EN

This text is made available for information purposes only.
A summary of this decision is published in all EU languages in the Official Journal of the European Union.

Case No COMP/.6166 - DEUTSCHE BÖRSE / NYSE EURONEXT

Only the English text is authentic.

REGULATION (EC) No 139/2004
MERGER PROCEDURE

Article 8 (3)
Date: 01/02/2012

EUROPEAN COMMISSION

Brussels, 1.2.2012

C(2012) 440 final

PUBLIC VERSION

COMMISSION DECISION

of 1.2.2012

addressed to:

Deutsche Börse AG

and

NYSE Euronext

declaring a concentration to be incompatible with the internal market and the functioning of the EEA Agreement

(Case No COMP/M.6166 - DEUTSCHE BÖRSE / NYSE EURONEXT)

(Text with EEA relevance)

(Only the English text is authentic)

COMMISSION DECISION

of 1.2.2012

addressed to:

Deutsche Börse AG

and

NYSE Euronext

(Case No COMP/M.6166 - DEUTSCHE BÖRSE / NYSE EURONEXT)

(Only the English text is authentic)

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to the Agreement on the European Economic Area, and in particular Article 57 thereof,

Having regard to Council Regulation (EC) No 139/2004 of 20 January 2004 on the control of concentrations between undertakings (the EC Merger Regulation)[1], and in particular Article 8(3) thereof,

Having regard to the Commission's Decision of 4 August 2011 to initiate proceedings in this case,

Having given the undertakings concerned the opportunity to make known their views on the objections raised by the Commission,

Having regard to the opinion of the Advisory Committee on Concentrations[2],

[1] OJ L 24, 29.1.2004, p. 1. With effect from 1 December 2009, the Treaty on the Functioning of the European Union ("the Treaty") has introduced certain changes, such as the replacement of "Community" by "Union" and "common market" by "internal market". The terminology of the Treaty will be used throughout this decision.

Having regard to the final report of the Hearing Officer in this case[3],

Whereas:

1. INTRODUCTION AND PROCEDURE

(1) On 29 June 2011, the Commission received a notification of a proposed transaction pursuant to Article 4 of Regulation (EC) No 139/2004[4] ("the Merger Regulation") by which the undertakings NYSE Euronext and Deutsche Börse ("the Notifying Parties") enter into a full merger within the meaning of Article 3(1)(a) of the Merger Regulation[5].

(2) After preliminary examination of the notification, the Commission concluded that the notified transaction raised serious doubts as to its compatibility with the internal market, in particular as concerns the market for derivatives trading and clearing services and the market for cash trading and post-trade services and, therefore, on 4 August 2011 adopted a decision to initiate proceedings pursuant to Article 6(1)(c) of the Merger Regulation.

(3) On 5 October 2011, a Statement of Objections ("SO") pursuant to Article 18 of the Merger Regulation was addressed to the Notifying Parties. The Notifying Parties replied to the SO on 24 October 2011. At the Notifying Parties' request, an Oral Hearing took place on 27 and 28 October 2011. Twenty-three third parties were admitted to the proceedings as interested third parties, ten of them participated in the Oral Hearing.

(4) On 20 October 2011, the time limit for taking a final decision in this case was extended by seven working days pursuant to the second subparagraph of Article 10(3) of the Merger Regulation.

(5) In order to address competition concerns identified in the SO, the Notifying Parties submitted commitments on 17 November 2011. On 21 November 2011, the Notifying Parties submitted a revised version of those commitments. The Commission launched a market test of those commitments on 22 November 2011.

(6) On 1 December 2011, the Notifying Parties addressed to the Commission a letter claiming that economic evidence discussed at a meeting of 23 November 2011 between the Notifying Parties and the Chief Economist Team constituted new evidence as compared to the evidence contained in the SO. Therefore, the Notifying Parties claimed that they were not given an opportunity to exercise their rights of defence in relation to this evidence. By a letter of 8 December 2011 the Commission informed the Notifying Parties that the analyses referred to by the Notifying Parties were based on data submitted exclusively by the Notifying Parties and related solely to the objections raised in the SO. Nevertheless, the Commission invited the Notifying Parties to provide any

---

2 OJ C ...,...200. , p....
3 OJ C ...,...200. , p....
4 OJ L 24, 29.1.2004, p. 1.
5 OJ C 199, 7.7.2011, p. 9.

observations they might have. The Notifying Parties responded by a letter of 13 December 2011[6].

(7) On 12 December 2011, the Notifying Parties submitted a second set of commitments which was later amended on 14 December 2011. The market test of the second set of commitments was launched on 14 and 15 December 2011.

(8) On 16 December 2011, the time limit for taking a final decision in this case was extended by an additional thirteen working days pursuant to the second subparagraph of Article 10(3) of the Merger Regulation.

(9) The Advisory Committee discussed the draft of this Decision on 17 January 2012 and issued a favourable opinion.[7]

2. THE PARTIES

(10) **NYSE Euronext** ("NYX") is a U.S. holding company that was formed in 2007 through the merger of NYSE Group, Inc. and Euronext N.V. NYX is dual-listed in New York and Paris. It operates numerous exchanges in the US and Europe. It has four main businesses: (i) cash listing services; (ii) cash trading services; (iii) derivatives trading and clearing services; and (iv) information services and technology solutions. In particular, in Europe, NYX operates NYSE Liffe ("Liffe"), a London-based derivatives exchange that also operates derivatives exchanges in Paris, Amsterdam, Brussels, and Lisbon.

(11) **Deutsche Börse** ("DB") is a German listed corporation vertically integrated in all aspects of cash and derivatives markets. Its activities therefore include cash listing, trading and clearing, derivatives trading and clearing, cash post-trade services, namely settlement and custody, collateral management and market data and analytics (index licensing and information services). In particular, DB is the operator of the Frankfurt Stock Exchange (Frankfurter Wertpapierbörse, “FWB”). It also owns, together with SIX Swiss Exchange AG (a subsidiary of SIX Group AG, "SIX") Eurex Zürich AG[8], which is the parent company of Eurex Frankfurt AG ("Eurex")[9]. Eurex operates the derivatives exchange Eurex Deutschland and it holds all of the shares in Eurex Clearing AG (“Eurex Clearing”), which is the clearing-house within the DB group.

---

6 Further details on the substance of the contentious analyses are in Section 12 of this Decision.

7 Out of 13 Member States present, 12 agreed that the notified transaction should be declared incompatible with the internal market and the functioning of the EEA while one abstained.

8 DB and SIX own Eurex Zürich AG in equal shares. The economic interest of DB and SIX in Eurex Zurich AG amounts to 85% and 15%, respectively. Given that SIX has limited rights over relevant strategic decisions, the Notifying Parties submit that DB exercises sole control over Eurex. In June 2011, DB announced an agreement with SIX to acquire all of the latter's outstanding stake in Eurex as a result of which it would obtain full ownership in addition to control. The closing of this transaction is not expected to occur before 31 March 2012.

9 Eurex Zürich AG holds all the shares of Eurex.

3. THE TRANSACTION AND THE CONCENTRATION

(12) Under the Business Combination Agreement signed on 25 February 2011, the notified transaction involves the creation of a new corporate entity ("HoldCo"), domiciled in Amsterdam and organised under the laws of the Netherlands.

(13) Following its formation, HoldCo made a public tender offer to acquire all of the issued and outstanding shares of DB, in exchange for shares of HoldCo. Following the closing of the offer, a newly formed, wholly owned subsidiary of HoldCo incorporated in the US, will merge with and into NYX, which will become a wholly owned subsidiary of HoldCo. Both transactions are interdependent. Upon completion of the transaction, the current DB shareholders will hold approximately 60% of HoldCo, while the current NYX shareholders will hold approximately 40% of HoldCo, on a fully diluted basis.

(14) Therefore, the notified transaction constitutes a concentration within the meaning of Article 3(1)(a) of the Merger Regulation.

4. UNION DIMENSION

(15) On the basis of the audited revenue figures of the Notifying Parties, the undertakings concerned would have a combined aggregate world-wide turnover of more than EUR 5 000 million[10] (DB: EUR 2.106 billion; NYX: EUR 3.338 billion). Each of them has a Union-wide turnover in excess of EUR 250 million (DB: EUR […]* billion; NYX: EUR […]* billion), but they do not achieve more than two-thirds of their aggregate Union-wide turnover within one and the same Member State. The notified transaction would therefore have a Union dimension under Article 1(2) of the Merger Regulation.

(16) The issues as to whether certain fees charged by US exchanges and rebates granted by NYX to customers should be deducted from NYX's audited revenue figures to properly reflect its turnover within the meaning of the Merger Regulation may be left open as irrespective of this, the notified transaction would still meet the turnover thresholds set out in Article 1(3) of the Merger Regulation. Should such fees and rebates not be considered as turnover in the sense of the Merger Regulation, the combined aggregate world-wide turnover of the undertakings concerned would exceed EUR 2 500 million in 2010 (DB: EUR […]* billion; NYX: EUR […]* billion). In each of at least three Member States, the combined aggregate turnover of the undertakings concerned was more than EUR 100 million in 2010[11]. In each of these Member States, the aggregate turnover of each of the undertakings concerned was more than EUR 25 million in 2010. The aggregate Union-wide turnover of each of the undertakings concerned was more than EUR 100 million in 2010.

(17) In conclusion, regardless of the exact qualification of the fees and rebates referred to in Recital (16), the notified transaction has a Union dimension.

---

* Parts of this text have been edited to ensure that confidential information is not disclosed; those parts are enclosed in square brackets and marked with an asterisk.

10 Turnover calculated in accordance with Article 5 of the Merger Regulation.

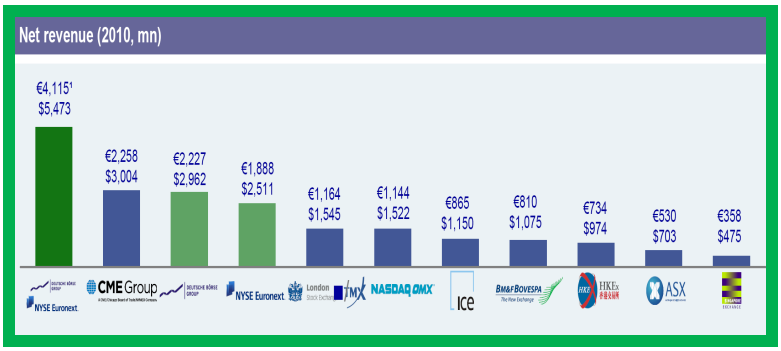
11 […]*.

5. INTRODUCTION

(18) The notified transaction has an impact on a number of markets or groups of markets, namely: (i) derivatives trading and clearing services; (ii) cash listing, trading and post-trading services; (iv) market data and index licensing; (v) collateral management and (vi) information services and technology solutions.

(19) The notified transaction gives rise to the creation of the biggest stock exchange in the world in terms of revenue, combining the current numbers two and three. The current leader, CME Group, would become the world's number two, reaching slightly more than half of the merged entity's revenue. The graphic in Figure 1 gives an overview of the net revenues in 2010 for the exchange industry.

Figure 1: Net revenues of the exchange industry in 2010 (in millions)



Source: DB's internal document, […]*.

(20) According to DB, the strategic rationale of the notified transaction lies in the creation of a "*premier global exchange with significant scale and breadth of product offering*" having "*leadership across the value chain (pre-trade, trading, post-trade, market date and analytics and technology)*"[12]. The notified transaction confers to the merged entity global leadership in derivatives and risk management, creates a number one cash listing and trading venue, extends DB's post-trade clearing capabilities across NYSE's operations and gives rise to the world's leading market data provider[13].

(21) The following charts in Figure 2 show the anticipated revenue and profit margin splits of the merged entity by business line. […]*.

Figure 2: Net revenue and EBITDA per business line

[...]*

Source: DB's internal document, […]*.

---

12 DB's internal document, section 5.4 of the Form CO, .[…]*.

13 See DB's internal document, section 5.4 of the Form CO,[…]*. Similarly, another DB internal document states that the merged entity will be the "world leader in derivatives and risk management", "the most compelling exchange provider of technology services and information content", and "the global pioneer in international post-trade infrastructure and settlement". See DB's internal document Project Gamma, section 5.4 of the Form CO, […]*.

(22) Each of the groups of markets set out in Recital (21) are analysed in this Decision as follows:

- Cash instruments (Section 7);
- Market data and index licensing (Section 8);
- Information technology products and services (Section 9);
- Collateral Management (Section 10); and
- Derivatives (Section 11).

6. INVESTIGATION OF THE CASE

(23) Given the specialised nature of the markets concerned, the Commission conducted a wide-reaching market investigation using all tools provided for under the Merger Regulation. In this context, in the first phase, the Commission sent over 600 detailed requests for information pursuant to Article 11 of the Merger Regulation covering seven different groups of market participants including but not limited to various types of customers (direct exchange members, corporates, and investment firms and retail intermediaries), competitors and clearing-houses[14]. Close to 250 responses were received and analysed. Moreover, a substantial number of the Notifying Parties' pre-merger internal documents were analysed, many of which are outlined in this Decision. In the second phase, the Commission sent over 150 questionnaires to targeted market participants active in the markets subject to the decision opening the proceedings, receiving over 100 responses,[15]

[14] More precisely, during the Phase 1 investigation, 620 questionnaires were sent targeting seven different groups of market participants. Three sets of questionnaires were sent to customers:

- Q1 – questionnaire to customers – Phase 1, addressed to 269 direct exchange customers. The Commission received 116 responses to this questionnaire;
- Q2 – questionnaire to investment firms and retail intermediaries – Phase 1 addressed to 131 indirect exchange customers , of which 39 provided the Commission with a reply; and
- Q5 - questionnaire to "corporates" – Phase 1, sent to 136 corporate customers in their capacity of listing companies and/or buyer users of derivatives for hedging purposes, and answered by 57 market participants.

Competitors' views were requested through the following questionnaires:

- Q3 – questionnaire to competitors – Phase 1 was sent to 68 competing platforms, namely other exchanges or multilateral trading facilities ("MTFs") which provide infrastructure for cash and derivatives trading. 27 competitors who received this questionnaire submitted a response;
- Q4 – questionnaire to clearing entities – Phase 1 was sent to 14 clearing-houses, which provide clearing services for cash and derivatives trading. The Commission received 5 replies to this questionnaire;
- Questionnaire Q6 was addressed to and responded by Euroclear;
- Q7 was sent to and responded by Company X, relating to the provision of connectivity services to financial markets participants identified by the Commission.

[15] The Phase II market investigation, consisted of two different sets of questionnaires targeting respectively derivatives markets and the Exchange Traded Funds ("ETF") market (Q12 - Questionnaire on ETFs - Phase 2, sent to customers and Q13 - Questionnaire on ETFs (trading platforms) – Phase 2, addressing competitors). As concerns derivatives, 159 questionnaires were sent to the following groups:

- Q8 – questionnaire to customers on derivatives – Phase 2 was sent to 121 direct exchange customers, of which 88 provided an answer;

and conducted more than 20 teleconferences and meetings with a range of customers and competitors.[16]

(24) In addition, the Commission analysed a substantial amount of both Notifying Parties' internal pre-merger documents which are, together with other evidence, the basis for a number of findings in this Decision.

(25) The Notifying Parties criticised the Commission for not conducting any economic or other quantitative analyses. The reasons why such analyses were not considered appropriate in this case are set out and developed upon in Section 10.1.1.2.1.

(26) In addition, at various points of the procedure, the Notifying Parties suggested that the market investigation and/or market test of the proposed commitments are biased as they rely on responses from market participants that pursue their own interests. In this respect, the Commission notes that the market investigation and the market tests conducted in the present case included a large number of market participants whose contact details were provided by the Notifying Parties themselves. As concerns the market tests of the commitments in the area of derivatives trading and clearing, the scope of respondents was narrowed to cover all market participants active in the relevant derivatives markets either as customers, competitors, potential competitors, regulators or clearing entities. In this regard, the Commission notes that market participants with direct knowledge of issues relating to derivatives are in best position to convey an informed opinion which may provide an input for the Commission's findings.[17] In all instances, the Commission assessed the replies of market participants carefully, critically and objectively.

(27) The conclusions presented in this Decision are therefore based on an overall analysis of all available evidence.[18]

- Three sets of questionnaires were sent to competitors:
  - Q9 – questionnaire to OTC trading platforms – Phase 2, targeting 13 OTC trading platforms. The Commission received 9 replies to this questionnaire;
  - Q10 - questionnaire to competitors on derivatives – Phase 2, sent to 23 market participants among exchanges and MTFs. A reply was submitted by 16 addressees;
  - Q14 - Questionnaire on derivatives – Phase 2 was sent to and responded by ICAP and Tradeweb.

16 Overall, 21 teleconferences / meetings were conducted with market participants on issues relating to derivatives markets; 4 teleconferences / meetings concerned cash markets.

17 On 17 January 2012, after the Advisory Committee had taken place, the Notifying Parties submitted a document entitled "Submission in support of merger clearance." In this document, the Notifying Parties argued that the Commission should have discounted the views of the Notifying Parties' competitors (these being claimed to comprise all competitors and a large number of customers which the Notifying Parties claim are their competitors; see sections 11.1.1.2.2.1.6 and 11.1.1.2.2.1.7 of this Decision). In this respect, the Commission notes that it has analysed all responses carefully and critically and that excluding these participants or their views on a wholesale basis from any market test would amount to excluding all competitors and the Notifying Parties' biggest customers. The results of such a market test would not have provided accurate and complete picture of the situation.

18 In its assessment of the results of the market investigation, the Commission considered only informative responses. In this respect, replies of those market participants who declared not to be able to respond to certain questions because the relevant question was not relevant to its activities and/or due to lack of information, experience and/or knowledge were not taken into account for the purpose of determining the group of market participants having provided an informative response.

7. CASH INSTRUMENTS

(28) Cash instruments (or securities) comprise equities and bonds. Equities provide a share of ownership in a publicly traded company whereas a bond does not provide its holder with any such ownership but is only representative of the obligation for the issuer to pay back a debt.

(29) Equities, according to the Notifying Parties, may be further sub-divided into (i) company-issued equity (stocks), (ii) Exchange Traded Products ("ETP") such as Exchange Traded Funds ("ETFs"), Exchange Traded Commodities/Vehicles ("ETCs/ETVs") or Exchange Traded Notes ("ECNs"), and (iii) structured products including warrants and certificates[19].

(30) Bonds (fixed-income securities, or debt instruments), according to the Notifying Parties, can be issued by governments (public issuers), semi-private entities (such as public law companies), or private companies, and they guarantee the right to repayment, with interest, of the borrowed amount, at a specific date.

(31) The services related to cash instruments are listing, trading, and pre- and post-trade services. The legal framework for the provision of these services has been changed by the entry into force of the Markets in Financial Instrument Directive ("MiFID")[20], aimed in particular at making financial markets more transparent and at liberalizing the sector by opening access to the market for entities other than traditional exchanges ("Regulated markets" under MiFID), such as Multilateral Trading Facilities ("MTFs") and Systematic Internalisers ("SIs").

7.1. CASH LISTING SERVICES

7.1.1. Market definition

(32) Listing is the practice of including a particular cash security in the set of cash securities that are available for buying and selling on a particular exchange. This occurs upon request of the issuer and it is a way for a company (or a government in the case of bonds) to obtain financing.

7.1.1.1. THE IMPLICATIONS OF MIFID AND THE PROSPECTUS DIRECTIVE AND THE DISTINCTION BETWEEN LISTING AND ADMISSION TO TRADING IN THE EEA

(33) In the EEA, Directive 2001/34/EC[21] (as amended by Directive 2003/71/EC[22], the "Prospectus Directive") on the admission of securities to official stock exchange listing

---

19 Structured products are securities that can be – as stocks and other equities - listed and traded on exchanges. They are based on an underlying such as an index, a company-issued equity, a currency or a commodity. Structured products are issued by banks, offer a return which is fixed at issuance and are often designed for local (retail) investors.

20 Directive 2004/39/EC of the European Parliament and of the Council of 21 April 2004 on markets in financial instruments ("MiFID"), OJ L 145, 30.4.2004, p.1. The deadline for transposition in Member States was 31 January 2007.

21 Directive 2001/34/EC of the European Parliament and of the Council of 28 May 2001 on the admission of securities to official stock exchange listing and on information to be published on those securities, OJ L 184, 6.7.2001, p. 1.

and on information to be published on those securities regulates listing as a Regulated Markets[23] activity related to the admission of cash securities to trading. Directive 2001/34/EC provides for common minimum sets of rules and obligations on transparency for listing which apply only to Regulated Markets (and do not apply in the context of admission to trading on other trading venues) in the context of offering securities to the public.

(34) MiFID imposes requirements on the admission to trading of financial instruments, as well as rules regarding the trading of those instruments. Under MiFID, MTFs, including those operated by Regulated Markets may admit to trading cash securities without a listing within the meaning of MiFID and the process provided for in the Prospectus Directive.[24]

(35) The Notifying Parties argue that admission to trading by MTFs could not be considered as a listing service. Rather, it could be characterised as a measure ancillary to trading. In their view, admission to trading differs from listing because it can happen without the request or consent of the issuing company and it does not take place in the context of capital raising. Listing, however, takes place at the request and with the consent of the issuing company and is often used for capital raising.

(36) The Notifying Parties also submit that, to their knowledge, no precedent distinguishes between listing and admission to trading at national level and that, although they may entail different reporting and transparency obligations for the issuing company, these differences are insufficient to distinguish a separate relevant product market. More precisely, the Notifying Parties consider that the regulatory definition of listing services should not necessarily correspond to the relevant market for competition law purposes.

7.1.1.2. EQUITIES AND/OR BOND LISTING SERVICES

(37) The Notifying Parties submit that for issuing companies, listing of bonds and listing of equities are not substitutes and constitute separate markets, in particular because equity listings have significant consequences for the ownership and control of a company, which are not affected by listing of bonds.

(38) As regards equities, a company may have one or more listings; namely a primary domestic listing and/or, possibly, one or more international listings. The Notifying Parties consider that *domestic company-issued equity listing* refers to listing of equities on an exchange in the country where the issuer is incorporated[25:] for most companies, this is the only listing, because there is a strong "home bias", namely the choice by issuers of a listing venue is dictated by factors such as the location of the corporate

---

22 Directive 2003/71/EC of the European Parliament and of the Council of 4 November 2003 on the prospectus to be published when securities are offered to the public or admitted to trading and amending Directive 2001/34/EC, OJ L 345, 31.12.2003, p. 64.

23 It is not possible to list instruments on an MTF within the meaning of MiFID: a listing can only take place on Regulated Markets (Article 4(1), (14), and (15) of MiFID). To offer listing services in this sense, the operator of an MTF would also have to be authorised as an operator of a Regulated Market.

24 The Notifying Parties note that in these instances, namely when the securities are not listed on a Regulated Market, the requirements for admission to trading are higher.

25 Location of incorporation is the criterion used by the World Federation of Exchanges ("WFE") to distinguish between domestic and international listings.

headquarters, the investor base[26], familiarity with the administrative and regulatory framework, and the language of procedure. According to the Notifying Parties, the geographic scope of the equities market is, by definition, national.

(39) The Notifying Parties submit that *listing of ETPs and structured products* is in the same relevant market as domestic listing of company-issued equities. This is because these cash instruments are listed and tradable as company-issued equities. Moreover, listings of ETPs and, in particular, listings of structured products are subject to home bias. Therefore, even if ETPs and structured products would form separate markets from domestic company-issued equity, listings of ETPs and structured products would be national in scope.

(40) According to the Notifying Parties, *international company-issued equity listing* is listing on an exchange in a country other than where the issuer is incorporated. It includes: (i) international listing, where an issuing company chooses to have a primary listing abroad; and (ii) secondary listing, or "dual listing," which is any listing in addition to an initial listing. The Notifying Parties submit that international listing and secondary listing are part of an overall relevant market for international listings for equities, the only difference between them being whether the company obtaining the listing is already listed elsewhere. For both these listings, the demand is not subject to "home bias".

(41) With reference to the geographic market, the Notifying Parties submit that the market for international listings is worldwide in scope and that competition among exchanges takes place on a global basis. An issuing company will generally choose an international listing venue for reasons specific to that issuing company, related to its strategic and business goals. Given the range of preferences issuing companies exhibit, the Notifying Parties submit that no general conclusions can be drawn regarding issuing companies' choice to complete an international listing in one region of the world rather than another.

(42) The market investigation has indicated that in choosing the listing venue for international listing, a corporate issuer in general only regards, or would only regard, Union exchanges as substitutable (that is to say, realistic alternatives to one another). However, for some respondents, Union and US exchanges, or even all world exchanges, could be considered as substitutable. In any event, the Commission considers on the basis of the market investigation that the listing decision of issuing companies depends on external factors such as regulation, investor base, business strategies as well as on elements influenced by the exchanges themselves (such as listing fees, trading services) and the liquidity of the trading venue.

(43) As regards bonds, the Notifying Parties submit that these instruments are usually listed only on one exchange and that the market for bond listing could be segmented according to the type of issuer (however, the Notifying Parties do not consider this as a

[26] Home bias is not limited to retail investors. The Notifying Parties submit that in their experience, although the portfolios of large, pan-European or global institutional investors may be less heavily weighted with domestic equities than an individual retail investor's portfolio would be, institutional investors still generally exhibit a degree of home bias. This is in part because institutional investors are investing on behalf of clients that themselves may have a certain home bias.

plausible segmentation)[27]. Public issuers and smaller companies list their bonds on their domestic exchange ("home bias"). The larger a corporation is – and the larger the issuance volume is – the more likely it is that a corporate issuer will list internationally. In any event, according to the Notifying Parties, apart from issuers with little international exposure or public issuers whose choice may be dictated by practical or political reasons, the place of listing would be less relevant for bond issuers because almost all bond trading (at least 90% according to the information of the Notifying Parties) is conducted over the counter ("OTC").

(44) Therefore, the Notifying Parties submit that whilst the geographic scope of the market for government bonds and small corporate bonds would be national in scope, with regard to large corporate issuers, the market would be wider and at least EEA-wide. The Commission considers that this submission has been confirmed by the market investigation. Nonetheless, the same considerations on the elements driving the listing choice for international equity listing seem to apply for bond listing.

7.1.1.3. CONCLUSION ON MARKET DEFINITION

(45) The market definition for cash listing services can be left open for the purpose of this Decision, since the notified transaction does not raise competition concerns under any plausible market definition.

7.1.2. Competitive assessment

7.1.2.1. HORIZONTAL OVERLAPS

(46) The Notifying Parties both provide cash listing services, domestic and international, for equities and bonds.

(47) DB provides equity and bond listing services in Germany by operating the Frankfurt Stock Exchange (Regulated Market under MiFID). Through Scoach Holding S.A., it offers listing for structured products in Switzerland[28]. Moreover, through its MTF DB Entry Standard, DB offers admission to trading for small- and mid-cap companies[29] which do not meet the requirements for listing on a Regulated Market under MiFID.[30]

---

27 The Notifying Parties submit that listing services for bonds cannot be segmented according to the currency denomination of the securities (Euro/non-Euro). Indeed, from the demand side, the issuer's choice depends in general on the particular financing requirements and target investors in every individual case of a listing and an issuer may issue bonds in more than one currency. In any event, market shares have been provided also for this possible market definition.

28 Scoach Schweiz AG, a 100% subsidiary of Scoach Holding S.A., operates a Regulated Market for structured products in Switzerland. DB owns a controlling interest (50% + 1 share) in Scoach Holding S.A., of which Six Swiss Exchange AG holds the remaining shares.

29 Cap is short for capitalisation; a measure by which a company's size can be classified.

30 According to the Notifying Parties, admission to trading in Entry Standard can be considered as a listing service because it is often used for capital raisings and inclusion requires the consent of the issuing company. In contrast, the Notifying Parties submit that admission to trading in Open Market, another DB MTF, cannot be considered a listing service, but rather a service ancillary to trading, because: (i) it takes place at the request of a trading member; (ii) the request and the consent of the issuing company (unless the issuing company is itself a trading member) is not necessary; and (iii) it does not in general take place in the context of capital raising.

In 2010, DB generated total cash listing revenues of about EUR […]*, accounting for about […]*% of DB's overall revenues.

(48) In the EEA, NYX operates (i) Euronext Regulated Markets, comprising the exchanges in Amsterdam, Brussels, Lisbon, and Paris, along with a new venue for international listing in London[31], and (ii) NYSE Alternext, comprising the MTFs in Amsterdam, Brussels, Lisbon, and Paris, providing admission to trading for small and mid-cap companies not listed within the meaning of MiFID[32]. In the US, NYX operates (i) the New York Stock Exchange, NYX's largest listing venue for all cash instruments; (ii) NYSE Amex Equities, a listing venue for emerging growth companies; and (iii) NYSE Arca, providing listing for ETFs and other ETPs[33]. In 2010, NYX generated total cash listing revenues of about EUR […]* from its European markets, accounting for about […]*% of NYX's overall revenues.

(49) In the market segments where the demand for cash listing services is subject to "home bias" and the geographic scope of the market tends to be national (namely *domestic* (overall) *equity listing, domestic listing of company-issued equities, listing of ETPs and listing of structured products* as well as *government bond listing*), the Notifying Parties' activities do not overlap, since they are active in different Member States. NYX had, in 2010, a market share of approximately [90-100%]* in Belgium, France, Portugal and the Netherlands in any possible product market segments, while DB is only active in Germany[34]. The merger will not have any effect on these markets and therefore the notified transaction does not raise any competition concern.

(50) With regard to the market segments not subject to "home bias" (namely *international company-issued equity listing* and *corporate bond listing*), in a EEA-wide market, the Notifying Parties' combined market share would be [10-20%]* for international company-issued equity listing and [5-10%]* for corporate bond listing[35]. Both these markets appear to be characterised by the presence of strong competitors. In particular, in the market for international company-issued equity listing, the London Stock Exchange ("LSE") has a market share of [40-50%]* and the Luxembourg Stock

---

31 As of January 2012, no company had listed on this venue.

32 NYX also operates two separate Free Markets (Marché Libre), MTFs for small and mid-cap issuing companies in Paris and Brussels. Generally, companies are included to trade on these platforms without any raising of capital and, whilst in Paris '[l]*a première négociation d'une valeur sur le Marché Libre s'effectue à l'initiative et sous la responsabilité d'un membre des marchés réglementés de titres gérés par NYSE Euronext*'; in Brussels the admission occurs upon request of the issuer (NYX Euronext website).

33 Issuing companies can list initially on NYSE Arca and then transfer the listing to NYX once they meet the listing requirements.

34 In the Union, and within a given Member State, there is typically only one national exchange, with the exception of Spain (where all the regional exchanges are, nonetheless, part of the BME Spanish Exchanges group, "BME") and Germany. In Germany, largely for historical reasons, there are several active regional exchanges, namely the Stuttgart Börse, the Düsseldorf Börse, the Hannover Börse, the Berlin Börse, the München Börse and the Hamburger Börse. These German regional exchanges are not controlled by DB. DB and Stuttgart Börse have respectively [50-60]*% and [40-50]*% of market share in domestic (overall) equity listing. In 2010, about [90-100]*% and [90-100]*% of domestic equity listings on, respectively, DB and Börse Stuttgart concerned structured products.

35 The Notifying Parties submit that it is difficult to distinguish between large corporate and small corporate bond issuers on a non-arbitrary basis. In any event, they submit that their combined market share would, under any possible market definition, be below 15%.

Exchange ("Luxembourg SE") a [20-30%]* market share. Moreover, the Commission considers, in particular on the basis of the market investigation, that the choice of the listing venue depends also on several elements not influenced by the exchanges, such as the issuers' business strategies and targeted investors. Such constraining factors would also be relevant in the alternative geographic market definitions (which the Commission considers less plausible on the basis of the market investigation), where the Notifying Parties' combined market share would be somewhat higher, although still not at a level likely to cause concern[36].

(51) It should also be noted that within the EEA, only Regulated Markets under MiFID have been considered as relevant providers of cash listing services. Nonetheless, if the cash listing markets were to be considered to include also admission to trading services provided by MTFs, the Notifying Parties' combined market presence would be further constrained by another competitive presence.

(52) Therefore, the notified transaction does not raise any competition concerns in the cash listing markets not subject to "home bias". Moreover, the Commission notes that no significant concerns with specific regard to listing services in general have been raised by the respondents in the context of the market investigation.

7.1.2.2. VERTICAL RELATIONSHIP

(53) MIFID, since it became applicable within the EEA, has brought about significant changes in the structure of cash markets. Traditionally, a cash security had to be listed for it to be traded on a given exchange. Therefore, a vertical link between cash listing and cash trading could be established.

(54) Post-MiFID, securities can be admitted to trading on Regulated Markets/MTFs regardless of the venue on which they are listed. Moreover, trading on MTFs does not require prior listing of the securities on a Regulated Market. As a consequence, competition between Regulated Markets and/or MTFs takes place separately at listing and admission to trading levels, and the vertical link between listing and trading no longer appears to be relevant.

7.2. CASH TRADING SERVICES

(55) DB and NYX both provide trading services for all main categories of cash instruments[37] including company-issued equity, ETPs, structured products and bonds.

(56) In Germany, DB operates the FWB, an entity under public law, with its equity trading platform Xetra which offers a variety of trading models such as open order book models or specialist auction models and provides trading services for company issued equity, ETPs and structured products. Furthermore, as mentioned in Recital (11)[38], DB owns, together

[36] Respectively [20-30%] in a world-wide market and [30-40%] in an EU+US wide market. In the latter, LSE would have a market share of [20-30%], followed by Nasdaq OMX with [10-20%] and the Luxembourg SE with [10-20%].

[37] NYX is, however, not active in trading Repos ("repos" are transactions involving the sale of a bond together with a commitment to repurchase it at a higher price in the future).

[38] See Recital (11) of this Decision.

with SIX Swiss Exchange AG Eurex Zürich AG[39], the parent company of Eurex Frankfurt AG ("Eurex") which controls Eurex Clearing AG and the repo trading platform Eurex Repo GmbH. Eurex also has a majority shareholding in Eurex Bonds GmbH, an electronic trading platform for fixed income securities[40].

(57) In Europe, NYX operates the cash trading platform Euronext for the exchanges in Amsterdam, Paris, Brussels and Lisbon; NYSE Alternext - comprising four MTFs for the same locations; and the pan-European MTFs of NYSE Arca Europe and Smart pool, which was created in partnership with three investment banks[41]. In the US, NYX operates the New York Stock Exchange, NYSE Amex Equities and NYSE Arca.

(58) In contrast to NYX, DB also provides post-trading services for cash instruments, namely clearing services via Eurex and settlement via its subsidiary Clearstream.

7.2.1. Market definition

7.2.1.1. TRADING

(59) Cash trading is the buying and selling of cash instruments which occurs in a number of ways through a variety of venues. Under MiFID, in the EEA, cash instruments can be traded on Regulated Markets, MTFs[42], and OTC.

(60) One key distinction between cash trading and derivatives trading should be noted: whereas in derivatives, the contracts traded on exchange are created by the exchanges themselves and differ from the more customised or bilaterally negotiated OTC contracts, in cash trading it is always the same instrument which is traded, regardless of the trading venue. In other words, it is always the same stock or the same bond which is bought or sold on Regulated Markets, MTFs or OTC.

(61) The Notifying Parties submit that there are separate relevant product markets for the trading of equities and the trading of bonds. This is in line with previous Commission decisions[43] and has been confirmed by the results of the market investigation.

---

39 See footnote 8 of this Decision.

40 Eurex holds over 70% in Eurex Bonds GmbH (the remaining shares are held by Royal Bank of Scotland N.V.; Barclays Bank Plc; UniCredit Bank AG; BNP Paribas SA; Commerzbank AG; Credit Suisse AG; Deutsche Bank AG; Morgan Stanley Fixed Income Ventures Inc.; WestLB AG).

41 BNP Paribas, HSBC and JP Morgan.

42 Cash instruments can be also traded on Systemic Internalisers ("SI"). According to Article 4 (7) of MiFID, an SI is "*an investment firm which, on an organised, frequent and systematic basis, deals on own account by executing client orders outside a regulated market or an MTF*." An SI acts as both an agent and a counterparty for every trade or, in other words, as a buyer to a customer's selling and as a seller to a customer's buying order. Although brokers avoid through internalisation trading and post-trading costs, they are also subject to MiFID regarding obligations such as record-keeping and pre-trade transparency.

43 See, before MiFID, Case No COMP/M.3511 *Wiener Börse et al./Budapest Stock Exchange/Budapest Commodity Exchange/Keler/JV*, and post-MiFID Case No COMP/M.5495 *UniCredit/Banca IMI/Euro TLX SIM JV*.

7.2.1.1.1. Equity trading

7.2.1.1.1.1. Product market definition

7.2.1.1.1.1.1. Trading on Regulated Markets and MTFs vs OTC trading

(62) The Notifying Parties submit that all equity types listed in a particular country belong to one relevant product market regardless of whether they are traded on Regulated Markets, MTFs or OTC.

(63) As regards trading venues, the Commission, when considering company-issued equity in previous decisions, indicated a single market for Regulated Markets and MTFs but distinguished those from OTC trading because of their different characteristics[44]. This distinction still applies: whereas, the Commission considers, on the basis of the market investigation, that MTFs since MiFID have become a realistic competitive alternative to Regulated Markets, this does not seem to be the case for OTC trading. The decision for OTC appears to be determined by factors such as the size of the deal, specific client requirements and liquidity considerations. For instance, a number of customers responded that they prefer equity trading on Regulated Markets or MTFs, but may go for OTC if there is insufficient liquidity on exchange. Other customers responded that they principally prefer OTC to avoid market impact on exchange of large size deals. Thus, the decision for OTC or Regulated Markets/MTFs is generally determined by external factors.

(64) Therefore, the Commission in this Decision bases its assessment on a separate product market for equity trading on regulated markets and MTFs excluding OTC trading. Ultimately, however, the exact product market definition in this respect can be left open since the notified transaction does not result in competition concerns irrespective of the issue of whether or not OTC trading is included.

7.2.1.1.1.1.2. The different types of equity

(65) The Notifying Parties further submit that all equities belong to the same relevant product market and that there is no need to distinguish company-issued equity, ETPs and structured products (including warrants and certificates) as different segments. The reason for this broad definition is, according to the Notifying Parties, that all equities are traded in the same manner and that all trades are based on investors' needs as regards, for instance, liquidity and price, the characteristics of the equity and the expected return on investment.

(66) However, from the demand side perspective, there seems to be limited substitutability between the different categories of equity products. Thus, stocks differ quite significantly from ETPs which primarily comprise Exchange Traded Funds ("ETFs": open ended investment funds that aim to track the performance of underlying indices across all asset classes) but also Exchange Traded Commodities and Vehicles (tracking the performance

[44] See cases mentioned in the footnote above; the different characteristics refer to, for instance, the different sizes of exchange and OTC transactions, the irregularity of OTC trading and other criteria defined in MiFID.

of an underlying single or index commodity such as metals or energy) and Exchange Traded Notes (tracking the performance of indices and asset classes such as currencies). Both ETPs and stocks also differ from structured products that are based on different underlyings such as stocks, indices or currencies but offer a return that is fixed at issuance.

(67) The results of the market investigation highlighted that stocks, ETPs and structured products differ in many respects, namely in the risk profile, the legal ownership profile, the regulatory and the tax regimes, the intra-day liquidity and the counterparty risks. In addition, the different underlyings of some equities, such as ETPs or structured products, play a role in determining whether or not the instruments have leverage or bear credit risk. Consequently, the majority of customers replying to the Phase 1 market investigation stated that the three equity categories – company issued equity, ETPs and structured products – are not substitutable for each other and that each category should be considered separately.

(68) There are some indications that different equity types may be substitutable from the perspective of the supply side. Thus, most of the platform operators seem to offer trading services for all equity categories, and some respondents to the market investigation indicated that it would not require significant time or cost to start offering a trading service for an equity category which they currently do not offer. Nevertheless, a platform provider would not start offering a trading service for a new equity type, however easy it may be, if it does not make economic sense, for instance, because it would be difficult to attract sufficient liquidity. As regards ETFs, accounting for the significant majority of ETPs, there is already less liquidity on trading venues in the Union than in the US due to the current regulatory framework[45]. As a consequence, a large part of the ETF trading in the Union is executed OTC. MTFs have not been very active trading venues for ETFs although they can easily offer ETF trading on their platforms. Thus, the competition conditions appear to differ for the three equity types. This is further underpinned in Recitals (70) and (77) when discussing whether trading in equities listed in different countries form one or separate product markets because the trading conditions also differ between the equity types in this respect.

(69) Therefore, the Commission will base its assessment in this Decision on separate product markets for the three equity categories - company-issued equity, ETPs and structured products.

7.2.1.1.1.1.3. The "home bias" of equity trading

(70) The Notifying Parties submit that equities listed in a particular Member State belong to one relevant product market since these are substitutable for each other whereas they are not substitutable for equities listed in other countries. Accordingly, this "home-bias" applies to demand and supply-side substitutability since investors primarily trade in domestic equities – also on MTFs – and exchanges and platforms are still more successful when offering trading services of domestic equities.

[45] The lack of reporting obligations for ETFs in comparison to company issued equity leads to a lack of transparency which in turn reduces the ability of trading venues to offer high liquidity on their platforms.

(71) The Commission has not concluded on this issue in previous decisions[46] and the market investigation has only partially confirmed the Notifying Parties' view.

(72) With respect to company-issued equity, around half of the customers replying to the Phase 1 market investigation stated that trading in stocks listed in one Member State is not substitutable for trading in stocks listed in other Member States, whereas, broadly speaking, the other half saw substitutability between stocks listed in different countries. However, around a third of the latter saw substitutability only for trading blue chips listed in different countries. In any event, the exact market definition in this respect can be left open since the notified transaction does not raise concerns under both alternatives - whether company-issued equities independent of their listing origin or only those with a primary listing in a particular country are included in the relevant product market.

(73) As to ETPs, the result of the market investigation regarding substitutability with respect to the listing location was also mixed. In that context, the following should be noted: the most popular ETP-types with investors, including retail investors, are ETFs which account for roughly 90%[47] of all ETPs. Therefore, market data, statistics, studies and comments of market participants on ETPs often focus on ETFs[48]. As a consequence, the Commission will also base its assessment mainly on ETFs.

(74) ETFs are very often listed on several exchanges in addition to their "primary listing". This multiple listing can be explained by the attractiveness of certain ETFs - for instance, popular index-based ETFs such as DAX or CAC-tracking ETFs - with a broader set of risks than company-issued equities - also outside the country of the primary listing venue. Investors in these other countries, in particular retail but also a number of (small and medium sized) institutional investors, tend to require an additional listing on the local market due to, for instance, regulatory reasons or simply because they only trade locally. According to the information of the Notifying Parties, an issuer that, for instance, wants to directly contact investors in France, must first have the product listed on a Regulated Market. Finally, there is not much cross-border activity in ETF trading since buying in one country and selling in another would result in additional post-trading costs and is, therefore not attractive, at least not for retail and smaller investors. Issuers accommodate these requirements although the multiple listing fragments liquidity.

(75) This multiple listing of ETFs does not imply that there is no home-bias at all since ETF investors still tend to focus on trades in domestic ETFs, and, consequently, there is more liquidity on the primary listing venue. However, it results in the fact that the description "*listed in a particular Member State*" does not accurately reflect reality in disregarding the multiple listing of widely popular ETFs that, however, account for significant trade volumes. Similarly, the reference to "*ETFs with a primary listing in one particular Member State"* can distort the assessment, at least when assuming Union-wide markets, since this ignores the reasons for multiple listings (see Recital (79)).

---

46 See cases mentioned in footnote 43.

47 According to the information of the Notifying Parties based on *Deutsche Bank, Global Markets Research, Global Equity Index &ETF Research, European Weekly ETP Review, February 11, 2011*.

48 It should be noted that the Notifying Parties also base their calculations of ETP market shares on ETF data.

(76) Thus, there are strong indications that the relevant market encompasses not only the trading of ETFs with a primary listing in one particular Member State but also the trading of ETFs with other primary listing locations. Ultimately, however, the exact product market definition can be left open since no competition problems arise under any of the alternatives.

(77) With respect to structured products including warrants and certificates, the majority of customers replying to the Phase 1 market investigation stated that trading in structured products that are listed in different countries is not substitutable. This is underlined by some further statements of respondents indicating that structured products are in particular "structured" for specific customer needs which confirms the Notifying Parties' explanation that structured products are designed specifically for domestic investors and are rarely traded in countries where they are not listed. Therefore, the Commission bases its assessment on a product market that comprises structured products listed in a particular country.

7.2.1.1.1.2. *Geographic market definition*

(78) As regards the geographic market definition, the Notifying Parties submit that the markets for trading equities (listed in a particular Member State) are at least EEA-wide and provide market share calculations on EEA-wide basis. As mentioned in Recitals (33) to (36), listing and trading have been separated since MiFID and equities can be traded in a European-wide market (it being always the same stock which is traded regardless of the geographic scope of the market). Therefore, the Commission has in principle no reasons to object to the definition of EEA wide equity markets.

(79) There is, however, one exception: the multiple listing of at least certain (popular) ETFs described above (see Recital (74)) shows that trading and listing is *de facto* not really separated in this respect since retail but also some institutional investors outside the primary listing location require an additional listing on their domestic trading venues. The listing and trading of, for instance, a DAX-based ETF in Frankfurt and Paris does, however, not imply that the exchanges in Frankfurt and Paris compete for the trades. It only indicates the reach of the ETF issuer for customers outside the location of the primary listing as was confirmed by the respondents to the market investigation and by interviews the Commission conducted in this respect.

(80) Therefore, in the case of ETFs, there are strong indications for the existence of national markets. Finally however, the exact scope of the geographic market(s) for trading ETFs can be left open since no competition concerns arise under any alternative definition.

7.2.1.1.2. Bonds trading

7.2.1.1.2.1. *Product market definition*

(81) Only a small fraction of bonds are traded on-exchange. The Notifying Parties estimate that at least 90% of bond trading is carried out OTC and the importance of OTC trading has

been confirmed by the results of the market investigation[49]. The Notifying Parties submit that OTC - including internalisation - is the main competitive constraint for exchanges. As indicated in Recital (59) above for cash instruments in general, it should be noted that, as opposed to what occurs in derivatives trading, the same bonds are traded both OTC and on-exchange.

(82) As regards trading on MTFs, the Notifying Parties submit that MiFID transparency requirements do not differ between types of trading venues or types of bonds traded (in contrast to company issued equities). In general, they estimate that MTFs have probably captured a similar fraction of bond trading as Regulated Markets[50].

(83) Furthermore, the Notifying Parties state that different types of bonds (corporate vs. government) or the issuing country should not be distinguished for market definition purposes since other characteristics such as maturity date, rating or the rate of return are more important for investors than the above-mentioned criteria. However, the exact product market definition can be left open because the assessment would not change under any of the alternative definitions.

7.2.1.1.2.2. *Geographic market definition*

(84) As regards the geographic market definition, the Notifying Parties submit that the relevant geographic market is at least EEA-wide since investors residing in a specific country also use trading venues in other countries. The Commission agrees with that definition for the purpose of this Decision. In any event, should the markets be defined nationally, there would be no overlap between the Notifying Parties' activities regarding bonds.

7.2.1.2. POST-TRADING

(85) Post-trading services refers to two main services, namely clearing and settlement services.

7.2.1.2.1. Clearing of cash instruments

7.2.1.2.1.1. *Product market definition*

(86) Clearing is a process in a financial transaction that can take place after a trade is executed but before settlement. Its purpose is to manage the counterparty risk in this interim period, to ensure that all trades are settled even if a buyer or seller defaults or becomes insolvent prior to settlement. This service is provided by a Central Counterparty ("CCP"), which is interposed between the trading parties. The decision on clearing is controlled by the trading venues, which choose the CCP(s), but the trading firms pay the CCPs for the clearing service.

[49] The majority of liquidity in the European bond market is still in the OTC market. Although some respondents stated that they would prefer to trade on Regulated Markets and/or MTFs, they also confirmed that this was conditional on finding sufficient liquidity which, for bonds, is very often not the case.

[50] The Notifying Parties submit that no separate statistics on MTF trading are available for bonds.

(87) The Notifying Parties submit that there is a separate relevant market for the provision of clearing services, in particular because of the existence of competition between CCPs to provide clearing services to cash trading venues as the trading venue selects the CCP(s). They moreover submit that there is a separate market for the clearing of cash instruments.

(88) In the Commission's view, however, and from the customer perspective, cash clearing services could be considered as part of an overall service provided by an exchange with regard to a particular security, as it is the case for derivatives[51]. Taking into account the market investigation, the Commission considers that, when a trader decides to execute a trade on a certain venue, the clearing service is normally not decisive for cash instruments and that what is considered decisive is rather the total cost of trading (including clearing and settlement).

(89) In any event, the question can be left open since competition concerns do not arise even if the assessment is based on a separate potential market for the provision of cash clearing services to third party trading venues and platforms.

7.2.1.2.1.2. *Geographic market definition*

(90) As to the geographic market definition, the Notifying Parties submit that the market for cash clearing services is at least EEA-wide since many CCPs are active throughout Europe. Exchanges and MTFs cross national boundaries and, for instance, clear their trades with non-domestic CCPs. However, and in agreement with the Notifying Parties, the exact geographic definition can be left open, since competition concerns do not arise under any alternative market definition.

7.2.1.2.2. Settlement of cash instruments

7.2.1.2.2.1. *Product market definition*

(91) Settlement is the process by which a security traded by a seller is delivered to the purchaser in exchange for payment. Settlement therefore fulfils the buyer's and seller's contractual obligations with respect to a trade. This service is provided by the relevant national Central Securities Depositories ("CSDs")[52] or, in some cases, by intermediaries (such as brokers).

(92) In previous decisions, the Commission has considered the distinction between primary and secondary settlement services[53]. Primary settlement is performed by the national CSD, where the relevant securities reside and, as such, the settlement of a trade can be completely implemented by the CSD. In the Judgment *Clearstream Banking AG and Clearstream International v Commission*[54], the Court of First Instance accepted that

---

51 While from the perspective of a trader one service of cash trading and clearing is generally provided, as is the case with derivatives, there is a separate market for the provision of cash clearing services to third party venues and OTC trading platforms. However, this market is not affected by the present transaction since NYX is not active in the provision of cash instruments clearing services to third parties.

52 In general each country has only one CSD.

53 See Case No COMP/38.096, *Clearstream*, and Case No COMP/M.3511, *Wiener Börse/BSE/BCE/Keler*.

54 T-301/04, ECR II-3155, paras. 57ff.

there is a distinct market in the provision of primary clearing and settlement services in respect of securities issued in Germany (where there is a national CSD), separate from the market in secondary services, given that, because an undertaking holds a *de facto* monopoly on that market and is therefore an indispensable commercial partner for those primary services, there is neither demand-side nor supply-side substitutability for those services.

(93) According to the Notifying Parties, for instance, settlement providers for equity trades on Regulated Markets do not generally compete and the settlement services for these trades are almost always provided by the national CSD. Secondary settlement is provided by intermediaries that hold securities with the CSD in their name but on behalf of customers. These providers can settle in-house transactions occurring between their customers without involving action at the CSD level. According to the Notifying Parties, secondary settlement may be more likely where trades are completed OTC.

(94) The Notifying Parties submit that the precise definition of the product market can be left open as the notified transaction will not result in competition concerns regardless of the definition. The Commission, in view of the existing regulation for national CSDs as to primary settlement, will assess the impact of the notified transaction on settlement services nevertheless on the basis of separate markets for primary and secondary settlement. Finally, however, the Commission agrees with the Notifying Parties that the exact product market definition can be left open since the assessment would not alter under any definition.

7.2.1.2.2.2. *Geographic definition*

(95) The Notifying Parties submit that the market for secondary settlement services - and likewise a potential overall settlement service market – is at least EEA-wide since these services can be provided by intermediaries anywhere in the world.

(96) As to primary settlement, the Commission in previous decisions left the geographic market definition open[55]. It also explained that securities issued and settled in a particular Member State will anyway be kept in final custody in that Member State. Therefore, there is practically no competition between different national CSDs for deposit, final custody and primary settlement[56]. As a consequence, the competitive assessment is the same regardless of the precise geographic definition of the relevant market. Since the role of national CSDs has not changed in any significant way despite the regulatory changes introduced by MiFID[57], the Commission will follow also this line in this Decision.

---

55 Case No COMP/M.3511 *Wiener Börse et al./Budapest Stock Exchange/Budapest Commodity Exchange/Keler/JV*.

56 See Case No COMP/38.096, *Clearstream*.

57 This was recognised by the Commission in the context of its MiFID review when it stated that regulatory barriers have not yet been fully removed regarding cross-border post-trading services performed also by CSDs. (See Press Release, Enhancing safety of European financial markets: common rules for Central Securities Depositories (CSDs) and securities settlement, January 13, 2011, available at http://europa.eu/rapid/pressReleasesAction.do?reference=IP/11/29&format=HTML&aged=0&language=EN&guiLanguage=en).

(97) As to secondary settlement, the exact geographic definition can be also left open since the notified transaction does not result in competition concerns regardless of the definition.

7.2.2. Competitive assessment

(98) The envisaged merger does not raise competition concerns with respect to cash trading and post-trading services. The Commission's assessment was confirmed by the market investigation despite some critical remarks received regarding post-trading services, in particular with respect to settlement services.

7.2.2.1. EQUITY TRADING

(99) The market for equity trading has dramatically changed, in particular regarding company-issued equities, since MiFID entered into force in 2007 and abolished the concentration rule, which required that trading be undertaken only on the trading venue of the listing. As a result new competitors – the MTFs – emerged, changing the market structures and, as a consequence of these dynamics, bringing down trading costs.

7.2.2.1.1. Company-issued equities (stocks)

(100) With respect to EEA-wide traded company-issued equity listed in a particular Member State, the Notifying Parties have no overlaps – for stocks listed in Germany and Portugal - or negligible overlaps (below 0.5 % increment for stocks listed in France, the Netherlands and Belgium). According to the Notifying Parties, the strongest competitor of the respective incumbent is Chi-X Europe with market shares between 20% and 30% for stocks listed in Germany, France and Belgium and the Netherlands in value terms and also between 20-30% in volume terms (except for trading of stocks listed in Germany where Chi-X Europe according to the Notifying Parties achieves a market share in the range of 30-40% in value terms). Chi-X Europe as the strongest competitor for stocks listed in each of these countries is generally followed by BATS[58] and the London Stock Exchange ("LSE") with market shares in the range of 5-10% or even 10-15% on the listing location and whether measured in value or volume terms.[59] In that context, it should be noted that BATS has recently acquired Chi-X Europe.

(101) On the basis of EEA-wide stock trading independent of the listing location, post-merger, DB and NYX would achieve a combined market share of [20-30%]* in value terms and of [20-30%]* in volume terms, followed by Chi-X Europe in volume terms (20-30% with LSE also achieving a share within that range) and LSE in value terms (20-30%, with Chi-X Europe achieving 10-20%) and BATs with [5-10%]* and [10-20%]* in value and volume terms respectively. As outlined in Recital (72) in the context of market definition, there is, however, still a "home-bias" for stocks so that EEA-wide market shares independent of the listing country may not properly reflect the real picture.

(102) However, the Commission's analysis – whether based on EEA-wide trading of stocks of listed in a particular Member State or on trading of stocks listed anywhere in the EEA – clearly shows that the MTFs, in particular Chi-X Europe and BATS, have not only managed to become viable competitors but also to strongly increase their market shares at

[58] See BATS' website, available at http://www.batsglobalmarkets.com/, (January 2012).

[59] Market share estimates for 2010 (excluding OTC, on book) provided by the Notifying Parties.

the cost of the former incumbents, including DB and NYX, which has caused significant market dynamics and increased competition.

(103) This assessment has been widely confirmed by the results of the market investigation which revealed a general appreciation of MiFID and the emergence of MTFs. Although many customers focused on blue chip companies when characterising MTFs as a particularly viable substitute for stock trading - and not on equities issued by small and mid-cap firms - it was also acknowledged that MTFs are in a position to compete with exchanges for all types of trading. In general, the market investigation did not reveal any particular concerns in the field of stock trading.

(104) The Commission has also not found evidence that the competitive constraint that MTFs currently represent will be significantly reduced by the possible extension of DB's vertical silo model for clearing to the merged entity. This is so, in particular as barriers to entry are lower in the equity market than in the derivatives market due to the lower importance of netting and cross-margining at clearing. As described in Recital (86), the purpose of clearing is to manage the counterparty risk in the interim period between trading and settlement. For cash instruments, there are normally only two or three days between trading and delivery-versus-payment, whereas for derivatives, the counterparty risk needs to be managed throughout the lifetime of the derivatives contract which could be several months or years. In this regard, it has been observed, and the market investigation has confirmed, that successful entry by MTFs in equity trading has occurred without the need to obtain access to the clearing facilities of the incumbent exchanges, as MTFs have resorted to other clearing-houses such as EMCF and LCH.Clearnet.

7.2.2.1.2. Structured products

(105) As mentioned in Recital (77), structured products are designed for specific customer needs that vary from Member State to Member State. Consequently, structured products listed in a particular country are specifically designed for domestic investors and do not seem to appeal to other investors, so that structured products are rarely traded in countries where they are not listed. Among all equity types, this "home bias" appears to be strongest for structured products as confirmed by the market investigation (see Recital (77)).

(106) DB and NYX have no overlaps with respect to structured products listed in a particular Member State – it is either one or the other that offers the respective trading services Moreover, as to structured products listed in Germany, Stuttgarter Börse is much stronger than DB. The market investigation has not revealed any concerns regarding structured products.

7.2.2.1.3. ETFs

(107) ETFs are mostly traded OTC or on Regulated Markets. Whereas large institutional investors tend to trade OTC, retail investors and also small to medium size institutional investors trade on Regulated Markets. MTFs have so far not attracted significant volumes or value of ETF trades. This can be explained by the limited and fragmented liquidity in ETFs and by the current regulatory framework, in particular by the lack of reporting obligations in comparison to company-issued equity, as several market participants mentioned in the context of the Commission's market investigation. The non-transparency of transactions and the liquidity problem currently seem to provide limited

incentives for investors to trade ETFs on MTFs. Whether this is going to change in the near future, as the Notifying Parties claim, is not clear, also according to most of the respondents to the market investigation.

(108) On the basis of national markets - that appear to be the relevant markets from at least the viewpoint of retail and small to medium sized institutional investors that require local listings of ETFs independent of the primary listing – the activities of DB's and NYX's activities do not overlap.

(109) Alternatively, on the hypothetical basis of an EEA-wide market for providing trading services for ETFs with a primary listing in a particular Member State, there are also no overlaps as regards ETFs with a primary listing in Belgium, Portugal and the Netherlands. This can be explained by the fact that the respective ETFs are apparently not traded outside their primary listing location, at least not to a measurable extent.

(110) The picture is different with respect to a hypothetical EEA-wide trading of ETFs with a primary listing in Germany and France since popular ETFs with a primary listing in these Member States are also traded outside Germany and France. Thus, apart from the strong market position of the respective incumbent, overlaps seem to exist: as to ETFs with a primary listing in France, DB would, for instance, also be present (with a 'market share' of [10-20%]* in volume and value terms according to the Notifying Parties) as would be other exchanges such as LSE Group. Similarly, as regards ETFs with a primary listing in Germany, NYX would be present (with a 'market share' of [5-10%]* in volume and value terms according to the Notifying Parties) as well as others such as LSE Group and, to a very limited extend, MTFs.

(111) However, as already explained in the context of market definition, these 'overlaps' do not accurately reflect reality. They are caused by the multiple local listing of popular ETFs - as required by retail and smaller institutional investors that want to trade these ETFs domestically, also for regulatory reasons - but do not result from competition between the exchanges. Only very few large institutional investors may choose between the different trading venues. However, this effect is extremely limited since these investors mostly trade OTC for liquidity reasons. This was also confirmed by the market investigation which, moreover, did not reveal concerns with respect to competition in the field of ETF trading.

(112) Therefore, the notified transaction does not raise competition concerns with respect to ETF trading.

7.2.2.1.4. Conclusion

(113) As a consequence, it is concluded that the notified transaction does not raise competition concerns as regards equity trading.

7.2.2.2. BOND TRADING

(114) The Notifying Parties are not strong players in bond trading. This was confirmed by the market investigation.

(115) The Notifying Parties would achieve low combined market shares (0-5% according to their own estimates) under various alternative product market definitions with a European geographic scope[60]. There is one exception, where the Notifying Parties would achieve somewhat higher combined shares, at least if based on volume (number of trades), namely a hypothetical market for European bond trading carried out on Regulated Markets only (excluding trading on MTFs). Under this market definition, the Notifying Parties would achieve, according to their own estimates, a share that is still under [0-5%]* in value terms but [20-30%]* in volume terms. This can be explained by the fact that the Notifying Parties mostly attract small trades. In contrast, LSE and in particular Bolsas y Mercados Españoles ("BME"), seem to attract larger trades on Regulated Markets and achieve, according to the Notifying Parties, estimated market shares of [20-30%]* (LSE) and [60-70%]* (BME) in value terms and [50-60]*% (LSE) and [10-20]*% (BME) in volume terms. Therefore, even on the basis of such a narrow product market definition, the Notifying Parties are not leading players. On the basis of national markets, the Notifying Parties' activities would not overlap. The market investigation did not reveal any concerns in bond trading.

(116) Therefore, competition concerns do not arise with respect to bond trading.

7.2.2.3. POST-TRADING: CLEARING

(117) As described in Recital (58), NYX is not active in the provision of cash clearing; therefore there are no horizontally affected markets involving clearing services.

(118) Regarding potential vertical effects, although some respondents in the market investigation expressed concerns regarding a possible strengthening of the vertical silo through the merger with respect to clearing, the Commission has not identified such merger-specific factors that could strengthen the vertical silo.

(119) On the basis of the market investigation, the Commission considers that successful entry by MTFs in equity trading has occurred without the need to obtain access to the clearing facilities of the incumbent exchanges, as MTFs have resorted to other clearing-houses such as EMCF, EuroCCP and LCH.Clearnet.

(120) The notified transaction does not, therefore, result in significant vertical effects in relation to equities trading and clearing.

7.2.2.4. POST-TRADING: SETTLEMENT

(121) The Notifying Parties' activities do not overlap in settlement, whether in secondary settlement, where NYX is not active, or in primary settlement.

(122) NYX is only active in primary settlement through its subsidiary Interbolsa, the Portuguese CSD (settlement for NYX exchanges in Belgium, France, and the Netherlands are

[60] If the assessment was based on domestic trading, there would be no overlap of activities.

provided by Euroclear), while DB, via Clearstream Holding AG, ("Clearstream")[61], is active in primary settlement as CSD for German stocks and in secondary settlement.

(123) DB, via Clearstream and its subsidiary Clearstream Banking SA, Luxembourg ("CBL"), is active also as an International Central Securities Depository (ICSD). An ICSD is a central securities depository that settles transactions in Eurobonds[62]. There are only two ICSDs globally: Clearstream and Euroclear. Both entities have a joint arrangement with so-called "Common Depositories" in multiple countries to allow them to move securities between clients in both organisations on a book-based basis. In addition to the ICSD functionality which only these two entities share, both Clearstream and Euroclear also provide secondary settlement services. NYX is not active as an ICSD.

(124) Therefore, the notified transaction does not result in horizontal effects as regards settlement services.

(125) As regards vertical effects, it should be recalled that primary settlement services are conducted by the national CSD of a given Member State, pursuant to national laws of the various Member States, for the securities issued in that particular Member State. Thus, there is no meaningful vertical relationship between NYX's cash trading activities and DB's primary settlement activities. Similarly, there is no meaningful vertical relationship between DB's cash trading activities and Interbolsa‘s primary settlement services. Therefore, the notified transaction does not result in vertical concerns with respect to primary settlement services.

(126) As regards secondary settlement services, NYX‘s cash trading activities in Belgium, France, the Netherlands, and Portugal may be viewed as vertically related to DB‘s activities in secondary settlement. Post-transaction, the combined NYX/DB could potentially have the ability and incentive to direct trade flows from the NYX exchanges (via the clearing-house) to Clearstream for secondary settlement and, in the context of the market investigation, some concerns were indeed raised in this respect.

(127) Since the provision of equities settlement depends on the availability of a feed from an exchange to CCPs and then to the relevant CSD, it was submitted that, as a result of the notified transaction, a "*shift of activity at settlement level into the DBAG silo*"[63], more precisely the direction of trade flows or feed from the NYX exchanges to Clearstream without further involving the current settlement service provider (Euroclear), could be expected.

(128) In this regard, it was further argued that in view of the strong position of a combined NYX/DB group, the merged entity would have the incentive to shift settlement into DB's vertical silo since doing so would, despite some possible cost savings, enhance its ability to raise the all-in costs of trading on Euronext towards the profit-maximising level. Therefore, if DB discontinued providing access to CSDs outside its group for

---

61 DB holds 100% of the shares of Clearstream, which in turn owns 100% of Clearstream Banking AG, Frankfurt ("CBF") CSD for securities issued under German law, and of Clearstream Banking S.A., an International Central Securities Depository (ICSD).

62 Eurobonds are also known as international debt securities, and are issued in several countries and are denominated in the currency in which they are issued.

63 See attachment to Euroclear's reply to questionnaire Q6 of 13 July 2011, Market Definition", paragraph 5.10.2, [...]*.

Euronext trades cleared through Eurex, and if it did not also provide external CSDs with simultaneous reciprocal access to German securities cleared through Eurex Clearing, competition would be greatly reduced[64].

(129) The Commission, following its first phase market investigation, could therefore not exclude concerns with respect to a potential increase of the merged entity's ability and incentive to control transaction feeds and thereby foreclose competitors' access to an essential input. Consequently, the Commission further analysed the issue during the second phase.

(130) The Notifying Parties submit that the notified transaction would not result in any anti-competitive foreclosure of competing settlement and custody service providers including Euroclear, and their ability to compete effectively.

(131) First, the Notifying Parties state that, even under a worst case scenario where all Euronext trade volumes were shifted to Clearstream for secondary settlement, this would have no impact on its competitor's (Euroclear) ability to compete and engage in primary or secondary settlement services and a negligible impact on Euroclear's overall position. The effect of any shifts away from Euroclear in the market where it is the CSD would "*represent only a small crack in Euroclear's own vertical silo*"[65]. Secondly, since Euroclear would remain the custodian and primary settlement venue for France, Belgium, and the Netherlands, Clearstream might provide secondary settlement services to a CCP clearing Euronext trades only to the extent that it maintains an active custody and settlement account with the relevant Euroclear CSDs[66]. In general, settlement providers do not really compete and equity trades executed on Regulated Markets are almost always provided by the national CSD for all securities issued and deposited under national laws of the home country of a specific CSD, regardless of whether the CSD's customer is located domestically or abroad.

(132) Moreover, the Notifying Parties submit that […]*, post-transaction and irrespective of clearing arrangements, the national Euroclear CSDs are likely to remain settlement locations for securities traded on NYX exchanges[67].

(133) The Commission, following an in-depth investigation of these issues, concludes that the notified transaction would not have any relevant impact on settlement services or more precisely, any foreclosure effects with respect to competing settlement service providers. The main reason is the continuing de facto monopoly position of national CSDs for custody and primary settlement service due to national regulations and requirements. Any potential diversion of settlement services away from national CSDs would, therefore, take place as secondary settlement through Clearstream. Even though this might add a new (secondary) settlement venue for French, Belgian and Dutch securities it would not remove the incumbent national CSD for custody and primary

64 Euroclear, submission of 21 June 2011, paragraph 9.15, [...]*.

65 Notifying Parties' submission of 25 August 2011 in response to the decision opening proceedings, paragraph 5.

66 Notifying Parties' submission of 25 August 2011 in response to the decision opening proceedings, paragraph 31.,

67 Notifying Parties' submission of 25 August 2011 in response to the decision opening proceedings, paragraph 6.

settlement services. The possibility that Clearstream might be able to attract settlement for French, Belgian and Dutch securities and as a consequence shift some primary settlement services into secondary settlement is unlikely to result in market foreclosure, taking into account the volumes Euronext transaction feeds represent in comparison to the overall market and the settled transactions by strong primary settlers[68].

(134) Moreover, it is under the current environment highly unlikely that Clearstream would be able to move any significant volumes of settlement away from the CSD that concentrates settlement today. This can be explained by the current barriers - practical and regulatory - national differences in custody processing create and subsequent network effects.

(135) Therefore, the notified transaction does not raise any competition concerns in relation to post-trading services including settlement.

8. MARKET DATA AND INDEX LICENSING

8.1. MARKET DEFINITION

8.1.1. Market data

(136) The provision of market data has developed into a stand-alone business activity as investment decisions are often based on detailed information. Market data are information products consisting of the current pricing or historical performance of particular assets, other data, and news. The Commission analysed this product area in two previous cases.

(137) In *Reuters/Telerate*[69], the Commission divided market data products into separate markets for: (i) the provision of real-time market data to end-users ("RTMD"); (ii) the supply of price and reference data to middle- and back-office functions; (iii) the supply of market data platforms; and (iv) the supply of foreign exchange order management software. While recognizing that the provision of RTMD could be further subdivided by reference to the type of asset, the Commission ultimately left the market definition open in this regard.

(138) In *Thomson/Reuters*[70], the Commission went further into the segmentation. More precisely, it found that individual content sets are not substitutable and therefore it identified various content sets as separate relevant product markets. Among these

---

68 According to the settled case law, it cannot be presumed that the law of the European Union will not be complied with by the merged entity. See paragraph 159 of the Judgment of the Court of first instance of 25 October 2002 in the Tetra Laval BV v Commission case (T-5/02, ECR 2002 p. II-4381 where it is stated that, "*although the Regulation [4064/89] provides for the prohibition of a merger creating or strengthening a dominant position which has significant anti-competitive effects, these conditions do not require it to be demonstrated that the merged entity will, as a result of the merger, engage in abusive, and consequently unlawful, conduct*."

69 Case No. COMP/M.3692, *Reuters/Telerate*.

70 Case No. COMP/M.4726, *Thomson /Reuters*.

segments, there are: (i) real-time data feeds[71], (ii) market data platforms, (iii) other content sets.

(139) In the current case, the Notifying Parties propose that when an exchange is a provider of market data, the following market data services should be distinguished: (i) the *provision of proprietary trade-related information* ("proprietary market data"), namely information generated on an exchange, such as real-time pricing and trading volume data, and for which that exchange is the sole provider; and (ii) the *provision of non-proprietary market information* ("non-proprietary market data"), namely general data not generated on a trading venue (such as data on macroeconomic variables such as GDP, unemployment, or inflation) and data resulting from further processing and/or aggregation of proprietary data originally generated on trading venues (such as "consolidated feed" products). According to the Notifying Parties, this distinction has not been considered by the Commission in its previous cases, where no exchange was involved and, therefore, only the market for non-proprietary market data was analysed.

(140) The market investigation confirmed that the Notifying Parties each provide exchange-specific information that is not capable of being replicated by market data services provided by other exchanges or venues.

(141) As regards the geographic market definition, in the decisions mentioned in Recitals (137) and (138), the Commission found that the markets for separate content-types were at least EEA-wide and probably world-wide in scope. The Notifying Parties agree with this definition with respect to the market for non-proprietary market data and they submit that the market for proprietary market data is world-wide.

(142) In any event, the exact product and geographic market definition can be left open for the purpose of this Decision, since the notified transaction does not raise competition concerns under any possible market definition with regard to the horizontal effects of the notified transaction in market data.

8.1.2. Index Licensing

(143) Market data may also be collated into indices, which are information products that measure changes in the value or performance of a group of investment products. Indices can be used as a source of information or as a benchmark against which to assess the performance of a given financial instrument. Indices can also fulfil an “underlying” function in which the index serves as a reference price for tradable investment products, such as ETFs and derivatives. To this end, an index provider creates and licenses branded indices and provides the composition and weighting data of the index to issuers of ETFs and structured products, as well as derivatives exchanges, and in some cases clearing-houses, which base their products or services on the index.

[71] In *Thomson /Reuters*, although recognising the existence of two types of real-time datafeeds, consolidated real-time datafeeds and direct real-time datafeeds, and the existence of competition constraints exerted by direct real-time datafeeds on consolidated real-time datafeeds, the Commission did not take a final position as to whether consolidated and direct feeds were two separate markets or whether they belonged to a single product market.

(144) The Notifying Parties argue that such activities are separate from the supply of indices as a form of market data: in particular, the customer groups for each service would be different and, even where customers both purchase index data and license an index for a tradable product, these are generally separate transactions. Accordingly, the Notifying Parties submit the existence of a separate market for index licensing, which would be global in scope.

(145) Within this market, according to the Notifying Parties, it would not be appropriate to segment on the basis of different customer groups. Irrespective of this, market shares have been provided for any possible market definition in this respect.

(146) The Notifying Parties also contend that a segmentation according to the type of index, namely between the various national equity indices and "pan-European" equity indices[72] would not be relevant for market definition purposes, in particular because of the high degree of supply-side substitutability between different types of indices. Market shares have not been provided on this basis[73]. Only data on the Notifying Parties' turnover has been provided. Nevertheless, as highlighted in Section 10 on Derivatives, concerns were raised as regards the possible vertical link between index licensing and equity index derivative trading and clearing. These are analysed in that context in that Section.

(147) The Commission's investigation has shown, however, that there is no supply-side substitution due to IP rights and that whilst a new index can indeed be launched in competition, on the licensing side, with other indices, the chance of such an index to obtain commercial success in competition with the indices traded on the platforms of the Notifying Parties would depend *inter alia* on the existence (or likely existence) of a liquid market in futures and options on that index. The investigation has also shown that indices based on baskets of stocks of different nationalities do not compete, but that there is competition in terms of licensing between indices based on a broad basket of European blue chip stocks, including between the Stoxx (including Eurostoxx) and Eurofirst families of indices.

(148) It is therefore concluded for the purposes of this Decision that distinct relevant markets exist for the creation and licensing of indices composed of stocks from each of the national markets concerned, namely for German, Dutch, Belgian, Portuguese, French and UK stock indices. It is further concluded that a distinct relevant market exists for the creation and licensing of indices composed of a broad basket of stocks from a variety of EEA member states.

(149) The Notifying Parties have argued that the geographic market for index licensing is global in scope[74]. However, it could also be argued that the market is only EEA-wide or

---

72 A "national index" is a share-based index representing the value of shares from a selected number of companies or investment products listed in a given Member States. A "pan-European index" is also a share-based index, but with a European wide selection of shares.

73 The Notifying Parties submit that they are unable to provide estimates of share data for separate product categories comprising national indices and pan-European indices. Given that the majority of index providers offer several indices (and in some cases even their entire index "family") at a single price, the Notifying Parties are unable to reasonably estimate the proportions of the total licence fees paid that should be allocated between the multiple indices licensed by customers.

74 Form CO, section 6 on market data and indices, paragraph 6.84.

even, as regards the national indices (or certain of them), national in scope. However, this point can be left open since, regardless of the conclusion on this point, the competitive analysis is the same.

8.2. COMPETITIVE ASSESSMENT

(150) The Notifying Parties are active in the provision of market data and the licensing of indices.

8.2.1. Market data

(151) The Notifying Parties' activities overlap in the provision of *non-proprietary market data*. When considering the segmentations identified by the Commission in *Reuters/Telerate* and *Thomson/Reuters*, the Notifying Parties' activities overlap, respectively in RTMD and in real-time data feeds, market data platforms and other content sets. In any event, under any possible market definition, the Notifying Parties' combined market share is below 15% on both an EEA-wide and world-wide basis. These markets are characterised by the presence of strong players such as Thomson Reuters and Bloomberg, and other competitors, such as SIX Telekurs and IDC. Therefore, the transaction does not raise competition concerns when considering horizontal overlaps. The market investigation has not shown concerns in this regard either.

(152) As concerns *proprietary market data*, each Notifying Party is by definition the sole provider of the trade-related information generated on its own platforms. Therefore, there is no horizontal overlap between the Notifying Parties' activities and their proprietary data products should be considered as complementary.

(153) The Notifying Parties supply proprietary market data directly to end users or to re-sellers/suppliers of non-proprietary market information products (also called data vendors). A vertical relationship therefore exists between the supply of proprietary market data and the provision of non-proprietary market data. In this regard, the notified transaction results in vertically affected markets, since the Notifying Parties each hold market shares above 25% in the upstream market for proprietary market data which serves as an input into the provision of non-proprietary market data.

(154) Nonetheless, with regard to possible input foreclosure concerns stemming from this vertical relationship, pursuant to MiFID, trading venues are required to make proprietary data relating to equities admitted to trading on a Regulated Market within the Union accessible to other market participants on "reasonable commercial terms" and "a non-discriminatory basis"[75]. Therefore, given these mandatory regulatory requirements, in respect of equities data, the Notifying Parties do not appear to have the ability to foreclose their downstream rivals' access to their proprietary data and no input foreclosure concerns are likely to arise. As concerns market data other than data related to equities, while the regulatory requirements specified above do not apply, it should be noted that overall, the majority of the Notifying Parties' revenues from proprietary market data are derived from sales through third party data vendors, with a smaller

[75] MiFID, articles 29-30 and 44-45.

portion of sales made directly to end-users. Therefore, it can be excluded that the Notifying Parties would have any incentive to foreclose their downstream competitors.

(155) In light of the low market shares held by the Notifying Parties in the downstream market for the supply of non-proprietary data, customer foreclosure concerns can also be excluded. Moreover, as the proprietary data generated by different exchanges are complementary, and providers of non-proprietary data often seek to market a wide selection of data streams, the Notifying Parties have an incentive to continue purchasing data from other proprietary data sources (such as other trading venues).

(156) Some concerns have been raised in the context of the market investigation in respect of the relationship *between the supply of proprietary market data and cash and derivatives trading*.

(157) As specified, each Notifying Party is the sole provider of proprietary market data generated on its own trading venues. According to the Notifying Parties, even where the same instrument is traded on both Notifying Parties' trading venues, market data relating to a given instrument generated by one Party are not generally substitutable for data relating to the same instrument generated by the other Notifying Party due to the high asymmetries in trading volumes. Moreover, the Notifying Parties submit that there could be a question as to whether a proprietary data product of a third party venue with a comparable trading volume (such as an MTF) may be substitutable for the data product for the same instrument of one of the Notifying Parties. In addition, the Notifying Parties submit that the higher the (proportion of) trading volume in a specific instrument on a certain venue, the more credible the data from this venue will be.

(158) While acknowledging the Notifying Parties' pre-merger ability to act independently of any competitive constraints in the provision of proprietary market data, some market participants expressed concerns that the proposed merger would further enhance the value and importance of the market data provided by the Notifying Parties and that the proposed merger would therefore likely lead to an increase in fees and the bundling of data products.[76]

(159) Nevertheless the Commission considers that the notified transaction will not have any merger-specific effects on the provision of proprietary market data as the Notifying Parties are today already the sole providers of proprietary market data generated on each of their own trading venues.

(160) It follows that competition concerns do not arise on any of the possible markets for market data.

8.2.2. Index licensing

(161) The Notifying Parties are both active in the licensing of indices.

(162) NYX licenses to issuers of ETFs and structured products, in particular, the French CAC 40 indices and the Dutch AEX indices (national indices). NYX also owns a 50% interest in FTSEurofirst (pan-European index), a joint venture with the FTSE Group.

[76] AFME, response to question 175 of Q1 – Questionnaire to customers – Phase 1.

(163) DB owns and licenses to issuers of ETFs and structured products, in particular, the German DAX indices and a variety of STOXX Indices, including the very liquid Eurostoxx 50 benchmark index[77].

(164) The Notifying Parties submit that their combined market share in index licensing would be below 15% under any plausible market definition. As regards markets for national indices, however, which the market investigation has indicated constitute separate relevant markets, there is no overlap between the Parties although each of them achieves close to [90-100%]* in each of the relevant markets concerned.

(165) Nonetheless, as regards pan-European equity indices, the market investigation indicated that the importance of EuroSTOXX 50 due to the very liquid derivative market as discussed in the Section 11.2.1.6.2.1 below would likely result in a high market share should a market for the licensing of pan-European equity indices be identified.

(166) Despite this, it appears that the increment resulting from the joint venture between NYX and FTSE in this market would be small. Moreover, there are other providers including Russell, MSCI and S&P. Moreover, the Commission notes that the market investigation has not raised concerns as regards the horizontal effects of the notified transaction in index licensing, but only concerns as regards the vertical relationship with the trading and clearing of equity index derivatives resulting from the merger.

(167) It follows that competition concerns do not arise as a result of horizontal effects on any of the possible markets for licensing of equity indices, whether national or pan-European.

(168) The vertical effects of the notified transaction in respect of index licensing is analysed in Section 11.2.1.6 below.

9. INFORMATION TECHNOLOGY PRODUCTS AND SERVICES

(169) The Notifying Parties both supply a range of information technology products and services to the financial services industry[78]. In brief, the Notifying Parties' activities in this area consist of a number of products and services that are intended to support and execute trading and post-trading transactions, enable connectivity to the Notifying Parties' trading venues and supporting services (or those of others), and facilitate the effective management of market (and other trading related) data.

(170) The Notifying Parties in their submission make a distinction between "Technology and IT Services" on the one hand and "Technology and IT Software Products" on the other. According to this distinction, as far as **IT services** are concerned, the Notifying Parties indicate that they both provide: (a) transaction tools (aimed at informing and facilitating

[77] DB is in particular active in index licensing through STOXX Limited ("STOXX") and International Securities Exchange ("ISE"). DB holds 50% plus one share in STOXX, the remainder being held by SIX (the Notifying Parties submit that DB exercises sole control over STOXX), and has (via Eurex Zürich and Eurex, and its 100% subsidiary U.S. Exchange Holdings) a 100% interest in International Securities Exchange, LLC.

[78] The Notifying Parties in the Form CO characterize this sector of their activity as "technology and information technology services".

the trading practices of market participants, including tools to support investment decisions such as risk management tools, portfolio analysis tools); (b) exchange solutions (for example customer access interfaces, trading engines and data distribution); and (c) global connectivity (provision of physical infrastructure allowing market participants to be connected to a trading venue, including co-location, proximity hosting and network connectivity). As far as **IT products (software)** are concerned, the Notifying Parties indicate that they both provide trading solutions software (namely products that facilitate market participants' management of financial market data).

9.1. MARKET DEFINITION

9.1.1. *IT services*

(171) The Notifying Parties consider the *relevant product market* for the services which they categorize as "IT services" to be the market for all IT services, which includes, for instance, hardware maintenance, software maintenance and support, IT and business consulting, software development and integration, IT management services, business management services and education and training, irrespective of the application or industry sector concerned. To support this position, they contend that: (1) many customers purchase numerous IT services from a single provider; (2) many global IT services providers are active in multiple (and often in their view in all or nearly all) segments of IT services; and (3) there is a substantial degree of supply-side substitutability in the supply of all IT services.

(172) The Commission has in previous decisions indicated that a single product market for all IT services might exist, but did not exclude that narrower markets may be identified based on categorisations commonly used in the industry, for instance by customer activity, or customer size.[79] The Commission has, however, left the market definition open.

(173) Given that the Notifying Parties are active in providing IT products and services only to the financial industry, and in particular to large corporations, these are the market segments where the Notifying Parties overlap and on which the notified transaction may produce effects. The segments where the Notifying Parties are both active to any significant extent are the provision of *exchange solutions* to trading venues and *connectivity services* to their own venues.

(174) In respect of exchange solutions, the market investigation has nonetheless provided grounds to question whether this segment of activity should be regarded as an "IT service" in the sense advanced by the Notifying Parties and considered in the decisions which they cite. At the core of the offering of the Parties in this area is a hosted software offering. Since any complex and specialised software offering is likely to be accompanied by a range of services allowing this software to be managed, supported and used, and since moreover there is a general trend for increasing supply of software on a hosted basis as a service (so-called "SaaS"), it is therefore more consistent with market reality to discuss this segment of the Parties' activities in the next Section.

[79] See for instance Case No. COMP/M. 5666 *Xerox / Affiliated Computer Services* and Case No COMP/M. 5301 *Capgemini / BAS.*

(175) The Notifying Parties consider that the relevant *geographic market* for assessing competition in IT services is at least EEA-wide and likely worldwide in scope, as major providers of IT services operate on a worldwide basis, and the Notifying Parties themselves supply IT services to customers on a global basis.

(176) In previous decisions, the Commission has indicated that the IT services market has increasingly shown a trend towards internationalisation of supply and demand, and has considered EEA wide and worldwide markets as possible alternatives, but left the exact geographic scope open.[80]

9.1.2. *Software*

(177) Computer software consists of specific programs, routines, and symbolic language that control the functioning of computer hardware and direct its operations. There are three different categories of computer software, namely operating systems, middleware and application software. The Notifying Parties consider that a general product market exists for business applications software.

(178) In previous cases concerning software products, the Commission has considered the possibility of segmenting further business application software on the basis of its end-use.[81] In certain instances, it has gone further and concluded that there exist distinct relevant markets for specific software applications[82]. The ensuing analysis will therefore focus on the segments of exchange solutions and trading solutions software as these are the segments in which the Notifying Parties are active.

(179) The Notifying Parties consider that the *relevant geographic market* for software products is at least EEA-wide and likely worldwide, as major providers of software products operate on a worldwide basis. The Notifying Parties supply software products to customers on a global basis. In previous decisions, the Commission has noted that the geographic scope of the software market and/or of the possible segments is at least EEA-wide, if not worldwide.[83] The Parties' exchange solutions are clearly provided on a worldwide basis.

9.1.3. *Conclusion on market definition*

(180) In any event, the exact product and geographic market definition can be left open for the purpose of this Decision, since the notified transaction does not raise competition concerns under any reasonable alternative market definition.

---

80 See for instance Case No COMP/M.5197 *HP / EDS*. This does not of course preclude that, in specific areas, narrower geographic markets may apply.

81 See for instance Case No COMP/M. 5080 *Oracle/Bea*.

82 Thus for example in case COMP/M.5597 *Towers Perrin/Watson Wyatt*, the Commission concluded on the existence of a separate market for actuarial software for life insurance; in COMP/M.3216 *Oracle/Peoplesoft*, the Commission concluded on the existence of a distinct market for high-function financial and human resource management solutions or software for large enterprises with complex functional needs; individual software markets were also defined in the 2004 *Microsoft* antitrust decision.

83 See for instance Case No. COMP/M.5080 *Oracle/Bea*.

9.2. COMPETITIVE ASSESSMENT

(181) Whether on an EEA or worldwide scope of the possible market segments, the only market segments where the Notifying Parties would have a combined share above 15% would be in the segment of exchange solutions.[84]

9.2.1. *Exchange solutions*

(182) The Notifying Parties have combined merchant market shares of [20-30%]* for exchange solutions (NYX [10-20%]*; DB [10-20%]*) at a global level.[85] According to the Notifying Parties, the largest player in this segment is Nasdaq OMX with [40-50%]* and a number of other players are also active, such as Cinnober ([5-10%]*), BME ([5-10%]*) and LSE ([0-5%]*). Further, the Notifying Parties argue that, in this segment, in-house development of exchange solutions also constitutes an additional relevant competitive constraint.

(183) The market investigation has not raised any concerns in this area, and there are some indications that barriers to entry may be declining due to the declining cost of matching engine technology.[86]

(184) Therefore, and in the absence of any concerns raised by the Parties' customers or competitors, it can be concluded that the notified transaction does not raise competition concerns with regard to the possible market for exchange trading solutions.

9.2.2. *Global connectivity services*

(185) The Notifying Parties both offer what they define as global connectivity services, meaning the provision of physical infrastructure allowing market participants to be connected to a trading venue. These include the provision of co-location services (rental of space at the data centre where a venue's matching engine is located), proximity hosting (at a data centre close to the matching engine's location)[87] and network connectivity services (which are other points of access to a trading venue).[88] The closer a trader is to the matching engine, the lower the latency[89] as well as typically the higher the cost.

(186) The Notifying Parties consider that since global connectivity services supplied by an exchange are unique to that trading venue, there is by definition no overlap between the

---

84 These products and services in this category help exchanges and other trading venues to perform trade-related actions (for instance customer access interface, trading engines, and data distribution), as well as post-trade services such as clearing and settlement. According to the Notifying Parties, trading venues either develop their own proprietary exchange solutions system (so-called "self-supply") or contract with a third party supplier (generally either a trading venue or specialist IT company) for the provision of exchange solutions services.

85 ,[…]*.

86 Chi-X Europe, response to question 153 of Q 3 – Questionnaire to competitors, [...]*.

87 As the Notifying Parties are not active in providing proximity hosting services, these will not be examined further (see Section 6.18 of IT section of the Form CO).

88 These may be provided either by the trading venue itself or by third party connectivity providers, i.e. the so-called Application Service Providers, "ASPs" and Extranet Service Providers, "ESPs", that provide customers with access to the trading venue via their own physical infrastructure networks.

89 The lower the latency the less time between the emission and reception of the information.

activities of the Notifying Parties within this segment as the services that are provided by DB and NYX are not substitutable.

(187) As regards the *co-location services* segment, whilst NYX has a large new data centre in Basildon, UK, DB uses a third party data centre operated by Equinix to host its servers and […]* – it therefore does not currently offer co-location services directly itself. Furthermore, the first phase market investigation generally indicated that customers seek access to the trading venues of both Parties, meaning that, if they make use of such services at all, they are in most cases customers to both Parties. This would tend to confirm the Notifying Parties' claim that their offerings are not interchangeable and that they are therefore complementary on the demand side. This suggests that co-location services are indeed likely to be venue specific and not substitutable.

(188) Nonetheless, the first phase market investigation revealed concerns from certain market players that, following the notified transaction, DB would change the location of its matching engine to the NYX data centre in Basildon, and that this would allow the merged entity to charge higher prices.

(189) […]* the fact that the services currently on offer by each of the Parties are not substitutes implies that there is no reason why the merger would provide the Parties with the means to increase overall prices for these services over those that prevail pre-merger. The submissions made by third parties in this regard are neither sufficiently detailed nor based on substantiated evidence and it can therefore be excluded that such effects would arise as a result of the merger.[90]

(190) As regards *network connectivity services*, DB is active in providing access to its own trading venues via Managed Network Services,[91] whilst NYX is active in providing remote access points to a specific set of trading venues (mainly its own) via the platform SFTI. Network connectivity services to trading venues can also be provided by third party connectivity providers, namely so-called Application Service Providers, "ASPs" and Extranet Service Providers, "ESPs". Such players are customers of the Notifying Parties, obtaining co-location and/or network connectivity services and then providing their own customers with access to a number of trading venues via their own physical infrastructure networks.

(191) During the first phase market investigation, certain players raised concerns that, given the importance of the trading venues of the Notifying Parties, they would have an incentive to foreclose ASPs and ESPs from access to their connectivity services as the Notifying Parties would compete with those players in providing network connectivity services to third party trading venues.

(192) The Notifying Parties themselves have submitted that they do not consider themselves to compete with such ASP and ESP providers as they provide access only to their own trading venues, or to a very specific and limited set of trading venues beyond their own

---

90 [Discussion of confidential information demonstrating that NYX and DB do not compete with respect to the provision of colocation and network connectivity services]*.

91 Given that DB provides and hosts the trading systems of the Irish Stock Exchange and of Wiener Borse AG, it also provides these two stock exchanges with network connectivity. These services account for very limited revenue.

trading venues and in any event merely as ancillary services to other main services being provided to such trading venues. On its SFTI Europe website, NYX refers to providing "*comprehensive connectivity*" to a "*range of other trading* [venues]" but according to information provided by the Notifying Parties, […]*. According to the Notifying Parties, these are services to which SFTI is connected given the prevailing business relationship with those venues and should therefore be considered as ancillary services, in particular as regards the supply of exchange solutions. In all cases, NYX argues that […]*. Finally, according to information provided by the Notifying Parties, only a very limited number of SFTI customers use these access arrangements for each of these third party trading venues, […]*.

(193) On the basis of the above, it can be concluded that NYX and DB are not currently active or competing for the provision of comprehensive network connectivity services.

(194) [Discussion on confidential information demonstrating that NYX and DB do not compete with respect to the provision of colocation and network connectivity services]*.

(195) [Discussion of confidential information demonstrating that NYX and DB do not compete with respect to the provision of colocation and network connectivity services]*, no merger-specific effect would arise.

(196) As a result, the Commission considers that the ability and incentives for the merged entity to foreclose access to DB's current trading venues, if any, will not change as a result of the merger and that therefore the concerns raised by the third parties in question have not been substantiated and are not likely to arise as a consequence of the proposed merger.

(197) In light of the fact that (a) access to one or more of the trading venues of one of the Notifying Parties does not appear to be substitutable with access to the trading venues of the other Party and (b) there is only a very limited, ancillary service offering of NYX and DB in the downstream market of network connectivity to third party venues, it is concluded that the notified transaction does not raise competition concerns with respect to the possible markets for exchange colocation and network connectivity services.

10. COLLATERAL MANAGEMENT

10.1. MARKET DEFINITION

10.1.1. Product Market Definition

(198) Collateral is offered by one party to a bilateral agreement as a guarantee of performance. Collateral management can be carried out in-house, where the collateral flows are monitored for own accounts, or it can be outsourced to a third party in the context of so-called t*ri-party* collateral management as compared to "bilateral collateral arrangements" between the two parties to a transaction.

(199) Depending on the provider's service profile, collateral management services ("CMS") may encompass, *inter alia*, the selection of collateral, matching of transaction details, valuation and safekeeping of the securities held as collateral and their monitoring as

well as optimisation, substitution, settlement or custody services. Due to the increased requirements as to the efficient management of collateral, companies nowadays tend to reorganise collateral management and, for instance involve optimisation tools.

(200) NYX is not active in the provision of CMS. DB via Clearstream Banking Frankfurt ("CBF") and Clearstream Banking Luxemburg ("CBL") provides CMS services as a stand-alone service (tri-party CMS) and in connection with other service offerings[92]. In addition, DB provides CMS as an integrated part of Euro GC Pooling, a cash-driven general collateral segment of the trading platform Eurex Repo. Other tri-party CMS providers include companies such as Euroclear, Bank of New York Mellon and JP Morgan.

(201) Since collateral management services may be, and frequently are, provided independently of other post-trading services, it follows that they may plausibly constitute a market in their own right. The Commission received comments supporting this view that CMS should be distinguished from other post-trade services including clearing, settlement and custody[93]. As to the latter, it has also been submitted that CMS does not have to be provided by the custodian of the collateral[94]. The CMS market can be regarded as a market downstream from the markets for trading and clearing.

(202) At a relatively advanced stage of the procedure, the Commission received comments from certain CMS providers raising foreclosure concerns on the basis that the relevant product market should be defined at the level of each clearing-house/CCP (that is to say each collateral pool), since the CMS that clearing members and their underlying clients require, for instance, in connection with trading and clearing on Eurex is not the same as the CMS they require in connection with trading and clearing on other infrastructures. Furthermore, according to these complainants, a CMS provider needs a data feed from the CCP on transactions cleared by that CCP and on the resulting exposure (variation) of the market participant in question in order to perform its services.

(203) The Notifying Parties do not agree with this proposed narrow product market definition and argue that CMS always involves multiple business lines where collateral provision is required and that CMS does not differ significantly as to whether it relates to collateral to be posted with infrastructures such as CCPs or CSDs, with market participants in the context of bilateral OTC transactions, or with central banks.

(204) The CMS which clearing members and their clients demand with respect to trading and clearing on one trading venue/CCP may indeed be specific and not interchangeable with services required for other infrastructures. There are, however, also reasons, including those discussed below (see assessment), that suggest a wider market based on, for instance, supply side substitutability between the provision of CMS for different collateral takers such as different CCPs. The fact that a transaction feed is needed for a

---

92 For instance, Triparty Repo Service and Triparty Securities Lending Service.

93 See attachment to Euroclear's reply to questionnaire Q6 of 13 July 2011, Market Definition, paragraphs 5.9.3 and 5.9.4 [...]*; see submission of Bank of New York Mellon of 26 September 2011, paragraph 20 [...]*.

94 See attachment to Euroclear's reply to questionnaire Q6 of 13 July 2011, Market Definition, paragraphs 5.9.4 [...]*.

CMS provider in order to perform the respective service is not relevant as such for the purpose of market definition.

(205) The Commission can, however, leave open the question of whether the collateral management service market should be further subdivided on the basis of individual pools of collateral since, regardless of how the market is defined, no competition concerns arise.

10.1.2. Geographic market definition

(206) The Notifying Parties consider that the CMS market is global because CMS providers can deploy their services globally. Other market participants suggested national markets, for instance, because of the strong involvement of central banks in collateralised transactions, or, alternatively, European wide or Euro-zone markets with a view to the different time zones for trading and interbank transactions in other regions such as Asia or the US.

(207) For the purposes of the present Decision, the precise geographic market definition can, however, be left open since the transaction does not raise competition concerns under any of the alternative definitions.

10.2. COMPETITIVE ASSESSMENT

(208) NYX is not active in the provision of CMS. Consequently, the transaction does not result in horizontal effects. Since the provision of CMS is a market which is downstream to the activities of the Notifying Parties in trading and clearing, in several of which they have very high market shares, it needs to be assessed whether the transaction might result in vertical effects.

(209) It has been argued by certain providers of CMS that NYX's and DB's strengthened position in the upstream markets as a result of the notified transaction - in combination with DB's operation of a "closed vertical silo" including Eurex Clearing - might bring about (input) foreclosure risks and deprive users of a free choice of CMS providers. These providers argue that the combined entity would be able to further add to its critical mass in clearing services (of DB/Eurex Clearing) as a result of the migration of the volumes that are currently being traded on Euronext and LIFFE. Due to the Notifying Parties' strong position in clearing, the claim is that they would be in a position to induce users of its clearing services to also use DB's Clearstream, the provider of post-trading services such as settlement and CMS

(210) Furthermore, according to these providers, the notified transaction would enable DB/Eurex to continue and expand its existing business practices in this regard, which allegedly consist in not giving competing CMS providers data feeds on transactions cleared by Eurex Clearing and in not being willing to open accounts to which users can post collateral with competitors of Clearstream, which *de facto* makes Clearstream the only third party CMS provider for all collateral posted against positions at the CCP of the merged entity.

(211) The Notifying Parties submit that […]*[95]. Moreover, as to the collateral Eurex Clearing members have to post in relation to their risk exposure, CBF in its capacity as the German CSD only acts as the designated custodian, which would not prevent any other provider of CMS from providing CMS to clearing members of Eurex Clearing . Although Eurex Clearing members may appoint Clearstream as their CMS provider, they are not required to do so, […]*. Finally, Eurex does not provide Clearstream with any real-time information in connection with Clearstream's provision of CMS for Eurex Clearing members; each and every member of Eurex Clearing receives real-time information about its trades and exposures and can forward this information to any provider of CMS that they choose[96].

(212) First, the Commission takes the view that any conduct on the part of DB/Eurex which is independent of the notified transaction does not need to be assessed pursuant to the rules of the Merger Regulation since a merger-specific effect does not arise[97]. There are also no indications that specific practices such as the alleged refusal to provide transaction feeds could or would be "expanded" as a result of the notified transaction.

(213) Secondly, as regards the posting of collateral and safekeeping on accounts at Clearstream, the merger has no impact on CBF's function as the German CSD (see also Recital (133)).

(214) Since the Commission under the Merger Regulation is required to assess only those effects that arise as a result of the notified transaction, it will focus on the issue of whether the integrated margin pool upstream is likely to foreclose competing and non-integrated CMS providers downstream from access to an essential input and thereby put them at a disadvantageous competitive position.

(215) The Commission has not found evidence of foreclosure of non-integrated CMS providers as a result of the integrated margin pool upstream. First, according to information provided by the Notifying Parties, […]*[98]. As a result, Eurex Clearing members are free to choose their own CMS providers and manage their collateral without using Clearstream's CMS. There are no reasons to believe that the merger will alter this situation in any respect. Secondly, in response to third party comments that Clearstream's strong position in CMS results from its relationship with Eurex clearing, the Notifying Parties submit that […]*[99].

(216) Therefore, it is concluded that the notified transaction does not raise merger-specific competition concerns in relation to the provision of collateral management services.

---

95 Notifying Parties' submission of 4 October 2011 in response to the Commission's Request for Information ("RFI") of 29 September 2011, executive summary, third bullet point.

96 Notifying Parties' submission of 4 October 2011 in response to RFI of 29 September 2011, paragraph 17.

97 This is without prejudice to the conformity of any such conduct pursuant to Articles 101 and/or 102 TFEU.

98 Notifying Parties' submission of 4 October 2011 in response to RFI of 29 September 2011, executive summary, third bullet point.

99 Notifying Parties' submission of 4 October 2011 in response to RFI of 29 September 2011, paragraphs 12 and 14.

11. DERIVATIVES

(217) The Notifying Parties both operate platforms for the exchange trading of derivatives contracts. Within the EEA, NYX owns and operates Liffe Administration and Management, a derivatives exchange based in London, together with derivatives exchanges in Amsterdam, Brussels, Paris and Lisbon (collectively referred to as "Liffe"), while DB is active in this area mainly through the derivatives exchanges Eurex Zurich and Eurex Deutschland (collectively referred to as "Eurex").

(218) As concerns the economic importance of derivatives within the business of the merged entity, it is anticipated that these will represent […]* of the forecast EUR […]* revenues of the merged entity and […]* of EUR […]* EBITDA of the merged entity, thus reaching close to EUR […]* annually.[100]

(219) This Section of the Decision is divided into two parts, dealing respectively with market definition and competitive assessment for all of the relevant markets related to derivatives (with the exception of collateral management which is discussed in Section 10).

11.1. MARKET DEFINITION

(220) The Notifying Parties' activities in derivatives overlap in three main areas:

- trading and Central Counterparty (CCP) clearing of exchange traded derivatives contracts (ETDs) in various asset classes, namely European interest rate derivatives, European single-stock equity derivatives, European equity index derivatives and to a lesser extent commodity derivatives (Section 10.1.1);

- provision of services aimed at capturing OTC block trades in ETDs and bringing them “on exchange” which consists in registration and confirmation of the trades followed by CCP clearing services (Section 10.1.2.); and

- provision of services aimed at capturing OTC flex trades, primarily in European equity and equity index derivatives, via registration and confirmation of the trades followed by CCP clearing services (Section 10.1.3).

11.1.1. Trading and clearing of exchange traded derivatives

11.1.1.1. INTRODUCTION

(221) Derivatives are financial contracts whose value is derived from an underlying variable (asset), known as the "underlying". Derivatives allow the transfer of risk from one economic agent to another. Through derivatives contracts, undertakings exposed in the course of their business to various types of economic risk may offload that risk to other entities more willing or better placed to assume it, either in the short term to dealers who then trade the risk on, or to final investors who hold the risk for the duration of the exposure. As a result, derivatives have two main purposes: (i) to eliminate or reduce the uncertainty whereby economic agents insure against some specific type of risk

[100] DB's internal document, […]*.

("hedging"), and (ii) investing, whereby economic agents use derivatives contracts as an alternative to investing directly in the underlying asset. In addition to this "fundamental" demand deriving from the needs of the real economy and of investors, derivatives may also be traded by entities wishing to arbitrage against the underlying and correlated investments and by market makers providing liquidity in specific contracts.

(222) Eurex and Liffe operate platforms allowing derivatives users to trade certain derivatives contracts and have them cleared. Derivatives contracts traded on exchanges are designed, introduced, and regulated by the derivatives exchanges that created them.[101] They are commonly referred to as "exchange-traded derivatives" or "ETDs". Each category of contracts has its own specifications, exercise, and delivery processes, which the exchange determines and oversees. To attract liquidity in standardised derivatives contracts, exchanges design contract characteristics (for instance the pay-out mechanism, the tick size,[102] contract size, leverage, etc.) to best match customers' preferences. Successful derivatives contracts become very liquid, reaching several million of contracts traded per day.

11.1.1.1.1. Trading of derivatives

(223) Trading of derivatives contracts consists of matching buyers and sellers, that is, two parties willing to take opposite positions in the same contract.

(224) Matching between buyers and sellers may be bilateral or multilateral. Bilateral matching is trading in which the quoting of prices and execution are conducted between two parties in such a way that other market participants do not observe the trading; it involves dealers who “make a market” by maintaining bid and offer quotes to market participants and look to connect the parties to the contract. Bilateral matching is done only in the over-the-counter (or OTC) space through voice brokerage and telephone trading. Voice Broking is the traditional method of communicating quotes to market participants: the negotiation is conducted over the telephone, either end-user-to-dealer or dealer-to-dealer, but it is nowadays enhanced through the use of electronic bulletin boards by the dealers for posting their quotes and often highly automated[103].

(225) Matching can also be done on a multilateral basis whereby market participants can observe the others' price quotes and trade executions in the market-place. Multilateral matching of derivatives buyers and sellers is performed either on exchanges as concerns ETDs or on some OTC trading platforms as concerns OTC derivatives contracts.

(226) Exchanges are the traditional environment for multilateral trading and historically have been identified with “pit” trading through open outcry, but in the last decades, exchanges have adopted electronic trading platforms that automatically match bids and

---

101 Whereas a cash equities exchange serves as a venue for the trading of products created by third parties (i.e., issuing companies), which exist independently of the venue in which they are traded, a derivatives exchange, by contrast, creates a market for the trading of products it has designed itself. Other models for derivatives exist, such as for US options where the Options Clearing Corporation (OCC), a user-owned utility regulated by the Securities Exchange Commission (SEC), designs the contracts.

102 Tick size is the smallest increment by which the price can move.

103 Dealers have direct phone lines between themselves and other dealers and their major customers, and this enables instantaneous communication.

offers from market participants. Exchange trading involves an order to buy or to sell placed by a trader to the exchange's order book, where trades are then executed by matching the different orders.

(227) The OTC space has also adapted new electronic and networking technologies to trading needs: beside the “traditional” dealer markets where trades are conducted over the phone, electronic platforms automatically matching bids and offers have been created. These OTC platforms are operated by broker dealers[104] and allow trade execution in a multilateral environment. In addition, the landscape of multilateral trading of derivatives has been made potentially accessible to Multilateral Trade Facilities ("MTFs"), which were created as a result of MiFID[105].

(228) Once seller and buyer have identified each other, the trade is executed meaning that seller and buyer enter into a binding contract. After trade execution has taken place, the trade is captured, processed and cleared.

(229) Trading of derivatives has a cost, where the following implicit and explicit elements can be identified: on one side, the realised bid-ask spread[106] and market impact (also called liquidity cost) and the opportunity cost of posting collateral, on the other side, membership fees as well as per transaction trading and clearing fees.

11.1.1.1.2. Clearing of derivatives

(230) Clearing consists of a range of post-trade operations, in particular management of positions throughout the lifetime of contract, collateral management to address the counterparty risk and cash management. Clearing can be bilateral whereby each party is exposed to the other party's risk or via a Central Counterparty ("CCP").

(231) As concerns ETDs, clearing is performed by a CCP. A CCP provides a performance guarantee by legally interposing itself between the buyer and the seller. As a result, the CCP steps into each trade, thereby becoming a buyer to the selling party and a seller to the buying trading party. The CCP is contractually required to perform both contracts, even if the counterparty in one of the contracts defaults. When a trade is settled at maturity, the CCP handles deliveries which may take the form of either cash settlement payments or physical delivery of the underlying assets in return for payment.

(232) The chart in Figure 3 illustrates the various services involved in the clearing of a derivative contract.

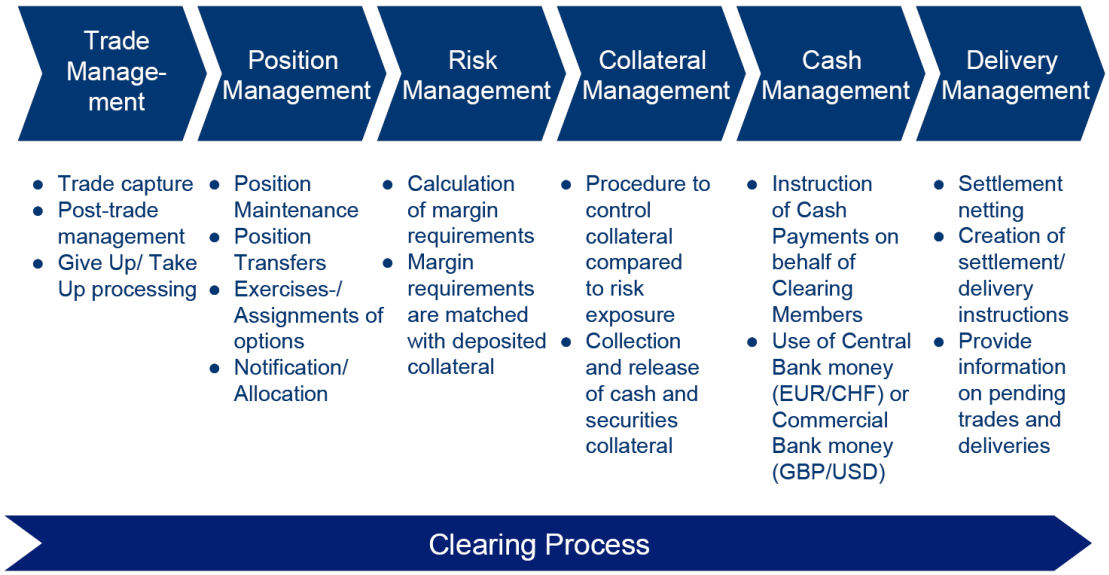
---

104 For instance BGC Brokers LP, certain ICAP platforms, GFI Group, certain Tulett Prebon platforms, TradeWeb, and a Tradition Securities and Futures platform.

105 MiFID opened access to financial markets for entities other than traditional exchanges ("Regulated markets" under MiFID) and classified these entities as MTFs or Systematic Internalisers ("SIs"). Examples of MTFs with a licence to trade derivatives are Turquoise and TOM.

106 Bid-ask spread is the difference between quoted prices for sale (ask) and for purchase (bid). The realised spread is the average spread achieved on the total trade.

Figure 3: Clearing Process for a Derivative



Source: Form CO, Derivatives, p. 70

(233) The CCP, by interposing itself in each contract, assumes the risk of counterparty default on behalf of trading parties. To this end, the CCP assesses the level of risk and manages it throughout the lifetime of each contract. To cover itself against the risk, the CCP determines so-called margin (collateral) requirements and establishes a default fund to which each trading member has to contribute according to its position. Margin requirements are normally composed of: (i) initial margin intended to provide a 'cushion' of collateral to open a position calculated by reference to the default risk associated with the contract in question; and (ii) maintenance (variation) margin which represents the amount needed to collateralise the existing mark-to-market value of the open positions, reflecting the changes in market prices of the underlying asset. Margin levels are calculated every day and if the posted margin is below the minimal margin requirement to cover all open positions of a party at a certain point in time, additional margin calls are issued, requiring the party to increase the posted margin.[107] In addition to the margin, clearing members provide contributions to a CCP's default fund so that it can bear the costs of counterparty non-performance should the collateral provided by a defaulting clearing member prove insufficient.

(234) CCPs charged to clear ETDs are chosen by the derivatives exchange platform which designs the contracts and on which trades on particular ETDs are executed. It follows that derivatives users generally have no choice of CCP for their derivatives trades executed on-exchange. Exchanges typically offer an integrated service for which some exchanges running vertically integrated models, such as Eurex, charge a single fee.

(235) A trade of a derivatives contract gives rise to an open position also called open interest. When new trades are executed, they are either added as new open positions or offset

[107] See Form CO, Derivatives, paragraph 6.193 et seq.

against the existing open positions. Where a party has multiple positions with a single CCP, netting and cross-margining[108] can significantly lower the overall level of margin that a user must post as well as the contribution to the default fund that clearing members need to provide.

(236) In the absence of interoperability agreements or cross-margining agreements between different CCPs, netting and cross-margining can be carried out only within a single CCP.

11.1.1.1.3. Link between trading and clearing in the area of derivatives

(237) Clearing is of particular importance for derivatives contracts since the value and the utility of a contract depends on how that contract is cleared.[109] This is because the counterparty risk needs to be managed for the lifetime of the contract which could span from a few months up to several years. This can be contrasted with cash instruments where counterparty risk usually only exists for 2-3 days between the trade date and the settlement date (which is generally on a delivery-versus-payment basis).

(238) At the current stage of market development and in the current regulatory framework, contracts traded on different derivatives trading platforms are generally not fungible[110] and no cross-margining is applied between contracts traded on different platforms. In the area of derivatives, where with this market set-up, trades on one platform are not cleared by different CCPs (and contracts traded on different platforms are not concentrated on one CCP), this has led to the phenomenon of liquidity in individual asset classes tending to concentrate on one venue. This is because posting margin is a capital intensive exercise incurring an opportunity cost which incentivises derivatives traders to minimise the collateral they are required to provide by concentrating trades (in both one and the same contract and in any correlated contracts which benefit from margin offsets) on one trading venue. Simultaneously, exchanges have an incentive to offer as wide a portfolio of contracts as possible in a given asset class to attract more customers by increasing the potential of margin offsets.

(239) As a consequence, exchanges have generally historically sought to preserve, and more recently also to create, a vertical silo model whereby clearing is controlled by the exchange where the contract is traded.[111]

(240) As such, whilst trading and clearing could potentially be provided as separate services, many exchanges at present generally provide to users an integrated service including the

---

108 Netting refers to offsetting buy and sell positions over a given period of time in a given product, thus reducing the number of open positions that need to be cleared and settled. Cross margining involves calculating the amount of collateral required from a counterparty to cover the risk presented by that counterparty's portfolio. Unlike netting, which only applies to the same products, cross margining applies to a range of different products which display a degree of risk correlation.

109 See Form CO, Derivatives.

110 Fungible contracts are contracts which can be completely netted and offset against each other in the case of an equal size buy and sell position cancelling each other out so that no position remains to be cleared and settled.

111 See for instance NYX' internal document provided in response to the Commission's RFI of 1 July 2011, stating: […]*, NYSE Liffe – Global Derivatives Strategy, June 2009, p. 5; and DB's internal document provided in response to the Commission's RFI of 1 July 2011, highlighting the […]* and that)",[…]*.

trading and clearing of derivatives contracts and for which they may charge a single fee. Indeed, many derivatives exchanges (such as Eurex, CME, ICE, etc.) are vertically integrated into clearing by operating "clearing-houses" for clearing of instruments traded on their venues. Other exchanges, while not being strictly speaking vertically integrated into clearing, offer clearing services for contracts executed on their platforms through agreements with third-party clearing-houses that they select, generally on an exclusive basis (such as Liffe, etc.).[112] In such a scenario, customers therefore purchase an integrated service from the trading venue and have ultimately no choice of clearing services provider.[113]

(241) The Notifying Parties submit that because trading and clearing of derivatives are intrinsically linked and the value and the utility of a derivatives contract depends on how the contract is cleared, from a derivatives trader's perspective (customer of the exchanges), clearing of exchange traded derivatives cannot be considered on a separate basis from trading of exchange traded derivatives.[114] This claim of the Notifying Parties is illustrated, in their view, by the fact that exchanges design the derivatives contract and determine how that contract will be cleared, clearing being one of the contract specifications.[115] As a result, the Notifying Parties argue that clearing services associated with a particular derivatives contract are part of the overall service provided by the exchange and submit that there is no separate market for the provision of clearing services to derivatives traders on exchanges.[116]

(242) The Commission considers that while at present trading and clearing of exchange traded derivatives are provided on a bundled basis from the perspective of a derivatives trader conducting a trade on the order book of one of the Notifying Parties[117], there is nonetheless already today a separate service consisting in on-exchange registration, confirmation and clearing of trades agreed away from exchange (be they block or flex trades as analysed in Sections 11.1.2 and 11.1.3).

---

112 Each derivatives exchange normally has only one clearing-house. See DB's internal document provided in response to the Commission's RFI of 1 July 2011, stating that: "*Competitors copy Eurex model and create vertical integration (ICE Clear, Liffe Clear); vertical integration becomes standard model except for US Equity Options*", .[…]*.

113 Certain trading members may not fulfil the clearing membership requirements or may elect not to be a direct or general clearing member, but to clear trades through a general clearing member.

114 Form CO, Derivatives, paragraph 6.295 states that *"from the perspective of a derivatives trader, the clearing services associated with the particular contract are part of the overall service provided by the derivatives exchange or OTC trading platform. In other words, there is no separate market for the provision of clearing services to derivatives traders."*

115 Form CO, Derivatives, paragraph 6.196, second bullet point.

116 Form CO, Derivatives, paragraph 6.294.

117 While, as pointed out in the decision opening the proceedings, there is no separate market for the clearing of exchange traded derivatives as from the perspective of a derivatives trader trading these contracts on the order book, there is a separate market for the provision of derivatives clearing services to third party venues and OTC trading platforms. However, this market is not affected by the proposed transaction since NYSE Liffe does not provide derivatives clearing services to third parties. The Notifying Parties in their response to the decision opening the proceedings did not contest this conclusion.

(243) Therefore, it is concluded for the purpose of this Decision that the impact of the notified transaction as regards competition in exchange traded derivatives is to be assessed on markets comprising trading and clearing together.[118]

11.1.1.2. PRODUCT AND GEOGRAPHIC MARKET

11.1.1.2.1. Commission's approach to market definition

(244) As already referred to above, the conclusions of this Decision are based on a wide-ranging market investigation.

(245) In their response to the SO and during the Oral Hearing, the Notifying Parties criticised the Commission for not conducting any empirical, economic or econometric studies, in particular as concerns the market definition in the area of derivatives.[119]

(246) First, it should be recalled that pursuant to the established case law, there is no hierarchy between the types of evidence used by the Commission in merger cases as the Commission has the duty to make an overall assessment of the case,[120] and that the Commission has a certain discretion, especially with respect to assessments of an economic nature.[121] In *Ryanair/Aer Lingus*, the Court accepted that quantitative analysis could be useful but specified that it is by no means mandatory.[122]

(247) Second, the Commission internally analysed the appropriateness of conducting any quantitative analyses in this Decision. The Notifying Parties suggested that cross price elasticity analysis, critical loss analysis, regression analysis, price correlation analysis, stationarity tests, shock analysis, co-integration analysis, merger simulation, own-price elasticity analysis, analysis of survey evidence, natural experiment analysis and supply-side substitution analysis are analyses in the Commission's "toolbox" but which were not used in this case.[123] In this respect, the Commission notes that as a matter of principle, complex inferences can sometimes be validated or rejected by conducting more sophisticated empirical analysis. However, this requires that all the necessary data are available to implement the chosen empirical methodology and that the available data are of adequate quality. Moreover, there has to be sufficient variability in the data to

---

118 This approach is without prejudice to whether or not this is the only viable way of derivatives trading and clearing services being provided to users, in particular since alternative models do exist.

119 Notifying Parties' response to the SO, Introduction, paragraph 75. See also slide 78 of Notifying Parties' presentation at the Oral hearing, 27 October 2011.

120 Case T-342/07 Ryanair Holdings v Commission [2010] ECR, paragraph 136: *"the applicant's assertion that the 'non-technical evidence' cannot be taken into account unless it is supported by 'technical evidence' cannot be upheld. There is no need to establish such a hierarchy. It is the Commission's task to make an overall assessment of what is shown by the set of indicative factors used to evaluate the competitive situation. It is possible, in that regard, for certain items of evidence to be prioritised and other evidence to be discounted"*.

121 Case T-342/07 *Ryanair Holdings v Commission* [2010] ECR, paragraph 29, according to which "*the Court of Justice has held that the basic provisions of the regulation, in particular Article 2, confer on the Commission a certain discretion, especially with respect to assessments of an economic nature, and that, consequently, review by the Courts of the European Union of the exercise of that discretion, which is essential for defining the rules on concentrations, must take account of the margin of discretion implicit in the provisions of an economic nature which form part of the rules on concentrations*".

122 Case T-342/07 *Ryanair Holdings v Commission* [2010] ECR, paragraph 406.

123 See slide 78 of Notifying Parties' presentation at the Oral hearing, 27 October 2011.

identify references for comparison.[124] In order to quantitatively identify the competitive constraint the Notifying Parties exercise on each other, variations in the competitive pressure of the Notifying Parties on each other through variability in marginal cost, entry or exit events, or changes in the regulatory structure would need to be observed. Without such changes, the competitive constraint cannot be identified.

(248) In this regard, the Commission notes that such shifts in the competitive constraint were not available. In addition, the price data required to conduct any meaningful empirical analysis were not available. Even though list prices for exchange-traded derivatives (ETD) are available, an analysis of the published "headline" fees alone would not take into account the important role of rebate schemes. These rebates schemes appear to be tailored to specific customers and are therefore difficult to analyse other than on a case-by-case basis. Rebate schemes are a driving source of competitive interaction among the Notifying Parties. In this respect NYX states that […]*.[125] DB […]*.[126]

(249) In any case, an analysis on explicit ETD fees (list prices taking into account rebates schemes) would fail to take into account the other components of the total cost of trading, where the total cost of carrying out a derivatives transaction is the parameter taken into consideration by customers when deciding where to trade. The total cost of trading not only comprises the explicit (trading and clearing) fees but also other elements such as bid-ask spreads, cost of collateral, infrastructure costs and regulatory capital requirements.

(250) On the particular point raised by the Parties that the Commission has not attempted to subject its key conclusions, such as the constraints imposed by OTC trading, to any quantitative analysis, despite having had the time and opportunity to collect all relevant data from the major users, the Commission notes that data on OTC trading are very difficult to obtain due to the very nature of OTC market. Indeed, this is confirmed by the Notifying Parties themselves in the Form CO: "*It is generally very challenging to produce exact figures for the opaque OTC segment of the global derivatives market*"[127]. As a matter of fact, the opacity of the OTC market is a known concern in the financial sector which various regulatory initiatives are attempting to address.

(251) Furthermore, another reason why such analyses would not be meaningful in this case is the limited variability in the fee data. The headline unit fees have generally remained stable with no material reductions. All in all, it is concluded that conducting any empirical analysis, in particular for market definition purposes, would not have been meaningful given the lack of suitable data required for those purposes. This is also evidenced by the fact that the Notifying Parties themselves were unable to perform any such analyses in relation to market definition.

---

124 Further, in accordance with the best practices on submissions of economic evidence any meaningful empirical or economic analysis needs to: (i) ask a relevant question that cannot be answered through other, less onerous means; (ii) rely on the "right" data; (iii) use the appropriate methodology; (iv) lead to clear and relevant conclusions; (v) be robust and counterarguments be given adequate consideration.

125 NYX reply to question15 of the Commission's RFI of 8 August 2011.

126 DB reply to question 13 of the Commission's RFI of 8 August 2011.

127 Form CO, Derivatives section, paragraph 6.66.

(252) Last, but not least, the Commission rejects the objections raised by the Notifying Parties that the findings in this Decision are based on anecdotal evidence. The Commission conducted a broad-ranging and comprehensive market investigation and collected extensive information from a substantial number of relevant market participants. In addition, the Commission analysed a substantial amount of the Notifying Parties' pre-merger internal documents which corroborated findings from the market investigation.[128]

(253) Taking account of the above, in its approach to the definition of relevant markets in the area of derivatives, the Commission performed an overall assessment based on all available evidence. The conclusions in this Decision are therefore based on this extensive and coherent body of evidence collected throughout the market investigation.

11.1.1.2.2. Product market

(254) Derivatives, as opposed to securities, are contracts between two parties (and not titles) which determine the payoffs to be made between the parties. Therefore, derivatives contracts, like any other contracts, are governed by contractual terms. These comprise legal terms of the contract related to, for example, the parties' capacity to enter into the transaction or consequences of counterparty default, and the economic terms, related to the economic exposure under the contract. The latter, depending on the type of instrument and its complexity, could include for example: the notional value, the type of underlying such as equities, commodities or indices; a strike price, that is to say the price at which a specific derivative contract can be exercised; an exercise date when the right granted under the contract can be exercised; an exercise style, that is to say when, how, and under what circumstances the option holder may exercise its rights, currency; tick size,[129] etc.

(255) As already indicated above, derivatives contracts may generally be executed in two different environments, namely on-exchange[130] or over-the-counter ("OTC"). Derivatives contracts which can be traded on an exchange order book are referred to as "listed" derivatives or "ETDs" whereas derivatives contracts that do not meet pre-conditions to be traded on exchange[131] or contracts that are agreed away from exchange are referred to as

---

128 Case T-342/07 Ryanair Holdings v Commission [2010] ECR. The General Court recognised the evidentiary value of internal documents at paragraph 138: "*Those items of evidence, and in particular the extracts of the discussions held during Ryanair's board meetings in relation to Aer Lingus that are in the file, are particularly important in that they corroborate the findings made at the stage of the analysis of the market shares and the degree of concentration and precede the analysis of the econometric information. They were taken into account as part of the set of factors used by the Commission to examine the effects of the concentration on competition"*.

129 See footnote 102 of this Decision.

130 The venues on which they are traded are referred to as "exchanges", regardless of whether the trading venue(s) achieving significant multilateral trading in these instruments is a traditional exchange or another platform. As a result, platforms like Turquoise, BATS and Chi-X Europe trading this type of derivatives contract will be referred to as exchanges.

131 These prerequisites mainly pertain to the level of standardisation of contracts. Indeed, only contracts that are standardised in all of their legal and economic parameters are suited to be traded on exchange. This is the very essence of exchange trading where the goal of exchanges is to aggregate liquidity though standardisation of contract terms. See Notifying Parties' presentation at the Oral Hearing of 27 October 2011, slide 8.

"OTC derivatives."[132] Within these two areas (ETD and OTC), derivatives contracts may be generally classified according to the type of the underlying (such as single stock equity derivatives, equity index derivatives, interest rate derivatives, exchange rate derivatives, commodity derivatives, etc.), and by the relationship between the underlying and the derivative contract (such as future, option, swap).

(256) According to paragraph 7 of the Notice on the market definition,[133] "*a relevant product market comprises all those products and/or services which are regarded as interchangeable or substitutable by the consumer, by reason of the* products' *characteristics, their prices and their intended use".* The Commission's market investigation in this Decision has sought to determine the scope of the relevant product market in the area of trading and clearing of exchange traded derivatives contracts, and in particular the relevance of the various classifications of derivatives contracts for the purpose of defining the market.

(257) The Notifying Parties submit that the relevant market in this Decision is a single global market for risk transfer comprising trading in a wide variety of derivatives irrespective of the underlying *asset*, both on-exchange and OTC. To support their claim, they argue that the purpose of derivatives trading is to transfer risk and in this context, from the demand-side, all derivatives would perform the same functions: a derivatives trader would seek to acquire a particular risk profile in the most convenient and lowest-cost way, irrespective of the particular contracts that will convey the desired risk exposure, the underlying asset and the trading venue.[134] The demand-side of the market, in the Notifying Parties' view, is represented by an international community of highly sophisticated financial institutions for which exchanges and OTC dealers *"compete to serve [their] wholesale risk transfer needs."*[135] The Notifying Parties claim that from the supply-side perspective, there is an increasing convergence in the functionality of derivatives available on-exchange and OTC and in the respective trading mechanisms, and that this supports the conclusion of one overall global risk transfer market. In addition, the Notifying Parties believe that the current regulatory convergence between the exchange and OTC environments at which various proposed reforms around the world are targeted is likely to make the OTC and the exchange space even more homogeneous and that therefore both forms of trading would become further substitutable from the demand-side.[136]

(258) The Commission has not previously dealt with derivatives markets from the point of view of the exchange platforms, and hence there are no relevant precedents dealing with market definition in the area of derivatives.

(259) In this Decision, the Commission focused on assessing the implication of the execution environment on the product market definition and in particular the level of competitive

---

132 As indicated, ETDs may also be traded away from the order book – therefore "OTC" – and subsequently brought onto the exchange for clearing in so-called "off-order book trading". Notwithstanding the style of trading, such contracts are identical to those traded on the order book.

133 Commission Notice on definition of the relevant market for the purposes of Community competition law ("Notice on market definition"), OJ C 372 of 9 December 1997, p. 5 et seq.

134 Form CO, Derivatives, paragraphs 6.37, 6.290, and 6.180.

135 E. Paul Rowady, *The Global Risk Transfer Market: Developments in OTC and Exchange-Traded Derivatives*, a TABB Group Study (the "TABB Report"), November 2010, Form CO, Annex D.1.

136 Form CO, Derivatives, paragraphs 6.98 et seq.

constraint exercised by OTC derivatives on listed products generally and within individual asset classes, the level of demand and supply substitutability between various underlying asset classes and the interchangeability between derivatives based on various instruments (futures, options, swaps).

11.1.1.2.2.1. Classification of derivatives according to the execution mode: ETDs vs OTC

(260) The decision opening the proceedings concluded that ETDs traded on the Notifying Parties' derivatives exchanges and derivatives contracts traded OTC likely constitute separate markets. This conclusion was reached on the basis of the results of the first phase market investigation pointing towards the lack of substitutability between ETDs and OTC derivatives. Indeed, the evidence collected from the Notifying Parties and market participants during the first phase market investigation indicated that ETDs and OTC derivatives are products which have substantially different characteristics and that customer choice between ETDs and OTC derivatives is driven by specific needs at the time of their trading decision. As a result, the decision opening the proceedings concluded that ETDs and OTC derivatives contracts are complementary rather than substitutable from customers' perspectives.

(261) The Notifying Parties, in their response to the decision opening the proceedings, strongly contested this conclusion and argued that OTC trading represents a very significant alternative to exchange trading, that traders regularly substitute between OTC and ETDs and that OTC trading does not meaningfully differ from exchange trading. As a result, the Notifying Parties argued that OTC trading of derivatives should be included in the relevant market.[137]

(262) The second phase market investigation further highlighted that ETDs, and in particular the specific listed options and futures in which the Notifying Parties overlap, are complementary rather than substitutable to OTC derivatives. According to the results of the market investigation, even customers that trade both ETDs and OTC derivatives do not use them as substitutes but rather for very different purposes and in very different circumstances. While OTC derivatives are used to provide a perfect hedge to any risk, ETDs are used both for taking positions, and for short-term imperfect hedging until a perfect hedge is found. As a result, the SO maintained the view that the market for derivatives in the asset classes where the Notifying Parties overlap should be subdivided according to the execution environment into ETDs and OTC derivatives.[138]

(263) In their response to the SO, the Notifying Parties argued that ETDs face strong competition from OTC derivatives. According to the Notifying Parties, this is evidenced by the increased standardisation of OTC derivatives driving the convergence between the two environments and the fact that any ETD could be replicated over-the-counter should the merged entity attempt to exercise market power in exchange trading. In this context, the Notifying Parties also invoked at several occasions that close to 90% of the overall derivatives market is accounted for by derivatives traded OTC and that only

[137] Notifying Parties' response to the decision opening the proceedings of 4 August 2011, Derivatives market definition, paragraph 10 et seq.

[138] SO, section 1.2.3.2, paragraphs 89 et seq.

slightly more than 10% are traded on exchange, which, in the Notifying Parties' view, shows an important competitive constraint from OTC on ETDs.[139] In addition, the Notifying Parties criticised the evidentiary value of responses to certain questions in the Commission's market investigation as well as the Commission's analysis of this evidence. Lastly, the Notifying Parties invoked a 2008 Commission Staff Working Paper concerning a financial transaction tax as arguably supporting the claim on the existence of substitutability of ETDs and OTC derivatives.[140]

(264) The Notifying Parties also claimed that the analysis of substitutability between ETDs and OTC derivatives should be conducted separately per asset class.[141] Whilst the Commission has considered relevant differences where appropriate, the high level distinction between ETDs and OTC does not differ by asset class for at least two reasons. First, the analysis below shows that the lack of substitutability between ETDs and OTC derivatives, for those asset classes where the Notifying Parties overlap, is due to exogenous reasons which apply in a similar fashion to all of the asset classes in question. Second, the Commission, in a number of questions explicitly asked respondents to the market investigation to distinguish between different asset classes and contracts, if relevant,[142] but practically no respondent made such a distinction.[143]

(265) On the basis of the market investigation, the Commission therefore considers that the level of competitive constraint between ETDs and OTC derivatives is not substantially different for any of the asset classes concerned by this Decision. Therefore, the analysis below applies to all asset classes where the Notifying Parties' activities overlap.

11.1.1.2.2.1.1. Introduction

(266) As already explained above, derivatives contacts are traded in two broad environments, namely on exchanges and OTC.[144] The relative size of these two broad segments differs according to the way this size is measured. There are two recognised metrics used to

---

139 See for instance Notifying Parties' presentation at the Oral Hearing, 27 October 2011, slide 23.

140 Notifying Parties' response to the SO, Introduction, paragraph 16.

141 Notifying Parties' response to the SO of 5 October 2011, Introduction, Annex I.3, Compass Lexecon Statistical Assessment of Market Investigation Questions.

142 In particular see question 11 of Q8 – questionnaire to customers on derivatives – Phase II, the above mentioned 'SSNIP test' question.

143 With reference to the 'SSNIP test' question, out of 56 replies, this is only the case for DekaBank Deutsche Girozentrale (response to question 11 of Q8 – questionnaire to customers on derivatives – Phase II: "*Die Frage, welche Verhaltensweise gewählt wird, hängt von dem jeweiligen Produkt, dem Kundenwunsch und der Preissensibilität des jeweiligen Produktes ab. Daher ist eine eindeutige Antwort an dieser Stelle nicht möglich*," [...]*) and HSBC Group (response to the same question: " *Our reaction would depend on the contract being traded*," [...]*). Barclays, instead, made reference to a difference in ETDs/OTC dynamics only for commodities (response to question 11 of Q8 – questionnaire to customers on derivatives – Phase II: "*Generally, the venue for the trade is dictated by the client. In the commodities space, this would be product specific*," [...]*).
See also responses to question 3 of Q8 - questionnaire to customers on derivatives – Phase II, reading "*Is there a certain category of underlyings for which you have a preference to trade OTC rather than on exchange? If so, please explain and provide examples*". In this case, out of 72 responses, only 15 of the customers pointed to some different preferences within the different asset classes, and among them the majority referred to FX derivatives. In general, therefore, the "*choice does not depend on underlying*" (DZ Bank AG, response to question 3 of Q8 - questionnaire to customers on derivatives – Phase II, [...]*).

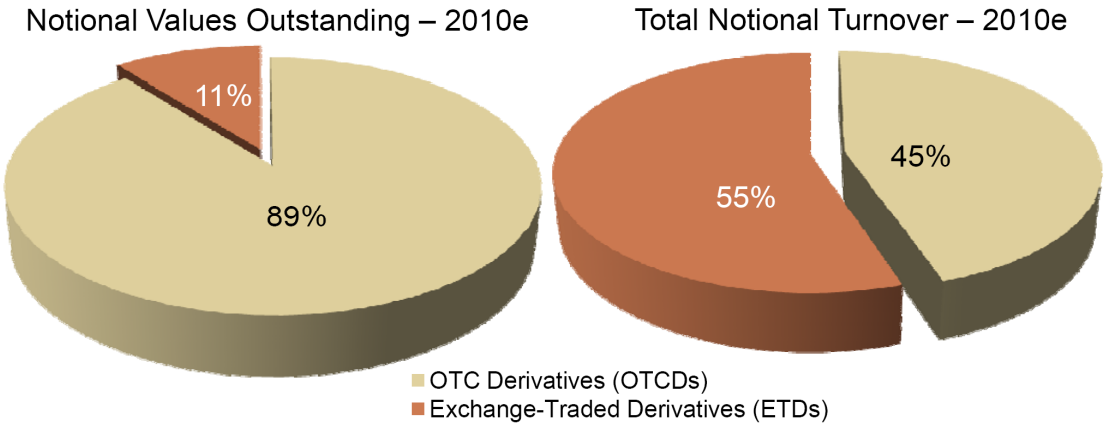
144 See paragraphs (224), (225) and (255) of this Decision.

measure the size of derivatives markets, notional outstanding and notional turnover. Notional outstanding looks at the total value of all outstanding transactions *de facto* representing the cumulative total of past transactions while notional turnover measures the level of trade activity during a certain period[145].

(267) During the proceedings, the Notifying Parties claimed that close to 90% of derivatives contracts are traded OTC which in their view evidences that, should the exchanges attempt to exercise market power, derivatives users would have a myriad of opportunities to switch to derivatives available OTC.

(268) It should first be noted that it does not follow that if the OTC market is significantly larger than the ETD market, then this in itself means that the OTC market imposes a competitive constraint on the ETD market. As explained in the sections below, the relative size of two markets or segments is not in itself determinative of the constraint one imposes on another, which is rather dependent on the inherent characteristics and uses of the products concerned. Without prejudice to this, the Commission notes that the Notifying Parties' claim would in any case only be valid if the relative size of the OTC and ETD markets were measured in terms of notional outstanding value. Indeed, as shown in the graphs in Figure 4, the OTC segment is much bigger than the ETD segment if notional values outstanding are compared. However, should the total notional turnover be used as a relevant measure, the OTC segment would be smaller than the ETD segment.

Figure 4: Notional Outstanding and Turnover of OTC Derivatives and ETDs



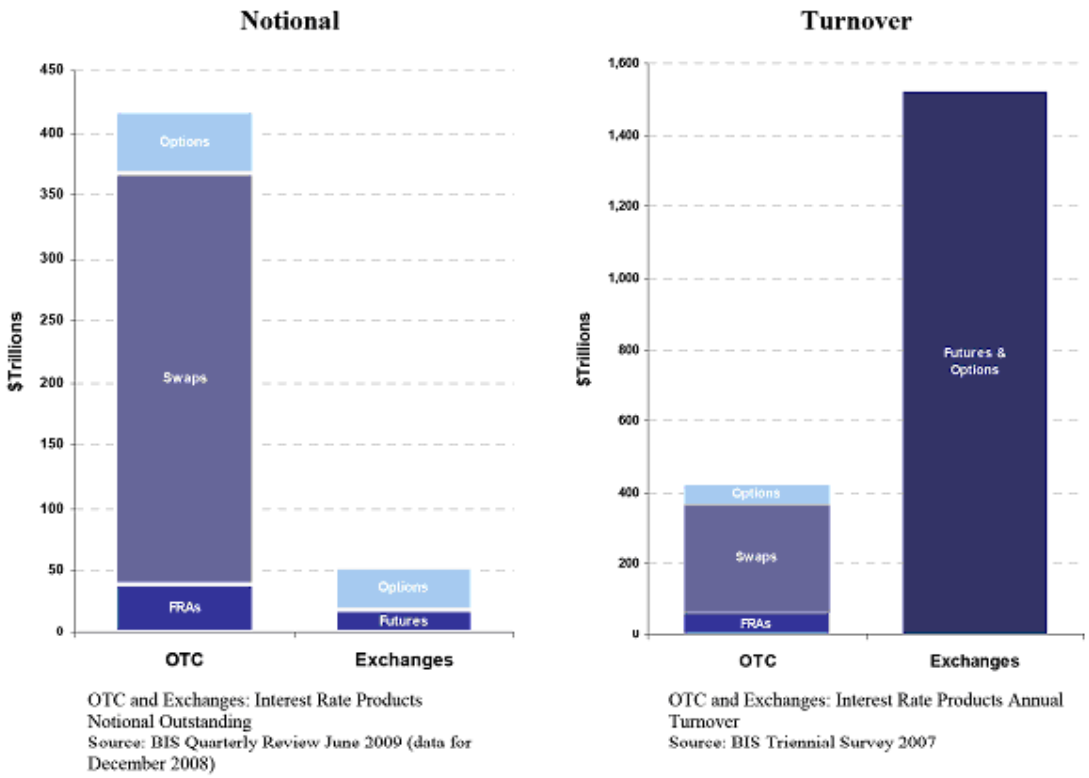
Source: TABB Group Study, The Global Risk Transfer market: Developments in OTC and Exchange-Traded Derivatives, November 2010, page 3.

(269) Similarly, the graphs in Figure 5 show the same effect using a concrete example of interest rate derivatives. This difference is only logical as notional turnover measures the activity which is beyond doubt much more frequent on exchanges where instantaneous matching results in millions of daily transactions (meaning that the value of open positions is reduced) while notional value outstanding measures the value of

145 See Form CO, Derivatives, sections 6.66 and 6.67 of the.

open positions, which in the OTC market are large and often open for several years. As concerns the relevance of the two measures, NYSE Euronext, contrary to its position in these proceedings, has previously considered that notional turnover value is more appropriate to evaluate economic utility of derivatives. *"Although it is often cited that the value of contracts notionally outstanding in the OTC market is far larger than those processed via exchanges, it is less often noted that the turnover of contracts processed via exchanges is also far larger than that in the OTC market[...] The level of notional value turnover of a market is a better guide to its economic utility than the size of notional value outstanding."*[146]

Figure 5: Overall Notional Outstanding and Notional Turnover of Interest Rate Derivatives traded OTC and on exchange



Source: NYSE Euronext, Response to the European Commission communication on a roadmap for ensuring efficient, safe and sound derivatives markets, July 2009, page 2.

(270) Last but not least, to underline the importance of the ETD market, it should also be recalled that in terms of annual number of transactions, ETDs are much more liquid. For instance, in 2009, the OTC market accounted for 16 million transactions compared to 3 billion transactions in ETDs.[147]

146 NYSE Euronext, Response to the European Commission communication on a roadmap for ensuring efficient, safe and sound derivatives markets, July 2009, page 2.

147 TABB Report, slide 23.

11.1.1.2.2.1.2. There is a range of derivatives contracts from fully standardised ETDs on one side to customised OTC contracts on the other side

(271) The decision opening the proceedings, on the basis of the results of the first phase market investigation, made a general distinction between ETDs and OTC derivatives based on the different level of standardisation of derivatives contracts, with ETDs being standardised derivatives contracts whereas OTC derivatives are bespoke contracts negotiated bilaterally away from exchanges.[148] The Notifying Parties, in their response to the decision opening the proceedings, explained that 90-95% of OTC derivatives contracts are also standardised and hence that standardisation of derivatives contracts cannot be considered as a differentiating factor having implications for the definition of the relevant product market in this case.

(272) The second phase market investigation confirmed the view of the Notifying Parties that there is a range of derivatives contracts from the most standardised highly liquid ETDs to fully customised OTC contracts. This is in line with the typical life cycle of derivatives contracts which are usually first introduced in the OTC environment on a customised and bilateral basis, then become more standardised to go first through voice broking and to ultimately reach the level of standardisation adapted for order book trading on exchanges. At this point, they are fully standardised, crucially, not only in their legal terms but also in all their economic parameters in order to achieve a concentration of liquidity in individual contracts. In this respect, one market participant noted that *"Exchanges bring standardization to the ideas that are born OTC. Therefore the direction of product innovation is usually from OTC towards exchange."*[149] This is in line with findings in the TABB Study stating that *"In fact, OTCDs and ETDs are complementary and symbiotic for product development; one is a primary source of innovation for the other."*[150]

(273) From the standardisation/customisation point of view, the Commission considers that the spectrum of derivatives contracts can broadly speaking be characterised as follows:[151]

(274) A first category of contracts are fully standardised contracts traded on exchanges' order books and cleared within the exchange's CCP. Given the inherent characteristics of exchange trading, the only contracts suitable for on-order book trading are contracts that are standardised in all of their economic parameters (such as the underlying, exercise date, strike price, exercise style, size of the lot, etc.) as well as their legal documentation. Due to this "absolute" standardisation, derivatives contracts traded on order book may achieve considerable volumes. Indeed, exchange trading is characterised by a relatively small number of contracts achieving high volumes[152]

---

148 Decision opening the proceedings of 4 August 2011, paragraph 27.

149 Agreed minutes of a teleconference call with BNPP of 16 September 2011, [...]*.

150 TABB Report, slide 11.

151 See agreed minutes of a meeting with AFME of 24 August 2011, [...]*, and agreed minutes of meeting with LSE of 6 September 2011, [...]*, paragraphs 12-13.

152 See agreed minutes of a teleconference call with Goldman Sachs of 19 September 2011, [...]* where Goldman Sachs referred to an analysis showing that 90% of revenues of CME is achieved by 4 contracts.

allowing for instantaneous execution and the possibility to close the obtained exposure before the expiry date in an anonymous market.

(275) The second category of contracts is based on the same underlying but traded in "block" sizes (namely large sizes). These contracts are negotiated bilaterally and then reported to exchange through an exchange's off-order book facilities and cleared. Such contracts cannot be traded onwards on an exchange's order book[153]. However, they are eligible for exchange clearing and become fully fungible and enter into a single margin pool with on-order book trades.

(276) The third set of contracts is ETDs "copied" in the OTC market, so-called "ETD lookalikes". These contracts offer the same economic exposure as ETD contracts but are traded away from an exchange and not cleared by the exchanges' CCPs. They are usually cleared bilaterally. These contracts represent a small portion of all available contracts in the OTC environment[154] and are principally designed for and by large banks in the interdealer market. These banks interact regularly and may have an interest to keep those entirely in the OTC environment away from the exchanges' CCPs. It follows that for this particular category of customers, these contracts might on occasion be directly substitutable for the same contracts within the first and second category.[155] Given the upcoming regulatory push for clearing of standardised OTC derivatives, this group will become smaller[156].

(277) A fourth category comprises contracts that are essentially offered in the same underlyings as derivatives traded on exchanges' order books but are customised in a number of economic parameters to achieve a better hedge for their customers. These are so-called "flex contracts". While these contracts cannot be traded on exchange order books, they are eligible for exchange clearing through facilities such as Bclear or OTC Flex. Although they are not fungible with the standardised contracts[157], due to the high degree of correlation with the contracts traded on the order book,[158] there is potential for cross-margining benefits.

(278) A fifth broad category of contracts are "pure OTC" contracts that are customised and do not have to date an equivalent on exchange (for instance, interest rate swaps, credit default swaps, or more "exotic OTC" contracts like swaptions, etc). They are either bilaterally cleared or, when the degree of standardisation permits it, through a CCP dedicated to the instruments in question (such as SwapClear for standardised IRS and IceClear for CDS). This is the largest segment of contracts traded OTC.[159]

---

153 See Section 11.1.2 of this Decision for definition of off-order book services.

154 See Section 11.1.1.2.2.1.3 of this Decision.

155 See Section 11.1.1.2.2.1.3 of this Decision.

156 In Europe, this regulatory push will come from the Regulation on OTC Derivatives, Central Clearing Counterparties and Trade Repositories (EMIR) which will mandate CCP clearing of eligible OTC derivatives (COM(2010)484)).

157 With the exception of flex trades in standard maturities beyond the last listed maturity, which may become fungible at a future date when that maturity is first listed.

158 Two instruments are considered correlated when their prices move together over time. Correlation can be positive, when the prices move in the same direction, or negative, when the prices move in the opposite direction. Correlation between instruments is dynamic.

159 Agreed minutes of a meeting with AFME of 24 August 2011, [...]*; see also [...]*, response to question 3 of questionnaire Q8- Questionnaire to customers, derivatives – Phase II [...]*.

(279) The spectrum was described by DB in its White Paper as follows: *"OTC derivatives cover a range from highly standardized (so-called "exchange look-alike") to tailor made contracts with individualized terms regarding underlying, contract size, maturity and other features […] Exchange-traded derivatives, on the other hand, are fully standardized and their contract terms are designed by derivatives exchanges."*[160]

(280) In their response to the SO and at the Oral Hearing, the Notifying Parties argued that over 90% of OTC derivatives are standardised and that this standardisation, combined with market and regulatory developments, will dramatically increase the competitive pressure that OTC derivatives exert on ETD trading.[161]According to the Notifying Parties, *"all standardized OTC Contracts and not only ETD Lookalikes constrain ETD trading."*[162]

(281) To support their argument that increasing standardisation of OTC contracts makes these contracts substitutes to ETDs, the Notifying Parties refer to a consultation paper on standardisation and exchange trading of OTC derivatives drafted by the Committee of European Securities Regulators (CESR), where it stated that there is "*significant standardization of credit derivatives, interest rate derivatives, and commodity derivatives. In each of these product classes, standard legal documentation, standardized contract terms and electronic post-execution confirmation services are in wide use and some products within each of these product classes are centrally cleared and traded on organized platforms*".[163] It is, however, evident from the text that this statement by CESR does not concern standardisation of economic parameters, but only legal standardisation.

(282) Indeed, while it is an observable phenomenon that even in the OTC world, there has been an ongoing trend towards standardisation, the rationale and the scope of standardisation in the OTC and ETD environment are very different. As concerns ETDs, full standardisation of all terms, in particular the economic parameters, is a prerequisite for exchange trading, whereas OTC derivatives are standardised in their legal terms for legal risk management reasons. The rationale for standardisation of OTC derivatives contracts therefore has been to minimise the legal and default risk associated with OTC trading, and to ensure that these contracts are processed until settlement in a more efficient manner, possibly via electronic means. As a result, the contractual terms of most[164] traded OTC contracts have been subject to standardisation, in particular under the umbrella of the International Swaps and Derivatives Association ("ISDA").[165]

---

160 See Deutsche Boerse Group, White Paper, The Global derivatives Market – An Introduction, April 2008, p.10, available at : http://www.scribd.com/doc/61304935/Global-Derivatives-Market (September 2011).

161 See Notifying Parties' response to the SO of 5 October 2011, Introduction, paragraph 15.

162 Notifying Parties' response to the SO of 5 October 2011, Introduction, paragraph 70 et seq.

163 See Notifying Parties' response to the SO of 5 October 2011, Introduction, footnote 111.

164 See replies to questions 13 and 20 of Q8 - Questionnaire to customers, derivatives – Phase II, showing the high percentage of OTC contracts based on ISDA contractual models. See also [...]*, reply to question 14 of Q8 - Questionnaire to customers, derivatives – Phase II, [...]*: "*The ISDA published MCA's as described in our response to question 13 are the most common manner in which OTC equity derivatives are standardised within certain product groups* ".

165 The International Swaps and Derivatives Association ("ISDA") is a trade organisation of participants in the market for OTC derivatives. ISDA develops and maintains standard derivatives documentation, which can be used, and is used, as a template for OTC transactions.

However, this level of standardisation does not imply the standardisation of the key economic parameters[166] which is necessary for a contract to be traded on the exchange order book: "*The characteristics that are commonly standardised for a product group would be pay-offs, mechanisms for dividends and corporate action and related events and any related legal wording used to framework these. As is the nature of OTC products, trading parameters e.g. strike prices, notionals, tenor and such like are not standardised.*"[167] Indeed, even most "standardised" OTC derivatives do not exclude a certain degree of customisation in the contract terms which is not the case for exchange traded derivatives which are fully standardised in all economic terms.

(283) In this respect, inter-dealer broker ICAP[168] recalled that *"the ISDA terms operate as a framework within which OTC derivatives contracts can be concluded by providing "definitions" and formats that can be applied in a modular way by the parties to the contract. Crucially, however, they do not provide for standardization of the derivatives product itself. This is in contracts to ETDs, which are fully standardized in relation to all contract parameters, including economic terms, as they could otherwise be note traded on an exchange."*[169] The fact that OTC contracts may be standardised in their legal terms does not mean that derivatives users would switch from highly liquid ETDs to OTC derivatives, be they standardised or not. As explained below, OTC derivatives are used for different purposes than and in different circumstances to ETDs.

(284) The Notifying Parties further argue that the mandatory clearing of standardised OTC derivatives will remove one of the only distinctions in how OTC and ETD products are traded which in their view will result in even more robust competition between these products.[170] As concerns the implications of upcoming regulation, the Commission notes from the outset that the final shape of any legislative initiative currently subject to discussions in various *fora* is at this stage unclear, and hence any reliance on the content of various proposals would be speculative and inappropriate. However, should regulation indeed bring about convergence between ETDs and OTC derivatives in the sense that it would require standardised OTC derivatives to be subject to mandatory clearing, this would not imply that ETDs and OTC derivatives would become substitutable.[171] On the contrary, the rationale and the numerous reasons (see above) for derivatives users to use OTC derivatives is unlikely to disappear.

---

166 Agreed minutes of a teleconference call with ISDA of 16 September 2011, [...]*, para. 4. For the definition of economic parameters, see above section 11.1.1.2.2.1.2 of this Decision.

167 [...]*, reply to question 14 of Q8 - Questionnaire to customers on derivatives – Phase II, [...]*. See also agreed minutes of conference call with RBS of 16 September 2011, paragraph 12 [...]*: "*the ISDA agreements aim to standardise the legal terms of the contract rather then the key economic terms* ".

168 See ICAP website, available at http://www.icap.com/, (January 2012).

169 ICAP, observations on the SO issued in case M.6166 Deutsche Börse/ NYSE Euronext submitted pursuant to article 16(1) of Commission Regulation (EC) No 802/2004 implementing Council Regulation (EC) 139/2004 on the control of concentrations between undertakings (the "Implementing Regulation"), 26 October 2011, paragraph 6.12.

170 See Notifying Parties' response to the SO of 5 October 2011, Introduction.

171 Rather, it would mean that due to regulatory requirements, it would become mandatory to trade some of the derivatives previously traded OTC on exchanges. As such, it would not alter the fundamental characteristics of OTC derivatives or ETDs nor the differences between them, but would rather shift the boundary between them.

(285) In addition, the majority of the contracts in the OTC environment are swaps (interest rate swaps, credit default swaps and FX swaps)[172], which by definition are very different instruments from options and futures and are not traded on exchanges. As will be explained in Section 11.1.1.2.2.2.1 b below, swaps, irrespective of the level of standardisation, are not substitutable to exchange-traded futures and options.

(286) It follows from the above that there is a whole range of derivatives contracts responding to the whole spectrum of customers' needs. While OTC contracts may also be standardised, as has been outlined in this Section, this standardisation is of a different nature for OTC derivatives and ETDs. Moreover, there is a range of fundamental distinguishing features between ETDs and OTC, as is explained in the following Sections of this Decision.

11.1.1.2.2.1.3. Substitution between ETDs and OTC derivatives is at best limited

(287) On the basis of the results of the market investigation in this Decision, the SO concluded that depending on the category of customers, there is either no substitution between highly standardised ETD contracts and OTC contracts, or that such substitution may be limited to a small category of contracts (so-called ETD lookalikes).[173] Indeed, according to the results of the market investigation, there is on the one hand a distinguishable group of customers that have no mandates or operational set up to trade OTC derivatives and hence for whom OTC derivatives are not an alternative, and on the other hand a group of customers that trade both ETDs and OTC derivatives but who could potentially switch to OTC only for a small category of contracts. As a result, this lack of, or limited, substitution is due to exogenous factors such as the ability to trade over-the-counter or the needs at the time of trading.

(288) The Notifying Parties in their response to the SO claim that the first category of ETD-only customers represents only a small portion of the market and that the second category of customers would switch to OTC if the merged entity were to attempt to exert market power post-transaction. [174] The Notifying Parties further argued that because they have no means to identify these customers, they cannot impose a price increase only on this category of customers.

11.1.1.2.2.1.4. Customers that can only trade ETDs

(289) The first phase market investigation indicated that certain customers trade exclusively ETDs (on and off order book) and hence do not consider any contracts traded away from the regulated exchange environment (including "lookalike" contracts) as alternatives in their trading strategies.[175]

---

172 According to figures of BIS, over 70% of OTC notional amounts outstanding in June 2011 was represented by various types of swaps. See BIS website, available at http://www.bis.org/statistics/otcder/dt1920a.pdf, (November 2011).

173 See SO, section 1.2.3.2.

174 See Notifying Parties' response to the SO, Introduction, paragraph 86ff and Notifying Parties' presentation at the Oral Hearing, 27 October 2011.

175 See replies to Q1 – Questionnaire to customers – Phase I, Q2 – questionnaire to investment firms and retail intermediaries – Phase I. For instance, "*AMF only do exchange-traded equities and fixed income derivatives, due to internal regulations and policies*", AMF Pension, response to question 11 of Q2 -

(290) The second phase market investigation confirmed that there is indeed a category of derivatives users that can only hold ETDs in their portfolios or hedge their portfolios only with ETDs. These customers could not trade OTC derivatives even through a broker. These would include mainly retail investors, as well as some institutional market participants[176] who may be prevented from using the OTC market for various reasons such as lack of mandate, an operational setup that can process only ETDs, risk management preference, accounting reasons and various internal limits on positions these users can take as well as their counterparty risk status.[177] This explains why the quasi totality of the open interest in the OTC market is controlled by a small number of the largest broker-dealer banks.

(291) The existence of customers trading only ETDs was also confirmed by the Association of Financial Markets in Europe, AFME, whose members are the largest banks serving precisely these customers. According to AFME, there are *"many clients who simply cannot use OTC products, even if they were willing, as their mandates do not allow it – for example, in view of the heightened counterparty credit risk."*[178] AFME stressed that *"banks deal in the products that their clients want to use – it cannot be any other way; but [banks'] clients, in turn, have to operate within the constraints of the current market structure, which for many of them means the ETD universe."*[179] This was also confirmed by one of the biggest broker-dealers Goldman Sachs explaining that some customers could not switch to the OTC market irrespective of the cost of trading on exchange: "*there are some categories of contracts which GSI does not trade OTC, for instance when they hedge their own positions on exchange. However, if the cost of trade on exchange were to increase, GSI would consider trading more OTC. This is possible owing to GSI's size and position as a dealer. The more retail end of the market would not have this possibility and would have to continue trading only on exchange because they are not set up to trade in the OTC market. In reality, only a small subset of market participants has access to OTC, even though they constitute a greater volume."*[180]

(292) The Notifying Parties' internal documents also suggest that some more risk averse customers – for various reasons – may be more inclined, or only able, to trade on exchange: *"The French market has benefited from a proportion of OTC business moving to the regulated exchanges, a trend which may continue if concerns about credit risk persist and if institutional investors continue to avoid OTC transactions. The fact that the French Market end users is dominated by traditional institutional investors rather than*

---

questionnaire to investment firms and retail intermediaries – Phase I, [...]*; and "*Since Carnegie Investment Bank does not trade OTC its* [sic] *always the only option to trade exchange traded contracts*", Carnegie Investment Bank AB, reply to question 16 of Q1 – Questionnaire to customers – Phase I, [...]*.

176 During the first phase market investigation, 45 customers indicated that they trade only ETDs. See replies to Q1 – Questionnaire to customers – Phase I and Q2 – questionnaire to investment firms and retail intermediaries – Phase I.

177 See replies to question 1 of Q8– Questionnaire to customers on derivatives – Phase II. See also agreed minutes of a meeting with AFME of 24 August 2011, paragraph 8, [...]*.

178 AFME's presentation at the Oral Hearing, 29 October 2011, [...]*.

179 AFME's presentation at the Oral Hearing, 29 October 2011, [...]*.

180 Agreed minutes of a teleconference call with Goldman Sachs of 19 September 2011, paragraph 7 [...]*; see also SNS Securities NV, question 13 of Q1 "*Otc is niet in scoop omdat de balans van SNS Sec. dit niet toelaat*" [...]*.

hedge funds may explain the greater resort to regulated markets in France in comparison to other market places. Eurex has not benefited from a similar shift in volume from the OTC market."[181] Similarly, another market participant explained that when they trade as a broker on behalf of their buy-side customers, they only trade ETDs. "*For our customers we only trade exchange-listed derivatives. Our customers have made this choice given the transparency of exchange-listed products and the end-of-day calculation and revaluation process for the portfolios related to the NAV [Net Asset Value] calculations*".[182]

(293) Retail investors who do not trade OTC derivatives contracts are mainly active in the trading of equity derivatives, representing a share of 50% of trading of single equity derivatives and 20% of trading of equity index derivatives.[183] While this represents only around 1% in terms of notional amount outstanding[184] of all derivatives (globally for all asset classes) traded, it represents a significant portion of the Notifying Parties' revenues.[185]

(294) The second phase market investigation confirmed that the group of customers who trade only ETDs are unlikely to switch to OTC products in response to a 5-10% increase in the overall cost of trading for ETDs on exchange.[186] For the purposes of this analysis, the relevant group of customers has been constituted by including all[187] those respondents who consistently declared both in the first and second phase market investigation that they trade only ETDs.[188] Among those respondents, only one customer indicated that it would consider switching to OTC as one of the possible reactions to a price increase and only if that would make economic sense.[189] In contrast, virtually all[190] the other customers

---

181 NYX's internal document provided in response to the Commission's RFI of 1 July 2011, Business Report to Euronext Supervisory Board, 30 November 2009, p. 8.

182 SNS, response to question 11 of Q1 – Questionnaire to customers, [...]* Translated to English from Dutch, original: *"Wij handelen alleen beursgenoteerde derivaten voor onze clienten. Onze clienten hebben hiervoor gekozen vanwege de transparantie in beurs genoteerde producten en de einde dag calculatie en herwaarderings proces voor de portefeuilles ivm NAV berekeningen"*. See also response by [another customer]* to the same question stating [...]*: *"We have a preference for visible order books so we trade only on exchange."*

183 See Deutsche Boerse Group, White Paper, The Global derivatives Market – An Introduction, p.6 footnote 3 referring to data of International Options Markets Association 2006, available at : http://www.scribd.com/doc/61304935/Global-Derivatives-Market (September 2011).

184 The notional amount outstanding measures the cumulative value of all open contracts for OTC-traded derivatives or all open positions held against the central counterparty for exchange-traded derivatives.

185 According to the information provided in the Form CO, […]*% and […]*% of Eurex 2010 revenues and […]*% and […]*% of NYX' 2010 revenues came from equity index derivatives and single equity derivatives respectively. It follows that a non-insignificant proportion of the Notifying Parties' overall revenues comes from retail customers.

186 See replies to questionnaires Q1- Questionnaire to customers – Phase I and Q8 – Questionnaire to customers – derivatives – Phase II.

187 Overall 13 respondents indicated both in the first phase and in the second phase that they trade only ETDs.

188 In their response to the SO, the Notifying Parties contested that the Commission has not included in the group of customers who only trade ETD Caixa D'Estalvis i Pensions de Barcelona ("Caixa"), despite the fact that it stated that it traded only ETDs in its response to question 7 of Q1 Questionnaire to customers – Phase I. Nevertheless, it should be noted that Caixa during the second phase market investigation stated that it traded both ETDs and OTC (see Caixa, response to question 2 of Q8 – Questionnaire to customers on derivatives – Phase II [...]*): therefore, given this inconsistency, Caixa has not been included in the Commission's analysis of the group of customers trading only ETD.

189 DZ Privatbank SA, response to question 11 of Q8 – Questionnaire to customers – derivatives – Phase II [...]*. In this context, it should be recalled that given that most liquidity of ETDs is on exchange, it is

who stated that they trade only ETDs and replied to this question indicated that they would either continue trading on exchange, or switch to another exchange or MTF if available, and that in any event, OTC would not be an option.[191]

(295) The Notifying Parties do not contest that this category of customers exists. However, the Notifying Parties claim that this group is small in size and cannot be identified by exchanges and hence discriminated against.[192] In this context, the Notifying Parties strongly contested, both in their response to the SO and at the Oral Hearing, the Commission's analysis of switching behaviour of this group of customers as being based on a statistically insignificant sample and therefore not robust. In this regard the Commission notes that while the sample of these customers is relatively limited, the responses provide a clear indication that this group of customers is reluctant or unable to switch to OTC.[193]

(296) In addition, the Notifying Parties criticised the market investigation question which asked about these customers' switching behaviour in response to a 5-10% price increase[194] for two main reasons. The first criticism raised by the Notifying Parties was that the question was misleading as it did not specify that the hypothetical price increase is applicable to all exchanges and offered as response switching to another exchange. In this respect, the Commission considers that the fact that the respondents had the opportunity to state that they would switch to another exchange does not affect their response that they would not switch to OTC. Indeed, the respondents were allowed and did tick several responses as

---

unlikely that trading the same contract OTC would make economic sense. See analysis in section 11.1.1.2.2.1.5 c. of this Decision.

190 Altogether 11 customers.

191 See replies to question 11 of Q8– Questionnaire to customers on derivatives – Phase 2. In addition Liquid Capital Management in its response to question 11 of Q8 – Questionnaire to customers on derivatives – Phase II replied "other reaction", but stated that "[o]*ur decisions in relation to trading venue(s) are heavily dependent on where the open interest and the liquidity lie*"[...]*.

192 See Notifying Parties' response to the SO, Introduction, paragraph 88 and Annex I.3.

193 In this regard it should be noted that during the second phase market investigation, the Commission sent 121 questionnaires to customers (Q8 questionnaire to customers on derivatives) and received 88 replies. Of those replies, 55 had informative content in response to the switching question. Among those respondents, 13 belong to the group of customers who only trade ETD and 11 stated that they would not switch in response to a 5 to 10% increase of the overall cost of trading. As mentioned above in Recital (294), the group of customers who only trade ETD has been constituted by including all those respondents who consistently declared both in the first and second phase market investigation that they trade only ETDs.

Nonetheless, the same picture on switching behaviour is drawn when considering the replies to Question 11 by those customers who declared to trade only ETDs during the second phase market investigation, despite this categorisation could not be inferred from their reply to Q1- Questionnaire to customers – Phase I. Of those 7 customers, 6 replied that, they would either continue trading the contract on exchange, or switch to another exchange or MTF if available or abandon the trade in response to 5-10% increase in the overall cost of trading for ETDs, while only 1 replied "*Other reaction*", clarifying that it would depend on the behaviour of its customers.

194 Question 11 of Q8 – Questionnaire to customers on derivatives – Phase II ("Question 11") reads "*Imagine a situation where, for derivatives contracts you usually trade on exchange, the total cost of trading these contracts on exchange were to increase by say 5-10%. Please explain what would be your most likely reaction, distinguishing as relevant between different asset classes and contracts: I would continue trading the contracts on exchange / I would trade the contract on another exchange or MTF platform / I would switch to OTC execution mode / I would abandon the trade/ Other reaction (please specify). Please provide further explanation in the following box*."

relevant.[195] The second criticism of the Notifying Parties is that the question *"can create bias because respondents find it difficult to conceptualize the price increase"* and therefore the price increase should have been expressed in absolute amounts. First, it should be noted that for reasons already explained in this Decision and in particular the difficulties associated with a precise determination of the overall cost of trading including explicit and implicit components, it would not have been possible to ask such a question using absolute numbers. Second, this criticism is in direct contrast with the Notifying Parties' claim throughout these proceedings that their customers are mainly large sophisticated financial institutions that are extremely price-sensitive and could pre-empt any attempt at an exercise of market power. In this context, the Commission does not consider it likely that these sophisticated customers were not able to "*conceptualize the price increase*".

(297) Many customers who have a clear preference to trade ETD or are only able to do so are not direct exchange members but use a broker to execute their trades on exchange. As a result, the Notifying Parties argue that they are not in a position to identify these customers and hence charge them different prices. However, it should be noted that within the Commission's sample of the group of customers who only trade ETDs, on which the above conclusions are based, 12[196] out of the 13 respondents were direct exchange members of one or both the Notifying Parties' derivatives exchanges. It follows that at least some portion of customers that trade only ETDs are direct exchange members and therefore can be identified by the exchanges.

(298) The market investigation and an analysis of the Notifying Parties' internal documents clearly demonstrates that exchanges can and do exploit different price sensitivities of their customers and compete for more price sensitive customers by granting them discounts. For instance, an NYX internal document reveals the discount strategy being clearly targeted at price-sensitive customers: […]*[197]

(299) The ability of exchanges to price discriminate between various customer types is also evidenced by the ability of exchanges to apply different transaction fees to liquidity providers and to liquidity takers. Moreover, exchanges are able to apply different fees depending on whether the trade is executed on behalf of a client or for an exchange member's own account. For instance, an example of pricing of Dutch stock options on Liffe is telling in this regard. Indeed, in the case of Dutch stock options, a member would be charged a trading fee of Euro 0.15 per lot (with a maximum fee per order of Euro 80) if the execution is for its own account, compared to Euro 0.75 per lot (with a maximum fee per order of Euro 160) if the trade is executed on behalf of a client. This indicates different price elasticities of different types of clients, which are likely caused by the lower ability of certain customers to switch to alternative solutions and substitute away from the exchange. While the Notifying Parties claim that they are unable to identify the final customer on behalf of whom a broker is acting, they know that these clients are willing to trade for a higher fee.

---

195 Five customers stated that they would switch to another exchange if available which indicates that they would continue trading on exchange.

196 [...]*.

197 NYX's internal document provided in response to the Commission's RFI of 1 July 2011, NYSE Liffe – Global Derivatives Strategy, June 2009, p.14.

(300) While the Commission was unable to determine the exact proportion of these customers or the corresponding revenue that can be attributed to these customers owing to the fact that the Notifying Parties were unable to provide this information, this category of customers is clearly distinguishable and price inelastic due to their inability to switch to OTC derivatives contracts because of the objective non price-related reasons explained above. Moreover, the market investigation has strongly suggested that this segment of demand has already increased significantly since the collapse of Lehman Brothers and greater awareness of potential counterparty risk generally associated with OTC derivatives, and is anticipated to continue to grow in importance under the regulatory capital rules of Basel III and pipeline Union legislation, as described below in Section 11.2.3.2.4.

(301) This group of customers therefore comprises both direct and indirect exchange customers. In the case of indirect customers, the demand is presented to the exchange through a direct customer and the exchange may indeed, as the Notifying Parties argue, be unable to determine with certainty the origin of individual trades and discriminate on this basis. However, as shown in the example of Dutch stock options above, this group of customers is automatically charged a higher fee than direct customers.

(302) It follows that the Notifying Parties' argument that they are unable to price-discriminate does not stand. This is for at least two main reasons. Firstly, the Notifying Parties are likely to be largely aware of the client base of their direct customers since this is determined by the commercial focus of each of those customers, with certain customers more typically serving the types of investor or user which is price inelastic. Secondly, the Notifying Parties can charge a price to each direct customer, when trading on client account, which reflects the trade-off between rents achievable against price inelastic end users and potential lost revenue from those who are more (albeit still not necessarily very) price elastic and might therefore, at the margins, make greater use of OTC.

(303) Therefore, it is concluded for the purpose of this Decision that there is an identifiable group of users which would not and/or could not switch to OTC derivatives should the overall cost of trading for ETDs, and the trading and clearing fees in particular, increase by a small but significant non-transitory increase in price post-merger. Because the exchanges have the ability to apply, and do apply, differentiated fees and discounts to different exchange customers, the merged entity will have the ability and incentive to increase the overall price of trading and clearing for these users who would not and/or could not switch to OTC derivatives. It will be able to do so directly where the inability or unwillingness to switch concerns the direct exchange member itself, as well as indirectly where the inability or unwillingness to switch concerns a significant part of the final demand routed to the exchange through the direct exchange member, by increasing the prices payable by the direct member which then will pass some or all of this increase through in turn to its own customers.[198]

[198] As explained in the following sections, the findings of this Decision with relation to market definition are not dependent on there being a separate category of customers which trade only ETDs.

11.1.1.2.2.1.5. Customers that trade both ETDs and OTC derivatives

a. Introduction

(304) The majority of derivatives trades are executed by direct customers of the exchange which have access to and trade both ETDs and OTC derivatives, even if they may not have a mandate to do so on behalf of all of their own customers.[199] As concerns this category of customers, the SO concluded that any substitution for these customers, when trading on own account or on the account of a client which is able to trade both categories, would be limited to so-called ETD lookalikes. This is because derivatives users use ETDs and OTC derivatives for different purposes and as complementary tools in their trading strategies.

(305) Contrary to what the Notifying Parties have claimed during the proceedings, the fact that a particular set of customers trades ETDs and OTC derivatives in parallel does not in itself mean that these products compete or are in the same product market. Instead, as will be explained below, in this case, such parallel use rather points towards complementarity of the two sets of instruments.

(306) In their reply to the decision opening the proceedings, the Notifying Parties indicated that *"traders regularly substitute between OTC and exchange-trading of derivatives.*"[200] However, the results of the Commission's market investigation did not confirm such substitution and rather showed a different picture.

(307) While the first and second phase market investigation indicated that traders use both ETDs and OTC derivatives, ETDs (if any) could potentially be substituted only by a limited portion of OTC derivatives, ETD lookalikes. This is because a significant majority of OTC contracts are used for different purposes and in different circumstances than ETDs and cannot therefore substitute an ETD contract. Moreover, ETDs represent products in which identical contracts are held by a wide variety of market participants, making it significantly easier to exit positions during the lifetime of the contract, and do not require individual credit assessments as they benefit from elimination of counterparty risk by the exchange CCP.

(308) The exchange and OTC trading environments coexist and provide complementary solutions to the trading community. Also, the market investigation and the analysis of the Notifying Parties' internal documents indicated that any interaction between ETDs and OTC derivatives is uni-directional whereby there is an increasing tendency of moving contracts from the OTC environment to the exchange environment when said contracts become more liquid. This does not, however, imply that the contracts traded in these two environments are substitutes as suggested by the Notifying Parties.

---

199 Indeed, the first phase market investigation in the present case revealed that the majority of the Notifying Parties' customers trade both ETDs and OTC derivatives. See replies to Q1 – Questionnaire to customers – Phase I and Q2 – questionnaire to investment firms and retail intermediaries – Phase I. See also minutes of conference call with BNPP of 16 September 2011, paragraph 5 [...]*: "*Some customers, for instance some funds, have an operational setting whereby they trade only listed products. These customers represent a small proportion of BNPP's customer base"*.

200 Notifying Parties' response to the decision opening the proceedings of 4 August 2011, Derivatives market definition, paragraph 14ff.

(309) In their response to the SO, the Notifying Parties claimed that they face large powerful customers who are dealers in the OTC market and would switch to OTC trading if the merged entity were to attempt to exert market power. In this respect, the Notifying Parties criticise the Commission's analysis for focussing on customers' current trading strategies and not analyzing in a forward-looking manner whether customers would be more inclined to switch should a price increase occur post-merger.[201]

b. Only ETD lookalikes could in some circumstances be considered as directly substitutable to listed products

(310) The second phase market investigation sought to assess the extent to which there exist contracts traded OTC that would provide identical exposure as ETDs. The market investigation showed that within each asset class, it could be possible to identify a small portion of OTC contracts that offer the same economic exposure. This is the third category of contracts referred to in the spectrum of derivatives contracts described in Section 11.1.1.2.2.1.2, the ETD lookalikes.

(311) In this regard, while the market investigation showed that ETD and OTC derivatives are generally not substitutable,[202] certain market participants may, in some circumstances, opt for a lookalike product instead of an ETD.[203] In this respect, one market participant noted that *"in some instances, for equities derivatives, from an economic risk perspective OTC and ETD instruments can be exactly the same and are therefore directly substitutable. However, in the majority of cases, where clients have non-standard terms, structural or margining requirements, the contracts are not substitutable."*[204] Likewise, another market participant explained that OTC contracts "*will be substitutable if they are carbon copy exchange lookalikes e.g. maturity date/strike etc and hence can be netted off cleanly against an exchange traded option. Non-standard maturities / strikes / exercise conditions would be non substitutable.*"[205]

---

201 Notifying Parties' response to the SO, Introduction.

202 As regards the result of the market investigation on this point, see section 11.1.1.2.2.1.3 of this Decision.

203 See replies to question 17 of Q8– Questionnaire to customers on derivatives – Phase II, showing that, while the slight majority of the respondents would always prefer an ETD to an OTC lookalike ETD (for instance, *All other factors being equal, [a look-alike ETD] would not be an option*" also for B. Metzler seel. Sohn & Co KGaA, response to question 17 of Q8 – Questionnaire to customers on derivatives – Phase II, […]*), some of them would opt for ETD lookalike derivatives instead of ETD. See also [...]*, response to question 11 of Q1 – questionnaire to customers – Phase I, [...]*: "*Generally, we believe there are very few OTC products that can be viewed as substitutes for exchange-traded versions, since ETDs are standard in nature (with respect to expiry dates and payoffs) whereas the majority of OTC products are structured and non-standard in nature, often reflecting bespoke exposure designed for a particular client's needs. The only OTC products we view as somewhat substitutable to ETDs are 'listed look-alikes', which are OTC options similar in nature to Exchange-traded equivalents. We may trade a listed look-alike product where a client wishes to gain exposure to an OTC product rather than trade on exchange – either because the listed look-alike has a difference to the ETD equivalent that the client prefers (for instance different strike price) or for reasons of reducing potential market impact (since not impacting exchange volumes directly)*".

204 [...]*, response to question 16 of Q8 – Questionnaire to customers on derivatives – Phase II [...]*.

205 Liquid Capital Management LLP, response to question 16 of Q8 – Questionnaire to customers on derivatives – Phase II, [...]*.

(312) This is also recognised by a DB internal document which states that *"Products can be traded OTC or on-exchange by customer decision. Intensity of competitive relationship depends on degree of substitutability on product level – the more look-alike products are, the higher is any potential substitutation (sic)."*[206] Indeed, from a customer's point of view, while, generally speaking, he may have a choice to trade either on exchange or OTC, the real choice exists only to the extent that substitutable products are available in the two environments. Therefore, only to the extent that there is an exchange lookalike available OTC and offering the same economic exposure as ETD contracts, would there potentially be competition between the listed product and this concrete OTC product for customers that can trade both.

(313) The Notifying Parties in their response to the SO and at the Oral Hearing claimed that any ETD can be at any time created in the OTC environment and hence should the merged entity attempt to exert market power, this would prompt traders to trade ETDs over-the-counter.[207] While this is true in theory, such a strategy would lack a solid economic rationale. Indeed, small size trades that are characteristic for ETDs could hardly be executed at the same total cost in the OTC environment where the pool of potential counterparties for such trades is by definition limited. An analogy could be drawn between buying a suit off the store rack and having exactly the same suit tailor-made. While both methods may result in the same suit being purchased, the costs of obtaining it in the store and at the tailor are not the same.

(314) In addition, it should be noted that because the liquidity in listed contracts is concentrated on exchanges (which translates in low bid-ask spreads and hence low cost of trading), the incentives of customers to trade these contracts away from exchanges are limited. This has been clearly explained by a market participant who outlined that "*the primary determinant between different trade alternatives is the value and liquidity at the time of trade. If the economics of the trade are similar, and initial connectivity to an exchange has been established, on-exchange trading is generally easier. On that basis we would generally choose an on-exchange trade rather than a "look-alike" OTC contract.*"[208] Further substantiation in this regard was provided by another market participant who indicated that "*For highly liquid ETD comparable OTC markets normally do not exist."*[209] Indeed, this is because under normal circumstances, there is no economic rationale for copying these contracts OTC.

(315) It follows that only in specific situations where OTC trading may confer a real added value to the customer may the customers decide to trade lookalikes instead of the product traded on exchange. In this regard, a market participant outlined that "[t]*here may be preference for a listed look-alike contract where it is important to minimise market impact on a large or sensitive trade, or where it is important to customise some aspect of the contract ('look-alikes' are not necessarily identical to their ETD equivalent), and where the counterparties are able to trade OTC derivatives.*"[210] For

---

206 DB internal document, […]*.

207 Notifying Parties' response to SO, Introduction, paragraph 73.

208 Barclays, response to questions 7 and 17 of Q8 – Questionnaire to customers on derivatives – Phase II, [...]*. But see more in general the replies to question 17 of Q8– Questionnaire to customers on derivatives – Phase II, highlighting liquidity as the key factor in the customers' choice.

209 DZ Bank, reply to question 16 of Q1 - Questionnaire to customers - Phase I, [...]*.

210 [...]*, response to question 17 of Q8 – Questionnaire to customers on derivatives – Phase II, [...]*.

instance, some customers may prefer trading a contract that could be traded on order book away from exchanges if they can trade at better conditions than on exchange, for instance without having to post collateral. This may be the case if dealers have a long-standing relationship of trust allowing them to trade without worrying about the counterparty risk.[211]

(316) The results of the market investigation show that trading of ETD lookalikes represents a relatively limited phenomenon.[212] This is because the value proposition of the OTC trading environment is very different and resides in the ability to offer a tailor-made contract that would constitute a perfect hedge to any kind of risk as opposed to the business model of exchanges which offers deep liquidity in a small subset of contracts.[213]

(317) ICAP in this respect indicated that ETD lookalikes represent a *"very small minority of products, namely for some types of equity and some commodity derivatives. For other types of products, such as interest rate, […], the ETD and OTC contracts simply would not offer the same type of exposure even if it were taken out for the same period. This is because, fundamentally, ETDs have a maximum duration for three months (even though the future may be for a longer period) as they technically end every quarter with a single payment and/or delivery obligation and in many cases a different underlying asset. This means that the "outcome" of an ETD (even if for the same period and same underlying) would be different to that of an OTC."*[214] AFME stated that the proportion of ETD lookalikes is circa [0-5%]* of the overall OTC market.[215] In addition, the majority of customers[216] indicated that the proportion of ETD lookalikes ranges from 0

---

211 See BNP Paribas' response to questions 7 and 17 of Q8 – Questionnaire to customers on derivatives – Phase II, [...]*, explaining that in the interdealer market, lookalikes are cheaper because the relationship between dealers is on a level playing field (most often no initial margin). Similarly, Goldman Sachs, in agreed minutes of a teleconference call of 19 September 2011, [...]* outlined that: "*As concerns contracts that are available OTC and which copy the contracts on exchange ('lookalikes'), GSI does not believe that these are a widespread phenomenon. Market participants would usually turn to exchanges for these transactions unless they could for example make savings on posting less collateral when trading OTC*."

212 AFME stated that the proportion of ETD lookalikes is circa [0-5%]*% of the overall OTC market. See agreed minutes of a meeting with AFME of 24 August 2011, [...]*. See replies to question 20 of Q8 - Questionnaire to customers on derivatives – Phase II, where the majority of respondents (9 out of 14 respondents that replied to this question) indicated that the proportion of look-alike ETDs ranges from 0 to 15 % of the overall OTC market: for example, Caixa D'Estalvis i Pensions de Barcelona, in reply to this question [...]*, outlined that look-alike ETDs would amount to 2 % of interest rate derivatives; similarly ICAP replied to the same question that look-alike ETDs represent "*In interest rates, est. 2% (ie 2% of FRA business is IMM FRAs that are equivalent to STIRs). In equity derivatives est 10%*", [...]*; [...]* referred that in equity derivatives look-alike ETDs represent 15% of the overall OTC market. [...]*, in reply to question 18 of Q8– Questionnaire to customers on derivatives – Phase II, [...]*, also mentioned that "*In Europe, look-alikes will exist, but they are not widely traded*". See also agreed minutes of a teleconference call with BNPP of 16 September 2011, [...]*, mentioning that "*there is a small portion of OTC derivatives that copies the listed products, so called ETD lookalikes*".

213 See agreed minutes of a meeting with BATS of 26 August 2011, [...]*: "*While ETDs are designed as highly liquid standardized contracts, OTC derivatives are attractive only insofar as they allow for customization of contracts*."

214 ICAP, observations on the SO issued in case M.6166 Deutsche Börse/ NYSE Euronext submitted pursuant to article 16(1) of the Implementing Regulation, 26 October 2011, paragraph 6.14 [...]*.

215 See agreed minutes of a meeting with AFME of 24 August 2011, [...]*.

216 A total of 9 out of 14 respondents that replied to the question 20 of Q8 - Questionnaire to customers on derivatives – Phase II.

to 15% of the overall OTC market. For example, Caixa D'Estalvis i Pensions de Barcelona, in reply to this question, outlined that ETD lookalikes would amount to 2% of interest rate derivatives;[217] similarly, ICAP replied to the same question that ETD lookalikes represent *"In interest rates, est. 2% (ie 2% of FRA business is IMM FRAs that are equivalent to STIRs). In equity derivatives est 10%"*.[218] [One large customer]* specified that *"In Europe, lookalikes will exist, but they are not widely traded*".[219] Another large customer specified that *"there is a small portion of OTC derivatives that copies the listed products, so called ETD lookalikes"*.[220] ICAP further explains that "*the types of asset classes for which there can be ETD "lookalikes" are extremely limited and only form a very small part of the derivatives sphere*."[221]

(318) Lastly, it should be noted that even to the extent that there are contracts offering the same economic exposure in the OTC market, the counterparty, the operational, the legal and the liquidity risks on exchange and in the OTC market vary significantly and are likely to induce users to prefer exchange trading.[222] In this respect, in its White Paper

---

217 Reply to question 20 of Q8 - Questionnaire to customers on derivatives – Phase II, [...]*.

218 Reply to question 20 of Q8 - Questionnaire to customers on derivatives – Phase II, [...]*.

219 Reply to question 18 of Q8 – Questionnaire to customers on derivatives – Phase II, [...]*.

220 See also agreed minutes of a teleconference call with BNPP of 16 September 2011, [...]*.

221 ICAP, observations on the SO issued in case M.6166 Deutsche Börse/ NYSE Euronext submitted pursuant to article 16(1) of the Implementing Regulation, 26 October 2011, paragraph 6.14 […]*.

222 See replies to question 6 of Q8 – Questionnaire to customers on derivatives – Phase II. In its reply to this question, [...]* FOA provided an extensive analysis of the differences in operational, legal and liquidity risks associated with ETDs and OTC derivatives: "*Operational risks in OTC transactions tend to be higher, reflecting the counterparty-to-counterparty nature of the transaction, but significant increases in post-trade efficiency in back offices of firms and the availability of using exchanges and CCPs to manage post-trade processing and clearing have generated a major improvement, to the point where, while there are a number of variables in terms of the nature of the risk, the level of risk is broadly the same as between well-run OTC dealing counterparties and well-run exchanges.*
The legal risks between exchange-traded contracts and OTC contracts are rather more significant and this will vary from jurisdiction to jurisdiction, and is usually dependent upon the extent to which a particular jurisdiction will allow contracts to be traded off-exchange. It is noteworthy that MiFID, in the EU, specifically provided for equity contracts to be traded off-exchange, subject to meeting certain minimum regulatory requirements, regarding transparency, etc. There is also the additional legal risk that the constitutional documents of some end-users may restrict the use of OTC contracts.
The biggest difference is the degree of credit risk applicable to the dealings, insofar as – while there is now a strong regulatory drive to encourage OTC contracts to be CCP cleared – non-standardised OTC contracts which are not capable of being CCP cleared will depend upon the creditworthiness of the executing counterparty, whereas the credit risk of exchange-traded contracts and CCP-cleared OTC derivatives will be significantly less because of CCP clearing have the credit risk mitigated largely through the use of CCP clearing. It is important to note, however, that the credit risk of the customer will, in the vast majority of cases, still be with the customer's intermediary, irrespective of whether it is an exchange-traded contract or an OTC contract.
Market and liquidity risk will be largely dependent upon the degree of volume, depth and liquidity of the market will vary from market to market and is less a variable between OTC and exchange-traded markets.
Another form of risk is valuation risk, which will depend upon the degree of price transparency applicable to a relevant contract and the availability of price benchmarks. This will vary as between exchange-traded contracts, which are wholly transparent with a well-structured central price-formation process and OTC contracts, which can be less transparent (although that is likely to change with the introduction of EMIR in the EU) leading to difficulties in valuing highly-tailored or structured contracts".
More specifically as regards ETD lookalikes, see [...]*, response to question 15 of Q1 – questionnaire to customers – Phase I, [...]*: "*OTC 'listed look-alike' products can be viewed as substitutes to their ETD*

on derivatives, DB came to the conclusion that the scale of aggregated credit risk varies significantly between the OTC and exchange segments, and is approximately 4 times larger OTC than on exchange, with operational risk events occurring more often OTC, legal risk being comparable in the two segments thanks to ISDA standard agreements, and liquidity risk higher OTC than on-exchange (as shown by the high liquidity of the exchange segment even throughout the recent economic crisis).[223] In a similar vein, a customer indicated during the second phase market investigation that *"while it is possible to create OTC contracts that 'look-alike' for most ETD instruments (particularly for short-term rates and equities except where exclusivity in e.g. Equity Index products constraints choice), the different pricing, processing including collateral/margining balance sheet impact mean that only a few are seamlessly substitutable.*"[224]

(319) It follows from the above that at best some customers, principally large interdealer banks, could under certain circumstances substitute some exchange-traded contracts, principally options,[225] with ETD lookalikes. Given that the economics of replicating an ETD contract in the OTC environment provides little justification for such a strategy, due, *inter alia*, to the fact that liquidity for the ETDs in question has settled on the Notifying Parties' exchanges[226], the phenomenon of ETD lookalikes is and will be very limited.

---

equivalents, and can be created and traded for (in theory) any ETD. However, they are not directly substitutable, in that they differ with respect to the credit risk, market impact, price, speed, liquidity and other factors involved in the trade – as discussed in answer to question 15 and subsequently". Finally, at the Oral Hearing when asked to explain why banks would decide to put liquidity on exchanges at all and what would be the drivers of such decision, the Notifying Parties replied that the banks *"decide to put liquidity on exchange because it is where the best price and best liquidity is. It's an open and transparent market, on a screen, they can see the complete depth of the prices, it's where the tight bid-offer spread is"*.

223 See Deutsche Boerse Group, White Paper, The Global derivatives Market – An Introduction, April 2008, p.24-25, available at: http://deutsche-boerse.com/mr/binary/0A4A6E3F8ED836BDC1257457002D5669/$File/2008-04%20DB_WP%20GlobalDerivativesMarket_e.pdf?OpenElement (viewed on 26 January 2012).

224 UBS, response to question 18 of Q8 – Questionnaire to customers – derivatives – Phase II, [...]*.

225 The same does not apply for futures. As explained by BNPP, agreed minutes of conference call of 16 September 2011, [...]*, "*As concerns BNPP's hedging needs, listed products are indispensable and could not be replaced by any OTC contract. This is because trading OTC needs to be complemented by listed products which are used to hedge the delta position. While some hedging is also done in the OTC market, it is not substitutable to that done on exchange. To hedge its delta positions and to cover the balance of the risk, BNPP buys and sells futures every minute. This can be done only on exchange where the order book has a high liquidity in these products. The same strategy would be very onerous OTC as it is a voice market where finding the counterparty for this type of contract is very difficult and thus impossible to perform on a regular basis in the same way as is done on exchange. For these transactions, which represent 80% of BNPP's trades, there is nowhere else to go even if the fees to trade listed products were to increase substantially. As concerns options, there would be less of a problem as hedging is more static (no trades every minute). This difference is also evidenced by the fact that trading fees for futures are more expensive than options because the exchanges (such as Eurex and NYSE) leverage the lack of alternatives for the clients*."

226 This has been also acknowledged by the Notifying Parties at the Oral Hearing when they stated that banks *"decide to put liquidity on exchange because it is where the best price and best liquidity is. It's an open and transparent market, on a screen, they can see the complete depth of the prices, it's where the tight bid-offer spread is."* See recording of Oral Hearing, 27 October, afternoon 03:02:20

(320) Furthermore, proposed regulatory developments are likely to require all or substantially all of the ETD lookalikes in question to be traded or at least cleared on exchange (see further Section 11.2.3.2.4 below), at which point, if the envisaged regulatory changes are enacted, substitutability will be excluded entirely for all categories of customers.

c. The majority of ETDs could not be substituted by OTC contracts as OTC contracts generally have different characteristics and fulfil different needs

(321) ETDs and OTC derivatives have fundamentally different characteristics in terms of, notably, average trade size, market participants, trading strategies, clearing arrangements, costs and legal risks. They each have their own reason to exist as they cater to different customer needs.

(322) ETDs are characterised by frequent trades in relatively small sizes whilst OTC derivatives trades are less frequent but of much bigger size. In this respect, an OTC trading platform, ICAP, indicated that *"it would be rare to have an interest rate swap for an amount less than EUR20m."*[227] This is evidenced by average trade sizes executed on exchange and OTC. For instance, as concerns a vanilla[228] interest rate derivative, the average trade size of interest rate futures on exchange is EUR 100 000 per lot[229] with a normal execution of 5 lots while the average size of an OTC vanilla interest rate swap is EUR 200 million.[230] It follows that a normal size OTC interest rate swap could not realistically be executed on an exchange.[231]

(323) The chart below in Figure 6 shows the average trade size for fixed income derivatives executed on Eurex and on ICAP's platform.

227 ICAP, observations on the SO issued in case M.6166 Deutsche Börse/ NYSE Euronext submitted pursuant to article 16(1) of the Implementing Regulation, 26 October 2011, paragraph 6.18 [...]*.

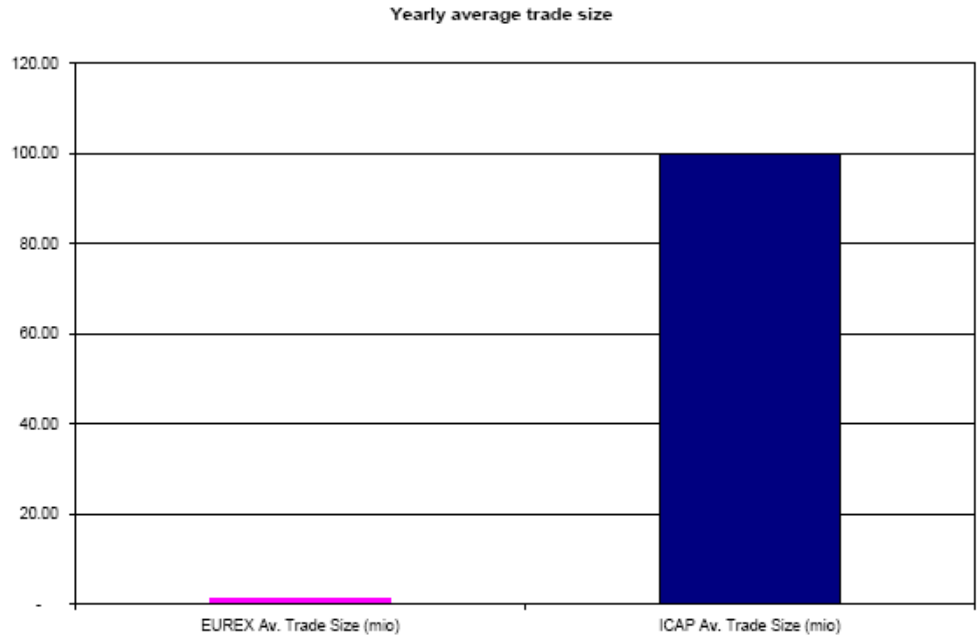
228 Vanilla, as opposed to exotic, refers to a simple derivative contract within a category.

229 Minimum number of contracts that can be traded.

230 LSE, response to question 5 of Q3 - Questionnaire to competitors [...]*. Figures based on LCH data.

231 LSE, response to question 5 of Q3 – Questionnaire to competitors [...]*.

Figure 6: Yearly average trade size for fixed income derivatives executed on Eurex and ICAP



Source: ICAP's observations on the SO, paragraph 6.17.

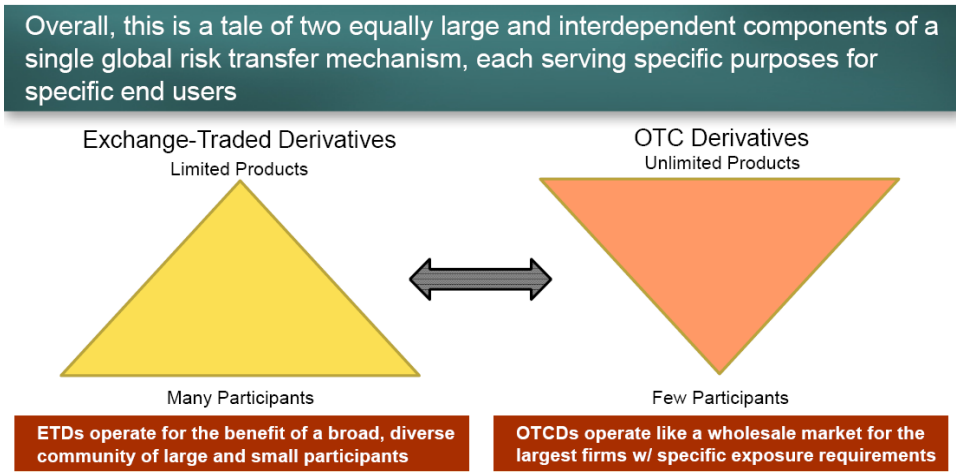
(324) These statistics are in line with the purpose for which OTC derivatives are used by market participants. According to ICAP, *"OTC swaps are used to hedge large amount of IR exposure linked to real economy events such as the underwriting of a corporate bond"*.[232]

(325) In terms of market participants, while the number of active participants on exchanges varies from 20 000 to 150 000, the number of OTC participants is between 200 and 500.[233] Indeed, as illustrated in the picture below in Figure 7, the dynamic between the number of participants and the number of traded products is precisely the opposite as far as ETDs and OTC derivatives are concerned: ETDs serve a very broad range and potentially unlimited number of participants willing to trade a small subset of fully standardised derivatives contracts whilst in the OTC environment, a small subset of players trades a potentially unlimited number of different products allowing for unlimited customisation.

232 Agreed minutes of a teleconference call with ICAP of 18 August 2011, paragraph 2 [...]*.

233 ICAP, observations on the SO issued in case M.6166 Deutsche Börse/ NYSE Euronext submitted pursuant to article 16(1) of the Implementing Regulation, 26 October 2011, paragraph 6.15 referring to ISDA data [...]*.

Figure 7: Number of participants and number of traded products



Source: TABB Group Study, The Global Risk Transfer market: Developments in OTC and Exchange-Traded Derivatives, November 2010, slide 22.

(326) ETDs and OTC derivatives are also subject to different rules. While ETDs are governed by the trading rules of the venue that designed the contract, OTC derivatives are subject to bilateral contracts negotiated between the parties to the trade, which may use a standardised format such as ISDA templates.

(327) The market investigation indicated that customers generally tend to value different characteristics of ETDs and OTCs and arbitrate between them depending on their needs at the time of trade. Indeed, customers generally consider objective characteristics of ETDs, such as transparency in the price discovery mechanism, the lack of counterparty risk and the ability to get out of a position quickly as advantages of on-exchange trading. These, in their view, are generally the opposite of the advantages of OTC trading which relate to flexibility, lack of transparency and the possibility to execute big trades without market impact.[234] Indeed, in terms of pricing and transparency, the dynamics prevailing on exchange and in the OTC space are fundamentally different: *"ETDs involve short terms by their nature, provide greater certainty through their constant pricing and due to their higher and more diverse participation have what might be called "self sustaining liquidity". In OTC inter-dealer markets, the banks make prices to each other, and actively "take" offers or bids form the exchange central order book to temporarily hedge OTC positions. Although an ETD position is imperfect and only suitable risk mitigation for a short duration, its immediacy due to high liquidity, allows it to be used this way very*

[234] See replies to question 14 of Q2 – Questionnaire to investment firms and retail intermediaries and to question 19 of Q1 – Questionnaire to customers.

efficiently."[235] It follows that the use and the appeal of OTC trading is different from trading ETDs and cater for different trading strategies.

(328) ETDs and OTC derivatives are also generally not suitable for the same type of trading strategy. While ETDs are suitable for short-term holding of positions, OTC markets, in contrast, better cater for longer term strategies. This is because ETDs, due to their high liquidity, generally trade at narrow bid-ask spreads in a fully straight-through processing[236] electronic manner with fast electronic matching for price discovery, whilst OTC markets have generally wider bid-ask spreads and still involve voice broking for price discovery, at least for highly customised contracts. As a result, it is generally more difficult to get out of a position in the OTC market as compared to the highly liquid on-exchange environment.[237]

(329) The difference between OTC derivatives and ETDs was also recognised by Liffe's Hugh Freedberg in his open letter to the Financial Times at the time of DB's bid for Euronext in 2006 (at the time, Mr. Freedberg was Liffe's Chief Executive and he is currently Liffe's Chairman). In this letter, he stated: *"we do not agree with Deutsche Boerse's statement that "competition in derivatives trading is between exchanges and the over the counter (OTC) markets." On the contrary, we consider there is a clear difference between the customised contracts traded OTC and standardised contracts traded on exchange.*"[238] This statement also holds true today: such a difference between the exchange and the OTC markets is reflected in some recent NYX internal documents where Liffe's future contracts are referred to as being "*transparent*", *"centrally cleared"*, able to *"trade into a net position"*, having *"short maturities"*, *"wider risk distribution than OTC"*, *"lower financial and technical barriers to entry than OTC"*, having *"self sustaining liquidity"* and for which liquidity is *"more reliable in times of crisis"*. This is in contrast to OTC derivatives which are considered to be *"opaque, bilateral, non-netting, long maturities (and hence risk exposure), high financial and technical hurdles to trade, unreliable in times of crisis, and a concentration of risk (engendering the "too big too fail" institutions)".*[239]

(330) Throughout the proceedings, the Notifying Parties have consistently claimed that ETDs and OTC derivatives are substitutable as they serve exactly same purpose. In this respect, the TABB Study on derivatives usefully explains that while *"they both compete to serve wholesale risk transfer needs*", OTC derivatives and ETDs *"represent significant differences in the needs that they serve."*[240] Indeed, at a very general level, the Commission does not dispute that all derivatives, be they traded on exchange or OTC, ultimately serve to transfer risk from one economic agent to another. However, despite this general function, OTC derivatives and ETDs are different instruments used

---

235 ICAP, observations on the SO issued in case M.6166 Deutsche Börse/ NYSE Euronext submitted pursuant to article 16(1) of the Implementing Regulation, 26 October 2011, paragraph 6.22 [...]*.

236 Straight-through processing refers to the ability to conduct a trade fully electronically without any need for manual intervention.

237 LSE, response to question 5 of Q3 – Questionnaire to competitors [...]*.

238 See FT Europe's two big derivatives exchanges compete head-on, 9 November 2006, available at: http://www.ft.com/intl/cms/s/0/59bd1750-6f99-11db-ab7b-0000779e2340.html#axzz1TJtvdq00 (November 2011)

239 See NYX's internal document provided in response to the Commission's RFI of 1 July 2011, Process and Operational Innovation (POI), November 2010, p.69.

240 TABB Report, slide 11.

in different circumstances (albeit in most cases by the same customers). Indeed, there is overwhelming evidence in the file indicating that traders that use both ETDs and OTC derivatives use them for different purposes. In this respect, AFME,[241] the major association of exchange customers, stated at the Oral Hearing that there is *"an obvious and widely recognized difference between ETDs and OTC derivatives for everyone operating in the derivatives sphere as they clearly serve different purposes."*[242]

(331) Similarly, ICAP in its capacity as interested third party admitted to the proceedings noted in its reaction to the SO that *"OTC and ETD instruments have a completely different purpose as financial instruments and this is evidenced by the differences in their characteristics. These differences in turn prevent any competitive interaction between the two categories of products. [...] While there are complementarities between ETDs and OTC derivatives the distinctions between the two are so fundamental that even at the margins there is no scope for identifying any competitive constraint exercised by OTC on ETD products."*[243]

(332) The market investigation showed that in most cases, ETDs cannot be substituted by OTC contracts.[244] This is because the majority of OTC contracts, be they flex contracts, block contracts or pure OTC contracts, are contracts offering customised solutions.[245] Indeed, the very *raison d'être* of OTC contracts, which is to allow a perfect hedge for any type of risk, is incompatible with the main characteristics of ETD contracts which derive from the full standardisation of all contract parameters. By their very nature, ETD contracts cannot be customised to cater for traders' hedging needs and are used on a "take it or leave it" basis. Even the most standardised OTC contracts, such as vanilla[246] interest rate swaps, allow for a degree of customisation.[247]

(333) In addition, ETDs have a fixed start and end as a result of which each ETD is identifiably the same contract as a similar contract held by other parties. OTC derivatives, on the other hand, start at the trade date (or another specified date) and last for the duration of the contract spanning anywhere from 2 years up to 30 years. As a result, each *"OTC derivative stands alone as an inherently unique transaction so that any new trade is clearly different transaction to that held by any other party (this is not altered by clearing, as the start and end dates will still differ)"*.[248] Also, ETDs are *"almost universally short maturity contracts by design – their characteristic high liquidity*

---

241 Association of Financial Markets in Europe includes all major pan- European and global banks, as well as other financial market participants.

242 AFME's presentation at the Oral Hearing, 28 October 2011 [...]*.

243 ICAP, observations on the SO issued in case M.6166 Deutsche Börse/ NYSE Euronext submitted pursuant to article 16(1) of the Implementing Regulation, 26 October 2011, page 3 [...]*.

244 See, in particular, from the customers' perspective, replies to question 13 of Q1 – questionnaire to customers – Phase I; question 12 of Q2 – questionnaire to investment firms and retail intermediaries – Phase I; question 11 of Q8 – Questionnaire to customers – derivatives – Phase II; from the competitors' standpoint, see in particular replies to question 8 of Q3 – questionnaire to competitors – Phase I; and question 5 of Q10 – questionnaire to competitors on derivatives.

245 Agreed minutes of a meeting with AFME of 24 August 2011, [...]*.

246 The term vanilla refers to simple and relatively standardised products.

247 For instance, the intervals for the interest rate payments are subject to the agreement of the parties to a contract.

248 ICAP, observations on the SO issued in case M.6166 Deutsche Börse/ NYSE Euronext submitted pursuant to article 16(1) of the Implementing Regulation, 26 October 2011, paragraph 6.4, [...]*.

is a by-product of having a short horizon to maturity."[249] The typical exposure offered by ETDs is three months and in order to extend that exposure, ETDs must be replaced by a new three month ETD contract; this is also true for transactions that refer to a longer-term risk, such as long-term interest rate derivatives.

(334) The market investigation generally indicated that customers use OTC derivatives as a default choice (and not as an equal substitute) in situations when a listed contract cannot provide the client with the correct risk profile.[250] In this respect, one respondent noted that the *"Decision between ETD and OTC depends on how effectively a position can be hedged with a standardised ETD compared to a tailor-made OTC derivative. If ETD is applicable, ETD is preferred to OTC."*[251] Indeed, the liquidity in contracts offering identical exposure to ETDs is generally concentrated in the ETD itself on exchange, and therefore, there is in principle no reason to trade OTC.[252] As a result, customers constantly facing the trade-off between liquidity in ETDs and OTC flexibility allowing for a perfect hedge, prefer to go to OTC if they need to flex certain parameters of a contract which could not be done on order book[253]. One market participant stated that *"The OTCs give us more flexibility (dates and amounts) while the ETDs give us more liquidity."*[254] Similarly, it was noted that the *"Primary factor for product type (i.e. listed vs. OTC) is where product liquidity is - for Rates, Credit & FX majority of liquidity is OTC, for Equity derivs majority is listed,"*[255] and that *"For equity derivatives, the decision to trade OTC is driven by availability and liquidity of the exchange traded instrument, client requirement for non-standard terms and the preference of the client."*[256] The same customer indicated that OTC is preferred when customers need a tailor-made solution: *"The main motivation for trading OTC is the bespoke nature of the contract, with exchanges fees also being a motivation for some clients…for interest rate derivatives – clients often requiring customization."*[257]

(335) Similarly, ICAP explained that *"where it is possible for customers to trade on exchange (i.e. should a type of contract be available both OTC and on exchange), users would prefer to do so (given the significantly reduced risk in trading on exchange given that*

---

249 ICAP, observations on the SO issued in case M.6166 Deutsche Börse/ NYSE Euronext submitted pursuant to article 16(1) of the Implementing Regulation, 26 October 2011, paragraph 6.4, [...]*.

250 Replies to question 3 of Questionnaire Q8 – Questionnaire to customers on derivatives – Phase II. [...]*.

251 DZ Bank AG, response to question 3 of Q8 – Questionnaire to customers on derivatives – Phase II, [...]*, See also reply to the same question by the Warsaw Stock Exchange, [...]*, according to which "*Market players like banks and asset management hedge or trade on interest rate derivatives mainly OTC, where they can enter into "tailor made" contracts aligned to the cash flows, trade volume and dates they need. The "tailor made" products are OTC domain*".

252 See section 11.1.1.2.2.1.511.1.1.2.2.1.5 b of this Decision for discussion on ETD lookalikes.

253 Some replies to question 3 of Questionnaire Q8 – Questionnaire to customers on derivatives – Phase II, point also at the opposite situation which can occur when liquidity is concentrated in the OTC products; for example, see the following: "*Foreign Exchange, because OTC is the only liquid market (according to B. Metzler seel. Sohn & Co KGaA,* [...]*)", "*The non liquid ones are the normal for OTC" ([...]*), "In principle, depending on the liquidity of the contract. If listed markets are illiquid, there is preference for OTC*" (ING Bank Group, [...]*), "*Currency options. Liquidity on exchange too small. In general we prefer exchange traded products*" (UniCredit Bank AG, [...]*).

254 Caixa d'Estalvis i Pensions de Barcelona, response to question 3 of Q8 – Questionnaire to customers on derivatives – Phase II, [...]*.

255 [...]*, , response to question 3 of Q8 – Questionnaire to customers on derivatives – Phase II, [...]*.

256 [...]*,, response to question 3 of Q8 – Questionnaire to customers on derivatives – Phase II, [...]*.

257 [...]*, response to question 5 of Q8 – Questionnaire to customers on derivatives – Phase II, [...]*.

clearing is through a central counterparty); and secondly, trading OTC is much less efficient, given the liquidity of ETDs and the simpler operational process and lower costs of trading on exchange."[258]

(336) The Notifying Parties criticised in their response to the SO that the Commission did not analyse switching behaviour of customers that trade both ETDs and OTC derivatives. In this respect, the Commission notes that in response to a switching question, out of 29 customers who trade both ETDs and OTC derivatives and that replied to the relevant question, only 8 customers indicated that they would switch to OTC. 14 customers unequivocally indicated that they would continue to trade on exchange (possibly switch to another exchange if available) and 7 stated that their choice would potentially be influenced by other factors such as the liquidity or choice of their own clients.[259] It follows that even customers that have mandates to trade OTC would be reluctant to switch to OTC for contracts that they currently trade on exchange.

(337) As concerns the cost of trading on exchange and in the OTC environment, the Commission's market investigation did not provide a conclusive picture as to the general cost levels of ETDs compared to OTC derivatives.[260] However, as concerns the comparison between ETDs and OTC contracts which provide the same economic exposure, the market investigation clearly indicated that trading of highly liquid ETDs is significantly cheaper on-exchange than trading of contracts offering similar economic exposure OTC.[261] This is principally due to the high automation of the process without any human intervention and, in particular, because liquidity in these contracts is concentrated on-exchange, resulting in smaller bid-ask spreads offsetting explicit trading and clearing fees charged by exchanges as compared to OTC. This also seems to be in line with the analysis outlined in DB's White Paper on derivatives, which states that "*from customers' point of view trading on exchange is approximately 8 times less expensive than trading OTC*"[262] and that "*transaction costs for exchange-traded derivatives are particularly low."*[263]

---

258 ICAP, observations on the SO issued in case M.6166 Deutsche Börse/ NYSE Euronext submitted pursuant to article 16(1) of the Implementing Regulation, 26 October 2011, paragraph 6.19 [...]*.

259 See responses to question 11 of Q8 – Questionnaire to customers on derivatives – Phase II.

260 See replies to questions 8, 9 and 10 of Q8 – Questionnaire to customers on derivatives – Phase II; questions 8, 9 and 10 of Q9 - Questionnaire to OTC trading platforms- Phase 2; questions 2, 3 and 4 of Q10 – questionnaire to competitors on derivatives – Phase II; and questions 2, 3 and 4 of Q14 - Questionnaire on derivatives (OTC platforms, short version) - Phase 2. See also BNP Paribas, response to question 17 of Q8 – Questionnaire to customers on derivatives – Phase II, [...]*, which, as acknowledged by the Notifying Parties (response to the SO of 5 October 2011, footnote 106), indicated that for ETD look-alikes, the cost of trading is cheaper.

261 See replies to question 15 of Q2- Questionnaire to investment firms and retail intermediaries. See also for instance [...]*; BNPP, response to question 14 of Q1 – questionnaire to customers – Phase I, [...]*.

262 See Deutsche Boerse Group, White Paper, The Global derivatives Market – An Introduction, April 2008, p.30, available at: http://www.scribd.com/doc/61304935/Global-Derivatives-Market (September 2011). The methodology used divides the revenues of exchanges and broker dealers by the notional amount traded on-exchange and OTC, respectively based on BIS statistics.

263 See Deutsche Boerse Group, White Paper, The Global derivatives Market – An Introduction, April 2008, p.32, available at : http://www.scribd.com/doc/61304935/Global-Derivatives-Market (September 2011).

(338) In this respect, the TABB Study, comparing transaction fees[264] on exchange and OTC also explains that "*transaction fees vary widely from ETDs to OTCDs and, on a nominal basis, OTCD clearing fees are 88% to 3700% greater than the highest transaction fees in ETDs.*"[265] TABB adds that *"although these examples are not necessarily apples to apples comparisons – since OTCD fees are clearing-only and the ETD examples include both clearing and exchange fees – they do illustrate the nominal divergence between OTCDs and ETDs."*[266]Indeed, and as also pointed out by TABB, should trading fees be added to the OTC segment, this would only exacerbate this divergence.

(339) The Notifying Parties contested at the Oral Hearing the relevance of the price comparison between ETDs and OTC derivatives, but conceded that "*even though OTC may be more expensive, 90% of trade is still done anyway OTC. They argued that there are many reasons for using OTC, such as to hedge any risk and to avoid posting margin, at least in the past, and that this explained the reasons for the success of OTC.*"[267]

(340) The market investigation also provided indications that some of the most liquid exchange-traded contracts, in particular futures, could hardly find a substitute in an OTC contract. This is due to the very nature of exchange-traded futures which are used by large investment banks for hedging of delta positions they have in the OTC market.[268] Such hedging activity implies frequent trades to adjust to constantly changing risk exposure.[269] Given that it is by definition more difficult to find a counterparty in the OTC market, as the OTC market is by definition not very liquid as concerns these products, such activity could simply not be replicated in the OTC market.

(341) In contrast with the Notifying Parties' arguments and with all the remaining claims they made in these proceedings, NYSE's public response to the recent Commission Communication on a Roadmap for ensuring efficient, safe and sound derivative markets[270] accurately summarises the main reasons why some customers have chosen to transact business OTC which may include: *"(i) A desire to use the economic profile of bespoke or non-standardised contracts. (ii) A desire to avoid exchange and clearing fees (note that considerable evidence exists that the increased operational cost of OTC derivatives often makes them more expensive than exchange trading or central clearing). (iii) A desire to negotiate, package and trade large deals without changing the prevailing market price. (iv) A desire to maintain market opacity and wider, more profitable spreads. Recognising the legitimate nature of the first three of these motivations, at least in some circumstances, NYSE Liffe has pioneered the clearing of OTC derivatives to complement its exchange traded business*".[271]

---

264 The compared transaction fees for ETDs include both trading and clearing fees while for OTC trades the compared fees are only clearing fees as there is no trading fees.

265 TABB Report, slide 35.

266 TABB Report, slide 35.

267 See recording of Oral Hearing, 27 October 2011, ,[…]*, morning session, 03:30:50.

268 Delta is the ratio comparing the change in the price of the underlying asset and of the derivative contract.

269 See agreed minutes of a teleconference call with BNPP of 16 September 2011, [...]*; and agreed minutes of a teleconference call with LSE of 21 September 2011, [...]*.

270 COM(2009) 332 final.

271 Response to the European Commission Communication on a Roadmap for ensuring efficient, safe and sound derivative markets, September 2009, available at

(342) On the basis of the above, the Commission considers that ETDs and OTC contracts have different and autonomous rationales for their existence aiming at addressing different customer needs. As a result, customers would not readily switch from ETDs to OTC derivatives should the merged entity attempt to exercise market power.

d. Critical loss analysis performed by the Notifying Parties does not evidence substitutability between ETDs and OTC derivatives

(343) In their response to the SO, the Notifying Parties argue that the Commission's market investigation results are equally consistent with a wider market definition than that of trading of ETDs[272]. The Notifying Parties reached this conclusion based on critical loss analysis using the market investigation responses[273]. The Notifying Parties argue that it is possible to show that the merged entity would not be able to profitably raise the price of trading ETDs by 5-10% – that is to say, other competitive constraints, such as OTC trading, would defeat any price increase.

(344) Critical loss analysis may be a simple and appealing methodology to assess the SSNIP question. However, because of its simplicity, critical loss analysis relies on numerous assumptions and its use has been subject to significant debate, in particular for industries where fixed costs are the main source of costs.

(345) Typically, where gross margins are high, critical loss analysis tends to define markets as wide because a price increase would be unprofitable with a few lost sales. However, high margins also tend to indicate that firms have a certain degree of market power and that, in fact, price elasticity may be rather low[274]. This would not only suggest that actual loss would in fact be low, but it would also suggest that markets may possibly be narrow. Indeed, firms are expected to set prices that maximise profits and price is inversely related with the demand elasticity faced by the firm. Hence, low price elasticity tends to lead to high prices (and high margins).

(346) The Notifying Parties' critical loss analysis is not informative for the purposes of casting doubts on the Commission's product market definition where ETD and OTC are separate markets. The Notifying Parties submit a very simplistic analysis which assumes that products are homogeneous, that there is no price discrimination and disregarding the fact that in this industry costs are mostly fixed.

(347) Indeed, the Commission notes that the critical loss analysis is of little use in differentiated products such as those at hand. It is clear that ETD contract characteristics vary substantially (for instance maturity, underlying, strike level) and that there can be considerable variability in the margins earned on different ETD contracts. Furthermore,

---

https://circabc.europa.eu/d/d/workspace/SpacesStore/52cf8134-69f5-4a9c-9050-0f87e91e8ca0/nyse_euronext_en.pdf.

272 Notifying Parties' response to the SO, Introduction, paragraph 84.

273 Notifying Parties' response to the SO, Annex I.3: Compass Lexecon Statistical Assessment of Market investigation Questions.

274 The Commission notes that this has also been pointed out by another jurisdiction: "if a firm sets price well above incremental cost, that normally indicates either that the firm believes its customers are not highly sensitive to price (not in itself of antitrust concern, [...]*) or that the firm and its rivals are engaged in coordinated interaction", United States Department of Justice and the Federal Trade Commission Horizontal Merger Guidelines, 19 August 2010, paragraph 2.1.1.

the Commission has shown that the Notifying Parties discriminate among different categories of customers[275]. Instead, the Notifying Parties' analysis assumes a constant margin earned for all ETD products. The use of an average price and a single price increase across the board to calculate the critical loss is not consistent with the way in which a hypothetical monopolist would price in this industry. It is possible that a 5-10 % average price increase could profitably be achieved by increasing prices to certain customers and for some particular ETD contracts.

(348) Finally, the Notifying Parties disregard the fact that fixed costs are the main source of costs in this industry. In such types of industries, gross margins are high and therefore both the critical loss and the actual loss are likely to be low. Moreover, the Commission cannot rely on the input data employed by the Notifying Parties in the analysis. The Notifying Parties assume a certain level of gross margins rather than using their actual margins figures. Furthermore, the actual loss figures are not estimated but are derived from the Notifying Parties' analysis of the replies to the Commission's market investigation. The outcome of the Notifying Parties' analysis is therefore questionable.

(349) Finally, a critical loss analysis assumes a very short run perspective. A hypothetical monopolist could find it profitable to increase prices on a permanent basis by modifying its current product offer, for instance, by modifying contract maturities or the portfolio of products offered. Hence, this would lead to gross margins (based on avoidable costs) to be lower than those based on short run variable costs. However, the Commission cannot judge the actual gross margin figures employed by the Notifying Parties as they do not constitute actual gross margin data

(350) Therefore, the Commission considers that the Notifying Parties' critical loss analysis does not evidence a single product market definition encompassing ETD and OTC markets.

e. ETDs and OTC respond to complementary trading strategies

(351) In their reply to the decision opening the proceedings, the Notifying Parties indicated that *"traders are increasingly actively choosing between OTC trading and exchange-trading, often on a trade-by-trade-basis."*[276] To support their claim, the Notifying Parties refer to NYSE's price discovery platform, Cscreen, which allows the quoting of prices of block size trades in ETDs and OTC derivatives side-by-side.[277]

(352) As already explained above, as concerns ETD contracts traded on the Notifying Parties' platforms, customers have a choice between exchange-trading and OTC trading on a trade-by-trade basis only to the extent that there is a lookalike of an ETD contract available in the OTC environment. As concerns other OTC contracts that do not fall in the category of ETD lookalikes, they fulfil different needs that cannot be satisfied through an exchange contract. For instance, as concerns the use of an interest rate swap as compared to an exchange traded interest rate future, the market investigation indicated that they are used for very different purposes. In this respect, ICAP noted that *"Many wholesale users*

275 See Recital (299) of this Decision.

276 Parties' response to the decision opening the proceedings of 4 August 2011, Derivatives market definition, paragraph 20.

277 See discussion on Cscreen in section 11.1.1.2.2.1.6 c of this Decision.

use both ETDs and OTC derivatives. However, the purpose and the circumstances in which ETDs and OTC derivatives are used, from ICAP's perspective as a broker, appear to be substantially different. While IR futures on exchange are highly standardised, liquid products traded in an average size of about € 3m or less, with a minimum trade size of € 100k, OTC swaps are used to hedge large amount of IR exposure linked to real economy events such as the underwriting of a corporate bond, and have an average transaction size is (sic) in the order of €100 m, and a practical minimum transaction size of €10m (5 year swap)."[278] This would indicate that ETDs and OTC are complementary rather than substitutable.

(353) Similarly, to underline the inherent complementarity between ETDs and OTC derivatives, one respondent in its response to questions enquiring about the nature and characteristics of ETDs and OTC derivatives stated that: *"The Commission's question neglects the point in seeking to identify how the OTC and Listed environments may be comparable rather than acknowledging the fundamental, historical and practical reasons why the two markets serve different purposes, are symbiotic, and can continue to co-exist in the future to serve users in a complementary and effective manner."*[279]

(354) The coexistence between ETDs and OTC derivatives was also recognised by DB in its White Paper where DB explains the evolution of a derivative contract. *"Most derivatives products are initially developed as OTC derivatives. Once a product matures, exchanges "industrialize" it, creating a liquid market for a standardized and refined form of the new derivatives product. The OTC and exchange-traded derivatives then coexist side-by-side."*[280] Indeed, the OTC market is generally viewed as an incubator for exchange products.[281] The life cycle of a derivatives contract starts at its birth in the OTC environment and develops over time to reach the maturity when it can become traded on exchange. While it is true that most derivatives contracts do not reach this point, OTC contracts generally complement rather than substitute exchange contracts. This is also supported by NYSE which, in replying to a CESR Consultation, stated that "*NYSE Euronext considers that it is appropriate that non-standardised contracts should continue to exist in order to provide bespoke risk management tools to customers. Each derivatives market is different and should therefore be considered separately in this respect, e.g. fixed income, equities, soft commodities, energy and metals*".[282]

(355) ETDs and OTC derivatives within the same asset class are generally not used for the same purpose by their users. Indeed, according to the TABB report, OTC derivatives are used in specific circumstances where ETDs cannot achieve the same goal: *"Banks, financial firms*

---

278 Agreed minutes of a teleconference call with ICAP of 18 August 2011, [...]*.

279 BCG Brokers LP, response to question 10 of Q9 – Questionnaire to OTC trading platforms.

280 See Deutsche Boerse Group, White Paper, The Global derivatives Market – An Introduction, April 2008, p.10, available at : http://www.scribd.com/doc/61304935/Global-Derivatives-Market (September 2011).

281 See agreed minutes of a teleconference call with Goldman Sachs of 19 September 2011, [...]*; FOA, response to question 14 of Q8 - – Questionnaire to customers – derivatives – Phase II, [...]*: "*It should also be noted that OTC markets are the "birthpool" for the emergence of standardised OTC contracts in new markets which, once they have reached a certain volume, only then become eligible for multilateral execution on a central marketplace*."

282 Point 2.9 of Comments by NYSE Euronext on CESR's Consultation on Standardisation and Exchange Trading of OTC Derivatives, 30/08/2010, available at http://www.esma.europa.eu/index.php?page=responses&id=169 (October 2011).

and large corporations use OTCDs to manage interest rate and currency risks that are too large or complex to manage using ETDs. Firms in the food, energy and manufacturing industries use OTCDs to manage physical commodity risks for precision that cannot be achieved in ETDs."[283]

(356) The fact that ETD derivatives and OTC derivatives within the same asset class do not compete directly but are rather complementary products addressing different customer needs is also evidenced by the different licensing policy licence-holders of equity indices apply to ETDs and OTC derivative products. It is telling that STOXX, the biggest European index [discussion of STOXX licensing practice]* [284][…]*[285] […]*.[286] If it were the case, as the Notifying Parties claim, that OTC products were directly competing with listed products, exchanges would have no incentive to grant such licences. When questioned about these incentives at the Oral Hearing, Deutsche Börse was not able to explain how the fact that STOXX was willing to license a range of OTC dealers but not rival derivatives exchanges which had requested such a licence (such as Turquoise) was consistent with the claim that OTC derivatives and ETDs were in the same market. It limited itself to stating that this was a commercial choice underlined by the desire to avoid fragmentation of liquidity.[287] Indeed, this implies that OTC licenses do not have an impact on fragmentation of liquidity as OTC contracts are used in parallel to ETDs and no major substitution is likely to occur between the two. More generally, this implies that licence providers do not see an economically unfavourable outcome to licensing to the OTC world as this would not erode their ETD franchise, whereas licensing to a direct exchange competitor would result in a commercially unfavourable outcome. In this general context, one of the OTC licence-holders also explained that while these OTC contracts are offered on the same underlyings, they do not directly compete with listed products as they are customised and typically of large size.[288]

(357) The results of the market investigation also confirm that customers generally consider the two segments as complementary. In this regard, one market participant stated that "*The OTC and Exchange Traded markets should to co-exist and complement each other as has been done for two generations*"[289] and explained that "*It may be a misnomer to speak of standardized OTC contracts. There are daily benchmarks which attract a higher percentage of the overall volume but the bespoke nature of risk mitigation at the heart of OTC trading ensures that Exchange Traded listed products do not approximate the purpose of OTC products. This is why Exchange Traded and OTC markets have always been complementary with each other. The purpose of each market is distinctly different and in combination serve the needs of market participants and end users. Therefore, exchange 'lookalike' products have historically not been successful as the listed,*

---

283 TABB Report, slide 14.

284 See footnote 77 of this Decision.

285 See LSE, reply to question 14 of Q3 – questionnaire to competitors – Phase I, [...]*, See agreed minutes of a meeting with AFME of 24 August 2011, [...]*, para. 11. See internal doc "Memo on FTSE 100 index futures - Turquoise Response", April 2011, ENX-00262- Email from […]* subject: Bullet points for EDX exchange leaders dinner introduction, 4/06/2010, ENX-00888 -00002.

286 See response to the Commission's Second RFI of 13 September 2011 and agreed minutes of teleconference call with BNPP of 16 September 2011, [...]*.

287 See recording of the Oral Hearing, 27 October 2011, morning session, at 3:49:00.

288 Agreed minutes of a teleconference call with BNPP of 16 September 2011, [...]*.

289 BGC (Cantor Fitzgerald Group), response to question 16 of Q8 – Questionnaire to customers – derivatives – Phase II, [...]*.

completely standardised characteristics do not suit the flexibility requirements and risk matching needs of end users".[290]

(358) Moreover, ETD and OTC markets are organised very differently which evidences different dynamics prevailing in the two environments. For instance, while exchanges predominantly operate a closed vertical silo model where customers have no choice of clearing-house, OTC markets are, where relevant, generally characterised by an open clearing model where customers indicate how and where they want their contracts cleared irrespective of whether a contract is traded bilaterally or on a multilateral trading platform.[291]

(359) On the basis of the above, the Commission considers that ETDs and OTC derivatives are not used by their users as substitutes since they correspond to different and complementary trading strategies.

f. The Notifying Parties' internal documents do not sustain the claim that substitution between ETDs and OTC derivatives occurs regularly

(360) In their response to the decision opening the proceedings, the Notifying Parties refer to a number of their internal documents which they argue evidence the substitutability between ETDs and OTC derivatives.[292] The same documents were referred to by the Notifying Parties in their response to the SO.

(361) However, a close analysis of these documents rather points to the existence of two phenomena that are not disputed by the Commission. First, these internal documents show the co-existence of two parallel ETDs and OTC derivatives environments where any substitution occurs at the margin and only for ETD lookalikes; and second, that exchanges continuously try to capture volumes from the OTC market and bring more standardised contracts on exchange. In this context, many internal documents rather point towards a potential one way competitive constraint exercised by ETDs on OTC derivatives while no internal document directly points towards substitution between ETDs and OTC in response to a price increase.

---

290 BGC (Cantor Fitzgerald Group), response to question 14 of Q8 – Questionnaire to customers – derivatives – Phase II, [...]*. See also, more specifically with reference to hedging, BNPP, agreed minutes of conference call of 16 September 2011, [...]*: "*As concerns BNPP's hedging needs, listed products are indispensable and could not be replaced by any OTC contract. This is because trading OTC needs to be complemented by listed products which are used to hedge the delta position*". See agreed minutes of conference call with Goldman Sachs of 16 September 2011, [...]* and agreed minutes of conference call with ICAP of 18 August 2011 [...]*, according to which "*many wholesale users use both ETDs and OTC derivatives. However, the purpose and the circumstances in which ETDs and OTC derivatives are used, from ICAP's perspective as a broker, appear to be substantially different. While IR futures on exchange are highly standardised, liquid products traded in an average size of about € 3m or less, with a minimum trade size of € 100k, OTC swaps are used to hedge large amount of IR exposure linked to real economy events such as the underwriting of a corporate bond, and have an average transaction size is in the order of €100 m, and a practical minimum transaction size of €10m (5 year swap)*". See agreed minutes of a teleconference call with ICE of 14 September 2011, paragraph 13, [...]*.

291 Indeed, all swaps can be cleared at Swapclear irrespective of the execution venue.

292 See Notifying Parties' response to the decision opening the proceedings of 4 August 2011, Derivatives market definition, section D, paragraph 44.

(362) For instance, in support of their argument that there is fee competition between ETDs and OTC derivatives, the Notifying Parties quote a DB internal document which refers to a situation where Eurex tried to introduce a new options contract based on a contract with an established liquidity OTC - […]*.[…]*.[293] It is in this context that Eurex states that the […]*[294] Therefore, the Commission considers that this statement has been taken out of context by the Notifying Parties. The document refers to a situation where Eurex attacks the OTC established contract and tries to attract the open interest on exchange (for which it is well placed as it controls the open interest of exchange traded contracts based on the IP protected STOXX index underlyings). It is logical that in this context, Eurex has to have competitive pricing if it wants to shift the open interest. However, this document does not evidence the competitive constraint from OTC products on exchanges.

(363) While the OTC market is significantly bigger in terms of notional amount of traded derivatives, there is a trend whereby the exchange segment is growing at the expense of OTC products. This is due to two main phenomena: the increasing standardisation of OTC contracts and the ongoing regulatory efforts to bring more trades into the regulated exchange environment.[295] This is also recognised by DB's White Paper on derivatives where it is stated that *"recently, however, the exchange segment has grown faster than OTC segment. This is widely perceived to be a result of the increasing standardization of derivatives contracts which facilitates exchange trading. Other contributing factors are a number of advantages of on-exchange trading: price transparency, risk mitigation and transaction costs are among the most important."*[296]

(364) The documents referred to by the Notifying Parties show that exchanges constantly fight between themselves to win new business by capturing contracts that are currently in the OTC environment. However, evidence of such unidirectional movement of OTC contracts towards the exchange environment does not prove substitution between ETDs and OTC derivatives. Instead, such evidence rather points towards natural one-way development whereby OTC contracts, as they become sufficiently standardised, tend to move to regulated exchanges where the liquidity in these contracts ultimately develops. As a result, such documents do not provide, as suggested by the Notifying Parties, evidence of the existence of a competitive constraint exercised by OTC derivatives on listed products or of a competitive constraint exercised by OTC trading platforms on exchanges. The Notifying Parties therefore incorrectly interpret these documents as showing threats to their business from the OTC market.

(365) Moreover, the fact that a switching from ETDs to OTC derivatives is not an observable phenomenon (except for marginal switching to ETD lookalikes when it comes to a certain customers) is also consistent with the fact that listed derivatives, in particular

---

293 DB internal documents, Introduction of Options on ,[…]*.

294 DB internal documents, Introduction of Options on ,[…]*.

295 At the European level, the European Commission is currently working on a legislative project addressing these issues: the review of the MiFID (the "MiFID II") which seeks *inter alia* to move standardised OTC derivatives contracts to exchanges or electronic trading platforms.

296 See Deutsche Boerse Group, White Paper, The Global derivatives Market – An Introduction, April 2008, p.12, available at : http://deutsche-boerse.com/mr/binary/0A4A6E3F8ED836BDC1257457002D5669/$File/2008-04%20DB_WP%20GlobalDerivativesMarket_e.pdf?OpenElement (viewed on 26 January 2012).

those traded on exchanges' order books, are not generally suitable to be traded away from the exchange environment. In this context, LSE noted during the second phase market investigation that *"Order book business is not suitable for trading away from an order book due to its small size and the way in which customers trade, requiring immediate execution on a multilateral basis."*[297]

(366) It follows from the above that the Notifying Parties' claim that *"trading customers consider these products as ready substitutes and have the means and ability to quickly and easily substitute between them"*[298] cannot be sustained on the basis of the evidence contained in their internal documents.

g. Conclusion

(367) On the basis of the above, the Commission considers that even for customers that trade both ETDs and OTC derivatives, the ability to directly substitute between ETDs and OTC derivatives would be at best limited to ETD lookalikes. The remaining OTC products generally address different customer needs than ETDs, in particular the need to achieve a customised perfect hedge which is not possible with an ETD contract. As a result, the Commission considers that even these customers do not use ETDs and OTC derivatives as substitutes but as complementary tools in their trading strategies.

11.1.1.2.2.1.6. Existence of OTC trading platforms, broker-dealers and inter-dealer brokers does not imply a competitive constraint from OTC derivatives on ETDs

(368) In their response to the decision opening the proceedings, the Notifying Parties claimed that OTC trading platforms such as those provided by Tradeweb, interdealer brokers (or IDBs) such as ICAP or GFI, broker-dealers, and price discovery platforms such as Cscreen, allow customers to choose between ETDs and OTC derivatives on a trade-to-trade basis and hence provide evidence for the competitive constraint OTC contracts allegedly exert on ETDs.[299] Finally, they argue that IDBs and large broker-dealers also play a gatekeeper role and decide where a trade ends, on exchange or OTC.

a. OTC trading platforms make it possible to find a counterparty in the OTC market

(369) The market investigation in this Decision indicated that OTC trading platforms do not operate exchange-like multilateral and automated trading systems for contracts comparable to those of the Notifying Parties. The Notifying Parties suggested in their response to the decision opening the proceedings that *"the increasing similarities between trading venues and the move to electronic trading on all platforms (OTC and on-exchange) allows most traders to use any trading venue."*[300] Whilst these venues

297 LSE, response to question 13 of Q10 - Questionnaire to competitors on derivatives – Phase II [...]*.

298 Notifying Parties' response to the decision opening the proceedings of 4 August 2011, Derivatives market definition, paragraph 45.

299 Notifying Parties' response to the decision opening the proceedings of 4 August 2011, Derivatives market definition, paragraph 21-22.

300 Notifying Parties' response to the decision opening the proceedings of 4 August 2011, Derivatives market definition, paragraph 19.

may provide electronic trading similar to that provided by exchanges for some other asset classes, and whilst they may be accessible to a number of traders, they do not allow order book trading of contracts similar to those of the Notifying Parties, and therefore if a user wants to trade a contract offering comparable exposure to one of the Notifying Parties' ETDs using a multilateral anonymous order book mechanism and with elimination of counterparty risk, OTC trading is not an option. In any event, as already explained above, the choice of trading venue depends on liquidity and the customer's need for a customised solution. If a contract can be traded on exchange, trading an OTC lookalike is rarely a preferred option.[301]

(370) The Notifying Parties suggested in their response to the decision opening the proceedings that platforms like ICAP or Tradeweb *"offer customers the option (but in many cases make the decision themselves) to bring their trades on-exchange or to execute them OTC."*[302]

(371) As concerns ICAP, the market investigation showed that ICAP offers two types of services, namely (i) an electronic brokerage service for block trades in listed derivatives and (ii), more significantly in commercial terms, ICAP acts as a "B to B" (bank to bank) broker in pure OTC asset classes, principally swaps.[303] ICAP does not list derivatives contracts, but rather only provides a platform for establishing bilateral contracts between banks, also known as interdealer broker. This is confirmed by one of the broker-dealers which uses ICAP as a platform for its OTC trades: *"ICAP is an interdealer broker active as a 'middleman' in the wholesale market where dealers such as GSI* [Goldman Sachs] *interact. Interdealer brokers like ICAP are part of the OTC market infrastructure and do not list products in the same way as exchanges do."*[304]

(372) Tradeweb is exclusively active in the OTC market and provides an electronic platform to facilitate trades in OTC contracts between dealers and liquidity takers. It operates on the basis of a request for quote (RFQ) methodology whereby the buy-side requests quotes from a circle of dealers with whom it has established a link through the Tradeweb platform. There is also a limited portion of contracts that are related to block size listed contracts.[305] The transactions bilaterally agreed on Tradeweb can then be cleared on exchanges via services such as Bclear.[306] At the time when a customer wants to trade a contract on Tradeweb's platform, the customer has to indicate which type of contract it wishes to ask a quote for. This is because the price of that contract depends on whether it is a block size listed contract or an OTC contract. As a result, Tradeweb does not offer a choice of ETDs and OTC derivatives on its platform; it only allows the opportunity to its customers to book their block size trades and then to have them cleared via exchange clearing facilities it selects at the time of the RFQ.[307]

---

301 See section 11.1.1.2.2.1.5 b of this Decision for discussion of ETD lookalikes.

302 Notifying Parties' response to the decision opening the proceedings of 4 August 2011, Derivatives market definition, paragraph 22.

303 Agreed minutes of a teleconference call with ICAP of 14 September 2011, [...]*.

304 Agreed minutes of a teleconference call with Goldman Sachs of 19 September 2011, [...]*.

305 Agreed minutes of a teleconference call with Tradeweb of 26 September 2011, paragraph 3 [...]*.

306 Agreed minutes of a teleconference call with Tradeweb of 19 September 2011, [...]*, paragraph 9.

307 Agreed minutes of a teleconference call with Tradeweb of 19 September 2011, [...]*, paragraph 7, and agreed minutes of a teleconference call with Tradeweb of 26 September 2011, paragraph 4 [...]*.

(373) It follows that the business model of OTC trading platforms, while allowing for a multilateral interaction, focuses on the OTC side of the market. Therefore, these players do not concentrate on leading customer choice either towards ETDs or OTC derivatives but instead focus on the big size customised deals characteristic of the OTC wholesale market, mainly in typically OTC asset classes such as IR swaps.

b. Broker-dealers and inter-dealer brokers focus on the OTC market and do not play a gatekeeper role

(374) In their response to the decision opening the proceedings and in their response to the SO[308], the Notifying Parties claimed that their main customers, namely the largest broker-dealers such as […]*,[309] and the inter-dealer brokers act as gatekeepers in the sense that they control access to the exchanges, acting as agents for their clients who are not direct members of the exchanges.[310] They further argue that these market participants exercise tremendous power over the exchanges, controlling where the business ends up, on exchange or OTC[311]. According to the Notifying Parties, these major market players, which are clearing members of all major exchanges, are in a unique position to facilitate the shift of significant amounts of liquidity very quickly. Large broker-dealers and execution brokers (or IDBs) with access to multiple exchanges worldwide account for a significant portion of the Notifying Parties' business and would be more than capable of resisting any attempt to exert market power by NYX, DB, or the merged entity.

(375) As regards the claim that those market participants play a gatekeeper role, the market investigation has provided ample evidence that the decision of whether or not to trade OTC, in those instances where both routes are possible, is rarely left by clients to brokers. In this respect virtually all respondents indicated that they specify their choice of execution mechanism (on exchange or OTC) when they trade derivatives contracts through their brokers[312]. This was also confirmed by a number of replies from the

---

308 Notifying Parties' response to the decision opening the proceedings of 4 August 2011, paragraphs 22, 25 (section on derivatives trading and clearing - market definition). Notifying Parties' response to the SO, Introduction, paragraph 50.

309 According to the Notifying Parties, these are the main companies: .[…]*

310 In this respect the Notifying Parties argue that IDBs offer to customers the option to bring their trades on exchange or to execute them OTC, sometimes offering them on a single screen and side-by-side.

311 As to the argument related to the alleged buyer power, see section 11.2.1.8 of this Decision.

312 See replies to question 6 of Q 2 - – questionnaire to investment firms and retail intermediaries – Phase 1, reading "*When contemplating a transaction in a derivative contract through a broker, do you indicate your choice of execution channel between on-exchange execution and OTC? We are able and do specify this on a trade-by-trade basis / The choice is made by our sell-side intermediary (broker/dealer) on the basis of criteria we have communicated in advance, namely (please specify in a box below) / We leave the choice completely free to our sell-side intermediary (broker/dealer)*": 18 respondents said that they specify it on a trade-by-trade basis to the broker and 2 said that they give to the broker the criteria to be followed for a set of trades, only 3 respondents said they leave the broker free to make the choice. See also response to question 7 of the same questionnaire ("*Are you able further to choose between individual trading venues on which the intermediary will execute the trade? We are able to specify this on a trade-by-trade basis / The choice is made by our sell-side intermediary (broker/dealer) on the basis of criteria we have communicated in advance, namely….. (please specify in a box below) / The choice is freely made by our sell-side intermediary (broker/dealer)*"), to which 16 replied that they specify their choice on a trade-by-trade basis, 1 said that it gives to the broker the criteria to be followed for a set of trades and only 8 customers would leave their broker completely free to choose.

broker-dealers to the switching question indicating that their reaction to a price increase would depend on their clients' decision.[313] In this respect, BNPP is typical in stating that: "*The choice whether to trade OTC or ETD depends on the clients; if they can trade both, they would indicate their preference*".[314] Similarly, AFME reiterated in its presentation at the Oral Hearing that "*banks deal in the products that their clients want to use – it cannot be any other way; but our clients, in turn, have to operate within the constraints of the current market structure, which for many of them means the ETD universe. As such AFME rejects the concept of the banks acting as so called "gatekeepers"*"[315]. This is also described very clearly by Goldman Sachs, which stated to have "*very sophisticated* [clients] *that know how to trade and that use all types of derivatives. They choose between different derivatives contracts to best manage their risk exposure. For instance, if they need a simple hedge and a listed contract can provide that, they would go on exchange as that is where this type of transaction in highly liquid contracts is cheapest. However, if they need a more complex tailored hedge or a large size deal, they would go OTC although it is more expensive. They always choose the most optimal solution for their need taking into account factors such as whether a product provides an exact hedge, liquidity in the contract, size of the deal and its market impact if executed on transparent order book and time to implement the transaction*"[316].

(376) In addition, the claim that broker-dealers are gatekeepers is also inconsistent with the Notifying Parties' claim that these same players are their competitors. Indeed, one cannot be a gatekeeper to a market where one competes. This is because there is no commercial rationale to channel business to competitors instead of supporting one's own business.

(377) During the Oral Hearing, in response to a question about incentives of large banks (that is to say broker-dealers) to direct liquidity on exchanges as opposed to executing the trades themselves[317] […]* ([…]* of Liffe) stated that: "*they decide to put liquidity on exchange because it is where the best price and best liquidity is. It's an open and transparent market, on a screen, they can see the complete depth of the prices, it's where the tight bid-offer spread is. I think we are also alluding to the fact that banks are part owners of platforms and exchanges, (note the volume flow to MTF[…]) so that they are gatekeepers in the sense that they can either internalize a trade (they can trade it on MTF) or on exchange. However there are some rules called best execution rules*

313 See response to question 11 of Q8 - Questionnaire to customer on derivatives – Phase 2, by BGC (Cantor Fitzgerald Group) [...]*, [...]*, Tullett Group [...]*, B. Metzler seel. Sohn & Co KGaA [...]*, Citigroup Global Markets Limited [...]*, and Barclay [...]*. See also Erste Group Bank AG, response to question 11 of Q1 – questionnaire to customers – Phase 1 "*Institutional client takes the decision to 99.9%. In 0.1% of the cases we are executing on the best priced market*" [...]*, Credit Suisse, question 25 of Q1 – questionnaire to customers – Phase 1 "*As the customer choose the execution venue, it is very likely part of the customer's decision making process*," [...]*.

314 BNPP, agreed minutes of a teleconference call of 16 September 2011, [...]* See also replies to question 6 of Q2 – questionnaire to investment firms and retail intermediaries – Phase I.

315 AFME presentation at the Oral Hearing, 28.10.2011 [...]*.

316 Agreed minutes of a teleconference call with GSI of 19 September 2011, [...]*.

317 The following question was asked by a member of the case-team to the Notifying Parties' delegation: "*You argue that the banks perform a gatekeeper role and that they can decide where to direct liquidity and that they can keep it on their own books, if I understood your argument correctly. Can you explain why exactly do the banks decide to put liquidity on exchanges at all? What's driving that decision?*"

where they are supposed to go on the place of the best execution. In the States that's actually a law for asset managers. It's not as quite well defined in Europe. But in order to answer your question upfront: they go where the best liquidity is".[318]

(378) Therefore from Mr. […]* reply, it is apparent that once the liquidity is settled, the broker-dealers often have very limited discretion on where to place an order and, moreover, pursuant to US law and Article 21 of MiFID,[319] they normally have a so called "best execution obligation" according to which they have to trade where the best liquidity is, which is on exchanges in the case of ETDs. It follows that the gatekeeper role of the broker-dealers and IDBs is at best limited.

(379) This only shows that broker-dealers operate in a different space than exchanges. It is only logical that to the extent they could execute a trade themselves, they would have no incentive to channel it on exchange.

(380) As to the IDBs such as ICAP, the market investigation revealed that IDBs themselves consider that they address a specific segment in the market offering to their customers trades in both standard large size and customised contracts and often with flexible funding requirements. Furthermore, the customers of IDBs are generally sophisticated investors who know in detail what trading strategy they or their clients wish to adopt[320]. As a result, they typically indicate which product they want to trade and do not leave the choice to the IDB[321]. As a result, IDBs do not control whether to place an order on exchange or execute it OTC.

(381) ICAP, explaining its part of the activity as an interdealer broker reiterated that *"ICAP does not have any function as a "gate-keeper" on where the business ends up on exchanges or OTC platforms. Any such conclusion mischaracterises the inherent role of an interdealer broker. ICAP has no direction over the investment decisions on risk allocation or the choice between the types of assets. ICAP acts for sophisticated customers to facilitate trading between different financial instruments. Simply put, for the vast majority of traded instruments, ICAP does not make any decision on behalf of its customers and therefore has no influence over whether to place an order on the exchange or to execute it OTC."*[322]

---

318 See recording of Oral Hearing, 27 October 2011, afternoon session, at 03:02:20.

319 See Article 21 Obligation to execute orders on terms most favourable to the client, MiFID, paragraph 1: *Member States shall require that investment firms take all reasonable steps to obtain, when executing orders, the best possible result for their clients taking into account price, costs, speed, likelihood of execution and settlement, size, nature or any other consideration relevant to the execution of the order. Nevertheless, whenever there is a specific instruction from the client the investment firm shall execute the order following the specific instruction*. See also whereas number 33, 41 and 44 of MiFID.

320 BNPP, agreed minutes of conference call of 16 September 2011, [...]*: "*The choice whether to trade OTC or ETD depends on the clients; if they can trade both, they would indicate their preference*". See also replies to question 6 of Q2 – questionnaire to investment firms and retail intermediaries – Phase I.

321 See agreed minutes of a teleconference call with Goldman Sachs of 19 September 2011, [...]*. See also replies to question 6 of Q2 - – questionnaire to investment firms and retail intermediaries – Phase I.

322 ICAP, Observations on the SO issued in case M.6166 Deutsche Börse/ NYSE Euronext submitted pursuant to article 16(1) of the Implementing Regulation, 26 October 2011, paragraph 6.28 [...]*, see also agreed minutes of a teleconference call with ICAP of 14.9.2011[...]*, paragraphs 5 "*When a customer comes to ICAP, it already has a certain strategy in mind (either ETD deal or OTC swap, or both) and ICAP executes what the client requests. ICAP does not decide or advise customers to route the trade either on exchange or OTC*".

(382) In the same vein, [one customer]* stated that[323]: "*As an intermediary, [...]* acts under instruction from our clients. On the assumption that there is choice of venue available for the products being traded, the depth of the liquidity pool will be the primary factor in this process. General economics/cost of trading and processing efficiency, although very important, we assume to secondary in terms of the method by which our clients choose the venue for execution*".

(383) The limited gatekeeper role of IDBs is also acknowledged by broker-dealers, in turn customers also of IDBs, stating that "*As regards OTC trading platforms such as Tradeweb and ICAP, they are interdealer brokers, replacing the order book by matching orders of big banks for illiquid products. As concerns liquid ETDs, customers go directly to the exchange. Originally, this trading was made by voice brokers, then the business has been automated and now it consists of electronic platforms although there is still a portion that is fairly manual. They do not disseminate information on trades so as to avoid effects on price. This is in particular important for large trades.*"[324]

(384) On the basis of the above, the Commission considers that IDBs and broker-dealers do not act as gatekeepers channelling business either on exchanges or OTC.[325]

c. Cscreen is a price discovery mechanism for trades agreed away from exchange

(385) The Notifying Parties argue in their response to the decision opening the proceedings that price discovery platforms such as Cscreen are *"powerful and irrefutable examples of competition between OTC trading and exchange trading"* offering the choice to traders to execute their orders on-exchange or OTC and show indications of interest in identical ETDs and OTC derivatives.[326]

(386) Cscreen is a price discovery bulletin owned by NYX which allows users to post bids and offers to selected market participants (rather than the whole market as on exchange) and arrange trades on a bilateral basis: on its website, Cscreen presents itself as "*an 'electronic broker tool for OTC equity derivatives'. It is used as a bulletin board to publish Indications of Interests (IOIs) and trades. There is no automatic matching and all trades are finalised over the phone. Cscreen also has a simple chat function where brokers and traders can chat with each other in real time*".[327]

(387) The Cscreen platform is principally used as a matching platform for contracts that could not be traded on order book but that can then go directly to exchange clearing via

---

323 [...]*, Response to question 11 of Q1 – questionnaire to customers – Phase I, [...]*

324 BNPP, agreed minutes of conference call of 16 September 2011, [...]*, paragraph16. See also agreed minutes of conference call with GSI of 19 September 2011, [...]*, paragraph11 "*ICAP is an interdealer broker active as a 'middleman' in the wholesale market where dealers such as GSI interact. Interdealer brokers like ICAP are part of the OTC market infrastructure and do not list products in the same way as exchanges do*".

325 It may also be noted that even if this claim of playing a gatekeeper role were true, it would not alter the competitive assessment.

326 Notifying Parties' response to the decision opening the proceedings of 4 August 2011, paragraph 21.

327 See Cscreen website, available at https://www.cscreen.com/Cscreen_FAQ.pdf; see also agreed minutes of a teleconference call with LSE of 21 September 2011, [...]*.

NYX's connected service Bclear. As a result, it is natural that there is little interest on this platform in pure OTC contracts which are typically on OTC platforms.[328]

(388) The Notifying Parties suggest that the pricing of ETD contracts and OTC derivatives on these platforms is very competitive. However, these are trades that could by nature not be executed on order book and thus for listed products offered by Eurex and Liffe, such alleged price competition is not relevant as these products are not substitutable to ETDs.

(389) The Commission considers that Csreen services offering price discovery for trades that could not be executed on exchange do not indicate competition between ETDs and OTC derivatives.

d. Conclusion

(390) Therefore, the Commission considers that OTC platforms, interdealer brokers, broker-dealers and OTC price discovery platforms operate in a different space than regulated exchanges. They generally focus on OTC trades that cannot be executed on exchanges' order books as they are either of large size or not standardised enough to be eligible for exchange trading. Moreover, those market participants do not perform a gatekeeper role. As a result, the existence of these players cannot evidence significant competitive interaction between OTC derivatives and ETDs.

11.1.1.2.2.1.7. Broker-dealers cannot be included in the relevant market via supply-side substitution

(391) The Notifying Parties claim in their response to the decision opening the proceedings and in the response to SO that their largest customers are also their main competitors, and hence that these actors should be included in the relevant market.[329]

(392) From the outset, it should be noted that broker-dealers offer a different service to exchanges. The services offered by these market participants are two-fold: the first type of service includes the wholesale trading of derivatives, whilst the second type of service consists in brokerage services for wholesale participants. As a result, interdealer brokers do not address retail investors in the same way as exchanges.

(393) Broker-dealers structure bespoke derivatives products which they sell to wholesale customers. These contracts are by nature large, customised contracts. The market investigation revealed that broker-dealers themselves consider that they address a specific segment in the market, offering to their customers trades in customised contracts and with flexible funding requirements. For example: "*Barclays provides clients with an ability to trade equity derivatives with tailored product specifications and flexible funding requirements. [...] Barclays provides a service to its clients that is*

[328] The Notifying Parties in their response to the decision opening the proceedings referred to this fact, suggesting that this may show tight competition between OTC and ETDs in exchange-traded underlyings, paragraph 21.

[329] Notifying Parties' response to the decision opening the proceedings of 4 August 2011, paragraph 9, Notifying Parties' response to the SO, Introduction, paragraphs 17-21. See also section 11.1.1.2.2.1.6 and 11.1.1.2.2.1.7 of this Decision.

not necessarily in competition with Liffe or Eurex but which compliments (sic) these exchanges in fulfilling client execution requirements whilst providing clients with alternative solutions where existing exchange contracts do not meet client requirements."[330]

(394) Moreover, according to the replies that broker-dealer banks provided in the context of the second phase market investigation, they consider that they offer a complementary service and complementary products to those traded on exchanges.[331]

(395) It follows that broker-dealers offer bespoke OTC products for wholesale customers whose needs cannot be satisfied through standardised listed contracts. As a result, these players operate in a different market. Therefore broker-dealers should not be considered as offering competing services within the same relevant markets as the Notifying Parties. If they were to seek to offer ETDs in competition with exchanges, they would face high barriers to entry characteristic for this market.[332]

11.1.1.2.2.2. Classification of derivatives according to the underlying asset class

(396) The first phase market investigation generally indicated that for most derivatives users, the demand to trade derivatives is specific to a certain asset class (or even a specific asset within asset classes) and cannot be generally substituted by trades in a different asset class.[333] More precisely, customers, representing both the sell side and the buy side[334] of the market generally consider that their trading activity is specific to the underlying asset. In this respect, some derivatives users indicated that "*different underlying fulfils different needs*".[335] This is because derivatives users typically use derivatives for two main purposes, hedging and investing. As concerns customers using derivatives contracts for hedging purposes, they seek to hedge a specific risk associated with their positions in a certain asset. In this respect, derivatives users indicated that the underlying "*needs to be the same as the one which is creating the exposure*".[336] For a

330 Barclays, Supplementary Response of 14 September, question 14, [...]*.

331 See Agreed minutes of a teleconference call with BNPP of 16 September 2011, [...]*, and agreed minutes of conference call with Goldman Sachs of 19 September 2011, [...]*.

332 See below section 11.2.1.7.1. of this Decision.

333 See replies to questions 29 and 30 of Q1 – questionnaire to customers – Phase I, and to questions 22 and 23 of Q2 – questionnaire to investment firms and retail intermediaries – Phase I. For instance, to support the delineation according to the asset class, [one customer]* considers that even "[t]*rading desks are divided by underlying asset (Equity, Fixed Income, Credit, FX and Commodities), and each one of them looks into derivatives usage alternatives on a realistic base for its corresponding asset class*", reply to question 29 of Q1 – questionnaire to customers – Phase I, [...]*.

334 The "buy side" is the side of the market comprising (i) institutional investors such as pension funds, mutual funds, and hedge funds; (ii) companies with genuine commercial risks, which use derivatives to hedge against these risks; and (iii) retail investors. The buy side is the opposite of the "sell side" entities, which provide investment services to the buy side. These services encompass a broad range of activities, including broking/dealing, investment banking, advisory functions, and investment research.

335 Banco BPI S.A., reply to question 30 of Q1 – questionnaire to customers – Phase I, [...]*.

336 ING Bank N.V., reply to question 29 of Q1 – questionnaire to customers – Phase I, [...]*. See also, Dexia SA, reply to question 29 of Q1 – questionnaire to customers – Phase I, [...]*: "*In no case we are indifferent towards the underlying asset class as market activities are function of customer flows which are very specific in our case. As we try to keep risk mismatches in all their forms under control, we obviously will not consider different underlyings to hedge these flows. For the remaining -very small-*

position in one specific asset, a derivatives contract on another asset would not provide a perfect hedge. Indeed, "[t]*he reference asset is the key feature of a risk exposure, and therefore of the hedging requirement. Interest rate, FX, equity, commodity and credit risk are not fungible in any meaningful way*".[337] Similarly, users using derivatives contracts for leveraged investing purposes are also sensitive to the type of asset in which they invest and hence do not generally substitute one asset for another.[338]

(397) There are, however, specific types of derivatives users who are more indifferent to the type of underlying asset in which they invest and may be more inclined to use different derivatives contracts as trading opportunities arise. For instance, algorithmic traders that trade with high frequency in and out of derivatives to make profit may be more sensitive to other parameters than merely the underlying asset[339], although also in this case the Notifying Parties have not provided, and nor is there from the market investigation, any evidence that these traders, given a particular trading objective, choose to trade one instrument rather than another based purely on the commercial terms of trading for that instrument available from the exchange.

(398) The decision opening the proceedings left the question of whether different underlyings constitute separate markets open as it concluded that the notified transaction would raise serious doubts irrespective of the precise market definition. The Notifying Parties, in their response to the decision opening the proceedings, suggested that the market should be defined according to the asset class and include all trading venues that do or can offer competing products irrespective of their geographic location.[340]

---

part of risk we will consider small macro-hedges (as not all risks can always perfectly be hedged) but even in this case our set-up is such that e.g. a fixed income trader will not cover via e.g. DAX-futures. a trader will stay within his/her asset-class as we are organised in such a way that no single person has access to all asset-classes"; and KBC Bank NV, reply to question 22 of Q2 – questionnaire to investment firms and retail intermediaries – Phase I, [...]*: "*In case of derivative contracts used for hedging, the underlying asset is the most important factor since this is determined by the risk that needs to be hedged. In other cases (e.g. private banking clients dealing in equity derivatives) the underlying asset is more or less "indifferent", and will be determined by the investment strategy and risk appetite of the client. Clients need to give specific orders, possibly after advice of their investment adviser*".

337 [...]*, reply to question 29 of Q1 – questionnaire to customers – Phase I, [...]*.

338 The importance of the underlyings for leveraged investing purposes is acknowledged by the Notifying Parties when they explain that: "*derivatives contracts are leveraged, i.e., if the price of an underlying asset changes, for the same principal investment, the return from the related derivative position will typically be a large multiple of what would be received from the underlying asset's price change. As a consequence, derivatives provide leverage and are a more capital-efficient way of gaining exposure to an underlying asset.*" (Form CO, Derivatives, paragraph 6.9).

339 Kyte Group, reply to question 29 of Q1 – questionnaire to customers – Phase I [...]* sating that *"Our traders and customers are concerned about the characteristics of the derivative product itself rather than the underlying asset. The derivative will be popular if it is liquid, has a high 'tick' value (ie The price difference between each incremental price step), has a manageable overall cost of trading, has decent daily volume, has significant open interest,"*. This is also argued by the Notifying Parties in the Form CO, suggesting that users that use derivatives for investing purposes are *"more indifferent to the specific underlying and are primarily seeking trading opportunities associated with spreads and volatility"*. See Form CO, Derivatives, paragraph 6.5.

340 Notifying Parties' response to the decision opening the proceedings of 4 August 2011, Derivatives market definition, paragraph 5.

(399) The Commission, in the SO,[341] preliminarily concluded that derivatives markets should indeed be defined according to asset classes and analysed the effects of the notified transaction on that basis. The Commission also considers that it would be inappropriate to define markets on a narrower basis, that is "per contract" basis. This is because customers implement trading strategies based not on a single contract but on a portfolio of contracts within an asset class. In addition, contracts within one asset class are closely correlated which suggests that the boundaries of the relevant markets are closely linked to the margin groups within which the Notifying Parties apply cross-margining.

(400) The Notifying Parties mainly offer derivatives contracts on the following underlyings:

- European interest rates which can be subdivided into long-term interest rates ("LTIR") or capital market rates and short-term interest rates ("STIR") or money market rates;
- European single stocks that can be further subdivided according to the underlying stock;
- European equity indices (at pan-European and national level); and
- to a very limited extent commodities.[342]

11.1.1.2.2.2.1. European interest rate derivatives

(401) Eurex and Liffe both offer exchange trading and clearing in STIR and LTIR options and futures, based in particular on Eurozone and UK interest rates. LTIR are based on government debt securities in which the sovereign debt issuer owes the holder a debt and is obliged to repay the principal an interest. STIR derivatives, on the other hand, are based on commercial interbank rates at which banks offer to lend unsecured funds to other banks in the wholesale money market. Liffe has accumulated liquidity in European STIR options and futures as well as UK rates (both short and long term) while Eurex has built up liquidity in European LTIR options and futures and in Swiss long-term interest rates.[343] Specifically, Liffe's landmark STIR products are 3 month Euribor future and options[344] and Eurex's most traded products include Bund, Bobl and Schatz which are each based on a basket of German sovereign debt. While Liffe also offers some LTIR products based on sterling, Eurex is not present in sterling and hence Liffe and Eurex only overlap in two STIR contracts, Euribor and Eonia.

---

341 See SO, paragraphs 39 and 151.

342 Given the limited overlap between the Notifying Parties' activities in the area of commodity derivatives and the number of exchanges active in that area, the Notifying Parties' overlap in this area is not within the scope of this Decision and hence will not be discussed further.

343 There is little liquid trading in derivatives on European interest rates denominated outside of these reference currencies.

344 Euribor futures are derivatives contracts having an underlying instrument Euribor, i.e. the rate at which Euro interbank term deposits are offered by one prime bank to another prime bank within the Economic and Monetary Union zone. Euribor options are derivatives contracts having as underlying an Euribor future.

(402) In the Form CO, the Notifying Parties argue that if derivatives markets were to be distinguished by asset class,[345] then STIR and LTIR constitute different markets. The decision opening the proceedings left the question as to whether interest rate derivatives should be further subdivided into LTIR and STIR derivatives open as it concluded that the notified transaction raised serious doubts in the area of interest rate derivatives irrespective of the precise market definition. The SO, while it concluded that STIR and LTIR derivatives most likely belong to the same product market, stated that competition concerns with respect to interest rate derivatives would arise even if STIR and LTIR were to be part of different markets.[346]

(403) In their response to the SO, the Notifying Parties strongly contested the possibility that STIR and LTIR could be included in the same relevant market. Specifically, the Notifying Parties argued that as STIR contracts are based on European interbank lending rates and LTIR contracts are based on government debt, they are by no means substitutable for derivatives traders seeking to hedge interest rate exposures. Similarly, for customers that use derivatives for other purposes than hedging such as algorithmic traders, spread traders and market makers, these contracts are traded according to different patterns, with distinct market models and matching algorithms and hence are not substitutable form their point of view.[347] The Notifying Parties also argued that for these categories of traders STIR and LTIR based on dollars are closer substitutes to respective Euro-based STIR and LTIR derivatives than are Euro-based STIR and LTIR one to the other.[348] According to the Notifying Parties[349], OTC-traded forward rate agreements and interest rate swaps are closer substitutes for Euribor futures as they share the same reference fixed interest rate and allow traders to achieve the same economic exposure to the Euro money market yield curve.[350]

a. Exchange-traded interest rate derivatives are intrinsically linked to a specific currency

(404) First, the Commission notes that exchange-traded interest rate derivatives products have an intrinsic link with the currency on which the underlying is based. In this respect, European IR derivatives and US IR derivatives offer exposures to European and US interest rates respectively which by their very nature cannot be considered as substitutes from a demand perspective, although they may be correlated to some extent.[351] For instance, margin

345 The Notifying Parties' overall position is nevertheless that the relevant market is one global risk management market. See Form CO, Derivatives, paragraph 6.255 et seq.

346 SO, paragraph 56. The Notifying Parties have acknowledged their understanding that the concerns as specified in the SO in the area of European interest rate derivatives arise irrespective of the market definition. In this respect, […]* of NYX stated at the Oral Hearing, that "*We keep hearing through the SO and the case team presentation that even if [LTIR and STIR] are different markets there is still a competition issue to answer. If they are different markets with different participants using different technology to trade, it's very hard to make this conclusion, and I think you really need to think of the kind of analysis that would lead to that conclusion, and I think that we feel that it is misplaced*" (,[…]*, see recording of Oral Hearing, 27 October, morning 2.13.00).

347 Notifying Parties' response to the SO of 5 October 2011, Interest rate derivatives, paragraph 1.

348 Notifying Parties' response to the SO of 5 October 2011, Interest rate derivatives, paragraph 31.

349 Notifying Parties' response to the SO of 5 October 2011, Interest rate derivatives, paragraph 50.

350 The yield curve is the relation between the interest rate or cost of borrowing in a given currency and its time to maturity.

351 See replies to question 42 of Q1 – questionnaire to customers – Phase I, and 32 of Q2 questionnaire to investment firms and retail intermediaries – Phase I. For example: Banco Santander Totta SA, reply to

offsets, which are themselves based on correlation, between Dollar and Euro-based rates are relatively limited. For instance, between Euro-based Euribor and Dollar-based Eurodollar Liffe offers an offset of [<50]*%[352] while CME offers up to 50%.[353] These offsets are substantially higher between two Euro-based interest rate products, reaching [>50]*%.

(405) In this context, an investor who wishes to get an exposure to European interest rates will not be able to do so by trading Eurodollars futures[354] and conversely, an investor wishing to get exposure to US interest rates will not be able to do so by trading Euribor futures.[355] This was confirmed in the market investigation where customers explained that given the differences in underlying economies on which interest rates are based, derivatives based on different currencies are not substitutable. In this regard, one respondent explained that "*rate expectations, based on very different economies, are not the same and therefore a derivative based on Euribor cannot substitute one based on Eurodollar and viceversa*".[356] Similarly, "*Euribor futures/options and Eurodollar futures/options are by no means substitutable because the monetary policies from ECB and Federal Reserve are by no means comparable (different mandates). Exception: when a major disaster happens like 9/11 but even then, correlation of STIR futures is lower than correlation of bond futures*".[357]

(406) It follows that interest rate products, be they short-term or long-term, based on different currencies are not generally substitutable. The same would also apply to euro and sterling-based interest rate derivatives.

b. STIR derivatives v LTIR derivatives

(407) LTIR are based on government debt securities in which the sovereign debt issuer owes the holder a debt and is obliged to repay the principal an interest. STIR derivatives, on the other hand, are based on commercial interbank rates at which banks offer to lend unsecured funds to other banks in the wholesale money market. This basic distinction gives rise to the terms "capital market derivatives" as opposed to "money market derivatives". Also on this basis, the Notifying Parties argue that STIR and LTIR derivatives are products based on different underlyings and hence used to hedge a different

---

question 42 of Q1 – questionnaire to customers – Phase I, [...]*, refers that "*generally speaking, those two kind of instruments are positively correlated meaning that it might be the case that some investors consider using them interchangeably. However, it is a fact that the exposure is not the same as sovereign interest/credit rate curves are different, proved clearly by the recent crisis. Moreover, one has also to take into consideration the FX risk*"; and WestLB AG, reply to question 42 of Q1 – questionnaire to customers – Phase I, [...]* considers that "*although interest rates may move in the same direction, they cannot be considered as substitutes where differing currencies*".

352 Notifying Parties response to the RFI of 13 September 2011, annex 12.

353 See section 11.2.1.4.3.5.1 of this Decision.

354 Eurodollar futures are derivatives contracts having as the underlying instrument time deposits denominated in U.S. dollars at banks outside the United States, called Eurodollar Time Deposits. Eurodollar Options are derivatives contracts having as underlying a Eurodollar future.

355 See replies to question 43 of Q1 – questionnaire to customers – Phase I, and 33 of Q2 questionnaire to investment firms and retail intermediaries – Phase I.

356 Fineco S.p.A., reply to question 43 of Q1 – Questionnaire to customers – Phase I, [...]*, original text: "*le aspettative sui tassi, basandosi su Economie assolutamente diverse, non sono le stesse e quindi un prodotto derivato sull'Euribor non può sostituire uno sull'Eurodollar e viceversa*".

357 Dexia SA, reply to question 43 of Q1 – questionnaire to customers – Phase I, [...]*.

kind of exposure. This makes these two groups of products in the Notifying Parties' view not substitutable.[358]

(408) While this argument is in direct contradiction to the Notifying Parties' overarching claim that the relevant market in the area of derivatives is one overall market for "global risk transfer" where all derivatives of all asset classes and all types compete with and constrain each other, the Commission analysed the substitutability between STIR and LTIR from the point of view of derivatives users.

(409) During the market investigation, as the Notifying Parties correctly pointed out, the majority of sell side (wholesale) customers indicated that STIR and LTIR derivatives are not substitutable for their use.[359] However, the market investigation also indicated there was no hard-and-fast consensus among market participants as to where one category began and the other ended, and that the Notifying Parties compete in providing exposure to short and medium term interest rates. Indeed, the market investigation in this Decision showed that the boundary between STIR and LTIR derivatives is becoming increasingly blurred. In this context, one market participant noted that there is "*some blurring in the distinction between LTIR and STIR (e.g. Liffe's longest STIR contract is 3 years, which is longer than the shortest LTIR contract offered by EUREX).*"[360] Similarly, another market participant pointed out that *"The exchanges generally operate at different points on the yield curve, Liffe short end and Eurex long, but in the medium term they certainly compete, contracts such as the schatz and bobl competing with Liffe's STIR contracts for participants looking for exposure in these sectors. More recently Eurex competed with Liffe on STIR options and part of that competition was based on trading fees.*"[361]The Notifying Parties in this respect indicate that LTIR products cover "*approximately*" two years to ten years, whereas STIR derivatives "*classically have short term (i.e. one year or less) interest rates as their underlying*"[362] suggesting that the term of the contract may not be such a reliable criterion on which to separate STIR from LTIR derivatives.

(410) The gradual extension along the yield curve is also confirmed by the Notifying Parties' internal documents. For instance, while Liffe offers futures and options only on one and three month (that is short term) interest rates – namely Eonia and Euribor – it offers Euribor rates 24 quarters forward, that is to say six years, thereby offering interest rate exposure well into the maturity period of Eurex's two and five year benchmark products, the Schatz and Bobl. As NYX itself says: "*We are continually expanding and developing our product range of STIR options to encourage market growth and bring new opportunities to the market. To extend our STIR options portfolio, in 2009 we launched two-year mid-curve options in the Euribor and Short Sterling options contracts. These products give you access to longer-dated interest rates. Following the success of two new*

---

358 Form CO, Derivatives section, paragraph 7.34.

359 See responses to question 33 of Q1- Questionnaire to customers and to question 27 of Q2 – Questionnaire to Q2 – questionnaire to investment firms and retail intermediaries – Phase .1

360 ICE, response to question 15 of Q 3 – Questionnaire to competitors, [...]*.

361 DRW Investments UK Limited, response to question 55 of Q1 – Questionnaire to customers [...]*. See also reply of ICAP [...]* to the same question explaining that "*At the margins there is also some competition between different contracts: for example a 'strip' or 'stack' of Euribor STIR futures vs a schatz contract.*"

362 Although in fact Eurex also lists a longer maturity product, the Buxl.

serial expiry months in standard Euribor options, we also introduced additional serial expiry months in the Euribor one-year mid-curve options in early 2010. This has enhanced the trading and hedging opportunities, with market participants able to benefit from longer-term exposure."[363] This indeed indicates that some STIR products may be designed in a way to offer longer term exposures suggesting that there is a certain level of substitutability between the two groups of products.

(411) Although spot and close expiry money market rates may diverge from capital market rates as a result of conditions in interbank markets, longer term expectations of money market rates are much more reliably linked to expectations of capital market rates, such that the further out a position goes, the more closely price movements track each other. In reality there is a series of maturities on the interest rate yield curve from short term to long term, including for STIR well into the future.[364]

(412) In addition, given the strong correlation between contracts with comparable maturities, especially going forward, evidence shows that the Notifying Parties could, have often tried to, and to some extent have been successful in extending their product offering towards the other end of the curve (that is to say where they have traditionally been less successful in building up liquidity), a prospect which is possible *inter alia* because of their ability to provide offsets with correlated contracts.[365] In particular, Liffe has been steadily expanding towards providing longer term interest rate exposure and […]*.[366] Besides the overlaps in offering exposure to medium maturities, Eurex and Liffe overlap in a number of STIR options and futures. Although liquidity in each particular instrument is generally concentrated on one of the respective platforms,[367] as further discussed in the competitive assessment Section below, Eurex is nonetheless reported by several respondents, including by NYX itself, to have in the recent past been aggressively marketing its Euribor offering.

(413) In their response to the SO, the Notifying Parties, while acknowledging the existence of a continuum of maturities along the interest rate yield curve,[368] brought forward additional arguments in support of their claim that STIR and LTIR belong to separate product markets. First, the Notifying Parties recall that STIR and LTIR derivatives are

---

363 See NYX' website, available at http://globalderivatives.nyx.com/en/stirs/nyse-liffe/stirs-options, (29 September 2011).

364 It is therefore possible to hedge against what the level of the three month euro interbank lending rate will be at points 3, 6, 9, 12 etc months in the future, up to five years into the future.

365 The highest offset on LCH Clearnet amongst interest rate products is provided for Eonia vs Euribor ([>50]*%), but second is short against medium gilts ([>50]*%). 3 month sterling is offset for [>50]*% against long gilts. LCH also offsets 3 month Euribor for [>50]*% against the ten year Euro swapnote and offsets Euribor for [>50]*% against long gilts, i.e. long dated sterling government debt. It is therefore safe to assume that an offset of [70-80]*% would be possible between Euribor and the Schatz or Bobl. On Eurex, arrangements for margining are more complex but an offset factor of at least [40-50]*% applies between all fixed income products except for Swiss products (see the reply to the Commission's second RFI of 13 September 2001 (Annex 12 for NYX)). In addition, the Notifying Parties themselves argue that there are cross-margining benefits from combining the short and long end of the curve: ".[…]*. ("Cross-margining efficiencies induced by the Deutsche Börse / NYSE Euronext merger" - 5 September 2011, page 11).

366 .[…]*.

367 See Annex 4, tab 2, of the Notifying Parties' response to the Commission's first RFI of 13 September 2011.

368 Notifying Parties' response to the SO, Interest rate derivatives, paragraph 6.

based on different underlyings which means that they are not substitutable for customers hedging their exposure in a certain asset class.[369] In support of this claim, the Notifying Parties provided an analysis showing that the hedging exposure in German bonds (LTIR) with derivatives on the interbank yield curve (STIR) results in basis risk which means that the hedge is not perfect.[370] Additionally, the Notifying Parties argue that STIR and LTIR are matched using different algorithms which make them not substitutable even for traders that are less sensitive to the nature of the underlying. STIRs are matched using *pro rata* style algorithms; LTIR are matched using price/time style algorithms and are "front month traded" (namely the vast majority of trading takes place in the closest contract to maturity).[371]

(414) At the Oral Hearing, while this was generally confirmed by [a]* trader that the Notifying Parties invited to be part of their presentation, the same company did not fully exclude substitutability between STIRs and LTIRs in their response to the Commission's market investigation. In this respect at the Oral Hearing, [this trader]* stated that *"In our opinion Euribor and German Government bond futures have a different underlying and are in our opinion distinct markets"*.[372] However, in responding to the Commission's first phase market investigation questionnaire some months earlier, [the same trader]* had stated that *"it is well known that they are correlated and show similar behaviour"* and that *"STIR and LTIR can be considered as substitutes. To replicate a LTIR using a STIR is possible. The underlying interest rates are not identical, but reasonably related"*.[373]

(415) The Notifying Parties argue that OTC-traded forward rate agreements and interest rate swaps are closer substitutes for Euribor futures as, notably, STIR futures and short to medium term interest rate swaps are linked to each other due to the fact that STIR futures prices are used to price swaps. In support of this claim, they refer to TriOptima data showing that 60% of interest rate swaps are plain vanilla contracts and that over 50% of interest rate swaps are centrally cleared. In the Notifying Parties' view, this would demonstrate that a rigid distinction between OTC and ETDs based on the level of standardisation should not be followed.[374]

(416) However the market investigation revealed that unlike a futures contract, most OTC derivatives, being structured as swaps, require periodic payments between the parties based on the relative value or price change of the fixed and floating legs of that transaction. OTC derivatives typically "swap" cash flows, whereas ETDs oblige settlement of a single exchange of assets or cash at a fixed point in the "future". Also, euro denominated interest rate swaps are based on the comparison between a negotiated fixed rate of interest and external reference price such a LIBOR, whereas bund/bobl/schatz contracts are euro interest rate sensitive and can therefore be used as an interest rate hedge. In addition, OTC interest rate swaps are generally traded in five,

369 However, as explained in more detail in the competitive assessment section, unlike equity and equity index derivatives, the interest rate market is characterised by the fact that certain liquid benchmark products are widely used for hedging purposes even if they offer only an imperfect hedge.

370 Notifying Parties' response to the SO, Interest rate derivatives, paragraph 16.

371 Notifying Parties' response to the SO, Interest rate derivatives, paragraph 10.

372 See Notifying Parties' presentation at the Oral Hearing, 27 October 2011, slide 57.

373 [...]*, response to question 33 of Q1- questionnaire to customer – Phase 1, [...]*.

374 Notifying Parties' response to the SO of 5 October 2011, Interest rate derivatives, paragraphs 50-60.

seven, or ten year tenor, while ETDs are held for a shorter period as they are chosen in order to make short-term offsets of risk exposure through hedging or position taking. Moreover, the fact that OTC derivatives can and have benefited from greater standardisation, clearing and electronic trading does not alter the different function and nature of the asset class. Such standardisation in fact, as already expressed in detail in Recitals (272) *et seq.* above, does not cover the key economic terms of the contracts which characterise the OTC derivatives.[375]

(417) In relation to the specific claims of the Notifying Parties regarding forward rate agreements, these, like any OTC contract, are traded very differently, in much larger sizes, and predominantly in order to hedge or gain exposure to interest rates on a non-standard date. Although they often are centrally cleared, being treated as a single-period swap with the possibility of margin offset in the Swapclear pool of LCH Clearnet, there is no pool of fungible open interest in particular contract dates. Neither Liffe nor Eurex offers either trading or clearing of flexible Euribor futures[376]. The general conclusions above relating to the fundamental difference between OTC and ETD trading therefore also apply in the case of Forward Rate Agreements.

(418) Finally, the Notifying Parties point out an alleged inconsistency between the Commission's "overlap" theory for bringing the Notifying Parties' main STIR and LTIR derivatives together into a single market and the Commission's treatment of OTC derivatives in relation to exchange-traded derivatives.[377] This comparison is misleading. Indeed while on the one hand the Commission comes to the conclusion that the frontier between STIR and LTIR is blurred, on the other hand, the line between OTC traded derivatives and ETDs is not blurred as seen in the relevant Section above. This is in line with the conclusion on the existence of a limited set of derivatives traded OTC that present some of the ETDs characteristics.

(419) The Commission has analysed carefully the evidence brought about by the Notifying Parties and acknowledges that there may be some valid reasons to consider that STIR and LTIR belong to separate markets. However, and in particular in view of the blurred boundaries between STIR and LTIR, the Commission considers that splitting interest rate derivatives between these two groups based on the nature of the underlying (sovereign versus commercial rate) and their place on the yield curve may not fully reflect the reality of the market. However, it can be left open for the purpose of this Decision whether the market for listed interest rate derivatives should be further subdivided into short-term and long-term interest derivatives as the competitive assessment of this Decision with respect to interest rate derivatives would remain the same. This is because, as detailed in the competitive assessment Section of this Decision, the notified transaction would eliminate the closest actual and potential competitor regardless of whether there is a single market for trading and clearing of European interest rate derivatives or this market is divided between STIR and LTIR.

375 ICAP, observations on the SO issued in case M.6166 Deutsche Börse/ NYSE Euronext submitted pursuant to article 16(1) of the Implementing Regulation, 26 October 2011, paragraphs 6.5 and 6.13 [...]*.

376 As noted at Recital (1)(a)(672) of this Decision, Eurex did offer flexible Euribor options (but not futures) for a period but withdrew this product in January 2011.

377 Notifying Parties' response to the SO, Interest rate derivatives, paragraphs 47-49.

The same would apply if one were to divide the relevant market by currency of the underlying interest rate.

11.1.1.2.2.2.2. European single equity derivatives

(420) Eurex and Liffe both offer single stock options and futures based on the shares of a number of leading European companies. Their contracts overlap in particular as concerns Dutch, French, Belgian, German and UK companies, such as for instance Unilever, BNP Paribas, Deutsche Bank, etc., but there are also overlaps in blue chip companies of other European countries as described further in the competitive assessment Section below. For derivatives on equity underlyings within their "core" home markets, the Notifying Parties face little competition other than the other Party, whereas for contracts on underlyings from outside this zone – such as Nordic, Italian and Spanish underlyings – the respective national exchange is usually a competing provider.

(421) Single equity derivatives are typically used to hedge positions in single stock equities or as a leveraged investment tool into a particular company. As a result, from the demand side perspective, strictly speaking, there is no substitution between different single stock derivatives[378]. In this regard, the significant majority of respondents to the market investigation confirmed that, to get exposure to a specific single stock, only derivatives in that particular stock would be considered.[379] Indeed, "*a single stock exposure to a specific company cannot be substituted in full with another underlying. Usually only a single stock derivative ensure a 1:1 exposure. Basic risk on single name is too high for cross hedges in most cases*".[380]

(422) However, traders do not just buy once a single equity derivatives contract, but often implement trading strategies, for instance covering a number of single stock equity derivatives within one country or industry. This is because concentrating correlated contracts on one exchange increases the cross-margining opportunities in the exchange's CCP as well as offering operational trading advantages.

(423) The market investigation also showed that the boundaries of these strategies are those of geographic areas such as Europe or the US. In this context, a market participant stated that "[f]*rom a customer perspective they would not consider European equity derivatives to be substitutable with other equity derivatives in other geographic regions*."[381] Likewise, another market participant stated that "*Derivatives having European equity […] underlyings are mainly used to achieve a financial exposure to*

---

378 This differs from the situation in respect of interest rates where, as explained, the primacy of liquidity over hedging accuracy gives rise to a continuum.

379 See replies to question 45 of and to question 35 of Q2 - questionnaire to investment firms and retail intermediaries – Phase I.

380 BVI, response to question 34 of Q2 - questionnaire to investment firms and retail intermediaries – Phase I, [...]*; see also The Kyte Group, response to question 44 of Q1- questionnaire to customers – Phase I, [...]*, explaining that: "*One single stock derivative cannot be used to hedge a different underlying single stock. The only time that they be substitutable is if the trade is in a different type of product based on the SAME underlying stock (eg A warrant versus an option)*".

381 ICAP, response to question 44 of Q1- questionnaire to customers – Phase I, [...]*.

European equity […]. Thus they are not substitutable investments to derivatives having as underlying other equity […] (e.g. US, Japanese etc.)."[382]

(424) From the supply-side perspective, there are no intellectual property (IP) rights associated with single stock derivatives and therefore any European derivatives exchange can technically start listing single stock derivatives without particular investment and at short notice.[383] Derivatives exchanges regularly add new single stock derivatives to complete their product portfolio and attract customers by increasing the potential for margin efficiencies.

(425) In their response to the SO, the Notifying Parties contend that there is a single relevant market for trading of single equity derivatives, including both exchange trading and OTC trading[384]. The Notifying Parties claim that the phenomenon of ETD lookalikes is particularly pronounced as concerns single equity derivatives and for this reason should be included in the relevant market.[385] However, as already explained in Recitals (310)et seq. above, lookalikes of listed products in their size and shape are by nature a limited phenomenon that is available only to a limited portion of customers. This is also in line with the findings in the TABB study showing that equity-linked derivatives (including both single equity and equity indices)[386] represent only 1% of notional values traded OTC while they represent 8% of notional value traded ETD. According to TABB, this is explained by the fact that ETD and OTC equity linked derivatives do not serve the same purpose: *"ETD equity-linked notional open interest is several times the proportion of OTCD equities because they generally serve different purposes: OTCD - hedging for physical asset holders; ETD – trading and investment for asset managers and individuals."*[387] This is in line with the Commission's analysis of substitutability between ETDs and OTC derivatives in Section 11.1.1.2.2.1.5 above.

(426) Therefore, the Commission considers that it can be left open for the purpose of this Decision whether the market for listed single stock equity futures and options should be subdivided according to the individual stock or should comprise a wider set of stocks up to and including options and futures on all European single stocks as, irrespective of the conclusion on this point, the notified transaction is likely to give rise to a significant impediment of effective competition with respect to European single stock equity derivatives under all alternative market definitions, that is be they considered on individual, national or European levels.

---

382 Amundi Asset Management, response to question 34 of Q2 - questionnaire to investment firms and retail intermediaries – Phase I, [...]*. See also BANCA IMI S.p.A., response to question 44 of Q1-questionnaire to customers – Phase I, [...]*, saying that "*In nessuna circostanza i derivati aventi come underlying azioni europee sono sostituibili a quelli aventi come underlying azioni US o JP. Possono essere al limite usati come proxy hedge ma lasciano un rischio di base aperto.*"

383 See NASDAQ OMX, response to question 25 of Q3 – questionnaire to competitors – Phase I, [...]*, explaining that, for an exchange already offering derivatives on some national single stocks,"[f]*rom a technical point of view,* [it] *may theoretically be possible*" to start offering, derivatives on single stocks listed on exchanges in (other) European countries. See also LSEG, response to question 25 of Q3 – questionnaire to competitors – Phase I, [...]*.

384 Notifying Parties' response to the SO, Single equity derivatives, paragraph 11.

385 Notifying Parties' response to the SO, Single equity derivatives, paragraph 8 et seq.

386 As concerns equity linked derivatives, index derivatives account for a majority of these derivatives in terms of notional value and volume traded.

387 TABB Report, slide 13.

11.1.1.2.2.2.3. European equity index derivatives

(427) Eurex and Liffe offer trading and clearing of equity index futures and options based on pan-European and national indices. Eurex's flagship products are derivatives on the pan-European EUROSTOXX 50 index, STOXX pan-European sectoral indices and the German DAX indices,[388] while Liffe offers trading of derivatives based mainly on the UK FTSE 100, the French CAC 40, and the Dutch AEX indices[389]. Due to trademarks and other IP rights associated with most of these products, the Notifying Parties offer derivatives based on different indices, except for some Japanese and Indian national indices where their trading volumes are insignificant.[390]

(428) From the demand-side perspective, the individual indices are not considered substitutable as they offer different exposures. Indeed, the market investigation confirmed that the majority of customers do not consider various European indices or national indices as substitutable.[391] For example, a market participant outlined that "[u]*nfortunately the indices are not substitutable (sic) because they are demanded by the clients specifically. We are not in the positions of pharmacist who can prescribe generics. Our clients will only buy the branded indices*"[392] while another noted that *"the underlying indices have different constituents, thus different performance and hence while at the superficial level they are both "pan European Equity indices" for any given trade one index or the other will be the appropriate benchmark and thus they are in no way substitutable."*[393]

(429) Similarly to single stock equity derivatives, index derivatives are by their very nature tied to a geographic region as they are used to get exposure to a basket of equities in a certain region. In this respect, one respondent indicated that "*Derivatives having European equity or equity index underlyings are mainly used to achieve a financial exposure to European equity or equity index. Thus they are not substitutable investments to derivatives having as underlying other equity or equity index (e.g. US, Japanese etc.).*"[394]

---

388 Eurex's derivatives based on other indices account for […]*% of the average daily volume ("ADV") for options and […]*% for futures.

389 Liffe's derivatives based on other indices account for less than […]*% of the ADV for options and […]*% for futures.

390 Form CO, Derivatives, paragraph 7.126.

391 Replies to question 89 of Q8 - Questionnaire to customers - derivatives – Phase II. For instance, Liquid Capital Mangement [...]* noted that "*They share some traits on a more macro basis but are fundamentally different as they are both based on completely different underlyings*". Similarly, [...]* stated that major European index derivatives are *"based on different set of underlyings and so are not substitutable."*

392 BNP Paribas Arbitrage SNC, response to question 35 of Q1- questionnaire to customers – Phase I, [...]*. see also the responses to the same question by BANCA IMI S.p.A., "*Riteniamo che nessun equity index derivatives sia perfettamente sostituibile con un altro anche se solo parzialmente diverso; un indice può al limite essere un proxy hedge di un altro indice lasciando però aperto il rischio di base tra i 2 indici. Il trading equity di BancaIMI cerca come copertura indici perfettamente sostituibili (cioè lo stesso)*" [...]*, and Finecobank S.P.A., "*Riteniamo che ogni sottostante abbia le sue caratteristiche e peculiarita', di conseguenza e' poco realistico ipotizzare di sostiuire un prodotto derivato con un altro*", [...]*.

393 [...]*, response to question 89 of Q8 - Questionnaire to customers- derivatives – Phase II, [...]*.

394 Amundi Asset Management, response to question 34 of Q2 - Questionnaire to investment firms and retail intermediaries – Phase I, [...]*. See also BANCA IMI S.p.A., response to question 46 of Q1-

(430) From the supply side perspective, the indices are usually protected by IP rights and therefore whilst it may be possible to reproduce the composition of an index,[395] its brand name cannot, at least at present, be freely used[396]. Such an index would therefore need first to gain credibility in the market, in particular on the part of asset managers developing funds which are based on or incorporate the relevant index. In this respect, the market investigation showed that "*there are very limited alternatives to* existing *European equity index derivatives. In order to effect entry successfully, a new entrant would need to be able to list popular ETDs on its trading platform, which would entail either obtaining a licence to use an existing benchmark or creating a new benchmark. Broadly-speaking, the creation of a new benchmark as a realistic alternative is not a viable option given that market participants often wish to trade the established index product. A new entrant would also need to offer a clearing service to customers enabling them to offset margin payments from their existing ETDs transactions.*"[397] In addition, it is extremely difficult to replicate an index,[398] since the calculation of an index includes certain elements, such as the treatment of certain corporate actions, the handling of which is partly at the discretion of the index provider.

(431) Therefore, it is concluded for the purpose of this Decision that, in view of separate and non-overlapping IP rights, which neither Notifying Party presently has licensed to the other and which the Notifying Parties have argued they would not have an incentive to do, separate relevant product markets exist for the trading and clearing of each of the Notifying Parties' families of existing equity indices (national and pan-European).

(432) However, there nonetheless exists competition between the Notifying Parties, as well as competition with third Parties, in respect of innovation in the area of new European index products, both national and pan-European. Given the high degree of correlation between the various European indices with resulting possibilities for significant margin offset between them, as well as technical similarities in how they are constructed and traded, this

---

questionnaire to customers – Phase I, [...]*, saying that "*In nessuna circostanza i derivati aventi come underlying indici europei sono sostituibili a quelli aventi come underlying altri indici. Possono essere al limite usati come proxy hedge ma lasciano un rischio di base aperto*".

395 Knight Capital Europe Limited, in its response to question 35 of Q1- questionnaire to customers – Phase I, [...]*, outlined that there is no European equity index derivatives which is substitutable to another "[b]*ecause equity index derivatives require licensing from the index licensor (DB and NYSE) to list, the existing and anticipated future instruments would not be readily fungible or substitutable*".

396 Under the Commission proposal of 20 October 2011 for "MiFID II", this situation may change. Since this proposal is not yet enacted, and in its final form may differ in some respects from the existing proposal, it is not relevant to the assessment of the proposed transaction under the EUMR.

397 AFME, response to question 35 of Q1- questionnaire to customers – Phase I, [...]* (AFME is the trade association of participants in the wholesale European financial markets, including banks, corporate finance advisors, and brokers, i.e. the largest customers of the Notifying Parties).

398 See Agreed minutes of meeting with AFME of 24 August 2011, paragraph 11, [...]*: "*Copying a market-leading index under a white label (such as "Europe 50" instead of EuroStoxx 50) may not infringe trademark rights but isn't a real alternative: it is rather, in investors' eyes, an unproven substitute since it cannot be guaranteed that the copied index is the same since there remains a degree of discretion in the operation of indices in the event, for instance, of system outages and corporate actions, due to which basis risk would still arise. Even if comparable liquidity and a collateral pool were available, such basis risk would likely outweigh any benefits from reduced trading and/or clearing fees. Investors' mandates often preclude using any alternative indices since they would be unwilling to jeopardize their hedging by using a different index and even if they were willing to do so they have little if any incentive*". See also Nasdaq OMX, response to question 79 of Q10 – questionnaire to competitors, Phase II [...]*.

type of innovation competition occurs in a wider market encompassing all European equity indices, both national and pan-European.

11.1.1.2.2.3. Classification of derivatives according to their relationship with the underlying

(433) According to the Notifying Parties, to the extent that the markets should be considered on the basis of underlying asset classes, options and futures should be distinguished as they have, in their words, somewhat different characteristics.[399]

(434) The three most common types of derivatives contracts are options, futures/forwards, and swaps.

(435) An option is a financial contract between two parties whereby the buyer acquires (against payment of a premium) the right, but not the obligation, to buy (call) or sell (put) a specified amount of the underlying at a specific "strike price" on or before a specified expiration date. Options may be traded on exchange or OTC. Listed options are standardised according to parameters such as the quality, quantity, delivery time, and strike price levels.[400] Options can take different forms, among which the two most common are call options (which provide the holder the right to purchase an asset for a specified price) and put options (which provide the holder the right to sell an asset for a specified price). The strike price of a call (put) option is the contractual price at which the asset will be purchased (sold) in the event that the option is exercised. The last date on which an option can be exercised is called the expiration date.

(436) A future/forward is a financial contract between two parties to buy or sell the underlying (or its cash equivalent) on a specified future date at a price agreed at the time of the conclusion of the contract. Contrary to the option contract, the futures contract obliges the buyer to purchase an asset or the seller to sell an asset. Futures are standardised listed products while “forwards” are traded OTC. Futures are the most liquid products on exchange. Although a futures contract technically calls for delivery of an asset, such delivery is normally replaced by the parties to the contract closing out their positions before contract maturity and taking gains or losses in cash.

(437) Futures contracts have linear payoffs so that the losses as well as the profits for the buyer and the seller of a futures contract are unlimited. This is not the case for options since the losses for the buyer of an option are limited, whereas the profits are potentially unlimited.

(438) Swaps are agreements between two parties to exchange a sequence of cash flows over a period of time. Swaps may be viewed as portfolios of forward contracts. Each transaction may be viewed as a separate forward agreement. The swap price is an average of the forward prices. The Notifying Parties note that swaps have historically been traded exclusively OTC and attempts by exchanges to launch swaps as listed derivatives have so far been largely unsuccessful in attracting significant liquidity.[401]

399 Form CO, Derivatives, paragraph 6.259.
400 Form CO, Derivatives, paragraph 6.42.
401 Form CO, Derivatives, paragraph 6.46

(439) The market investigation has indicated that options, futures and swaps constitute fundamentally different instruments used for different purposes. In particular, the market investigation pointed to the fact that swaps may constitute a separate category due to their different characteristics, use and environment in which they are traded.[402] Indeed, *"While a future contract fixes the price for a single point in time, a swap locks in a level today for several future dates. In case a trader would want to achieve a risk exposure using futures similar to [that which]* could be achieved by entering into an interest rate swap, the trader would be exposed to the cost of carrying the futures position, and would need to regularly roll the futures position as liquidity of futures contracts past the front end is very thin*".[403] Similarly, ICAP, an interdealer broker operating an OTC trading platform trading primarily swaps "*sees activity in OTC swaps as a consistent and frequent market that operates independently from the listed derivatives markets, and has its own dedicated swaps brokers that supply a brokerage service to banks. This indicates that listed options and futures do not perform the same function as swaps for the banks, despite the greater concentration of liquidity in certain exchange products.*"[404] BNPP stated that "*swaps are only traded OTC: exchanges tried to introduce swaps (e.g Liffe tried to introduce a swap note in 2000) but without success. According to BNPP this is because swaps are tailored to particular dates and therefore they are not fungible by definition. As a result, they are not suited for exchanges*".[405]

(440) In addition, while cross-margining between futures and options is currently offered by all clearing-houses active in European derivatives, there is no clearing-house currently offering cross-margining between futures and options on the one hand and swaps on the other.

(441) As concerns substitutability between futures and options, while they are both traded primarily on exchanges, they offer different payoffs and have different uses. LSE noted that "*futures tended to be traded on screen (i.e. on exchange) whereas options were much more prearranged in part (but not only) to benefit from the fee cap. There was no equivalent OTC market for trading futures.*[406]

(442) While from the demand-side perspective, the demand to trade derivatives would seem specific to the specific type of contract and therefore options and futures would not seem substitutable, from the supply-side, exchanges are able, and typically do offer, both futures and options on underlyings on which they list contracts. Indeed, once an exchange has established liquidity in futures on an underlying, it can start offering options at minimum cost (or vice versa).

(443) Therefore, it is concluded for the purpose of this Decision that swaps do not belong to the same product market as futures and options. The question as to whether futures and

---

402 As to the forwards being distinct to the futures please refer to Recitals (416) and (417) on ETD vs. OTC

403 Agreed minutes of a teleconference call with ICE of 14 September 2011, [...]* – paragraph 10.

404 Agreed minutes of a teleconference call with ICAP of 14 September 2011[...]*, paragraph 4. ICAP also stressed the fact that "*OTC interest rate swaps are almost never traded for a period of less than two years and are often traded in five, seven, or ten year tenor, whereas ETDs are normally held for a shorter period of time*", see ICAP's observations on the SO issued in case M.6166 Deutsche Börse/ NYSE Euronext submitted pursuant to article 16(1) of the Implementing Regulation, 26 October 2011, paragraph 6.13 [...]*.

405 Agreed minutes of a teleconference call with BNPP of 16 September 2011, [...]*, paragraph 19.

406 Agreed minutes of a teleconference call with LSE of 21 September 2011[...]*, paragraphs 22-23.

options on a particular underlying belong to the same or separate relevant markets can be left open as the competitive assessment would remain the same irrespective of the conclusion on this point. This is because the notified transaction is likely to give rise to a significant impediment of effective competition with respect to a number of listed derivatives irrespective of whether options and futures were to be considered as separate relevant markets or part of the same market. As a result, the term ETDs used in this Decision generally refers to exchange-traded options and futures taken together.

11.1.1.2.2.4. *Conclusion*

(444) On the basis of the above, it is concluded for the purpose of this Decision that the market for trading and clearing of derivatives should generally be subdivided according to the execution environment into ETDs and OTC derivatives and the type of customer. Furthermore, the market should be subdivided according to the underlying asset class comprising the whole series of contracts within each asset class. Finally, the market should be subdivided according to the type of product into swaps, futures and options while the question of whether futures and options belong to the same relevant market can be left open.

(445) As a result, the relevant markets in the area of derivatives trading and clearing on which the effects of the notified transaction are assessed in this Decision are the following:

- As concerns customers that can trade only ETDs, the relevant markets are the market for existing and new exchange-traded European interest rate futures and options possibly subdivided into STIR and LTIR, the market for existing and new European single stock equity futures and options, and, the market for new European equity index futures and options[407];

- As concerns customers that trade both ETDs and OTC derivatives, the relevant markets are the market for existing and new exchange-traded European interest rate futures and options possibly subdivided into STIR and LTIR and possibly comprising ETD lookalikes, the market for existing and new European single stock equity futures and options possibly comprising ETD lookalikes, and, the market for new European equity index futures and options[408]. Indeed, given the small size of the ETD lookalikes segment, it can be left open for the purpose of this Decision whether, for this category of customers, ETD lookalikes belong to the same market as ETDs traded on the central order book as the competitive assessment remains the same regardless of whether or not, for this category of customers, ETD lookalikes were included into the relevant product market.

(446) In addition, it is concluded that OTC platforms, inter-dealer brokers, broker-dealers and OTC price discovery platforms operate in a different space to exchanges and therefore cannot be considered as offering services which fall within any of the relevant markets defined above.

---

407 Given that equity index derivatives are protected by IP rights, Notifying Parties overalp only with respect to the market for new European equity index futures and options.

408 Given that equity index derivatives are protected by IP rights, Notifying Parties overalp only with respect to the market for new European equity index futures and options.

11.1.1.2.3. Geographic market definition

(447) According to the Notice on market definition, *"the geographic market comprises the area in which the undertakings concerned are involved in the supply and demand of products or services, in which the conditions of competition are homogeneous and which can be distinguished from neighbouring areas because the conditions of competition are appreciably different in those area."*[409]

(448) Despite indications that the geographic scope of the market for derivatives contracts in which the activities of the Notifying Parties overlap (namely European interest rate derivatives or European equity derivatives) may be regional due to a clear nexus these contracts present with Europe, the decision opening the proceedings left the precise geographic market definition open as the conclusion on that point did not affect the conclusion that the notified transaction raised serious doubts as to its compatibility with internal market.

(449) The Notifying Parties in their response to the decision opening the proceedings state that the relevant geographic market is worldwide and should include *"the entire universe"* of exchanges.[410]

(450) The SO, similarly to the decision opening the proceedings left the geographic market definition open.[411] The Notifying Parties in their response to the SO reiterated their arguments in support of a global market definition stating that major competitors are active globally and that the market is analysed as global in their internal documents and that, arguably, the Commission and other regulators acknowledge a broader "global" market for derivatives trading.[412]

11.1.1.2.3.1. General considerations

(451) First, as concerns the Notifying Parties' claim that the major players are active globally, the Commission notes that distribution of market shares between the parties and their competitors may provide a broad indication of the scope of the geographic market.[413] In this Decision, as concerns the underlyings subject to this Decision, the Notifying Parties are the only significant providers around the world. According to one of the Notifying Parties' customers, *"there are limited number of contracts that exist on European underlyings on non–European exchanges."*[414] The Notifying Parties control almost all exchange-traded European interest rates (be they short term or long term) and the vast majority of exchange trading in European single equity and equity index derivatives, while the biggest exchange in the world, CME, controls the quasi totality of the US futures market. This market share asymmetry in various regions provides a first general indication that the scope of the geographic market for the products at stake may be narrower than global. This is consistent with the fact that historically, CME has been strong in the US

409 See Notice on the market definition, paragraph 8.
410 Notifying Parties' response to the decision opening the proceedings of 4 August 2011, paragraph 3 and section IV.
411 See SO, section 1.3.
412 Notifying Parties' response to the SO, Introduction, paragraphs 23ff.
413 Notice on the market definition, paragraph 28.
414 [...]*, response to question 37 of Q8 - questionnaire to customers on derivatives, [...]*.

while Eurex and Liffe have historically been strong in Europe and high barriers to entry have precluded the significant emergence of new players. This is illustrated by the attempts of Eurex US and Liffe US to penetrate the US market which have not met with significant success.[415]

(452) While derivatives markets may be viewed as global in the sense that customers are located all around the world[416] and in theory any exchange from another region can enter Europe provided it fulfils the relevant regulatory obligations, as concerns derivatives based on European underlyings as those subject to this Decision, there is very little trading outside Europe. This is because platforms outside of Europe have no meaningful margin pool in contracts based on European underlyings.

(453) Trading of derivatives contracts that are by nature tied to a geographic region such as European interest rate derivatives or European equity derivatives is specific to the moment in time when the trading firm is willing to get exposure or reduce exposure to a certain risk. As a result, trading during trading hours of different regions would normally not be an alternative to trading during European trading hours. This is observable through the fact that liquidity in these instruments tends to be highest during European trading hours. This is because trading of these derivatives is used to hedge positions in underlying instruments which are themselves tied to a region and which appeal principally to local customers.[417] This was confirmed during the second phase market investigation which generally indicated that the choice of trading venue depends on trading hours as the liquidity in these region-linked instruments is highest during the trading hours of the region to which they are linked.[418] This means that as concerns European IR derivatives and European single stock equity derivatives, a platform needs to operate during European trading hours. This has also been confirmed by the Notifying Parties at the Oral Hearing when, [discussion of STOXX licensing practice]*.[419] […]*.

(454) In order to build up presence on another continent than its home continent, an exchange must first build up physical presence in the form of a local infrastructure. This is because the location of the exchange has an impact on applicable regulations (including in case of default), post-trade arrangements, currency risk, trading hours (ability to offer trading and exchange support).[420]

(455) The Notifying Parties argued that CME is penetrating the European market with its launch of Euribor contracts and that this evidences the global nature of competition.[421] CME currently offers two products based on European underlyings – Sovereign Yield Spread

---

415 See Form CO, annex D.44.

416 Because a lot of trading goes through brokers, it is difficult to get a clear picture where end customers are located.

417 See [...]*, response to questions 29 and 35 of Q8 – Questionnaire to customers on derivatives – Phase II, [...]*.

418 See replies to question 33 of Q8 – Questionnaire to customers on derivatives – phase II.

419 The following question has been asked by a member of the case-team: [discussion of STOXX licensing practice]*, Oral Hearing, morning session 3:38:51.

420 See BNP Paribas, response to question 35 of Q8 - questionnaire to customers on derivatives - Phase II, [...]*: "*The geographic location of the exchange platform has little influence. The law governing the contracts and the potential resolution in case of default are a much more important factor*."

421 Notifying Parties' response to the decision opening the proceedings of 4 August 2011, paragraph 52.

Future and Euribor which it launched in October 2011. [...]* [422] [...]*.[423] As a result, trading of these products in US hours may not be an alternative for most European customers that trade the bulk of the liquidity on the Notifying Parties' derivatives trading platforms and in any event, given the high barriers to entry[424] in this industry, it is unlikely that CME would develop substantial liquidity in these European products.

(456) Finally, as concerns the Notifying Parties' claim that they analyse their performance against competitors worldwide, the Commission notes that this has little bearing on the reality that other platforms do not, or offer to a limited extent, contracts based on European underlyings. Therefore, with the exception of CME trading a limited amount of Euribor futures, the Notifying Parties in practice do not face competition from their "global competitors" in any of the products in which their activities overlap. Similarly, the statements in various regulatory proposals to which the Notifying Parties refer as evidencing the global nature of derivatives markets do not affect the fact that on the basis of individual products, the Notifying Parties are the only exchanges around the world that trade products in these categories.

11.1.1.2.3.2. *Exchange traded European interest rate options and futures*

(457) From the demand side perspective, customers of European exchange traded interest rate options and futures are located around the world. However, from the supply-side perspective only Eurex, Liffe, and to a very limited extent CME, offer derivatives contracts based on European interest rates.[425] In addition, given the high barriers to entry into this market as described in Section 11.2.1.7 below, successful entry of other players into these products seems unlikely.

(458) In any event, it can be left open for the purpose of this Decision whether the geographic scope of the market for exchange traded European interest rate options and futures is worldwide or limited to the EEA, as the notified transaction is likely to significantly impede effective competition under both alternative market definitions.

422 [...]*.

423 Agreed minutes of a meeting with CME of 1 September 2011, [...]*.

424 See section 11.2.1.7. of this Decision.

425 See Section 11.2.1.4.3.5.1 of this Decision for the analysis of CME's position in Euribor contracts.

11.1.1.2.3.3. Exchange traded European single stock equity options and futures

(459) From the demand side perspective, customers of European exchange traded interest rate options and futures are located around the world. However, from the supply-side perspective only Eurex, Liffe, and a number of other European exchanges offer derivatives contracts based on European single stocks. In addition, given the high barriers to entry into this market as described in Section 10.2.1.7 below, successful entry of other players into these products seems unlikely

(460) In any event, it can be left open for the prupose of this Decision whether the geographic scope of the market for exchange traded European single stock equity options and futures is worldwide or limited to the EEA, as the notified transaction is likely to significantly impede effective competition under both alternative market definitions.

11.1.1.2.3.4. Exchange traded European equity index options and futures

(461) As in the case of single equity derivatives, from the demand side perspective, customers of European exchange traded interest rate options and futures are located around the world. However, from the supply-side perspective, only Eurex, Liffe, and a number of other European exchanges offer derivatives contracts based on European equity indices. In addition, given the high barriers to entry into this market as described in Section 11.2.1.7 below, successful entry of other players in competition with the products currently offered by the Notifying Parties seems unlikely.

(462) In any event, given that Notifying Parties compete only with respect to new products in the the market for exchange traded European equity index options and futures it can be left open for the purpose of this Decision whether the geographic scope of this market is worldwide or limited to the EEA, as the notified transaction is likely to significantly impede effective competition under both alternative market definitionswith respect to the innovation competition in this area.

11.1.2. Off-order book services – registration, confirmation and CCP clearing of block size ETD contracts

(463) In the decision opening the proceedings, the Commission left open the question of whether off-order book and on-order book services constitute separate relevant markets.[426] The SO concluded that off-order book services constitute a separate market from order book trading of ETDs.[427]

(464) In their response to the SO, the Notifying Parties argued that off-order book services together with trade registration, confirmation and CCP clearing services for flex contracts belong to the same market as order book trading as they all use the same matching infrastructure.[428]

---

426 Decision opening the proceedings of 4 August 2011, paragraph 42.

427 See SO, paragraph 1.7.4.

428 Notifying Parties' response to the SO, paragraph 63.

11.1.2.1. PRODUCT MARKET DEFINITION

(465) Off-order book facilities are services allowing parties to a derivatives contract bilaterally to negotiate the terms of a large size trade in an ETD contract available on the order book, and nevertheless still report and clear the trade on-exchange. This constitutes an alternative for such parties to simply submitting an order to the exchange's central order book, which would then electronically match it with another order based on pre-determined priority principles.[429] The post-trading process is identical in both cases. Use of the off-order book facility therefore allows a trader to benefit from the three key post-trade advantages of trading in the exchange environment, namely fungibility, margin offset and elimination of counterparty risk, whilst ensuring full execution of the order at a predetermined price.

(466) The exchange off-order book facility is reserved for trades above a certain size (the level of which is determined by the exchange depending on the contract in question). This level is determined on the basis of a trade-off between the desire to keep liquidity on the order book and the recognition that customers may be reluctant to execute trades above a certain size on the order book because of the risk of price impact or simply because there is insufficient liquidity available on the order book at an attractive bid-ask spread.

(467) The off-order book facility therefore allows customers to trade exactly the same underlyings as those traded on the order book, with full offset and fungibility of positions. As a result it is a complementary service to on-order book trading, as explained by one respondent who stated that they *"regard off-orderbook as a complement to trading on-orderbook"*[430]. Market participants will take a view at the moment when they wish to trade on the terms available to execute a particular order on the order book compared to those which can be agreed bilaterally, and on the basis of this view will decide which route to follow. When negotiating the trade bilaterally, however, it is understood by both potential counterparties that exchange conditions will apply and that the trade will enter into the open interest and margin pool of the exchange, exactly as if it had been traded on the order book.

(468) It follows that, given available liquidity at the moment of trading, and given exchange rules on minimum size, demand for off-order book services is distinct from demand for on-order book services. Whilst at the margins market participants may consider the two routes as alternatives (given the transactional costs of finding a counterparty away from the exchange), this is of no consequence for the competitive assessment since there is no "competition" between these two routes.

(469) Both derivatives and cash exchanges generally offer off-order book services for some or all of the instruments listed on their platforms. Although such trades are agreed bilaterally and therefore, as regards their means of execution, might in one sense be viewed as OTC trades, the existence of full offset and fungibility and the elimination of counterparty risk

---

429 The term "off-book services" is sometimes used in the market (and by the Notifying Parties in their submissions) in a wider sense to cover all services of trade registration, confirmation and clearing regardless of the contract concerned, i.e. not limited to listed contracts available on the order book. In this Decision, the term "off-order book" is reserved for the case where trades take place in instruments which are available on the order book of the same exchange.

430 UBS, response to question 21 of Q8 - Questionnaire to customers on derivatives – Phase II, [...]*.

distinguishes them from all other contracts traded OTC, since what is traded is in effect an ETD, differing only in respect of the mode of execution.

(470) This view has been confirmed in the market investigation. One market participant noted that the "*Main difference [with OTC] is the counterparty risk. Also Off order book is easier to trade and customer has exchange settlement price for their valuation*" (that is to say it is easier to determine fair value of the resulting asset than in the case of an OTC contract)[431]. Another explained that "*Off-order book exchange trading allows the trader to pre-arrange larger size trades in exchange listed contracts. Using the wholesale trade entry facility such trades can be agreed, ratified and effectively executed before being put onto the exchange. The most significant difference between this and OTC trading is that the exchange acts as CCP for off-order book exchange trading whereas OTC trades are bilaterally agreed.*"[432]

(471) Indeed, according to the Notifying Parties, the distinction between on-book and off-book may sometimes be blurred. In this respect, the Notifying Parties note in the Form CO that *[…]*.*[433] […]*[434]. This is likely to be because the thinness of liquidity in these cases would expose the sell-side order to excessive adverse pricing risk in the absence of a known buyer at the offered price. Where there is a liquid order book in a given instrument, however, this risk would not be expected to arise.

(472) The fee structure and actual fees for off-order book services and trading on the order book offered by the Notifying Parties are different. […]*.[435]

(473) It follows that off-order book services provided by exchanges are different from on-order book services notwithstanding the fact that they concern the same contracts and use the same infrastructure. From a demand-side perspective, off-order book services clearly cater for specific needs that cannot in general be catered for at the same cost by order book trading. Indeed, off-order book services comprise the registration, confirmation and CCP clearing (including margin management throughout the lifetime of the contract) of block trades that could not be executed on order book without significant price impact, but do not include the trading service.

(474) Because of the fundamental difference in use between off-order book and on order book facilities, customers would not switch between order book trading and off order book trading – and indeed cannot switch unless the size they wish to trade exceeds the thresholds established by the exchange. The mere fact that a separate service designed to cater for the demand of traders who want to trade large sizes without market impact exists, notwithstanding that this service might run the risk of subtracting liquidity from the order book, is an indication that there is no, or at best limited, demand substitutability between the two services.

---

431 BHF-BANK Aktiengesellschaft, response to question 26 of Q1 – questionnaire to customers – Phase I, [...]*.

432 Principle Trading LLP, response to question 26 of Q1 – questionnaire to customers – Phase I, [...]*.

433 Form CO, Derivatives section, paragraph 6.289.

434 Form CO, Derivatives section, paragraph 6.289.

435 See Notifying Parties' replies to the Commission's RFI of 8 August 2011. .[…]*. See also agreed minutes of call with [...]*.

(475) As a result, it is concluded for the purpose of this Decision that off-order book services belong to a distinct, although closely linked market, to on-order book services. Because of the close link between the two services, which concern identical contracts, and the fact that only exchanges that list certain ETDs can offer off-order book facilities for these same contracts, the Notifying Parties' offering in respect of off-order book services overlap to the same extent as they do for on-order book services. Since the relevant off order book services concern the same ETDs as on-order book services, separate markets might similarly be identified for European interest rates, equity and equity indices derivatives as discussed for on-order book trading above. Since the service provided is essentially the same in all of these cases, however, the competitive assessment is discussed with reference to these asset classes as a whole.

11.1.2.2. GEOGRAPHIC MARKET DEFINITION

(476) Given the close link between on-order book and off-order book services, the analysis of the geographic scope of this market is the same as for on-order book services in all asset classes where the activities of the Notifying Parties overlap (see Section 10.1.1.2.3 above).

11.1.3. Trade registration, confirmation and central counterparty clearing services for flexible versions of European equity futures and options traded OTC[436]

(477) The Notifying Parties' activities also overlap with respect to trade registration, confirmation, central counterparty clearing and risk management ("post-trade services") for "flex" contracts. Flex contracts are single equity futures and options that could not be executed on exchange because certain of their economic parameters (such as strike date, strike price, settlement style and exercise style) deviate from those of the standard listed derivative available on the order book of the exchange in question.

(478) In their response to the SO, the Notifying Parties argue that trade registration, confirmation and CCP clearing services for flex contracts together with off-order book services belong to the same market as order book trading as they all use the same matching infrastructure[437].

11.1.3.1. PRODUCT MARKET DEFINITION

(479) Post-trade services for flex contracts are provided by NYX through a facility called Bclear introduced in 2005 and by DB through its Flexible Options and Futures Facility ("OTC Flex"). In relation to this type of contract, Bclear and OTC Flex offer the same type of services aimed at providing facilities for confirmation and clearing of flexible equity options and futures traded OTC. The rationale behind these services is to attract trades that would otherwise stay OTC into the exchange environment for clearing and post-trade services, allowing them to benefit from elimination of counterparty risk, and also from margin offset where relevant.

(480) While Bclear offers these post-trade services for a wide range of options and futures on European equities (including single stocks and indices), as well as for commodity

436 See Section 11.1.3 of this Decision for definition of flex contracts.

437 Notifying Parties' response to the SO, paragraph 63.

derivatives, including for underlyings that are not listed on Liffe's central order book, DB's facility, by contrast, only offers OTC flexible options and futures on European equities (including single stocks and indices) which are also listed on Eurex's order book. Contracts cleared through these services represent significant parts of the cleared volumes and open interest of both of the Notifying Parties in the equity and equity index options and futures space.

(481) The Notifying Parties claim that these post-trade services, despite being marketed as OTC clearing services, are simple off-order book facilities as they only make it possible to […]*[438] Although the services provided are similar to those provided in the cases of off-order book services – namely, trade registration, confirmation, CCP clearing and counterparty risk management – and contract terms are defined by the exchange, they differ in respect of the possibility of netting, which is in general absent and in any case not immediately possible for flex trades. The market investigation provided indications that the services provided in relation to flexible contracts should for this reason (absence of netting) rather be characterised as OTC clearing services.

(482) Indeed, several market participants indicated that they consider Bclear and OTC Flex as OTC clearing facilities: "[t]*hese services were introduced approx. in 2007 to offer clearing on "look-alike" contracts (listed contracts with a customised maturity, strike price...)*[439]*. We trade on equity derivatives (single stocks and index). From our point of view, they are pure OTC clearing facilities and are presented as such by NYSE Liffe and Eurex;*"[440] "*Substance of services: - Cleared service for equity derivatives (futures and options) on blue chip single stocks, national and pan-European indices - Register OTC business for trade confirmation, administration, and clearing as if it were an Exchange Contract - Retain flexibility to specify contract maturity, exercise price and settlement method - Allow for novation of contracts by CCP thus allowing a position to be opened and closed via different participants;*"[441] "*FLEX is a OTC clearing facility;*"[442] [...]*[443]. "*The exchanges with their single stock products (such as Bclear) function only as clearing agents*"[444].

---

438 Notifying Parties' response to Commission's RFI of 13 September 2011, page 6.

439 For the avoidance of doubt, it should be noted that "lookalike" here should not be confused with "lookalike" as defined in section 11.1.1.2.2.1.3 of this Decision, which is limited to exact copies of the economic exposure offered by an ETD. In general, there is certain fluidity in how market participants use some elements of terminology.

440 BNPP, response to question 23 of Q8 Questionnaire to customers on derivatives – Phase II, [...]*, which also stated that "*BClear and OTC Flex are services providing clearing of OTC contracts (off order book used to exist before and the only rationale of introducing these services was to provide a new service that did not exist). Through these services, contracts traded OTC are declared on the platforms. BClear accept vanilla contracts, standardised, regardless of being listed on Liffe, whilst OTC Flex accepts only contracts listed on Eurex and only single stock options, which are then cleared on Eurex. While BClear allows margin offset with Liffe's order book, Eurex only recently allowed partial offset*", agreed minutes of conference call of 16 September 2011, [...]* Out of 42 respondents, 13 described them as clearing facilities (see non-confidential replies to questionnaire Q8). See also agreed minutes of telephone conference with BNPP of 16.9.2011, [...]*, para. 15.

441 [...]*, response to question 23 of Q8 - Questionnaire to customers on derivatives – Phase II, [...]*.

442 DZ Bank AG, response to question 23 of Q8 - Questionnaire to customers on derivatives – Phase II, [...]*.

443 [...]*, response to question 23 of Q8 Questionnaire to customers on derivatives – Phase II, [...]*. See also the replies to the same question of Banca Akros S.p.A., [...]*, FOA, [...]*, and Landesbank Berlin AG, [...]*. Nonetheless, see also the replies to the same question of [another customer]* ("*For market*

(483) According to LSE, *"the major innovation of BClear when it was introduced was that it allowed trade reporting and clearing in products which Liffe did not have on its order book. IT was accompanied by a major pricing innovation whereby the linear pricing in volume used on the order book was subject to a price cap. As block or flex trading is in large sizes by definition, this kept costs down and was the aspect of the service most welcomed by the market."*[445]

(484) The Notifying Parties claim that *[…]**[446] However, Bclear offers post-trade services for ETDs not listed on the central order book of NYSE Liffe and achieves, […]* trading volumes from providing these post-trade services for many OTC contracts based on underlyings where the primary liquidity in the corresponding ETDs is on Eurex (it can be surmised that some of this volume will relate to lookalikes). […]*.[447]

(485) The mere fact that exchanges introduced this service to attract trades that would otherwise remain in the OTC environment indicates the existence of a separate demand for this type of service. Clearly, trades entered into these facilities lack (with the exception of lookalikes, which form an intermediate category) the level of standardisation in economic parameters that would make them eligible for order book trading. As a result, these services cannot be substitutable with either on order-book services or off-order book. This is because the contracts concerned by on and off order book services on the one hand and flex services on the other differ in one fundamental respect: the former apply to fully standardised contracts while the second apply to flexible contracts.

(486) Although market participants may sometimes use the term "off-order book" facilities also to apply to trade registration and clearing of flexible equity futures and options as offered by the Notifying Parties, it is clear that, in doing so, they are using this term in a different and wider sense to the one defined above at in Section 11.1.2.

(487) It is, however, not necessary to decide for the purpose of this Decision whether these services are best characterised as off-order book facilities or OTC clearing services as they clearly constitute a separate market from on-exchange trading of standard ETDs, whether on- or off-book, since, *inter alia*, they do not involve the trading of ETDs, and the positions entered into are not fungible, at least at the outset, with positions in standard ETDs.[448]

(488) Since the relevant services, in terms of where the Notifying Parties presently overlap, concern European equities and equity indices, separate markets might be identified in these two cases. Since the service provided is essentially the same in both cases, and

---

participants, to facilitate Central Clearing for OTC trades. For the Exchange, to capture more volume from OTC market into Central Clearing, volume they wouldn't have gotten otherwise because of the size of the trades. The difference between Off order book and OTC clearing facilities is very thin", [...]*) and Liquid Capital Management LLP ("*They are both off order book trading facilities and OTC clearing facilities e.g. fulfil both needs*", [...]*), where the concerned services are presented as both off order book and OTC clearing facilities.

444 ICAP, response to question 16 of questionnaire Q8 - Questionnaire to customers on derivatives – Phase II [...]*.

445 Agreed minutes of a teleconference call with LSE of 21 September 2011, [...]*.

446 Notifying Parties' response to Commission's Request for information of 13 September 2011, page 1.

447 Notifying Parties' response to Commission's Request for information of 13 September 2011, page 8.

448 .[…]*

since the Notifying Parties' offerings hardly overlap as regards indices, the competitive assessment is discussed with reference to flexible equity and equity index futures and options as a whole.

(489) Therefore, it is concluded for the purpose of this Decision that trade registration, confirmation and central counterparty clearing services for flexible European equity futures and options traded OTC constitutes a distinct product market.

11.1.3.2. GEOGRAPHIC MARKET DEFINITION

(490) Given the close link between the services for trade registration, confirmation and central counterparty clearing services for flexible European equity futures and options traded OTC and off order book services in standardised ETDs, the analysis of the geographic scope of this market is the same as for both on- and off-order book services in all asset classes where the activities of the Notifying Parties overlap (see Sections 10.1.1.2.3 and 11.1.2.2 above).

11.2. COMPETITIVE ASSESSMENT

(491) The following Section 10.2.1 deals with the competitive assessment of all relevant markets related to trading and clearing of exchange traded derivatives. Sections 11.2.2 and 11.2.3 deal with off-order book and flexible post-trade services respectively. Section 11.2.4 concludes for the competitive assessment of the relevant markets in the field of derivatives as a whole.

11.2.1. Trading and clearing of exchange traded derivatives

11.2.1.1. INTRODUCTION

(492) This Section of the Decision is organised as follows. Section 11.2.1.2 outlines the general parameters of competition in the markets concerned by this Decision. Section 11.2.1.3 then looks at the nature of competition between the Notifying Parties in general terms, and is followed by Sections on competition between the Notifying Parties in European interest rate futures and options (11.2.1.4), single stock equity options and futures (11.2.1.5) and equity indices (11.2.1.6). Sections on barriers to entry (11.2.1.7) and buyer power (11.2.1.8), which apply in respect of all product classes concerned, then follow.

11.2.1.1.1. The Commission's analytical framework

(493) In making its competitive assessment of the markets concerned by this Decision, the Commission applies the Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (the "Horizontal Merger Guidelines").[449]

(494) According to the Horizontal Merger Guidelines, "*a merger may significantly impede effective competition in a market by removing important competitive constraints on one or more sellers or service providers, who consequently have increased market power.*

[449] OJ C 31, 05.02.2004, p. 5.

The most direct effect of the merger will be the loss of competition between the merging firms. For example, if prior to the merger one of the merging firms had raised its prices, it would have lost some sales to the other merging firm. The merger removes this particular constraint."[450] The Merger Regulation clarifies that all mergers giving rise to such non-coordinated effects must be declared incompatible with the internal market.[451]

(495) Typically, in concentrated markets such as the derivatives markets concerned by this Decision, the most direct effect of the merger is the loss of competition between the merging parties. Similarly, a merger between potential competitors may significantly impede effective competition if the potential competitor in a market significantly constrains the behaviour of firms active in the market.[452]

(496) The Commission has made its assessment in light of the following factors that are according to the Horizontal Merger Guidelines relevant for the competitive assessment in horizontal merger cases:

(a) as regards the likelihood of significant non coordinated effects:

– the market shares that would result from the notified transaction in all relevant markets under all possible market definitionsthe closeness of competition between NYX and DB; andthe ability of customers to switch suppliers post-merger.

(b) as regards the assessment of countervailing effects, the Commission analysed:

– potential buyer power of the merged entity's customers; and

– the likelihood of timely and sufficient entry post-merger.

(c) as regards the assessment of the effects of the merger on markets where DB and NYX are potential competitors, the Commission assessed the two cumulative conditions :

– the existence of the pre-merger constraining influence (or the ability to grow into an effective competitive force) of the Party that is a potential competitor in a market where the other Party is already present; and

– the existence (or not) of other potential competitors that would be able to maintain sufficient competitive pressure on the merged entity post merger.

(497) In this respect, it should be recalled that pursuant to paragraph 26 of the Horizontal Merger Guidelines, not all of the listed factors need to be present for a significant impediment to effective competition to arise.

450 Horizontal Merger Guidelines, paragraph 24.
451 Merger Regulation, Recital 25.
452 Horizontal Merger Guidelines, paragraphs 58 and 59.

11.2.1.1.2. The overall market position of the Notifying Parties

(498) The Notifying Parties are *de facto* the only two players offering exchange trading in European interest rate futures and options, and they occupy predominant positions in trading of European single equity derivatives (while being the only two players in their home markets) and European equity index derivatives. They together control over [90-100%]* of all derivatives based on European underlyings traded around the world. This is evidenced by the figures in Table 1 below which show the Notifying Parties' combined market shares in the two main product categories where they overlap, namely European interest rate derivatives and European single stock equity derivatives.[453].

Table 1: Combined market shares of the Notifying Parties for ETDs

Type of ETD	Combined market shares of the Notifying Parties: On-exchange only (on and off order book), year 2010
European interest rate derivatives	[90-100%]* (NYSE: [40-50%]*; DB: [40-50%]*)
European single stock equity derivatives	[80-90%]* (NYSE: [20-30%]*; DB: [60-70%]*) Significant overlaps in contracts on individual equities (Belgian, French, Austrian, Finnish, French, German, Italian, Portuguese, Swiss, UK)

Source: based on 2010 figures provided in the Form CO, Annex D.15.

(499) In existing products in European equity index futures and options, DB has a [90-100%]* market share for its Eurostoxx and DAX franchises, while NYX has a [90-100%]* market share for its CAC, BEL, AEX and PSI franchises and close to [90-100%]* for its FTSE index franchise.

11.2.1.2. GENERAL PARAMETERS OF COMPETITION IN DERIVATIVES TRADING AND CLEARING

11.2.1.2.1. Introduction

(500) This Section outlines the general parameters of competition in the derivatives markets concerned by this Decision. According to the Commission's market investigation in this Decision, exchanges compete on pricing and the cost of trading (Section 11.2.1.2.2), to attract liquidity (Section 11.2.1.2.3), technology (Section 11.2.1.2.4), product innovation (Section 11.2.1.2.5) and process and market design (Section 11.2.1.2.6).

[453] The Notifying Parties' combined market shares under alternative market definitions are reported in section 11.2.1.4 of this Decision dealing with interest rate derivatives and in section 11.2.1.5 of this decision dealing with single stock equity derivatives.

11.2.1.2.2. Pricing and cost of trading of ETDs

(501) The cost of carrying out a derivatives transaction comprises the following implicit and explicit elements: the bid-ask spread and market impact, the opportunity cost of posting collateral, membership fees as well as per transaction trading and clearing fees. The implicit cost of trading represented by the realised bid-ask spread is typically several times greater than the other costs traders incur.[454]

(502) The market investigation confirmed that traders in general take into account the total cost of trading (including both implicit and explicit fees) when deciding where to trade.[455] Derivatives exchanges compete on the explicit portion of costs (including rebates, market making incentives and collateral costs) to attract liquidity to their platform whilst implicit costs are mainly a function of the achieved bid-ask spread.

(503) The Notifying Parties publish public fee schedules indicating headline fees for trading and post-trade services. However, headline fees rarely reflect the actual fees paid by customers as these are influenced to a large extent by rebate schemes, which, because they may be tailored to specific customers[456] are difficult to analyse other than on a case-by-case basis. Rebate schemes are nonetheless an important way by which the Notifying Parties respond to competitive situations and try to attract most valuable customers. In this context, NYX states that […]*[457] DB acknowledges that […]*, although states that […]*.[458]

(504) It follows that the Notifying Parties' internal documents recognize that there are customers with different price sensitivities and […]*. This was also confirmed during the market investigation which indicated that the relative importance of explicit trading costs may differ according to the type of customer; liquidity providers tend to consider the level of trading fees as very important due to the high transaction volume they handle, while other customers indicated that the level of fees are not so important. Exchanges can and do exploit this different price sensitivity and compete for more price sensitive customers and those who bring liquidity to the exchange by granting them discounts.

(505) The ability of the Notifying Parties to price discriminate between various types of customer is evidenced for instance by their applying different transaction fees to liquidity providers and to liquidity takers. Moreover, the Notifying Parties are able to

---

454 In the Form CO, Derivatives, paragraph 6.181, the Notifying Parties state that the difference is "several orders of magnitude", a formulation also inadvertently taken over by the Commission in the SO. However, this appears to be an exaggeration. Indeed, as DB argues in a public document, "*for many of the most liquid products (or so-called global benchmark products) at the globally leading derivatives exchanges, such as the Bund Future at Eurex, bid-ask spreads have been constantly close to their potential minimum level since the late 1990s*", implying that, for these products at least, transaction costs are a more significant part of the overall cost of trading (see "The Global Derivatives Market: An Introduction: DB White Paper", *op.cit.*, p.31.

455 See Recital (249) of this Decision.

456 Notifying Parties, response to question 13 of the Commission's RFI of 8 August 2011.

457 NYX, response to question 15 of the Commission's RFI of 8 August 2011.

458 DB, response to question 13 of the Commission's RFI of 8 August 2011.

apply different fees depending on whether the trade is executed on behalf of a client or for an exchange member's own account. For instance, in the case of Dutch Stock options on Liffe, a member would be charged a trading fee of Euro 0.15 per lot (with a maximum fee per order of Euro 80) if the execution is for its own account compared to Euro 0.75 per lot (with a maximum fee per order of Euro 160) if the trade is executed on behalf of a client.[459] On Eurex, although order book per-contract fees are the same, a lower threshold for discounts typically applies when clients are trading options on own account than when they trade them for client account[460]. This practice concerning fees indicates that the different price elasticity of different types of clients – possibly caused by the lower ability of certain customers to switch to alternative solutions and substitute away from the exchange – can be exploited and captured by both of the Notifying Parties.

(506) The ability to use its rebate policies to discriminate between customers with different price elasticities is recognised by NYX in an internal document discussing its pricing strategy. […]*:

§ *[…]**[461]

(507) Fee competition is the most common type of competition when exchanges try to attack an existing product. As a result, fee competition (including rebate schemes) between derivatives trading platforms is not limited to the Notifying Parties' platforms and products, but generally observed in the industry.

(508) Thus, for example in relation to Italian single stock futures, which NYX offers both on its order book and through Bclear and where it currently faces competition from both Eurex and IDEM, it introduced fee caps for order book trading of these specific instruments citing […]* and considering that […]*.[462]

(509) Similarly, in the US, Liffe and ELX have recently tried to challenge CME for its Eurodollar and US Treasury futures contracts, as a result of which CME lowered its fees.

(510) In the same vein, Turquoise's attempt to challenge Liffe on FTSE Futures, though so far unsuccessful, sheds some light on the importance of fees.[463] Although in this case, market participants confirm that Liffe did not respond with a fee reduction on order book,[464] Citigroup draws attention to the fact that Liffe did respond by means of certain fee reductions and fee caps on FTSE futures trades transacted in block size on Bclear.[465]

---

459 On 24 October 2011, NYX made public an amendment to its fee schedules for Dutch stock options as of 1 December 2011, allegedly (according to submissions and comments made at the Oral Hearing) in response to .[…]*. This is discussed further in Section 11.2.1.5.3.3 below. See http://globalderivatives.nyx.com/sites/globalderivatives.nyx.com/files/an_11-023.pdf.

460 DB, response to the Commission's RFI of 8 August 2011, Annex 1.

461 NYX Internal Document, "NYSE Liffe – Global Derivatives Strategy", June 2009, slide 14.

462 NYX Internal Document, Email of 3 August 2010 from […]* to ,[…]*, ENX-00260. London Notice 3282 of 28 April 2010 applied these caps to order book trades and was followed by London Notice 3290 of 1 June extending this to block trades. (http://www.euronext.com/fic/000/056/821/568213.pdf and http://www.euronext.com/fic/000/057/695/576950.pdf, both viewed on 30 September 2011).

463 ICAP, response to question 51 of Q8 - Questionnaire to customers, phase II [...]*.

464 See responses to question 71 of Q8 - Questionnaire to customers, phase II.

465 See responses to question 71 of Q8 - Questionnaire to customers, phase II [...]*.

This is in line with the fee information provided by NYX itself.[466] The fees in 2011 were indeed reduced from […]* to […]*[467], and caps introduced of […]*. This limited response is consistent with the perception by NYX that this threat had a low probability to succeed.[468]

(511) It should be further noted that exchanges also have in their direct control the cost of clearing, both in terms of fees for clearing, as well as the cost of collateral (haircuts on interest provided on collateral posted in cash and safekeeping fees for securities).[469] DB can also determine, and Liffe at least influence, the total volume of collateral posted via clearing policies on allowable margin offsets and contributions to default funds. The incentive to implement and maintain a collateral policy which provides as much scope as possible for margin offsets between correlated instruments, subject to appropriate risk management standards, is related, at least in part, to whatever competitive constraints the merged entity would face.

(512) This last point is made clear in internal documents of DB relating to its new portfolio-wide margining approach, PRISMA. Thus, DB states […]*[470]; […]*.[471]

(513) Price competition is also a key component of competition between the Notifying Parties in the services they offer for trade entry, registration and clearing of off order book and flexible options and futures, discussed in the following Sections 11.2.2 and 11.2.3.

(514) It follows that, to attract or maintain liquidity on their platforms, derivatives exchanges compete on fees (including various rebate schemes granted to customers according to their price sensitivity) as concerns both existing and new derivatives products.

11.2.1.2.3. Competition to attract liquidity and tendency of liquidity to aggregate on a single platform

(515) Given the network nature of the industry, it is the very essence of an exchange's business to offer incentives in order to attract liquidity in particular contracts or types of contract onto their platforms. Indeed, liquidity is one of the main drivers of competition in the derivatives business.

(516) In this respect, the Commission's market investigation showed that competition in markets which are characterised by closed vertical silos of the type operated by the

---

466 NYX reply to the Commission's RFI of 8 August 2011, question 16.

467 The first of these prices is for client trades and the second for own account.

468 NYX Internal document, Memo with date April 14, 2011 to […]* from […]* with title Re: FTSE 100 Index Futures - Turquoise response, Reference ENX - 00021 – 00001.

469 See responses to question 64 of Q1 – Questionnaire to customers: "*The possibility to post collateral in equities or bonds instead of cash collateral could play a role in the competition between exchanges.*" (Lyxor Asset Management); "*If we have the choice between different platforms that offer the same clearing costs but different collateral conditions, we will choose the most flexible and less consuming in term of liquidity. Flexible means that our collateral can be covered with several assets: govies / corporate bonds / equities / cash*" (Société Générale); "*In [our] view, flexible usage of collateral and wide list of non-cash collaterals available are fundamental for an efficient usage of capital when trading on-exchange derivatives*" [...]*.

470 DB internal document, .[…]*.

471 DB internal document, .[…]*.

Notifying Parties is often, though not always, characterised by "winner-takes-all" dynamics whereby exchanges compete at the stage of introduction of new contracts in defining contract characteristics and fees to attract liquidity in the contract onto their platform. Once open interest has been built up at one trading venue, absent fungibility,[472] individual traders have an incentive to return to the same trading platform for trading in the same and similar category of contracts in order to be able to offset positions. Dealers also discount this expectation of future liquidity in their decisions to trade today, to avoid the risk of being caught with positions which are expensive to exit.

(517) This tendency of liquidity to aggregate on one exchange was confirmed during the market investigation. For example, respondents during the first phase market investigation stated that "*It seems impossible to create a credible competitor when the liquidity is concentrated on one exchange (Eurex Eurostoxx Futures competition history for example)*"[473] or that *"Open interest is difficult to migrate once its (sic) embedded elsewhere*".[474]

(518) However, while for most ETDs, it has historically proven to be difficult in Europe to make the liquidity shift to any substantial extent to a different trading venue once liquidity has settled on the platform that "won" the battle,[475] this does not mean that competition is over at that point of time and split liquidity is observed for a number of contracts. Indeed, the fact that liquidity has settled on one platform does not *per se* preclude competition between exchanges as is illustrated by a number of futures and options on European blue chip equities and options on Euribor short term interest rates which are traded by both Notifying Parties in competition with each other. Indeed, even in the instances where there are marked asymmetries in market shares between the Notifying Parties (one controlling the bulk of liquidity while the other having a less significant market share), this does not mean that the Notifying Parties do not exercise a significant competitive constraint on each other. Indeed, as detailed in the Section of this Decision dealing with potential competition, the mere threat that liquidity might shift, in whole or in part, to the other platform, is a credible constraint on the competitive behaviour of exchanges. In this context, exchanges keep each other on their toes constantly.

(519) It follows that exchanges at all points of time (be it at the time of introduction of new contracts or when liquidity has settled on one platform) compete to attract liquidity on their platforms through a range of measures such as market maker incentives.

11.2.1.2.4. Technology

(520) Exchanges equally compete in system performance and trading functionalities in order to provide additional incentives to customers to trade on their respective venues and additional ways to do so.

---

472 In fungible clearing regimes, as already indicated, significant shifting of liquidity and split liquidity appears to be possible and even commonplace.

473 Credit Agricole, response to question 51 of Q1 – Questionnaire to customers [...]*.

474 BGC, response to question 51 of Q1 – Questionnaire to customers [...]*.

475 The only example of large-scale shifting of liquidity has been the so-called "Battle of the Bund", further discussed below in relation to interest rate futures.

(521) The Notifying Parties compete in technology with respect to trading and clearing services for their overlapping core asset classes, including in particular interest rate, equity and equity index derivatives.

(522) The market investigation indicated that system performance (throughput and latency[476]) as well as the overall reliability of the system are crucial to attract new customers as well as keep existing customers. Notwithstanding that the Notifying Parties have argued that incentives to innovate in technology are exogenous, and as discussed further in Section 11.2.1.3.4.2 below, internal documents show that they well understand the importance of this parameter of competition. A recent example of this is constituted by […]*.[477]

(523) Market participants generally indicated that exchange system performance is one of the factors they consider as very important in their selection of a trading venue and as such is a competitive parameter in the derivatives market.[478]. In this respect, one respondent qualified system performance as the "*backbone of all transactions.*"[479]

(524) The importance of technical performance of the trading infrastructure resides in the fact that any system failure or underperformance can be very costly for customers. System performance is of particular relevance to market makers who take on risk when placing their quotations on exchanges. As a result, "*technology is a key tool in allowing market makers to reduce this exposure risk because better technology enables a market maker to adjust* prices *quickly in response to market dynamics. When market makers reduce their risks it means that they can offer more competitively priced quotations i.e. the lower the risk, the lower the spread, and therefore the lower the cost to other market participants."*[480] Therefore, in order to attract good market makers (and hence liquidity on their venues), exchanges have to be in a position to provide irreproachable system performance.

(525) As a result, exchanges are constantly competing in improving their technical solutions so as to ensure as low operational risk as possible for their customers and to avoid the loss of liquidity to another platform. During the course of the market investigation, one respondent pointed out that *"there is currently significant competition between exchanges to improve the technological features of their trading systems, primarily driven by the desire to prevent the loss of liquidity to another platform. Technological failures that cause a platform to fail can have severe effects on liquidity as customers will shift to better performing platforms."*[481]

---

476 Latency, or time delay, is an expression of how much time it takes for a packet of data to get from one designated point to another, i.e., in the trading context, for an order to trade to be transmitted for execution to the exchange.

477 See NYX internal document, "Business Report to Members of the Liffe Board of 15 June 2009", with reference ENX – 00052 – 00001, at p. 2. See also, for example, the DB internal document provided in response to the Commission's RFI of 1 July 2011 […]* "*Need for low latency trading, high trading system performance/throughput to serve algorithmic trading*".

478 See responses to question 49 of Q1 – Questionnaire to customers.

479 WestLB's response to question 49 of Q1 – Questionnaire to customers [...]*.

480 Getco's response to question 49 of Q1 – Questionnaire to customers [...]*.

481 ICE, response to question 75 of Q3 - Questionnaire to competitors [...]*.

(526) Competition between the Notifying Parties in respect of technology is discussed in Section 11.2.1.3.3 below.

11.2.1.2.5. Product innovation

(527) As a result of certain "winner-takes-all" dynamics, one of the most important forms of competition between derivatives exchanges occurs when exchanges try to come up with new contract ideas and attract new business.[482] Attracting new liquidity and retaining existing liquidity in order to capture new sources of revenue and avoid the erosion of existing franchises is an important goal and driver of each exchange to constantly innovate.

(528) As in any industry, product innovation therefore covers a range of initiatives from incremental improvements to completely new developments related in a more distant way to existing franchises. In this instance, three general categories can be recognised:

- Type I innovations relate to so-called "product upgrades", namely individual ETDs, or a set of individual ETDs, where one exchange has an existing strong franchise. Such innovation if carried out by the incumbent may pursue revenue-enhancing goals and/or be defensive in purpose. If carried out by a challenger it may attempt to get liquidity to switch or, more modestly, to occupy a niche position.

- Type II innovations relate to so-called "product adjacencies", namely the launch of new ETDs within a class where the incumbent has an existing franchise, but where the contract itself is new (for instance based on a new underlying of the same type, or on different contract terms). In this case, innovation, if carried out by the incumbent, is likely to pursue revenue-enhancing goals and again, if carried out by a challenger, it may attempt to get liquidity to switch (hoping to offer a product which better suits the needs of the market) or to occupy a niche position.

- Type III innovation involves the greenfield launch of unrelated new products, where the exchange engaged in the innovation has no ETDs of this type or adjacent to it. There may or may not already be exchanges with liquidity in the contract type (if there is no exchange liquidity, it is likely that there is liquidity in the OTC world).

(529) Whilst the Notifying Parties compete with respect to product upgrades in product areas where they overlap (which they may attempt respectively to stimulate or forestall), competitive rivalry between the Notifying Parties in product innovation is focused on product adjacencies concerning products which are correlated to existing products (and therefore allow for margin offsets) and products which appeal to a similar set of users to existing products. Because Eurex and Liffe have similar margin pools, there is a considerable overlap in the space of product adjacencies for which they compete in terms of product innovation.

[482] The market investigation confirmed that competition "for the market" is frequently of particular importance in derivatives. See responses to question 61 of Q1 – Questionnaire to customers.

(530) The Horizontal Merger Guidelines note that innovation is one of the benefits of effective competition to consumers.[483] In this context, the Commission is required to assess whether a notified merger would be likely to deprive customers of the benefits of innovation by significantly increasing the market power of firms, resulting in less incentive to innovate. In principle, a merger may affect the incentive to innovate both of the merged entity relative to the Notifying Parties pre-merger, and also of third parties, leading in either case potentially to less overall innovation in the market.

(531) Competition between the Notifying Parties in the area of new products, be they product upgrades or adjacencies, is discussed in the relevant Sections of this Decision dealing with products where the Notifying Parties are either actual or potential competitors.

11.2.1.2.6. Process and market design

(532) Exchanges also compete on different aspects of market design and supporting systems, such as order types, connectivity and market rules, and there is ample evidence that this dimension of competition also characterizes the relationship between the Notifying Parties.

(533) Clearing-houses and their exchange partners further compete in designing and innovating in the parameters of clearing, such as for instance the type of acceptable collateral.[484]

(534) Competition between the Notifying Parties in respect of process and market design is discussed in Section 11.2.1.3.4.3 below.

11.2.1.3. PRE-MERGER COMPETITION BETWEEN THE NOTIFYING PARTIES

11.2.1.3.1. Introduction

(535) In order to analyse the impact of the notified transaction, the Commission sought to assess the extent of pre-merger competition between the Notifying Parties in light of the competition parameters and competitive forces prevailing in the derivatives markets concerned by this Decision.[485]

(536) The Notifying Parties consistently downplayed the extent of their competition in the relevant derivatives markets claiming that competition in these markets occurs solely at the level of introduction of contracts. For instance, in their submission of 17 January 2012,[486] the Notifying Parties state that *"competition for existing derivative products effectively took place when the new derivatives contracts were listed by DB, NYX, or a*

---

483 Horizontal Merger Guidelines, paragraph 8.

484 NYX, in an internal document provided in response to the Commission's RFI of 1 July 2011 entitled "Process and Operational Innovation" compares itself to Eurex and specifies that […]*.

485 In line with the market definition in this case and in light of the conclusion that ETDs and OTC derivatives belong to separate product markets with respect to all relevant product markets, the level of competitive constraint from OTC trading (be it out-of-market constraint) is not further analysed in this Decision.

486 Notifying Parties, Submission in support of merger clearance, 17 January 2012, page 7.

third party exchange for the first time."[487] The implication of this statement is that there can be or should be no further competition once liquidity has settled in a certain asset class. This is not the case. There is ample evidence in the present case that the fact that one exchange may have won an initial liquidity battle does not insulate that exchange from a competitive constraint subsequently, whether that constraint is actual or potential.

(537) Indeed, and contrary to the Notifying Parties claims, the market investigation and the Commission's analysis of all the evidence have shown that competition between the Notifying Parties essentially takes three forms: actual competition in products where both Notifying Parties are active, potential competition in products where one of the Notifying Parties has the bulk of the liquidity while the other is a potential entrant and competition to introduce new or improved products to the market

(538) While actual competition relates to existing overlaps between the Notifying Parties' product offerings within a given relevant market, as well as related competition in terms of trading technology and processes, potential competition concerns product areas where one party is active while the other is a potential competitor. The Horizontal Merger guidelines state that "*Concentrations where an undertaking already active on a relevant market merges with a potential competitor in this market can have similar anti-competitive effects to mergers between two undertakings already active on the same relevant market and, thus, significantly impede effective competition.*" This applies when "*the potential competitor significantly constrains the behaviour of the firms active in the market. This is the case if the potential competitor possesses assets that could easily be used to enter the market without incurring significant sunk costs.*" [488]

(539) In this Decision, potential competition refers to the constraint that the Notifying Parties impose on each other within a given relevant market by virtue of the threat of entry into that market despite not being present in the market today. Potential competition has a significant constraining effect on the incumbent as the incumbent needs to avoid any substantial degradation of the terms of the incumbent product offering in terms, for instance, of price, product features and technology. Potential competition is also illustrated by a number of instances where there has been actual competition in the past, but such competition has by now resolved itself in favour of one or the other party, either entirely or in part. Indeed, the fact that there is a competitor which could step in if the incumbent makes a mistake puts competitive pressure on the incumbent in terms of fees, system performance and product portfolio. For established asset classes, such a threat is credible, however, only if the other competitor already has a margin pool of

---

487 This is in the context of the Parties seeking to justify the limitation of their proposed access commitment to new products only, but it is nevertheless instructive as regards the Parties' views on competition.

488 Horizontal Merger Guidelines, paragraphs 58 and 59 state that "*Concentrations where an undertaking already active on a relevant market merges with a potential competitor in this market can have similar anti-competitive effects to mergers between two undertakings already active on the same relevant market and, thus, significantly impede effective competition.*" This applies when "*the potential competitor significantly constrains the behaviour of the firms active in the market. This is the case if the potential competitor possesses assets that could easily be used to enter the market without incurring significant sunk costs.*"

some correlated contracts, the required know-how and a similar membership base, as is the case for the Notifying Parties.

(540) In addition, the fact that it might be difficult to attract liquidity from a platform once it has settled there does not mean that attempts to do so are illegitimate or without value. In this regard, the Notifying Parties highlighted as significant the fact that a number of examples of previous attempts at competition which have been cited all failed[489]. Even if this is the case, it does not mean that any such attempts were without value or competitive impact.[490] In fact, quite the opposite is the case. As is demonstrated in the sections of this Decision dealing with potential competition in the relevant derivatives markets, it is precisely attempts such as these, whether they are ultimately successful or not, which act as an important competitive constraint. Indeed, even where competition eventually results in one platform becoming the preferred platform for trading a certain contract, this does not automatically imply that the acquired product franchise is incontestable and therefore that there is no further competitive constraint.

(541) Competition to bring new or improved products to the market is driven in many cases by the expectation, or at least hope, that ultimately the successful innovator will capture all demand in the product in question. Indeed, the prospect of capturing all liquidity in a single product has historically characterised exchange markets (both cash and derivatives) and remains an important motivation to be first in bringing a successful new product to market, although as noted it does not apply universally and has indeed largely been superseded for trading in European blue chip cash stocks as a result of MiFID.

(542) In the context of the analysis of actual and potential competition between the Notifying Parties, the Commission sought to assess to what extent there are other actual and potential competitors active in the markets concerned and the level of competitive pressure they could exert post-merger. According to settled case law, *"the examination of conditions of competition must be based not only on existing competition between undertakings already present on the relevant market but also on potential competition, in order to ascertain whether, in the light of the structure of the market and the economic and legal context within which it functions, there are real concrete possibilities for the undertakings concerned to compete among themselves or for a new competitor to enter the relevant market and compete with established undertakings."*[491]

11.2.1.3.2. The Notifying Parties compete head-to-head and are each other's closest actual and potential competitors

(543) The Notifying Parties compete head-to-head by offering trading services in products which offer identical economic exposure in both the interest rate and single equity derivatives markets concerned by this Decision.[492] All parameters of competition

489 Notifying Parties, Submission in support of merger clearance, 17 January 2012 , pages 11-12.

490 In one sense, the Notifying Parties do acknowledge this when they seek to portray CME as Liffe's […]* competitor for Euribor, a contract initially introduced by Liffe..

491 See for instance Case T-177/04 *easyJet* v *Commission* [2006] ECR II-1913, paragraph 116. See also paragraph 60 of Horizontal Merger Guidelines.

492 In interest rate derivatives, the Notifying Parties compete not only in products which provide identical economic payoffs, but also in products with somewhat different payoffs where this difference is less

discussed in Section 10.2.1.2 above are present when it comes to competition between the Notifying Parties' derivatives exchanges. Indeed, Eurex and Liffe compete fiercely to attract and maintain liquidity, especially in contracts based on European financial underlyings; they compete on fees, in technology and in product and market design. This is because, as shown in Table 1 above, the structure of European financial derivatives markets is essentially duopolistic in the sense that Eurex and Liffe are essentially the only players in European interest rate and single stock equity derivatives.

(544) As concerns fees, while historical analysis of ETD fees shows that, for existing contracts, headline unit fees have in most cases remained stable with no material reductions over the past years[493] indicating that once liquidity has settled, competition in fees seems to have been more limited,[494] for contracts where directly comparable alternatives exist on other trading platforms, episodes of price competition are often observed between exchanges, including between the Notifying Parties, which then compete directly on fees for the trading of the specific contract. In this context,, the challenger prices at a considerable discount to the incumbent in order to try to overcome the latter's liquidity advantage, and is also in a position to do so because of the fact that he faces only fixed costs of entry. Similarly, the incumbent's ability to respond with aggressive price cuts itself is constrained, if at all, primarily by a concern to avoid undercutting its own future revenues once - hopefully - it has seen off the competitive threat.

(545) Eurex and Liffe have highly overlapping membership bases which indicate that customers view them as alternative providers. According to the Commission's calculations based on information provided by the Notifying Parties, over […]% of contracts traded on Eurex and Liffe involve firms present on both platforms[495]. UBS stated that "*In terms of closeness of competition, UBS Participants pointed to the very considerable membership overlap between the Parties and the role of the installed base of connectivity software which allowed traders to access both platforms as examples supporting why Liffe and Eurex are each other's significant competitor*."[496]

(546) This Decision demonstrates that, regarding the relevant derivatives markets concerned by this Decision, the Notifying Parties are each other's closest competitors principally due to their overlapping membership base, comparable portfolio of contracts and the size of the margin pool. Eurex and Liffe together account for most derivatives contracts traded on European underlyings and have been historically competing to attract European business. This uniquely close competitive relationship prevailing between

---

important than considerations of liquidity or where the related hedge serves some purposes better than others.

493 Based on fee schedules submitted by the Notifying Parties for the time period between 2005 – 2010, see also Responses by LSE to follow-up questions following meeting on 1 July 2011, [...]*.

494 In comparison, equity fees across Europe have fallen by c. 60% as a result of entry of MTFs. See Oxera's analysis in *"Monitoring prices, costs and volumes of trading and post-trading services"*, May 2011.

495 For the purposes of this analysis, companies are aggregated according to the company group using data provided by the Notifying Parties in response to a request for information of 23 September 2011. Given that mother companies have control over the different subsidiaries trading at the different exchanges, it makes no sense to treat the different subsidiaries of for instance, JP Morgan, separately. It should be noted that these figures are a rough approximation and probably are a conservative estimation as all companies have not been able to be matched to the corresponding mother companies.

496 Agreed minutes of a teleconference call with UBS, 16 September 2011, paragraph 12, [...]*.

Eurex and Liffe would be eliminated by the merger. Contrary to the Notifying Parties' claims, any competitive constraint on Eurex and Liffe other than that which the Notifying Parties represent, and ultimately any competitive constraint which would remain on the merged entity post-merger is, at best, of a limited nature.

(547) The omnipresent competitive rivalry between Eurex and Liffe is evidenced by a number of the Notifying Parties' pre-merger internal documents. For instance, an NYX internal document states that *"the two exchanges [are] locked in constant competition right across their businesses, including product development, technology, fees & incentive schemes and service value.*"[497] Similarly, a memo to […]*, refers to Eurex as Liffe's *"main European rival.*" [498]

(548) The Notifying Parties track each other's activities constantly and consistently, at a high level inside the respective companies. A very significant number of minutes of NYX's Executive Committee in the last few years provides evidence of the closeness with which NYX monitors Eurex, indeed having a section of the meeting routinely allocated to it (under the heading: "Eurex Initiatives Update")[499]. References to executive committee meetings dedicated to Eurex and its activities and the "competitive threat" are also found in other internal documents of NYX[500]. This level of interest is by no means comparable to the monitoring which the exchanges carry out with respect to any other exchange venues as regards their European businesses. Whilst from time to time, references to other platforms are made, such references are made less frequently and typically only with reference to a particular project (for instance to ICE in the context of CDS, which anyway falls outside the scope of this Decision)[501].

(549) It follows that, in particular as concerns European financial underlyings where they do not face a challenger, Eurex and Liffe are locked in unique competitive dynamics whereby they closely track each other's moves and which cannot be disturbed by any other player. This is also valid for products where Eurex and Liffe do not directly overlap but exert on each other a competitive constraint as potential competitors.

---

497 NYX internal document provided in response to the Commission's RFI of 1 July 2011, Minutes of Executive Committee Meeting 19.03.2007, Reference ENX-00812 -00001, subheading 07/56 Euronext.liffe initiatives vs. Eurex. Although in the Oral Hearing the Notifying Parties suggested that the context of this quote was limited to the Notifying Parties' equity derivatives businesses, this is not apparent from the document itself.

498 NYX internal document provided in response to the Commission's RFI of 1 July 2011, "Consolidation / Harmonization of European Derivatives Markets" dated 20/05/2009, Reference ENX-00471-00001.

499 See for example NYX internal document provided in response to the Commission's RFI of 1 July 2011, Minutes of Executive Committee meeting of 9.10.2006, Reference ENX-00766 -00002.

500 In the NYX Internal document, Minutes of Executive Committee of 14.12.2006 Reference: ENX-00770 -00001 (NYX internal document provided in response to the Commission's RFI of 1 July 2011) reference is made to "*[…]* provided an overview of Eurex, its approach to central markets and the wholesale / OTC market. […]* also provided a summary of areas where Eurex is expected to focus its competitive efforts in 2007. […]* requested an EC meeting in January be dedicated to the Eurex competitive threat*".

501 Ultimately, as ICE states, "*both Eurex and Liffe are European derivatives exchanges which predominantly trade financial derivatives which have a European geographic focus and competitor set – due to the intrinsically European scope of the underlying assets (European interest rates and European equities). They are each other's closest competitors. Indeed there are no other comparable exchanges. Between them they account for virtually all on exchange trading of European interest rate products and the vast majority of trading of European single stock and equity index products*", response to question 43 of Q10 – Questionnaire to competitors, Phase II – [...]*.

Indeed, the magnitude of the competitive harm resulting from the loss of potential competition in this case is a direct function of the closeness of competition observed between the Notifying Parties and the distance of all other competitors.

(550) In this context, one respondent noted that "*there are no other participants with anything like the existing customer distribution, […] which means that any new players would be playing catch-up for many years.*"[502] Indeed, if there was general dissatisfaction with fees, system performance, product portfolio etc. of an incumbent, it is clearly conceivable that customers may consider moving all or part of liquidity to the other Party's platform.[503]

(551) The result of this closeness of competition is that the Notifying Parties continue to act as a constraint on each other, even where all or almost all liquidity has settled on one or other platform, due to the fact that they are, in almost all cases, not only the closest but the only viable alternative platform to which liquidity could be switched. Potential competition therefore disciplines the Notifying Parties' pricing and service offering in the products concerned by this Decision due to the possibility of customers switching to the alternative platform of the other Party.

(552) One respondent to the market investigation illustrated this disciplining effect as follows: "*There is however the threat of competition as either firm [Eurex and Liffe] could currently credibly compete should one of the exchanges behave in a way (or fall behind in technology or service) that would incentivise the market to migrate to the other platform.*"[504] Another market participant noted that "*While Liffe and Eurex do not currently compete to a material extent, they act as a constraint on each other as potential competitors. The merger will eliminate potential competition between Liffe and Eurex.*"[505]

(553) Even in instances where liquidity has predominantly settled on one platform, it does not mean that the market is not contestable. The Notifying Parties are well conscious of the fact that their respective franchises may be challenged by the other one, for instance through reduced fees. In this respect NYX notes in an internal document, comparing with the Battle of the Bund, that […]*[506]

(554) Internal documents of the Notifying Parties show that threats to enter the other's markets are responded to based both on market intelligence prior to launch and on the conditions of launch itself. In many cases, the Notifying Parties already list products offering identical economic exposure and very similar characteristics which represent the closest alternative, even if the challenger has not achieved a significant market

502 ICAP, reply to question 31 of Q8 – Questionnaire to Customers, Phase II, […]*.

503 For instance Nomura International plc., in its response to question 55 of Q1 – Questionnaire to customers, indicated that *"Since contracts are based on different underlyings, there is no competition between them. There is however the threat of competition as either firm could currently credibly compete should one of the exchanges behave in a way (or fall behind in technology or service) that would incentivise the market to migrate to the other platform"* [...]*.

504 Nomura International, response to question 55 of Q1 – Questionnaire to customers [...]*.

505 Chi-X Europe, reply to question 46 of Q3 – Questionnaire to Competitors [...]*.

506 NYX internal document provided in response to the Commission's RFI of 1 July 2011, Memo to Executive Committee, From […]*, dated 20/09/2001.

share. In such an instance, it is even easier to adapt commercial terms in an attempt to capture liquidity and the constraint from potential competition all the more effective.

(555) In the following sections of this Decision, a number of important examples are given where the one of the Notifying Parties which had an incumbent position in a particular type of asset responded to the threat of entry by the other Notifying Party by fee cuts, incentives and other measures. This clearly indicates the importance of the constraining effect generated through potential competition and its impact on the overall level of prices charged for trading and clearing, especially in the area of interest rate derivatives.

(556) In their response to the SO, and indeed consistently throughout the procedure, the Notifying Parties have claimed that, in interest rates, CME is their closest competitor for both the short and the long end of the interest rate curve. In respect of innovation in equity indices, they point to a variety of competitors, whereas they do not explicitly address the conclusion of closest competitor as regards single equity derivatives, at least in their core markets. Since the situation is rather different in each of these markets, the discussion of the points made by the Notifying Parties on potential competition and closeness of competition in their response to the SO is deferred to the relevant sections of this Decision dealing with individual product markets.

(557) Table 2 provides a general overview of the players involved in derivatives based on European financial underlyings and key parameters of their product offerings. It outlines that the Notifying Parties share a range of characteristics for these key parameters that are unmatched by the other players:

Table 2: General overview of the players and main competitive parameters in derivatives based on European underlyings

Company	Product offerings			Significant volumes			Sizable European Membership base	Sizable margin pool in European underlyings	Margin offset possibilities between European underlyings
	IR	EI	SE	IR	EQ	SE			
DB	•	•	•	•	•	•	•	•	•
NYX	•	•	•	•	•	•	•	•	•
CME	•	X	X	X	X	X	X	X	X
Turquoise	X	•	X	X	X	X	X	X	X
Nasdaq OMX	•	•	•	X	X	X	X	X	•
TOM	X	X	•	X	X	X	X	X	X
ELX	X	X	X	X	X	X	X	X	X

Note: IR= Interest Rate Derivatives based on European underlyings, EI= Equity Index derivatives based on European underlyings, SE= Single Equity Derivatives based on European underlyings.

Source: Compilation of data from various sources: Notifying Parties and relevant third party responses in market investigation.

(558) Whether by virtue of actual or potential competition, the market investigation strongly qualified the Notifying Parties as each other's closest competitors[507]. Indeed, the majority of trading platforms considered that Liffe is the closest competitor to Eurex (BATS, BME, Chi-X Europe, Nasdaq OMX, TOM and Wiener Boerse), with only [one competitor]* of the view that this was CME. That Eurex is the closest competitor to Liffe was the opinion of all of these respondents (with TOM also putting itself forward together with Eurex in the Dutch, Belgian and French markets[508])[509]. The reply of TMX also goes in this direction, whilst sometimes proposing also CME. Similarly, amongst customers, 34 respondents regard Liffe as Eurex's closest competitor with a further 10

507 Replies to questions 47, 48 and 49 of Q3 – Questionnaire to Competitors, [...]*.

508 NYX however mentions TOM in the context of trading in Amsterdam equity derivative products and OTC lookalike products and classifies this as a , […]*, "Risk report to the Liffe audit and risk committee, 15 April 2010", NYX internal document, ENX-00307-00001, p.12.

509 Tom has just initiated in these markets having launched its derivative service in July 2011.

putting forward both Liffe and CME, whilst sometimes emphasizing that for European customers, Liffe was still the closer (one put forward Liffe and Nasdaq OMX). Only 5 put forward CME alone, and 4 stated that there was no close competitor. As closest competitor to Liffe, 37 put forward Eurex, 8 Eurex together with CME (again sometimes commenting that in Europe Eurex was closer) and 3 no close competitor. CME alone was not mentioned at platform level, though for short term interest rates considered in isolation it was evoked by 10 respondents, though this still represents a clear minority[510].

(559) It follows that, as concerns derivatives based on European financial underlyings, Eurex and Liffe compete closely and exert significant competitive constraint on each other even for contracts where the bulk of the liquidity is with one of them. This constraint is all the more important in light of the duopolistic market structure of derivatives based on European underlyings and the particularly high barriers to entry characteristic of these markets.[511] As a result, as is demonstrated in the sections of this Decision dealing with the relevant derivatives markets, Eurex and Liffe are each other's closest actual and potential competitors in these markets.

11.2.1.3.3. Competition between the Notifying Parties to introduce new products

(560) In the decision opening the proceedings, the Commission outlined that the Notifying Parties, in particular as concerns the European financial derivatives, may be each other's closest competitors in respect of various types of innovation. The response of the Notifying Parties to the decision opening proceedings, and the further market investigation, nonetheless clarified that the scope of innovation within which the Notifying Parties primarily compete against each other rather than against other platforms is less extensive than initially considered in the decision opening proceedings and comprises product adjacencies and upgrades only, not unrelated product launches. This is reflected in a comment by ICE, which has indicated that the Notifying Parties "*compete on innovation in product areas which are closely related to both of their activities as well as at technology level*".[512]

(561) The remainder of this Section therefore discusses product innovation in respect of product upgrades and product adjacencies only ("Type I" and "Type II" innovations). Competition in technology, process and market design is discussed in the next Section.

11.2.1.3.3.1. Competition to introduce new products

(562) New ETD contracts are constantly introduced on exchange platforms[513] and range from adding new exercise and settlement dates for an existing contract series (a rather routine product upgrade) to launching a completely new suite of products, whether adjacent or

510 Replies to questions 56, 57 and 58 of Q1 – Questionnaire to Customers. The calculations are based on the non-confidential replies only.

511 See section 11.2.1.7 of this Decision for the analysis of barriers to entry.

512 Minutes of a teleconference call with ICE of 14 September 2011, paragraph 5 [...]*.

513 The importance of the introduction of new products in the derivatives space is also evidenced from the documents provided by the Notifying Parties, for example in a document of 2008 provided in response to the Commission's RFI of 1 July 2011 ([…]*). DB outlines that "*Eurex launched nearly 200 new products and functionalities in 2007 and already more than 180 products and functionalities in 2008*".

unrelated, in response to significant changes in customer demand, market structures, market regulations, and macroeconomic changes.

(563) The fact that product innovation is a significant dimension of competition between the Notifying Parties is attested by DB internal analysis taken from a recent DB strategy document*: "[DB and NYX are] [m]ajor competitors on exchange level with similar business model, competition focuses on new products and services, less on existing benchmark products.*"[514]

(564) The current economic context seems, if anything, to have made this aspect of competition between the Notifying Parties more important. DB states that: "*The need for continued new product innovations around the core products is more urgent than ever given the opportunities to migrate OTC business to exchange and clearing platforms. […]**".[515]

(565) The importance of the introduction of product upgrades and adjacencies has been made clear during the market investigation.

(566) According to Nasdaq OMX, "*Product innovation is an important competitive force in derivatives markets because derivatives exchanges may gain additional business … through the launch of new products appealing to their members. Competition between Eurex and Liffe to attract liquidity in newly launched products by either party is based primarily on fees, technology solutions, and margin efficiencies. Depending on the individual product there will be some sort of campaign to attract liquidity, most notably special rebates on trading fees.*"[516]

(567) According to CME, "*exchanges offer products that compete on product design, trading conventions such as tick size narrowing, changing of notional size (for instance make the contract bigger to appeal to institutional investors), technical parameters, type of collateral accepted, etc.*"[517]

(568) There are numerous examples of past and recent competition between Liffe and Eurex to attract liquidity for new suites of products, such as the EuroBund contract, contracts on Eurozone equity indices (EUROSTOXX and EuroFirst) and contracts on Euro STIR. Each of these particular instances is reviewed below for the light which it sheds on potential competition. As a more general matter, however, competition in product innovation between the Notifying Parties can, of course, not be confined to instances observed in the past but equally concerns instances which would otherwise occur in the future and which, necessarily, cannot be predicted today.

(569) During the initial market investigation, market participants confirmed the existence of a product innovation race between derivatives exchanges, and between Eurex and Liffe in particular. In this respect, one respondent indicated that *"the exchanges engage in a continuous process of competing in innovation and attempt to improve existing products and offer new products to better serve their users and gain trading volumes.*

514 See DB internal document provided in response to the Commission's RFI of 1 July 2011, […]*.
515 See DB internal document provided in response to the Commission's RFI of 1 July 2011,: "[…]*
516 Reply to question 40 of Q10 – Questionnaire to competitors, phase II [...]*.
517 Agreed minutes of a meeting with CME on 1 September 2011 – point 11 [...]*.

The merging parties are by far the two most active and relevant participants in this competitive process."[518]

(570) Competition between exchanges to introduce new products is often prompted by regulatory or market changes bringing about new opportunities and creating demand for new derivatives contracts. In this respect, NYX noted in its internal documents that *"History suggests that changes of market structure provide opportunities, and that political and regulatory pressure can be significant in determining the outcome.*"[519] UBS states in the context of the G20 reforms[520] that "*we would expect Deutsche Boerse and NYSE Euronext to be key competitive innovators on the market landscape for this new business*"[521].

(571) Whilst there are therefore many intrinsic reasons why exchanges innovate, the tendency of liquidity in a particular contract to aggregate on a single trading venue, discussed in Section 11.2.1.2.3 above, creates a strong incentive to be first to the market or to come to the market with clearly a superior product for a given purpose.

(572) Table 2 above illustrates that Eurex and Liffe are *de facto* the only exchanges offering ETDs in European equity and interest rates (outside certain national equity markets) and by extension are also best placed to compete for liquidity in new contracts of these types when they are introduced given the cross margining opportunities arising from the risk correlation between the same product types (see also Section 11.2.1.7.1.2)[522]. As a result, they are each other's closest potential competitor in this area of contracts when it comes to the introduction of new ETDs of the type in question.

11.2.1.3.3.2. Pricing behaviour in relation to new product launches

(573) As concerns transaction fees and rebates, competition is particularly in evidence when the Notifying Parties compete to attract liquidity in new contracts or in those instances when contracts providing the same economic exposure are available on competing platforms, notwithstanding the general tendency, absent fungible clearing, for it to aggregate on one or the other.

(574) At the stage of the introduction of a new contract, in order to attract customers and hence liquidity on their platforms, the Notifying Parties carefully design their per-transaction trading and clearing fee structure by benchmarking themselves to their competitors, which in practice, at least for the asset classes where they overlap, primarily means the other Party. Thus NYX states that: "*For new contracts, fee levels are proposed by the responsible product development teams having gathered relevant*

518 See ICAP's response to question 48 of Q 1- Questionnaire to customers [...]*.

519 See NYX internal document provided in response to the Commission's RFI of 1 July 2011, Project Blackhawk – Fixed Income derivatives, p.3.

520 For more on the Commission G-20 driven reforms, see Section 11.2.3.2.4 of Decision.

521 Reply to question 75 of Q 1- Questionnaire to customers [...]*.

522 In this regard the relevant counterfactual is the best risk margining model which the merged entity could introduce; existing observed offsets do not always reflect the "best" that the exchange could do in order to render a new product more attractive.

market intelligence and taking into consideration the prices of comparable and competing products".[523]

(575) Equally, when a particularly immediate competitive threat arises, they tend to respond rapidly. For instance, at the time of the EuroBund battle, one Liffe board member pointed out*[…]**[524][…]*[525]

(576) The role of pricing at the stage of introduction of a new contract can also be understood from an internal analysis made by NYX reflecting a few years later on the EuroBund battle: […]*[526]

(577) The Commission therefore considers that customers view that the Notifying Parties compete on pricing to attract new business. For instance, one respondent indicated that the Notifying Parties provide "*aggressive pricing and marketing to win new customers. A merger of the two would potentially reduce the need for aggressive pricing.*"[527] Another respondent stated that: "*They both try to react quite quickly to each other´s new move, trying to offset the impact on the new launching price wise; a good example has been the listing of the universal stock futures in both exchanges*"[528].

11.2.1.3.3.3. *Response of the Notifying Parties to the SO*

(578) In their response to the SO, the Notifying Parties dispute the findings of the Commission on new products and product innovation,[529] offering four main arguments, namely:

(579) The Notifying Parties first argue that for interest rates, CME is at least as great a constraint on them for product innovation as they are on each other[530]. In the context of equity index products, the Notifying Parties claim that the constraint is formed by third party venues to which users could, if they wished, direct flows.[531]

(580) The Notifying Parties also argue that except for a "broad claim" that "given the cross margining opportunities" arising from the risk correlation between the same product types, the SO does not put forward any evidence for the "assumption" that the Notifying Parties are each others' closest competitors in respect of product innovation[532].

---

523 NYX reply to question 15 of the Commission's RFI of 8 August 2011.

524 Deutsche Terminboerse, the forerunner of Eurex.

525 NYX internal document provided in response to the Commission's RFI of 1 July 2011, Memorandum, Bund team & Management Committee, 6 August 1997.

526 NYX internal document provided in response to the Commission's RFI of 1 July 2011, Memo to Executive Committee, From ,[…]*, dated 20 September 2001.

527 [...]*, response to question 60 of Q1 – Questionnaire to customers [...]*.

528 [...]*, response to question 60 of Q1 – Questionnaire to customers [...]*.

529 The Notifying Parties' arguments as regards actual and potential competition are dealt with in the respective sections relating to specific product markets below.

530 Notifying Parties response to the SO, Interest Rate derivatives, paragraph 172.

531 Notifying Parties response to the SO, Equity Index derivatives, paragraphs 23ff.

532 Notifying Parties' response to the SO, Interest Rate derivatives, paragraph 174.

(581) The Notifying Parties argue that innovation takes place in the OTC space, not on exchange[533] (although this claim is made in the context of the reply on equity index products, it seems to be intended to be of wider application).

(582) The Notifying Parties argue that "*head-to-head competition between the Parties in launching new products is not a significant dynamic in the derivatives industry*". This latter claim is based on the assertion that "*the SO does not identify a single successful product innovation since 2000 that either one of the Parties has won*". [534]

(583) The Notifying Parties also contest the relevance of the various individual examples of innovation contained in the SO. In respect of index products they make the additional argument that innovation takes place at the level of the index provider, not the exchange.[535]

(584) The Notifying Parties' arguments in respect of these individual examples and their claims regarding innovation in equity index derivatives are addressed in the respective Sections below.

(585) It should also be noted that the Notifying Parties devote a part of their response to the SO seeking to rebut closeness of competition in respect of entirely new and unrelated products (Type III innovation). Since the Commission had already specified in the SO that concerns did not arise in respect of this type of product innovation, it is unnecessary to analyse the arguments of the Notifying Parties further on this point.

11.2.1.3.3.4. Analysis of the Notifying Parties' claims in response to the SO

(586) The Notifying Parties' first claim, that the CME is at least as important a constraint for product innovation in interest rates, as well as their second claim in relation to closeness of competition, can largely be dismissed on the same grounds as those which establish that the CME does not constitute an equivalent constraint in terms of potential competition and the Notifying Parties are each other's closest potential competitors. Indeed, the reasons why a new and different product might be a success have much in common with those which explain the relevance of a more direct competitive challenge with a product which offers similar or identical economic payoff. Admittedly, the lack of an established liquidity pool in the former instance means that barriers to entry are lower. All the other factors which distinguish the Notifying Parties' competitive relationship to each other from their competitive relationship to CME nonetheless still apply, namely the scope for margin offset and membership considerations. Insofar as product innovation serves a defensive purpose in relation to the threat of actual and potential competition, it directly follows from the conclusions on potential competition that CME does not constrain the Notifying Parties to the same extent as they constrain each other.

533 Notifying Parties' response to the SO, Equity Index derivatives, paragraphs 23 et seq.
534 Notifying Parties' response to the SO, Interest Rate derivatives, paragraph 169.
535 Notifying Parties' response to the SO, Equity Index derivatives, paragraph 15.

(587) Positive reasons why the CME should be so considered are not advanced by the Notifying Parties. There do not appear to be any examples at all of the CME actually having successfully launched an innovative product in Europe adjacent to one of the products of the Notifying Parties. The example of the failure of CME's European Sovereign Yield Spread Future product (see footnote 422 above) is telling in this regard.

(588) It follows that these claims by the Notifying Parties must be rejected.

(589) In relation to the claim that innovation occurs in the OTC space before products are brought on exchange, and that this innovation will continue, the Notifying Parties rightly observe that the SO recognised the role of the OTC space in "incubating" new product concepts. However, it does not follow from this that such products make their way onto exchanges in a timely, much less automatic, fashion or that they do so under conditions which provide to customers the optimal benefit from competition.

(590) In order to standardize OTC products and make them suitable for exchange trading, significant investments are required, both at the development stage and, once a product is launched, in terms of incentives to liquidity providers to trade the product in order to overcome the adoption externalities, namely the fact that, in initially thin markets, the natural incentive to trade is lower.

(591) The costs of new product introduction are clearly set out by the Notifying Parties themselves in Annexes D.9 and D.10 to the Form CO. Even though the Notifying Parties concede that these estimates may be imperfect as some costs are not tracked systematically[536], the information is nonetheless telling.

(592) NYX identifies three approximate cost categories for new product introductions, "low" (of the order of […]*), "medium" ([…]*) and "high" (in excess of […]*). It should be noted, moreover, that these investments are anything but risk-free, and, in general, the higher the spend, the more innovative the product and also the greater the risk that this product will not achieve volumes which offset the initial investment. In one of the apparently most extreme examples, trade entry and clearing through Bclear of commodity products was introduced in March 2009 at a cost of around […]*, but until the end of 2010 had achieved […]*. It therefore goes without saying that the incentive to make investments in innovation of this order of magnitude may be affected by the notified transaction, precisely as the Commission has outlined.

(593) In other examples, short and medium gilt futures were introduced in November 2009 at a cost which was "high". The competitive context of this introduction vis-a-vis Eurex is described in Section 11.2.1.4.3.3 below. The introduction appears to have been quite successful. Multi-Serial options on Euribor, which were introduced at "medium" cost in early 2010, have also been very successful[537].

(594) As regards Eurex, little information has been provided at the individual contract level, but DB has estimated total yearly spend on product innovation at between Euro […]*

536 Form CO, Derivatives, paragraphs 8.80-8.84.

537 See Euronext press release of 29 March 2010, available at http://www.euronext.com/fic/000/056/165/561654.pdf, viewed on 30 November 2011.

and […]* for each of the three years 2008-2010, up on an estimate of Euro […]* for the two previous years.

(595) It follows that the fact of a product having been incubated in the OTC space is in no way determinative for that product's being launched on exchange, or for the timing, form and commercial conditions of such launch. This claim of the Notifying Parties must therefore also be rejected.

(596) Regarding the final claim, according to which there have been no "important" examples of products launched in competition between the Notifying Parties since 2000, and that therefore product innovation is a relatively unimportant dynamic, this claim cannot be reconciled with the evidence on file, whether from internal documents and public statements of the Notifying Parties or from responses to the market investigation.

(597) In this regard, NYX claims that "*NYSE Euronext operates the world's leading and most liquid exchange group, and seeks to provide the highest levels of quality, customer choice and innovation.*"[538] Eurex even has a special website devoted to innovation, innovate.eurexchange.com.

(598) Indeed, Eurex articulates what seem to be very similar conclusions to those of the Commission when it states, in April 2008, that "*Product innovation and introduction is thus significantly more costly on-exchange* [than OTC], *and exchanges have to be more selective in product development. Nevertheless, derivatives exchanges are highly innovative. Globally, the top three derivatives exchanges (Eurex, CME and Euronext.Liffe) have introduced more than 800 new products since the beginning of 2005, increasing the number of total products available to users by more than 80 percent.*"[539]

(599) High level innovations which date from later than 2000 include, for example, the launch of the FTSE EuroFirst index suite; EuroMTS Bond Index Futures and Euro-BTP Futures; Bclear and flexible options and futures; volatility and dividend futures, mid-curve options on Euribor, extensions of single stock derivatives into new geographies, and the Swapnote contract on Liffe, along with numerous more "incremental" but still significant innovations. Many of these are discussed below.

(600) The final claim of the Notifying Parties in this regard must therefore also be rejected.

11.2.1.3.3.5. General conclusions on competition in new products

(601) On the basis of the evidence on the file, the Commission therefore concludes that the Notifying Parties compete at the level of introduction of new and improved contracts around their overlapping core franchises and are each other's closest competitors in this regard. The degree of closeness of competition may to some extent differ by asset class, as further discussed the Section dealing with relevant product markets below. As argued

538 See NYX press release, available at http://globalderivatives.nyx.com/nyse-liffe-us/press-releases/2008-09-03, viewed on 1 December 2011.

539 The Global Derivatives Market – An Introduction, White Paper of Deutsche Boerse Group, p.27, http://www.eurexchange.com/download/documents/publications/global_derivatives_market.pdf.

by the Notifying Parties in their reply to the decision opening proceedings, there are indeed certain innovations, in particular product upgrades, for which one of the Notifying Parties is better placed than the other. However, even in this case, the incentive to innovate is at least in part driven by the threat of actual or potential competition.

(602) In respect of product innovation in European interest rate derivatives and European single equity and equity index derivatives, individually the Notifying Parties are always much better placed than any other competitor to engage in similar innovation and therefore represent the closest competitive threat to the success of a new product and an important force behind the need to continually invest in product upgrades.

(603) Even in the event that, post-merger, a certain innovation might reach the market in an equally timely fashion and in a form equally suited to customer needs, the notified transaction would still, as in many cases observed in the past, result in less price competition during the period of establishment of liquidity (as well as the loss of a pricing constraint from potential competition subsequently).

11.2.1.3.4. Competition between the Notifying Parties in technology, process and market design

11.2.1.3.4.1. Introduction

(604) The Commission's investigation has also shown that the competitive rivalry between the Notifying Parties in each of the relevant derivatives product markets and in product innovation is similarly reflected in rivalry at an upstream level between them in technology, processes and market design.

11.2.1.3.4.2. Competition in technology

(605) The strength of the actual and potential constraint of each of the Notifying Parties on the other is a function of a number of factors including established margin pools and overlapping memberships. Amongst these factors is technology. The Commission's examination of the case has clearly shown that the Notifying Parties invest in technology at least in part in order to keep ahead of the other and forestall the risk of liquidity moving to the other Notifying Party's platform, as well as to be better placed to launch innovative products.

(606) The Notifying Parties discuss at length in their strategy documents the importance of providing fast and reliable service offerings, where IT plays an important role: […]*[540]. Indeed, DB stated as much at the Oral Hearing, noting that there was always the possibility of a "*disruptive change in technology*" and that for this reason they needed to be on their guard.

[540] DB internal document provided in response to the Commission's RFI of 1 July 2011 […]*.

(607) Further, the Notifying Parties closely monitor each other's developments in this respect: […]*.[541] IT plays a crucial role in all relevant markets and throughout the value chain, encompassing trading, trade registration and clearing as well as associated services.

(608) Another respondent also confirmed that technological solutions and system performance are crucial for exchanges to remain in the market: *"Similarly Eurex and Liffe are also competing in terms of technology innovation. System performance is a key criteria for trading and it a key factor that can trigger a shift of liquidity from one venue to another."*[542] One competitor noted that "*the actual and, in particular, potential competition between Eurex and Liffe acts as a significant incentive on both exchanges to improve technology. The merger would eliminate this potential competition*".[543]

(609) These findings are echoed by a range of other respondents. For example, BGC states: "*Both exchanges have competed on their respective trading systems since Liffe moved from open outcry. Liffe's system were seen as more versatile on spreads and options but suffered from an overall stability perspective whereas Eurex were known for stability but did not have the same option and spreads capability, although in 2010 they addressed these issues.*" [544]

(610) Dekabank states that "*Technical equipment (availability, stability, speed) plays a considerable role for competition between the two platforms. Eurex occupies the leading position.*"[545]

(611) Kas bank states: "*The exchanges compete on several parameters: Connectivity type and technology requirements: flexibility in technology used to connect to the exchange allows members to fit the infrastructure to into the capabilities of the organization. For instance, Eurex requires MISS technology to be implemented in order to access back-office functionalities, whereas Liffe adopts no client-server architecture to establish a connection. Latency: Both exchanges offer low-latency high-frequency solutions in a proximity hosting environment, but performance may vary. Reliability: the market engines of both exchanges may suffer failures though the Eurex engine seems more robust as these failures are far more infrequent. … Service: technical support quality may differ or incur additional costs*"[546].

(612) [One customer]* states: "*Liffe and Eurex compete on: latency (speed of execution and message traffic, availability of co-locations), capacity (ability to handle enough data traffic in normal as well as peak markets, without throttling [i.e.] queueing of messages], reliability (quality of infrastructure, preventing outages or calculation*

---

541 The DB internal document provided in response to the Commission's RFI of 1 July 2011, […]*. A similar comparative analysis is made of Eurex by NYX in the document Overview of Eurex Release 8.0 of the Values API - technology partnerships, Doc. Nr. ENX-00758 -00001.

542 BNP Paribas Arbitrage, response to question 55 of Q1 – Questionnaire to customers [...]*.

543 Chi-X Europe, response to question 76 of Q3 - Questionnaire to competitors [...]*.

544 References in this and the following paragraphs are to replies to question 58 of Q8 – Questionnaire to customers, phase II [...]*.

545 Original: "Die technische Ausstattung (Verfügbarkeit, Stabilität, Schnelligkeit) spielt eine erhebliche Rolle für den Wettbwerb zwischen den beiden Plattformen. Die Eurex besetzt dabei eine Vorrangrolle" [...]*.

546 Kas Bank, response to question 58 of Q8 – Questionnaire to customers, phase II, [...]*.

errors, maximizing the amount of uptime). Liffe and Eurex definitely try to compete on both of them with Eurex taking the lead in terms of performance and stability."[547]

(613) The Kyte Group states: "*Most of our clients will be sensitive to 'round trip times'; the time it takes for an order to leave the originators computer, to be processed by the exchange and then to return to the originator with a confirmation of execution. These times are measured in milliseconds and the exchanges are in a constant fight to increase bandwidth, maintain stability and reduce round trip times. Historically, Eurex has been more successful in this "arms race". Both exchanges publish data relating to round trip times, bandwidth utilisation, orders-per-second processing capacity, etc."*[548]

(614) A different view is expressed by only a small minority of customers, including DZ Bank which considers that "*As product scope is overlapping only to a small extent, competition in technology is relatively small at the moment*". Exane also considers that there is no competition in technology[549].

(615) This notwithstanding, a clear majority of customers expect the merger to result in at least a degree of reduction in innovation in both products and technology, with estimates varying according to the source. This includes the industry association AFME, which states that "*the combined entity would have less incentive to innovate than it does currently through the removal of each exchange's main competitor*"[550]. A minority expect the same (6 including FOA) or more innovation (5).

(616) The market investigation has also outlined that exchanges, including Eurex and Liffe, compete not only to design and achieve liquidity in new listed contracts, but also to register and clear trades which take place OTC, therefore including the markets dealt with in Sections 11.2.2 (Off-order book services – registration, confirmation and CCP clearing of block size ETD contracts) and 11.2.3 (Trade registration, confirmation and central counterparty clearing services for flexible versions of European equity futures and options traded OTC). Competition in these areas is anticipated to gain further in importance under current regulatory initiatives in the Union (see Section 11.2.3.2.4 below).

(617) In this regard, [one customer]* states: "*Going forward technological access to clearing facilities owned by the exchanges will become a more significant factor as more non-Equity OTC products are required to be cleared via a CCP. Healthy competition in this area will be welcomed.*"[551]

(618) AFME places this in the regulatory context in the following way: "*as regards technological innovation, experience has shown that this is pushed only by competition or regulation and would only take place much more slowly otherwise. This is evidenced by the developments in the cash equity markets post-MiFID where technology which*

---

547 [...]*, response to question 58 of Q8 – Questionnaire to customers, phase II, [...]*.

548 Kyte Group, response to question 58 of Q8 – Questionnaire to customers, phase II, [...]*.

549 Exane, response to question 58 of Q8 – Questionnaire to customers, phase II, [...]*.

550 AFME, response to question 83 of Q8 – Questionnaire to customers, Phase II [...]*.

551 [...]*, response to question 58 of Q8 – Questionnaire to customers, phase II [...]*.

had long been outdated was only upgraded by incumbents in response to the entry or threat of entry of the MTFs."[552]

(619) The potential negative impact of elimination of competition between Eurex and Liffe on technology was also recognised by Liffe's Hugh Freedberg in his open letter to Financial Times at the time of DB's bid for Euronext in 2006, which stated: *"We and our customers believe that the existence of two major European derivatives exchanges maintains an incentive for each to innovate in product development, technology and service quality that would be lost through a merger that would create a monopoly controlling more than 90 per cent of the European on-exchange derivatives market.*"[553]

11.2.1.3.4.3. *Competition in process and market design*

(620) Just as in the case of technology, the Notifying Parties also compete with each other in developing new ways to trade, process and clear on their respective platforms. The Commission's examination of the case has clearly shown that also this dimension of innovation is motivated at least in part in order to keep ahead of the other Party and forestall the risk of liquidity moving to the other platform[554].

(621) Examples of competition between the Notifying Parties in this respect have been given by a number of customers as follows[555].

(622) [One large customer]* notes, as regards interest rates, competition on "*different order types, creation of different order books, different APIs and different levels of access*".

(623) B. Metzler states "*Liffe offers the interface onto which customers access via separate vendor products. Liffe thereby enhances competition between vendor companies for the best electronic trading platform for the customer. Eurex supplies the complete direct market access to customers.*"

(624) Caixa D'Estalvis i Pensions de Barcelona notes that "*while EUREX uses a FIFO pattern for trading, LIFFE prefers the proportional one.*"

(625) DRW Investments states: "*Eurex provides better transparency into the life-cycle of our orders including detailed execution latency reports.*"

(626) Intesa Sanpaolo states that "*Eurex supplies its own trading system, whilst for Liffe it is necessary to use ones own [in-house] system.*"[556] (although Unicredit states that Eurex's trading system will soon be discontinued).

---

552 AFME, agreed minutes of a meeting of 24 August 2011 [...]*.

553 FT article, Europe's two big derivatives exchanges compete head-on, 9 November 2006, available at: http://www.ft.com/intl/cms/s/0/59bd1750-6f99-11db-ab7b-0000779e2340.html#axzz1TJtvdq00.

554 See SO, sections 2.6.1 and 2.6.2.

555 References in the following paragraphs are all to replies to question 58 of Q8 – Questionnaire to customers, phase II [...]*.

556 Original: "*Eurex fornisce un sistema proprio per il trading mentre con Liffe è necessario utilizzare il proprio.*"

(627) SNS Securities states that "*the way in which the platforms operate is completely different. Eurex is order driven and Euronext is quote driven. The latter requires a lot more IT capacity but in return provides much more transparency. With an order driven market it can happen that for certain series there are no prices. In Quote driven [markets] there are always prices in all series.*"[557]

(628) Société Générale states that the Notifying Parties compete "*on collocation services and market data for example*".

(629) [Another customer]* nevertheless presents a different view: *[...]**

11.2.1.3.4.4. *Response of the Notifying Parties to the SO*

(630) In their response to the SO, the Notifying Parties argue that, since in their view they do not compete head-to-head in interest rate and other derivatives, their incentives to innovate in technology and market design do not come primarily from each other but from other, broader influences including the CME, other exchanges, potential entrants, OTC trading, and strong countervailing buyer power. They conclude that the merged entity will continue to have every incentive to innovate in technology and market design[558].

(631) They proceed to argue that the Notifying Parties' investments in trading technology and market design are largely specific to their own products and that, because their main interest rate products trade entirely differently and use different matching algorithms, investments by one Party in trading technology for its main interest rate contracts would be of no relevance for the other Party. The Notifying Parties' investments in trading technology and market design, they argue, are intended to increase trading volumes by making their own products more attractive to traders (faster, easier to use, amenable to additional trading strategies, etc.) not to induce switching from other contracts that users do not in any event regard as substitutes[559].

(632) Finally, the Notifying Parties qualify the evidence contained in the SO as "a few scattered quotes from market participants" and submit that "other respondents in the file express different views"[560].

11.2.1.3.4.5. *Analysis of the Notifying Parties' arguments in the response to the SO*

(633) From the arguments set out in the previous Section, it appears that the Notifying Parties, in their response to the SO, do not properly characterise either the argument which was made by the Commission in the SO or the evidence in support of it.

---

557 Original: "*Manier waarop de platformen draaien zijn kompleet verschillend. Eurex is order driven en Euronext is quote driven. De laatste vraagt meer IT capasiteit maar levert daar tegenover veel meer transparantie. Bij een orderdriven market is het mogelijk dat er in bepaalde series geen prijzen staan. In Quote driven staan altijd prijzen in alle series.*"

558 Notifying Parties' response to SO, Interest Rate Derivatives, paragraph 191.

559 Notifying Parties' response to SO, Interest Rate Derivatives, paragraph 193.

560 Notifying Parties' response to SO, Interest Rate Derivatives, paragraph 194.

(634) The Commission did not argue that there were no exogenous incentives for the Notifying Parties to invest in technology and market design, nor that such incentive would disappear as a result of the notified transaction.

(635) Rather, the Commission concluded in the SO that, post-merger, the intensive and unique competition between the Notifying Parties in technology, process and market design would be lost, since this competition is based on the need to forestall unique competitive threats to the Notifying Parties' respective franchises from the other Party[561]. This competition contributes, to a non-negligible extent, to the incentive to innovate in these areas and therefore the notified transaction would be likely to lead to lower innovation in technology solutions, fewer new services, and less innovation in market design in respect of services for trading, registering and clearing European interest rate and equity derivatives.

(636) The Commission considers therefore that the Notifying Parties have not provided evidence to modify the preliminary conclusions which it reached in this respect in the SO. The weight of evidence from the market investigation supports the position set out in the SO and cannot be dismissed as "a few scattered quotes". On the contrary, this evidence is all the more compelling given that it is widely recognised that the incentives to innovate do not exclusively derive from the competitive interaction between the Notifying Parties and therefore, as the Notifying Parties themselves point out, many respondents do expect such innovation to continue to some degree. Notwithstanding this, there is still an expectation that the incentive to innovate will be reduced.

(637) The Notifying Parties' argument that all investments by each of the Notifying Parties in technology pertain exclusively to separate product markets must similarly be rejected. While this may be true in part, the Notifying Parties' many services – including co-location services (in the case of DB, under an outsourcing arrangement) and connectivity solutions are used by all of their products, including those, where they actually compete at present and also those for which they are the closest potential competitor. They also offer integrated trading and clearing platforms.

(638) Moreover, investments in technology for a particular product may be designed to head off potential competition in that product and, even if prompted by user requests, the need to respond to these requests is certainly influenced by the threat of potential competition. As indicated by AFME, in cash markets the introduction of competition has resulted in enormous improvements in technology, by both challengers and incumbents, investments which were not made at an earlier stage[562]. As LSE points out, "*it was notable at the Oral Hearing that the Notifying Parties did not seem to attribute importance to innovative competition around technology development, business models, or service, notwithstanding that, in Turquoise's experience, such dynamics of competition are highly relevant to customers and are at the forefront of customer demand*."[563]

(639) As shown in sections 11.2.1.3.5.2 and 11.2.1.3.5.3 above, the market investigation provided strong evidence that a move to near-monopoly, in respect of the relevant

561 See SO, paragraph 396.

562 Agreed minutes of a meeting with AFME of 24 August 2011, paragraph 17 [...]*.

563 LSE, Preliminary Response to SO, 31 October 2011, p.4 [...]*.

product markets concerned by this Decision will result in a diminished incentive to innovate and in service offerings which would be less innovative and responsive to users' needs.

11.2.1.3.4.6. Conclusions on competition in technology, process and market design

(640) The Commission therefore concludes that the notified transaction, by eliminating actual and potential competition between the Notifying Parties in European interest rate derivatives, equity derivatives and equity index derivatives, lessens the incentive which the merged entity would have to innovate in technology, process and market design in order to respond to these same competitive threats, and would result overall in less innovation being available to customers in those markets.

11.2.1.4. COMPETITION BETWEEN THE NOTIFYING PARTIES - EUROPEAN INTEREST RATE FUTURES AND OPTIONS

11.2.1.4.1. Introduction

(641) European interest rate derivatives represent a significant proportion of derivatives contracts based on European underlyings traded in the exchange environment[564]. Eurex and Liffe are currently each other's closest actual and potential competitors in this space. Besides the Notifying Parties, there is no other exchange offering significant trading in European interest rate derivatives, based on the same currency as the Notifying Parties, be they short-term or long-term. CME, the only other player which is active in the same European interest rates as the Notifying Parties, is confined to short term euro interest rates (Euribor), and has barely any presence even in this area.

(642) From the outset it should be recalled that this assessment applies for both groups of customers identified in the market definition Section of this Decision, namely the customers that trade only ETDs and the customers that trade both ETDs and OTC derivatives. This is because, as explained in Section 11.1.1.2.2.1.5 of this Decision, even for customers for whom ETD lookalikes in the area of interest rate derivatives could possibly be an alternative under certain circumstances, the phenomenon of ETD lookalikes in the area of interest rate derivatives is of minimal importance and therefore not of a nature to alter competitive assessment in this case.

(643) In respect of interest rate derivatives, the Notifying Parties reiterated at several instances that there is no direct overlap in interest rate products and therefore *"no overlap means low potential for competitive harm"*.[565]The following sections will show that, first, the claim that there is no direct overlap between Notifying Parties' interest rate products is incorrect as Eurex and Liffe overlap with respect to a number of interest rate products.

---

564 The notional value outstanding at 31 December 2010 for trades in European interest rate futures and options on organized exchanges represented 22.8 trillion USD (source: BIS, http://www.bis.org/publ/qtrpdf/r_qa1112_anx23a.pdf, titled "Table 23A: Derivative financial instruments traded on organised exchanges by instrument and location"). This is over 9 times the outstanding in equity index contracts, which in turn dwarves trading in individual equities.

565 See Notifying Parties, Submission in support of merger clearance, 17 January 2012.

Second, even if there was no overlap, the competitive constraint exercised by the mere existence of the other party and the threat that it may pose the incumbent by entering its territory is particularly powerful in this case, in particular in view of the duopolistic market structure which is in addition characterised by high barriers to entry.[566]

11.2.1.4.2. Actual competition in existing interest rate derivatives

11.2.1.4.2.1. Introduction

(644) Eurex offers 10 LTIR derivatives on its order book and 11 STIR derivatives[567]. The LTIR contracts include the benchmark Euro-Bund, Bobl and Schatz contracts and options on these futures, the longer-dated Euro-Buxl contract[568], as well as Swiss and Italian government bond futures. In the STIR space, Eurex offers a suite of contracts based on the three-month Euribor rate as well as futures in one-month EONIA.[569]

(645) Liffe, for its part, offers 7 Futures and 9 Options on STIR derivatives.[570] Four of these are based on three-month Euribor, four on three-month sterling rates, one on one-month EONIA and one on three-month Eonia. The others are based on non-European rates (Eurodollar, Euroyen etc) that are not the subject of this Decision. It offers three futures contracts and an options contract in long-term sterling interest rates (gilts), a range of swapnote contracts and a Japanese long-term rate. As regards sterling, it follows that Liffe has liquidity throughout the interest rate curve.

(646) The Notifying Parties argue that given that in their view, the market for interest rate derivatives should be subdivided into STIR and LTIR derivatives,[571] there is virtually no overlap in their interest rate derivatives franchises as Eurex focuses on LTIR derivatives while Liffe focuses on STIR derivatives.

(647) Table 3 illustrates the Notifying Parties' combined market shares on various possible candidate markets in the area of European interest rate derivatives in 2010.

Table 3: Market shares on various possible candidate markets in the area of exchange traded derivatives

	DB	**NYX**	**Combined**	**Others**
European interest rate derivatives	[40-50%]*	[40-50%]*	**[90-100%]***	[0-5%]* (Nasdaq OMX, Oslo

566 See section 11.2.1.7 of this Decision for analysis of barriers to entry.
567 Annex 4 to the Notifying Parties' reply to the Commission's second RFI of 13 September 2011.
568 Euro-Buxl Futures are futures contracts based on a notional long-term debt instruments issued by the Federal Republic of Germany, with a remaining term of 24 to 35 years.
569 Eonia (Euro OverNight Index Average) is an effective overnight interest rate computed as a weighted average of all overnight unsecured lending transactions in the interbank market.
570 Annex 4 to the Notifying Parties' reply to the Commission's second RFI of 13 September 2011.
571 See for instance Notifying Parties' response to the SO, Interest Rates derivatives.

(including options and futures)[572]				Bourse), CME: [0-5%]*
European interest rates options[573]	[30-40%]*	[60-70%]*	**[90-100%]***	[0-5%]* (Nasdaq OMX, Oslo Bors), CME: [0-5%]*
European IR futures[574]	[50-60%]*	[30-40%]*	**[90-100%]***	[0-5%]* (Nasdaq OMX, Oslo Bors) CME: [0-5%]*
Euro STIR[575]	[0-5%]*	[90-100%]*	**[90-100%]***	(CME: [0-5%]*)
Euro LTIR	[90-100%]*	[0-5%]*	**[90-100%]***	-
Sterling STIR	[0-5%]*	[90-100%]*	**[90-100%]***	-
Sterling LTIR	[0-5%]*	[90-100%]*	**[90-100%]***	-
European LTIR[576]	[90-100%]*	[0-5%]* (UK)	**[90-100%]***	[0-5%]* (Nasdaq OMX)
European STIR[577]	[0-5%]*	[90-100%]*	**[90-100%]***	[0-5%]* (Nasdaq OMX), [0-5%]* (Oslo Bors)

Source: Compilation of data from various sources: Form CO and third party information.

(648) From the table above, it follows that should the relevant market comprise all exchange-traded European interest rate derivatives (irrespective of currency and instrument), the combined market shares of the Notifying Parties would amount to [90-100%]* while no other player would have a market share exceeding [0-5%]*.[578] In this context, it should also be recalled that these market shares have been stable over time. As a result, the proposed transaction would lead to a *de facto* monopoly under this market definition. This assessment is the same irrespective of whether the geographic market is EEA or wider as Eurex and Liffe are *de facto* the only players offering trading in European interest rate derivatives worldwide.

(649) If the relevant market were to be subdivided into STIR derivatives and LTIR derivatives and on the basis of currency (euro/sterling), the Notifying Parties would overlap in the

572 Form CO, Annex D.15.

573 Jan-May 2011. Source: World Federation of Exchanges, as provided by AFME, Annex to their reply to Q1 – Questionnaire to customers – paragraph 2.7. […]*

574 Jan-May 2011. Source: World Federation of Exchanges, as provided by AFME, Annex to their reply to Q1 – Questionnaire to customers – paragraph 2.7. […]*

575 See the next section for details.

576 Form CO, Annex D.15.

577 Form CO, Annex D.15.

578 CME launched its Euribor futures contract in September 2011, but has achieved very limited volume, and hence its share is effectively zero even on the narrowest possible market. The interest rate derivatives volumes achieved by Nasdaq OMX and Oslo Bors concern Scandinavian currencies.

area of STIR derivatives as concerns futures and options based on the three month Euribor commercial bank rate. As concerns LTIR derivatives, while the Notifying Parties do not directly overlap in futures and options based on euro sovereign rate underlyings, Liffe's offering of strips, packs and bundles of Euribor futures and of longer dated Euribor futures and options provides a certain competitive constraint on Eurex's Bobl and Schatz offering since, whilst these products are differentiated, there is nonetheless a degree of overlap in demand. In terms of revenue, the Notifying Parties are closely balanced with Liffe obtaining Euro […]* and Eurex […]*[579]. The assessment of these market scenarios follows below in Sections 11.2.1.4.2.2 and 11.2.1.4.2.3.

(650) It should also be noted that despite the limited observed overlap between the Notifying Parties in STIR and LTIR derivatives, the market investigation provided indications that the existing competition between Eurex and Liffe in their respective franchises has not been as fierce as it could have. For instance, Chi-X Europe indicated that "*there is no evidence of price competition in related contracts, Liffe has not relisted LTIRs, and Eurex has not promoted clearing-related synergies (eg margin offsets between its LTIRs and STIRs).*"[580]

(651) This indication was also confirmed by a DB internal document where in relation to the analysis of competitive forces in the market it is stated that "*incumbent competitors (e.g. Liffe)*" are "*generally accepting mutually agreed market shares/asset classes"* and therefore there is *"no need to take competitive initiative*".[581][582]

(652) However, the Commission considers for the purpose of this merger case that these indications are without prejudice to the substantial evidence of competition between the Notifying Parties on which this decision is based.

11.2.1.4.2.2. *STIR Derivatives based on euro interest rates*

(653) Actual competition between the Notifying Parties in Euro STIR primarily concerns Euribor products. It may also be noted that, in relation to the one-month EONIA

579 Form CO, Annexes D.18 and D.19, figures date from 2010.

580 Chi-X Europe, reply to Q.46 of Q3 – Questionnaire to Competitors [...]*.

581 DB internal document with Reference Doc. DB00000180 - This is without prejudice to the compatibility of any possible agreement between the Notifying Parties with Articles 101 and/or 102 TFEU.

582 Asked to explain this comment at the Oral Hearing, the Notifying Parties appeared to argue that the "general acceptance" in question was acceptance by the market and not by the Notifying Parties themselves. This appears, however, to be an unlikely interpretation of the phrase "mutually agreed". If it were to be concluded that the observed degree of competition were reduced as a result of agreements between the Notifying Parties, then this degree of competition might not be the relevant benchmark against which to assess the competitive harm brought about by the merger. Even on the basis of observed competition, nonetheless, the Commission is able to conclude that the notified transaction gives rise to a significant impediment to effective competition. In this respect, it is noted that the reference to this evidence is included for the purpose of showing the context of the parameters of competition existing between the Notifying Parties, while the Commission is not making or relying on a formal finding of a restriction pursuant to Article 101 of the Treaty in the context of the present merger case.

contract, Eurex decided, at the end of 2002, to introduce a contract[583] in competition with Liffe. This contract is still available for trading on Eurex, even if, according to the Notifying Parties, there was no trading in it in 2011 to date[584].

11.2.1.4.2.2.1. Initial competition to establish the Euribor benchmark

(654) At the time of introduction of the euro in 1999, competing standards developed for the reference money market interest rate, with Liffe initially promoting the Euro Libor rate whereas Eurex, initially offered, as of 18 September 1998, both rates[585], and subsequently decided to support Euribor only.

(655) The Notifying Parties describe this as follows: "*When the Euro was introduced, liquidity for the principal pre-Euro currency contract, the Three Month Euromark was primarily held on NYSE Liffe. NYSE Liffe had also for some years offered a highly liquid Three Month Eurolira contract (referencing short term Italian interest rates) as well as a Three Month ECU contract (which referenced interest rates for the European Currency Unit (ECU), the forerunner of the Euro), in addition to the non-Euro Sterling and Swiss Franc contracts. All of these contracts settled to the relevant British Bankers' Association (BBA) LIBOR rate, as indeed did and does the world's largest STIR contract, the Eurodollar. NYSE Liffe announced that the ECU contract would convert to the Euro contract on a one for one basis and using the same reference rate, i.e. BBA LIBOR, and that conversion facilities, with appropriate conversion factors and adjustments, would be offered in respect of the Euromark and Eurolira contracts as the underlying currencies on which these contracts were based were due to disappear.*"[586]

(656) Following the launch by Eurex of Euribor futures, Liffe launched its own Euribor contract in December 1998 and ultimately "won" the battle insofar as the vast majority of liquidity in STIR derivatives and Euribor in particular finally settled on Liffe. Nonetheless, Liffe is still subject to both actual and potential competition from Eurex in Euribor, as discussed in the following sections.

(657) ICE illustrates this battle as follows: *"There are [instances]* where the launch of a new derivative contract by Eurex was followed by Liffe and vice versa, e.g. the move from LIBOR to EURIBOR based derivatives when [the Euro]* was introduced when Liffe and Eurex competed to gain liquidity in Euribor contracts. Liffe was the incumbent and managed to persuade its participants to switch all open interest from LIBOR to EURIBOR after Eurex launched a rival EURIBOR contract."*[587]

(658) This is described on the Eurex website in a press release from January 1999 as follows: "*Eurex, the European derivatives market, wants to focus exclusively on the Euribor as the*

583 Eurex website, http://www.eurexchange.com/download/documents/circulars/cf0032003e.pdf, viewed on 20 September 2011.

584 Notifying Parties, Submission of 19 September 2011, p.4.

585 Eurex website, http://www.eurexchange.com/download/documents/circulars/cf0501998e.pdf, viewed on 29 November 2011.

586 Notifying Parties' response to the SO, Interest Rates derivatives, paragraph 156.

587 ICE, response to question 39 of questionnaire Q3 – questionnaire to competitors [...]*. See also Chi-X Europe, response to question 50 of questionnaire Q3 – questionnaire to competitors [...]*.

reference interest rate for money-market derivatives in the future. The development in turnover clearly speaks in favor of the Euribor, as the exchange stated in Frankfurt. For this reason, trading in the three-month Euro-Libor future will be discontinued at mid-year if no more open positions exist in the contract. In the future, the Eurex money-market derivatives will be focused on the one-month and three-month Euribor future as well as the option on the three-month Euribor future."

(659) Eurex goes on to state that "*the positive trend in Euribor contracts is mainly attributable to the overwhelming success of the reference rate itself. Its function as the leading reference rate for money-market transactions and over-the-counter derivatives trading in Euroland was already clear at the beginning of the year. To promote trading in Euribor products, the transaction fees will continue to be waived, as previously announced, up to and including March 15. Eurex is also waiving fees until the end of the year for Eurex participants who have traded at least 150,000 contracts in three-month money-market futures by March 15, 1999.*"[588]

(660) This battle was described at the time in *The Economist*[589]. By November 1999, that is to say approximately a year later, Liffe claimed business "*worth euro 70 trillion in Euribor futures, compared with euro 30 trillion on the Eurex exchange in Frankfurt and less than euro 5 trillion on the bourse in Paris.*"[590]

11.2.1.4.2.2.2. Ongoing competition in Euribor futures

(661) Eurex's interest in the Euribor contract, which as indicated above dates from the inception of the rate as the benchmark Euro money market rate, has continued until at least very recently. Eurex has kept the product listed and achieved small but still non-negligible market shares in futures on three month Euribor traded on-book, as shown in Table 4.

Table 4: Market share and volume in futures on 3 month Euribor

Year	Liffe	Eurex	Eurex volume
2007	[90-100%]*	[0-5%]*	[…]*
2008	[90-100%]*	[0-5%]*	[…]*
2009	[90-100%]*	[0-5%]*	[…]*
2010	[90-100%]*	[0-5%]*	[…]*

Source: Commission calculations based on the Notifying Parties' replies to the Request for Information of 25 November 2011[591]

588 http://www.eurexchange.com/about/press/press_21_en.html, viewed on 29 November 2011.

589 Article of October 29 1998, available at http://www.economist.com/node/174375 (titled "The battle of the benchmarks", Oct 29th 1998), viewed on 29 November 2011.

590 *The Guardian*, 19 November 1999, http://www.guardian.co.uk/business/1999/nov/19/futures (titled "There's life in the old Liffe yet", viewed on 29 November 2011.

591 On the basis of partial figures, Eurex volumes would seem to have declined further since the announcement of the agreement to merge in early 2011.

(662) Although these numbers may appear small and are minimised by the Notifying Parties[592], they are very significantly in excess of the market shares achieved by CME since the launch of its Euribor futures product, notwithstanding that CME is cited by the Notifying Parties as their "closest competitor". Indeed, CME had traded a total of only 2,310 Euribor future contracts as of 11 November 2011, and CME's revenue derived from traded Euribor futures has been negligible [...]*[593]. This trading volume represents only one-tenth of Eurex's average monthly volume in 2010.

(663) In addition to constraining prices, this actual competition underlines the extent of potential competition if the product offering of NYSE Liffe were to become less attractive. In this context, Nasdaq OMX states that: "*While Eurex offers some Euro denominated European STIR derivatives contracts in competition with Liffe actual competition is marginal as Liffe had 99.8% of the traded volumes in 2010 and 2011, respectively. That said, Eurex is the only credible force constraining Liffe in terms of setting fees for European STIR derivatives contracts as there is no other player with a comparable European interest rate derivatives expertise and standing in the market as Eurex and Liffe. It can be taken that Eurex is best suited to enter the STIR business of Liffe as it possesses assets such as expertise in the neighbouring European LTIR market, specialized software, specialized risk management tools etc. that would enable it to extremely easily enter and expand into Liffe's STIR business.*" [594]

11.2.1.4.2.2.3. Options on Euribor futures

(664) In addition to both listing Euribor futures, the Notifying Parties also both list options on three month Euribor futures (which CME does not). In respect of this contract, internal documents of DB show actual and/or potential competition between the Notifying Parties. DB has achieved volumes through its off-order book facility between June 2010 and January 2011, just prior to the announcement of the merger, as indicated in Table 5 which compares Eurex's share to the off-order book volumes of NYSE Liffe[595].

Table 5: Market share and volume in options on three month Euribor futures

Year	Liffe %	Eurex %	Eurex volume
Jun-10	[90-100%]*	[0-5%]*	[…]*
Jul-10	[90-100%]*	[0-5%]*	[…]*
Aug-10	[90-100%]*	[0-5%]*	[…]*
Sep-10	[90-100%]*	[0-5%]*	[…]*

592 In their submission of 1 December in the context of the remedies, the Notifying Parties state (without referring to any source) that Eurex accounts for "*less than 0.001% of the trading volume in Euribor contracts*". This understates the correct figure for 2010 by a factor of over 100 ("Briefing Paper on the Commitments", p.7).

593 CME's response to the Commission's Request for Information of 14 November 2011, non-confidential version, point 6, [...]*.

594 Nasdaq OMX, reply to question 47 of Q10 – Questionnaire to competitors, Phase II […]*.

595 Commission calculations based on Parties' replies to the Commission's Request for Information of 25 November 2011.

Oct-10	[90-100%]*	[0-5%]*	[…]*
Nov-10	[90-100%]*	[0-5%]*	[…]*
Dec-10	[90-100%]*	[0-5%]*	[…]*
Jan-11	[90-100%]*	[0-5%]*	[…]*

Source: Commission calculations based on the Notifying Parties' replies to the Request for Information of 25 November 2011.

(665) Some background to this development is provided in an internal document of DB. [Document reporting confidential discussions between DB and a customer with respect to options on STIR products]*[596]

(666) The same internal document of DB (Eurex) of July 2010 contains details of a review of the current pricing structure of OEU3 [DB internal discussion how to attract more volume]*[597]

(667) The threat of Eurex steadily gaining position in STIR derivatives is also recognised by NYX as a significant threat to Liffe's core business: […]*[598]

(668) This rivalry, though recently renascent, appears not to be new. An internal document from Liffe in October 2006 mentions that [...]*[599] The competitive rivalry is also clear from a DB internal document from November 2007, where […]* is evaluated "*in light of Eurex's value proposition to clear […]* STIR futures business and compete with Liffe for such products*"[600].

(669) The competition from 2010 is commented in an internal document from NYX as well: [Eurex is increasing efforts to capture this business and we are discussing ourresponses with clients]*[601] NYX later reports that [The threat from Eurex is receding but at the expense of concessions to clients]*.[602]

(670) Inter-dealer broker ICAP similarly notes that: *"Eurex do already offer STIR futures and options. [Eurex offers] options contracts at a significantly lower cost (4c per lot vs c20p including clearing fees) […] This forced Liffe to cut their fees and re-engage their customers."*[603] *"In Euribor options, Eurex mounted a campaign throughout 2010, based on cheaper execution and clearing fees. This was initially supported by at least one of the larger end-users, and succeeded in building up more than 100,000 lots of open*

596 DB internal document, […]*.

597 DB internal document […]*.

598 NYX internal document provided in response to the Commission's RFI of 1 July 2011, NYSE Liffe Business Model & Strategic Planning – submission to FSA, March 2011, p. 61.

599 NYX internal document provided in response to the Commission's RFI of 1 July 2011, with title, Minutes of Executive Committee meeting 30.10.2006, Reference ENX-00778 -00001.

600 DB internal document provided in response to the Commission's RFI of 1 July 2011, with title[…]*.

601 NYX internal document provided in response to the Commission's RFI of 1 July 2011, with title "Risk report to the Liffe audit and risk committee", 15 April 2010, Reference ENX-00307-00001, p.5.

602 "NYSE Liffe risk summary report to the Liffe audit and risk committee", April 2011, NYX document ENX-00311-00001, p.5.

603 ICAP, response to question 62 of Q1 – Questionnaire to customers [...]*.

interest, but in time Liffe eventually lowered their fees… and the Eurex threat went away"[604].

(671) Another customer notes that, *"more recently Eurex competed with Liffe on STIR options and part of that competition was based on trading fees."*[605]

(672) Eurex also offered flexible options on Euribor, which it similarly withdrew in January 2011. An internal document from Liffe mentions that "*In fixed income products, Eurex will introduce flexible options during Q4 2006.*" [606]

11.2.1.4.2.2.4. Commission analysis of the Notifying Parties' response to the SO

(673) The Notifying Parties' response to the SO contains no substantive rebuttal of the analysis of actual competition in short term interest rates developed by the Commission. Rather, this reply limits itself to the statement that "virtually all" liquidity in STIR is with NYSE Liffe[607] and claiming that the Notifying Parties "*do not compete in Euribor contracts to any meaningful extent.*"[608] The Commission considers that whilst the actual overlap in the products concerned is indeed low given that Liffe accounts for the significant majority of liquidity in STIR products, the evidence outlined above clearly demonstrates the competitive constraint that Eurex represents to Liffe. Eurex's attempts to gain greater liquidity and expand its product range keep Liffe "on its toes".

(674) The Notifying Parties further claim that the fact that "*DB does not offer and has not offered cross-margining between its LTIR contracts and its Euribor STIR contracts*" would mean that "*the Commission's argument [that DB's large pool of open interest of correlated LTIR contracts gives it a decisive advantage] is theoretical rather than practical.*"[609]

(675) Whilst the Commission is aware that Eurex does not presently offset its Euribor contract against its LTIR contracts, the assertion that such an offset is "theoretical rather than practical" is contradicted by at least two other elements provided by the Notifying Parties themselves.

(676) Firstly, the Notifying Parties' in their submission on efficiencies make the following claim: "*Joint members will gain cross-margining opportunities due to the complementarity of the products traded across the combined exchanges. For instance, users should achieve margin reductions as a result of being able to offset their positions on the short end of the Euro interest rate yield curve (Euribor), where NYSE Liffe has substantial open interest, against the long end of the curve (Schatz, Bobl, and Bund), where Eurex has substantial open interest. At the moment, these groups of products are*

604 ICAP, response to question 50of Q8 – Questionnaire to Customers, Phase II [...]*.

605 DRW Investments UK Limited, response to question 55 of Q1 – Questionnaire to customers [...]*.

606 NYX internal document provided in response to the Commission's RFI of 1 July 2011, with title, Minutes of Executive Committee meeting 30.10.2006, Reference ENX-00778 -00001.

607 Notifying Parties' response to the SO, Interest Rates derivatives, paragraph 65.

608 Notifying Parties' response to the SO, Interest Rates derivatives, paragraph 74.

609 Notifying Parties, Submission of 1 December 2011, "Effective Competition will Remain in Interest Rate Derivatives", p.1.

cleared in separate CCPs, although crossmargining already takes place within Eurex across the group of Euro long-term bonds, and, as discussed in more detail below, within NYSE Liffe Clearing between the short end of the curve and NYSE Liffe Clearing's bond products. Given that Euribor products are highly correlated with long-term Euro bonds, considerable additional margin offsets could be achieved when the two groups of products are cleared within a single CCP."[610]

(677) This statement of the Notifying Parties is not framed by them as being purely "theoretical" but presented as being an almost automatic outcome of the fact that, post-merger, the two sets of products would be cleared in one place, namely in Eurex Clearing, and this notwithstanding the fact that Eurex Clearing does not, today, offer such offsets between its own Euribor contracts which are already currently cleared within the same CCP as its LTIR contracts. The qualification of this possibility as purely "theoretical" would therefore imply, *ipso facto*, that the claims related to the existence of collateral savings post-merger as between STIR and LTIR are equally "theoretical".

(678) Secondly, Eurex Clearing itself is currently migrating to a new portfolio-based risk management model ("PRISMA") which is precisely intended to allow for greater offsets between correlated products within a clearing member's portfolio. Given that this project has already been announced to the market for introduction in June 2012[611], it is certainly not "theoretical".

(679) Moreover, NYSE Liffe already applies a high offset between its sterling STIR and LTIR products, and even between Euribor and sterling LTIR, again showing that this possibility is not "theoretical".

(680) The Commission therefore concludes Eurex and Liffe are each other's closest and *de facto* only competitors in the area of European STIR derivatives and in particular Euribor futures and options. This conclusion applies irrespective of whether the geographic scope of the market is worldwide or EEA as the Notifying Parties are *de facto* the only relevant competitors in this space. It follows that the proposed transaction would lead to a near-monopoly in the area of European STIR derivatives. Should the market be further subdivided into futures and options, the notified transaction would also result in a near-monopoly for futures, with CME being the only remaining player exerting a very limited constraining force, and in a monopoly for Euribor options.

---

610 Compass Lexecon, "Cross-margining efficiencies induced by the Deutsche Börse / NYSE Euronext merger", document dated 5 September 2011, p.7.

611 Eurex Clearing Circular 074/11, http://www.eurexchange.com/download/documents/circulars/cf0742011e.pdf, viewed on 8 December 2011.

11.2.1.4.2.3. European interest rate derivatives providing longer term exposure

11.2.1.4.2.3.1. Competition in mid-term euro interest rates

(681) The Notifying Parties also offer a competitive constraint to each other in the mid-range of the Euro interest rate curve by virtue of Liffe's offering of strips and bundles of Euribor futures. Also simple Euribor futures in forward months provide exposure to interest rates in the future, and albeit that the rate in question is the commercial three-month interbank rate, this rate is increasingly correlated to other long term rates the further out the contract in question.[612] Liffe currently offers 24 quarterly contract months for Euribor futures, allowing exposure of up to 6 years to be gained.[613] Although the Notifying Parties correctly point out that their products are based on different underlying rates and are therefore not perfect substitutes for each other, Euribor products can for certain purposes be alternatives to the hedge available using the Bobl or Schatz.

(682) This was confirmed by NYSE Liffe in an internal document as recently as December 2009, which states that […]*[614] The relevance of this final comment should also not be neglected, since interest rate swaps, which may extend into very long maturities, are also priced off the Euribor curve but generally hedged on-exchange with Eurex's LTIR contracts, even though those contracts refer to a different underlying curve.

(683) The background to this competitive interaction is as follows. Unlike equity and equity index derivatives, the interest rate market is characterised by the fact that certain liquid benchmark products are widely used for hedging purposes even if they offer only an imperfect hedge[615]. For this reason, competition between the Notifying Parties, whilst it may involve head-to-head competition as in the case of Euribor, also takes the form of launching differentiated products designed better to appeal to a hedging need than an existing contract. This type of contract may draw away a part of the demand from the existing contract.

(684) The resulting competitive constraint in this case appears to be asymmetric, since the contracts in question are subject to a constraint from their larger rival, but insofar as

---

612 See for instance NYX' internal document provided in response to the Commission's RFI of 1 July 2011, NYSE Liffe Business Model & Strategic Planning, March 2011, Reference: ENX-00002-00015, p.16 […]*.

613 Notifying Parties' reply to the Commission's RFI of 20 September 2011, question 1a). Indeed, real-time pricing of these bundles is available online at liffepacksandbundles.if5.com.

614 See the NYSE document with reference ENX – 00049 – 00001, Memo to Members of the Liffe Board "Business Report", dated 10 December 2009, page 6 .

615 In addition to being conceded by the Notifying Parties, this point is made by third parties. For example ICAP argues that interest rate ETDs "*will not allow a customer to obtain a complete hedge against the economic risk they face but have the advantage of immediacy and high liquidity… In OTC inter-dealer markets, the banks make prices to each other, and actively 'take' offers or bids from the exchange central order book to temporarily hedge OTC positions. Although an ETD position is imperfect and only suitable risk mitigation for a short duration, its immediacy due to high liquidity allows it to be used this way very efficiently*". (Observations submitted on 26 October 2011, paragraphs 6.6 and 6.21, [...]*

they represent a better alternative for only a relatively small part of demand, may not influence the pricing of the benchmark product itself.

(685) Liffe offers a means to trade strips of Euribor futures in order to mimic longer term exposure, in direct competition, as it itself indicates, to Eurex's Bund/Bobl/Schatz franchise, especially the 2 to 5 year instruments. Liffe claimed in 2005 that "*trading packs and bundles can offer a more efficient hedge than trading Bond* (sic) *futures, because they offer greater access to the yield curve, without the need to 'roll' positions. Strips, packs and bundles on LIFFE CONNECT are competitively priced against Bond futures, e.g. trading a two-year Euribor bundle is cheaper than the equivalent Schatz futures transaction; trading a five-year Euribor bundle is cheaper than the equivalent Bobl futures transaction*"[616].

(686) The relevant products are described by NYX as follows: "*NYSE Liffe's packs and bundles are recognized trading strategies that enable you to easily execute a combination of contract months in Short-Term Interest Rate (STIR) Euribor and Sterling futures contracts –- in one trade and at a single, significantly reduced cost. This allows users to gain exposure to longer term interest rates, without the legging risk and cost of trading the individual months. Packs and bundles are similar to strips, however with legs of equal volume*."[617] "*Euribor® and Short Sterling packs and bundles allow you to trade a combination of outright delivery months in just one trade, providing exposure to longer term interest rates without the need to roll positions - meaning they are an ideal alternative to trading shorter term bonds and swaps*".[618]

(687) Liffe indicates that this offering is particularly suitable for traders wishing to hedge swap exposure in the interbank market on exchange, who would otherwise use the Schatz and Bobl for this purpose though it was a less accurate hedge: "*Government / Treasury debt might not be considered a suitable hedge for inter-bank lending; i.e. Schatz is a less effective hedge for swap exposure compared to Euribor 2yr Bundle*"[619]

(688) Trading in Euribor strips, packs and bundles has been increasing in recent months relative to trading in the Bobl and Schatz and has represented between […]* of the total in most months since January 2010.[620] Relative to the Schatz alone, which they are better placed to emulate as it is the shorter term instrument over which period there is greater liquidity in Euribor futures, these figures, and the associated competitive restraint, are even higher.

(689) This increase in the trading of these strips, packs and bundles on Liffe may explain the assessment made by DB in an internal document: […]*.

(690) The competitive relationship between Euribor strips, packs and bundles and from forward Euribor futures contracts on the Schatz and Bobl has been confirmed in the

616 See http://www.euronext.com/fic/000/010/620/106201.pdf, viewed on 20 September 2011.

617 See NYX website, available at http://globalderivatives.nyx.com/stirs/nyse-liffe/pack-bundles, viewed on 20 September 2011.

618 Email from NYSE Liffe Marketing on 14 December 2010 16:49, Annex 4.01 to the Notifying Parties' reply to the Commission's RFI of 20 September 2011.

619 Notifying Parties' reply to the Commission's RFI of 20 September 2011, Packs and Bundles DMM Programme, Annex 4.11.

620 Notifying Parties' reply to the Commission's RFI of 20 September 2011, Annex 16.

market investigation, where respondents have noted that "*Liffe's longest STIR contract is … longer than the shortest LTIR* contract *offered by EUREX"*[621] and that whilst *"the exchanges generally operate at different points on the yield curve, Liffe short end and Eurex long, but in the medium term they certainly compete, contracts such as the schatz and bobl competing with Liffe's STIR contracts for participants looking for exposure in these sectors."*[622]

11.2.1.4.2.3.2. Response of the Notifying Parties to the SO

(691) In their response on this point to the SO, the Notifying Parties argue that "*even if STIR and LTIR futures can offer exposure to similar maturities, this does not mean that they can be used interchangeably to hedge the same risk. Since there is no single yield curve describing the cost of money for every borrower, any substitution between strips of STIR derivatives based on interbank rates and LTIR products based on medium-term government bonds will leave the user with significant basis risk.*"[623]

(692) In the SO, the Commission also presented an argument regarding strips, packs and bundles in relation to innovation, namely that "*this type of innovation would very likely not have been introduced had it not been for the competitive relationship between the Notifying Parties, since if it had been introduced by Eurex it would have risked cannibalizing revenues and liquidity in its flagship interest rate products. It is therefore innovation of a type which would in all likelihood be lost as a result of the merger.*"[624]

(693) In reply to this point, the Notifying Parties point out that when NYSE Liffe introduced strips (1994) and packs and bundles (1998), it still offered German government bond derivatives. In their view, [NYX would not have had any incentive to offer these products if they could have had an impact on other products' liquidity]*[625]

11.2.1.4.2.3.3. Analysis of the Notifying Parties' response to the SO

(694) The reference made by the Notifying Parties to "basis risk" when trading STIR rather than LTIR describes incorrectly the competitive relationship between them pointed to by the Commission in the SO. Indeed, the Notifying Parties seem here to contradict arguments which they make elsewhere, recognizing that there may be a trade-off between liquidity and accuracy for hedging interest rates, since they state in the Form CO that "*users seeking to hedge exposure to government debt instruments (or, indeed, any risk) with a futures contract are generally more concerned with the liquidity of the contract in question than the accuracy of hedge it provides.*"[626]

---

621 ICE, response to question 15 of Q 3 – Questionnaire to competitors [...]*.

622 DRW Investments UK Limited, response to question 55 of Q1 – Questionnaire to customers [...]*. See also reply of ICAP to the same question explaining that "*At the margins there is also some competition between different contracts: for example a 'strip' or 'stack' of Euribor STIR futures vs a schatz contract."* [...]*.

623 Notifying Parties' response to the SO, Interest Rate derivatives, paragraph 15.

624 Paragraph 301 of the SO.

625 Notifying Parties' response to the SO, Interest Rate derivatives, paragraph 80.

626 Form CO, Derivatives ., paragraph 6.50.

(695) The Notifying Parties similarly argue in the Form CO that "*the importance of liquidity is also underlined by the example of NYSE Liffe's Swapnote contracts, which were introduced in 2001 and have as their underlying asset the European interbank yield curve. Although the Parties assume that for a significant number of traders, the risks they are exposed to (IRS contracts, which are referenced to the interbank yield curve rather than the government bond curve) would be more accurately hedged with this contract than, for example, with Eurex's capital market derivatives on German government bonds, the trading volumes in Swapnote have remained very low. This reflects the fact that (except for a small minority of customers who place a high value on eliminating basis risk and thus seek a very precise hedge) derivative traders tend to value liquidity over accuracy in their hedging instruments.*"[627]

(696) It follows from this that while customers may have preference for one *underlying* over another, for instance a commercial interbank rate, their preference for greater *liquidity* may result in them nonetheless choosing to hedge using a different but related interest rate underlying, namely the German sovereign interest rate curve. As with any differentiated products, however, there will be a group of customers whose preference at any given moment will be determined by various considerations including pricing, available liquidity at that moment, collateral costs etc. Since only a relatively small part of demand for Euro LTIR products is specifically related to a desire to hedge the German sovereign rate, and much of it relates to hedging of other eurozone sovereign rates as well as commercial rates, a large majority of traders in euro LTIR are accepting basis risk by doing so, not only those who consider using Liffe's Euribor products but also those who only use the products of Eurex and for whom those products are certainly (all other things being equal) better suited.

(697) The Notifying Parties have brought evidence in their response to the SO to suggest that this group of customers is presently sufficiently small relative to the total demand for Eurex's euro LTIR contracts that it is unlikely that the latter would be priced to respond to this part of demand, or, as they put it, […]*[628] and […]*[629]. However, the opposite does *not* follow, and it remains a fact that the products offered by Liffe target a part of demand which, in their absence, would otherwise be likely to fall on Eurex. Even if such demand would not be of sufficient size in itself to justify an increase in price for LTIR products post-merger, the notified transaction would result either, if the products were withdrawn (which is unlikely) in the loss of a more attractive alternative for the group of customers in question or, in the more likely event that they were retained[630], in additional pricing power for the longer dated and composite STIR products, since the threat of diversion of demand to LTIR products would be internalised.

(698) Moreover, the Notifying Parties even appear to recognize that, when the purpose is to hedge interest rate swaps (IRS), the two products may be substitutable. Whilst in the Form CO, as noted above, they recognize the use of LTIR to hedge IRS, in the response to the SO they note that "*trading in Euribor packs, strips and bundles is a specific*

---

627 Form CO, Derivatives ., paragraph 7.26.

628 Notifying Parties' response to the SO, Interest Rate derivatives, paragraph 79.

629 Notifying Parties' response to the SO, Interest Rate derivatives, paragraph 82.

630 The CME/CBOT merger resulted in such a combination of short and long term interest rate products, including longer dated STIR and strips, packs and bundles on Eurodollar, and these products are still offered.

strategy, used by dealers looking to hedge OTC interest rate swaps and forward rate agreements"[631]: that is to say exactly those dealers who might use LTIR for the same purpose.

(699) Even if the final observation of the Notifying Parties in relation to the argument it had previously made concerning cannibalisation were to be accepted, it clearly does not follow from the mere fact that a hypothetical monopolist might wish to retain two products that it would not have additional market power in relation to one or other of them. This fact alone therefore does not invalidate the present analysis.

(700) The Commission therefore concludes that Eurex and Liffe are each other's closest actual competitors in the area of European LTIR derivatives, in particular as concerns the mid-range of the euro interest rate curve. This conclusion applies irrespective of whether the geographic scope of the market is worldwide or EEA as the Notifying Parties are *de facto* the only relevant competitors in this space. It follows that the notified transaction eliminates the closest actual and potential competitor in the mid-range of the euro interest rate curve, resulting in the loss of a competitive constraint on Liffe for longer dated and composite Euribor contracts.

11.2.1.4.2.4. *Conclusion*

(701) The Commission therefore concludes that the combination of the Notifying Parties' businesses would eliminate actual competition between Eurex and Liffe in respect of European interest rate derivatives, and in particular in Euribor futures and options, removing the closest competitor, and in the mid-range of the euro interest rate curve, resulting in the loss of a competitive constraint on Liffe for longer dated and composite Euribor contracts. This conclusion is valid irrespective of whether there is one market encompassing all interest rate derivatives or separate markets for short-term and long-term interest rate derivatives. Indeed, if the market were one for all interest rate derivatives, the Notifying Parties would *de facto* be the only two players together controlling [90-100%]* of the market. Similarly, should the market be subdivided into short-term and long-term interest rate derivatives, the notified transaction would eliminate competition between the Notifying Parties in the benchmark short-term interest rate derivatives contract, Euribor, and in a number of mid-range interest-rate derivatives contracts. As explained in the relevant Sections of this Decision, this conclusion applies irrespective of the geographic market definition as under all possible scenarios, the Notifying Parties are *de facto* the only two players active in this space.

[631] Notifying Parties' response to the SO, Interest Rate derivatives, paragraph 39.

11.2.1.4.3. Potential competition in European interest rate derivatives where one party has the bulk of the liquidity

11.2.1.4.3.1. Introduction

(702) As indicated in Section 11.2.1.3.2 of this Decision, Eurex and Liffe constrain each other, by virtue of potential competition, even in products where the bulk of liquidity has settled on one of their platforms. Even if the possibility to trade a given product on the other platform is not offered today, the other Party is uniquely placed to launch a product at short notice which would compete either head-to-head – by reproducing the economic payoff of the existing product - or compete for a segment of demand which is currently imperfectly served by the existing product.

(703) The threat of entry, and even more so actual preparations to enter, may have a significant impact on prices. An illustration of the disciplining effect that the existence of a competitor may generally have on an incumbent in the interest rate sphere is Eurex US' attempt to enter the US treasuries market and its impact on CME. As CME indicated, "*In one case, Eurex US, where the new entrant offered very substantial fee and ownership incentives, CBOT reduced its trading fees, made new clearing arrangements and secured an improved trading platform.*"[632] Several similar instances between the Notifying Parties are described in the following Sections 11.2.1.4.3.2 through 11.2.1.4.3.4.

(704) Internal documents of the Notifying Parties provide evidence of […]*.[633] It should be stressed that moving liquidity to an existing rival platform with a large margin pool of correlated contracts, however challenging that may be, is in any case significantly easier than trying to move such liquidity to a platform with no such advantage (see further Section 11.2.1.7 below).

(705) Nasdaq OMX notes that "*There is no actual [i.e. current] competition between Eurex and Liffe on European LTIRs. Eurex offers LTIR derivatives on German, Swiss and Italian bonds whereas Liffe offers only (GBP denominated) LTIR derivatives on UK bonds. That said, Eurex and Liffe constrain each other in terms of setting fees for European LTIR derivatives, i.e. each is the other's most important potential competitor. It can be taken that each company is best suited to enter the business of the other party as it possesses assets such as expertise in the European LTIR market, specialized software, specialized risk management tools etc. that would enable it to extremely easily enter and expand into the other's business. Post merger no other player would constrain the merged entity in European LTIR derivatives contracts as there is no other player with a comparable European interest rate derivatives expertise and standing in the market as Eurex and Liffe.*"[634]

(706) Indeed, the Notifying Parties themselves appear to accept the importance of the potential competition constraint in their response to the SO, disputing only which entity

632 CME, response to question 44 of Q3 – Questionnaire to competitors [...]*.
633 See footnote 596 of this Decision.
634 Reply to question 46 of Q10 – Questionnaire to competitors, Phase II [...]*.

is best placed to provide it, as they state "*It is common ground* [between the Commission and the Notifying Parties] *that shifting liquidity in a benchmark contract away from the incumbent derivatives exchange is difficult, but it does not at all follow that the possibility of a successful entry by the CME does not constrain NYX and Eurex, respectively.*"[635]

(707) The market investigation showed that Liffe and Eurex, due to their deep and correlated margin pools in the area of European interest rate derivatives are best placed to compete with each other and to attack the other's franchises. For instance, Chi-X Europe outlined that " *it would be extremely difficult if not impossible for any exchange other than Liffe or Eurex to compete… in the interest rate derivative space as no other exchanges can offer cross-product synergies along the interest curve capable of challenging the position held by Liffe and Eurex.*"[636]

(708) In the following sections, examples of potential competition are reviewed in respect of each of the main product classes of the Notifying Parties in European interest rates derivatives where, on the basis of potential markets for European STIR and LTIR futures and options, there would presently not be actual competition strictly speaking, namely Eurex's euro LTIR products, the flagship German Bund, Bobl and Schatz contracts as well as Italian Euro-BTP futures, and NYSE Liffe's sterling contracts, both short and long term. The source for most of these examples are high-level internal documents of the Notifying Parties and the legal test applied is that specified in Section 11.2.1.1.1 of this Decision. The points made by the Notifying Parties in response to the SO are discussed at the end of each subsection, but overall conclusions left to the end of this Section (11.2.1.4.3.6).

11.2.1.4.3.2. *Bund-Bobl-Schatz*

11.2.1.4.3.2.1. *Battle of the Bund*

(709) The first and most notable historical example of competition between the Notifying Parties was the so-called "Battle of the Bund".[637] The Bund was already traded in London since 1988 before Eurex (then the DTB) launched in 1990 substantially the same contract.

(710) The "Battle of the Bund"[638] is instructive insofar as it shows that even the entire liquidity in one contract can shift from one exchange to another under certain circumstances. This refers to the period when Liffe, having first introduced the Bund contract, eventually lost a liquidity battle to an identical contract introduced by the DTB two years later. Although the shifting of liquidity in the Bund contract occurred in specific circumstances, including the introduction by DTB of electronic trading in competition to the floor trading model operated by Liffe but also other factors[639], this

635 Notifying Parties' response to the SO, Interest Rate derivatives, paragraph 115.

636 Chi-X Europe, response to question 43 of Q3 – Questionnaire to Competitors [...]*.

637 See SO, Section 2.2.2.2.

638 Battle of the Bund refers to the successful attempt of Eurex to attract liquidity in the Eurobund contract which was initially controlled by Liffe.

639 See for example *Competition between Exchanges: Lessons from the Battle of the Bund* by Estelle Cantillon and Pai-Ling Yin, June 12, 2008.

episode demonstrates that it is conceivable that an incumbent's position can be challenged once liquidity settles on one platform (and by extension constrained on an ongoing basis).

(711) As already mentioned at Recital (575) above, as competition was unfolding one Liffe board member pointed out: *[…]**[640] *[We could be forced to cut our fees; however there is no need to go to 0]**[641] DTB did however cut to zero[642], and won the contract.

(712) The episode illustrates the nature of the constraint that the Notifying Parties represent on one another even for products for which the liquidity has settled on one platform. As ICAP points out: "*Even though it is rare that a contract "moves" from one exchange to the other (as with the Bund contract) and it requires a very significant investment, such a win could be worth approximately €200m per annum (for the Euribor futures complex, or the Bund/Bobl/Schatz) to the exchange. As a result of the significant profits at stake, the mere presence of a significant competitor makes competition relevant in this industry even if there is no "overlap" in contracts between the exchanges as competitors understand that should there be any misstep by any of them, the other will grasp the opportunity to move into their space. If the proposed transaction were implemented, the next available competitor would be so remote that the merged company no longer would consider it a relevant rival.*"[643]

11.2.1.4.3.2.2. EuroMTS Bond Index Futures

(713) In 2006, Liffe perceived another market opportunity to challenge the strength of the long term interest rate franchise of Eurex based around German government debt, and launched, in cooperation with the EuroMTS Bond market (now controlled by LSE) an index future on Eurozone sovereign debt, the EuroMTS Government Bond Index Futures.[644] This offer consists of a series of futures contracts listed on indices from the EuroMTS Government Broad Index family, which is made up of Eurozone government bonds and individual country sub-indices, each covering the various maturity bands[645].

(714) At the time, it was argued that there would be substantial market interest for the new products due to the inherent inadequacy of hedging pan-euro exposure with just the German benchmark rate.

---

640 i.e. Deutsche Terminboerse, the forerunner of Eurex.

641 NYX internal document provided in response to the Commission's RFI of 1 July 2011, Memorandum, Bund team & Management Committee, 6 August 1997.

642 RBS, reply to question 58 of Q8 – Questionnaire to Customers, Phase II [...]*.

643 Response to question 48 of Q1 – Questionnaire to Customers [...]*.

644 See SO, section 2.2.2.4.

645 See in this regard the open letter of Hugh Freedberg to Financial Times at the time of DB's bid for Euronext in 2006, which stated "*In interest rate derivatives, Eurex and Euronext.liffe compete directly across the 2-5 year maturity range of the interest rate yield curve and will soon compete across the 7-10 year maturity range when we launch bond index futures*.", FT article, Europe's two big derivatives exchanges compete head-on, available at: http://www.ft.com/intl/cms/s/0/59bd1750-6f99-11db-ab7b-0000779e2340.html#axzz1TJtvdq00 (viewed on 26 January 2012)

(715) An article in the trade journal "Futures and Options Week"[646] provided by the Notifying Parties indicates that these contracts "*would undoubtedly be seen as potential competition for Eurex's flagship products, the German government debt suite*". Although a Euronext representative is quoted in the same article as describing the new contracts as "*a very different animal*", in a presentation to the Executive Committee on 14 August 2006 it is clear that NYX viewed the competition with Eurex as fundamental since it is stated that "*Eurex Bund futures are already dominant (as a proxy) in this space*" and that the "*difficulties of launching a new contract to compete with an established, highly liquid contract*" were "*understood*".[647] It can thus be considered that Euronext's intention was to capture at least a part of the liquidity which up until that point had gone, by proxy, to Bund futures by offering a better tailored product to some investors.

(716) NYX explains that the products [were not as successful as expected and thus were delisted]*. Additional reasons for withdrawal were […]* and […]*.[648]

11.2.1.4.3.2.3. Recent attempts by Liffe to challenge Eurex

(717) Although the "Battle of the Bund" occurred in the past, and EuroMTS Bond futures have been delisted, internal documents of the Notifying Parties show that NYSE Liffe has continued to look for ways to attack Eurex's liquidity in the Bund, Bobl and Schatz.

(718) A NYX document from August 2007 refers to [the possibility of challenging liquidity from other party's products]*[649]

(719) This project appears to have been pursued further since an email of early 2009 by NYSE Liffe's […]*[650] states that the [there is a risk of counterattack]* The reaction of Eurex was expected to be accompanied by a number of other non-price measures such as: [delays/refusal to provide access to market makers which could impede our products launch]*.[651]

(720) The threat from potential competition in the euro LTIR space from NYSE Liffe is also referenced in an internal document of DB from 2010, which in response to a planned competing offer from DB in Euribor options considers the [Consideration of various factors]*.[652]

---

646 Futures and Options week, 6 March 2006, p.1; Annex 8 to the Notifying Parties' reply to the Commission's RFI of 20 September 2011.

647 Notifying Parties' reply to the Commission's RFI of 20 September 2011, annex 14

648 Notifying Parties' reply to the Commission's RFI of 20 September 2011,question 7.

649 See NYX internal document: "Email from […]* to ",[…]*, 06.08.2007, Subject Frankfurt, Reference: ENX – 00155 – 00001. According to NYX website .[…]*.

650 Director Fixed Income at NYSE Liffe and Director Business Development, Liffe.

651 NYX internal document provided in response to the Commission's RFI of 1 July 2011, with title Email of 16.01.2009 with subject: NYL Product Rollout Presentation Jan 15 2009 v2.ppt, Reference ENX-00479-00001.

652 DB internal document .[…]*.

11.2.1.4.3.2.4. Response of the Notifying Parties to the SO

(721) In the response to the SO, the Notifying Parties claim that "*the Commission vastly overplays internal brainstorming by NYSE Liffe to launch Bund/Bobl/Schatz futures, which were never seriously pursued and did not result in any concrete action by characterizing these as a* 'battle for liquidity' *in which the Parties were* 'locked in'."[653]

(722) As for EuroMTS Bond Index Futures, the Notifying Parties claim that the SO "speculates, without any foundation, that in 2006 'Liffe perceived a market opportunity to challenge the strength of the long term interest rate franchise of Eurex' as the rationale for the launch of EuroMTS Bond Futures." In reality, [according to the Notifying Parties, these initiatives were made to support EuroMTS, not to compete with Eurex]*[654] In summary, in the Notifying Parties' view, these products were "clear failures without any meaningful commercial relevance"[655]

11.2.1.4.3.2.5. Analysis of the Notifying Parties' response to the SO

(723) The statements made by the Notifying Parties miss the point. It is unconvincing to dismiss statements made by senior staff as mere "brainstorming" and, in any case, it is apparent that DB has taken the threat of competition seriously. Moreover, if such competition has not materialised in practice, the very fact that it is being considered demonstrates a competitive constraint that would be eliminated by the merger. As ICAP noted in its submission before the Oral Hearing, "*Each of Liffe and Eurex, therefore, are well aware that the mere presence of the other involves a threat of switching if they do not perform in an efficient and cost-effective manner*." [656]

(724) In relation to the EuroMTS Bond Index Futures, the Commission considers that the sources it has cited speak for themselves as regards the competitive relationship to Bund, Bobl and Schatz, and hardly qualify as "speculation". In any event, the Commission also notes that the Notifying Parties, although they offer an entirely different rationale for the launch of these products in the response to the SO, have not pointed to any evidence, whether in the public domain or in internal documents, to back up their alternative account. The weight of evidence therefore leads to the conclusion that the competitive threat is a real one.

(725) In any case, it is also not evident that the two explanations are inconsistent; on the contrary, rivalry between MTS and DB in relation to bonds is matched by the rivalry described between Liffe and Eurex in bond derivatives. The desire to establish a pan-European bond index is therefore part and parcel of the attempt made at the time to move the market away from sole use of the German sovereign rate as the long term benchmark, an attempt which concerned both cash instruments and derivatives. Whether or not the project failed, it represents an instance of actual, even if limited,

653 Notifying Parties' response to the SO, Interest Rate derivatives, paragraph 182.
654 Notifying Parties' response to the SO, Interest Rate derivatives paragraph 174.
655 Notifying Parties' response to the SO, Interest Rate derivatives paragraph 185.
656 ICAP, Observations submitted on 26 October 2011, paragraph 8.4 [...]*.

competition in the past and illustrates the constraint from potential competition to Eurex in respect of its euro LTIR franchise.

11.2.1.4.3.3. *Euro-BTP Futures*

11.2.1.4.3.3.1. Competitive interaction

(726) Euro-BTP Futures contracts are based on notional debt instruments issued by the Republic of Italy ("Buoni del Tesoro Poliennali") and were first introduced by Eurex in September 2009.[657]

(727) According to Eurex, "*Since the introduction of Long-Term Euro-BTP Futures in September 2009 more than three million contracts have been traded with an average daily volume exceeding 12,400 contracts in July 2011. In October 2010 Eurex Exchange expanded its suite of BTP futures contracts by successfully launching Short-Term Euro-BTP Futures. More than 510,000 contracts have been traded since the launch with average daily volumes of more than 2,300 contracts in July 2011. With over 125 members using BTP Futures, the contracts have enjoyed diverse support. Furthermore market participants have been very satisfied with the development of the futures contract during the sovereign risk turmoil and periods of volatility in the cash markets*."[658]

(728) Notional volumes in the Long-Term Euro-BTP Futures (FBTP) range between 130 and 215 percent of the deliverable bonds in the underlying 10-year cash market (traded on MTS), demonstrating the liquidity of the contract.

(729) Following the introductions of the Long and Short-Term Euro-BTP Futures, Eurex completed its BTP yield curve offering by introducing the Mid-Term Euro-BTP Future in September 2011 creating, in its view, three further trading opportunities: an efficient and cost effective instrument to hedge medium-term Italian debt on-exchange thereby removing the basis risk present when hedging with Euro-Bobl Futures; an alternative to cash bonds to trade the 5-year yield spread between German and Italian government debt; and opportunities to trade the 2.5 and 10-year spreads on the Italian yield curve.

(730) In this regard, NYX notes that [We considered launching BTP futures, as Eurex did, but we decided not to after consulting clients]*.[659]

11.2.1.4.3.3.2. Points made by the Notifying Parties in response to the SO

(731) In their response to the SO, the Notifying Parties argue that "*the Commission uses the example of NYSE Liffe's decision* not *to launch Euro-BTP Futures as evidence that both*

---

657 See SO of 5 October 2011, section 2.2.2.7, paragraph 310.

658 See Eurex website, available at http://www.eurexchange.com/download/documents/publications/Factsheet_BTP.pdf, viewed on 20 September 2011.

659 NYX internal document: Business Report to Euronext Supervisory Board – 30/11/2009 – Reference ENX-00463-00006.

Parties compete in launching and attracting liquidity in new products" and state that "*the Parties struggle to understand the SO's point here, since the internal document quoted by the Commission clearly shows the opposite*"[660].

(732) The Notifying Parties further consider that "*this episode illustrates the phenomenon of liquidity in closely related contracts flowing inevitably to the incumbent exchange. Euro-BTP Futures were not a genuinely new product; they more closely related to existing Eurex contracts. NYSE Liffe understood this, realized it had no chance to win the business, and so did not try.*" [661]

11.2.1.4.3.3.3. Analysis of the Notifying Parties' response to the SO

(733) The Commission did not use this example in the SO, and is also not using it in this Decision, in the manner claimed by the Notifying Parties. Although it is perfectly possible that Eurex was better placed than Liffe to launch this new product, as the quoted document suggests, Liffe nonetheless considered doing so and could have done so. With appropriate support from market participants and measures to support liquidity, it might also have been successful, and it could still be successful if Eurex were, to use the expression adopted by one of its representatives at the Oral Hearing, to "take its eye off the ball".

(734) Whilst the spread interest with Bund futures may indeed be a primary driver of the greater incentive for market participants to trade this product on Eurex, it is not the only consideration. Other factors may include offered margin offsets, where as outlined below in relation to closeness of competition (Section 11.2.1.4.3.5), Liffe is better placed than other exchanges; technology; market model; pricing; collateral rules; incentive programs etc: in other words all of the general factors which underlie potential competition.

(735) That this new product inevitably would go to Eurex therefore seems an unrealistic assumption. If this were the case, it might be questioned why Euribor itself did not migrate to Eurex, since it is clearly better correlated with other euro interest rates than with the other products offered by Liffe. The Commission therefore interprets the quoted document in the more natural sense of Liffe's simply having determined that there was no interest, at that moment, for launch on whatever commercial terms it was willing or able to offer. Indeed, if the conclusion that the product "naturally" belonged to Eurex were as self-evident as the Notifying Parties appear to imply, it should be asked why Liffe considered launching it at all or felt it useful to consult customers on the matter.

660 Notifying Parties' response to the SO, Interest Rate derivatives, paragraph 179.
661 Notifying Parties' response to the SO, Interest Rate derivatives, paragraph 180.

11.2.1.4.3.4. Gilts

11.2.1.4.3.4.1. Competitive interaction

(736) Another example where the Notifying Parties sought to challenge each other, in this case with Eurex as challenger, is in gilts (UK government bonds).[662]

(737) A serious threat of entry from Eurex into gilts is clearly documented in the internal documents of NYX: "*There is a threat from Eurex launching a gilt futures cont[r]act […]*.

(738) NYX considered actions in response that "*include […]*."* Liffe argued that *"although we are unlikely to be able to compete with Eurex on […]*, this is considered to be enough to secure customer goodwill*"[663].

(739) An earlier document from December 2006 shows that NYX feared an "*early bridgehead in London for Eurex Clearing*" and anticipated initial launch of 10 and 30 year gilt futures, possibly followed by gilt options. The 30-year contract was not available on NYX. NYX anticipated a price advantage on the side of Eurex, a fee holiday and, significantly, refers explicitly to expected margin offset against the Bund, Bobl and Schatz, noting however that "*gilt/short sterling margins will be at least as effective as Gilt/Bund margins*". The same document refers to the move by Eurex having been subject to "*probable encouragement by LIBA* [the London Investment Bankers' Association, now incorporated into AFME]"[664]

(740) Material from the Notifying Parties shows that NYX reduced the headline fee for gilts from […]* to […]*p by 2009 and also that average fees tended to fall over this period[665].

11.2.1.4.3.4.2. Points made by the Notifying Parties in response to the SO

(741) The response to the SO does not directly address the evidence brought by the Commission in relation to gilts, but is limited to three related points.

(742) Firstly, the Notifying Parties state that "*the SO … does not identify any issues in respect of competition between NYSE Liffe's and Eurex's LTIR contracts*".

(743) Secondly, the response to the SO refers to "*the Commission's (at least implicit) understanding that … the CME's highly liquid U.S.-based LTIR derivatives are, for proprietary traders, much closer substitutes than NYSE Liffe's Gilt contracts for*

662 See SO, paragraph 306.

663 NYX internal document provided in response to the Commission's RFI of 1 July 2011, with title "Slides on risk profile high risk report , March 2007" – Reference ENX-00295-00001.

664 NYX internal document provided in response to the Commission's RFI of 1 July 2011, with title "Product Review- Threats, Actions, Opportunities", 4 December 2006 – Reference ENX-00797-00001, slides 10 and 12.

665 Notifying Parties, response to the Commission's RFI of 8 August 2011.

Eurex's Bund/Bobl/Schatz contracts."[666] A similar claim is made in the Notifying Parties' submission of 1 December 2011[667].

(744) The Notifying Parties also contested the statement in the SO that launches by NYSE Liffe in the short and medium sterling rate space "*may have been in response to a perceived threat from Eurex in this space*"[668], arguing that "*there was no thinking on NYSE Liffe's Fixed Income desk that the launch of Short and Medium Gilts was in response to a potential threat from Eurex.*"[669].

11.2.1.4.3.4.3. Analysis of the Notifying Parties' response to the SO

(745) The first claim made by the Notifying Parties above is incorrect. Whilst there is indeed no actual overlap between euro LTIR and medium/long gilts, as set out in the preceding Sections there is certainly potential competition between the Notifying Parties for both sets of products owing, not least, to their position in the other.

(746) In relation to the second claim regarding substitutability with US Treasury Futures, the Commission has no evidence pointing to such a conclusion, and has neither suggested this to be the case nor, even if it were, that this would be relevant to the competitive assessment, since fundamental factors of demand, that is to say the need to hedge and the views on the market which would determine the willingness to trade, would all be currency-specific.

(747) In relation, finally, to the launch of the short and medium sterling products, the Commission accepts that the explanation given by the Notifying Parties may indeed be correct, since the documented threat from Eurex was in relation to longer-dated gilts with ten and thirty year maturity, although the reference by NYSE Liffe to margin offsets along the gilt curve being equally attractive to margin offsets with the Bund, Bobl and Schatz may well mean that this introduction also had the effect of strengthening Liffe's gilt franchise against the Eurex threat, even if this was not its primary intention.

(748) It follows that the Notifying Parties have not brought evidence to alter the Commission's assessment in the SO that Eurex provides a competitive constraint to Liffe in respect of its UK gilt business.

11.2.1.4.3.5. No other player could maintain sufficient competitive constraint on the merged entity post-merger

(749) The examples in the previous sections illustrate the particularly close competitive interaction existing between Eurex and Liffe, be it for products where they are actual competitors or for products where one of them controls the bulk of the liquidity. Indeed, under the current constellation of European interest rate derivatives markets, Eurex and

666 Notifying Parties' response to the SO, Interest Rate derivatives, paragraph 82.

667 Notifying Parties, "Briefing Paper on the Commitments proposed by the Parties", section "effective competition will remain in interest rate derivatives", p.4.

668 See SO, paragraph 307.

669 Notifying Parties' response to the SO, Interest Rate derivatives, paragraph 176.

Liffe are the only two relevant players between which every game in this space is decided. It follows that post-merger, it is unlikely that there would be any other player in a position to constrain the merged entity in a similar fashion to which Eurex and Liffe constrain each other pre-transaction.

(750) The unique competitive dynamics between the Notifying Parties is related not only to their existing large margin pools of correlated risk (discussed also in Section 11.2.1.7.1.2 below), but also to the fact that the Notifying Parties' membership bases (discussed in Section 11.2.1.7.1.4) overlap on a volume-weighted basis to a very large degree and are significantly different from those of other platforms. ICE qualifies this overlap, as regards members trading in interest rate futures, as "*an almost exact match*".[670]

(751) The position of the Notifying Parties and their main (alleged) rivals is illustrated in summary form in Table 6 and developed further in the following Sections.

Table 6: Interest Rate derivatives (options and futures) on European underlyings

	Yearly Volumes (in number of contracts)	**Size of Margin Pool in relevant European underlyings**	**Significant European membership base**
DB	828 million[671]	Large	Yes
NYX	588 million[672]	Large	Yes
CME	2310[673]	Very small	No
NASDAQ	27 million[674]	Small	No[675]

Source: Commission's compilation of various sources for the volumes: Notifying Parties and third party information, and Commission assessment based on various sources (Notifying Parties and third party information) for the remaining columns.

11.2.1.4.3.5.1. CME

(752) The Notifying Parties have throughout the procedure, and in particular in their Response to the SO, emphasised the competitive role of CME, having stated that it is "*the Parties closest exchange competitor in LTIR and STIR*"[676] and that it will "*continue to constrain*

670 See reply to question 43 of Q10 – Questionnaire to Competitors, Phase II [...]*. Cf also Chi-X Europe, reply to question 46 of Q3 – Questionnaire to Competitors [...]*.

671 This is for year 2010 – Eurex trading statistics at http://deutsche-boerse.com/dbag/dispatch/en/kir/gdb_navigation/investor_relations/30_Reports_and_Figures/20_Current_Trading_Statistics#par5 .

672 This is for year 2010 NYSE Liffe - Total Exchange Volume data provided on NYX website.

673 This is the total of the volume on CME, since Euribor was offered for trading and clearing on US platform up to 11 November 2011. See CME response to the Commission's RFI of 14 November 2011 [...]*.

674 This is for year 2010 and relates to interest rate derivatives on Swedish and Danish underlyings (only IR derivatives on European underlyings), taken from the Nasdaq website : http://nordic.nasdaqomxtrader.com/newsstatistics/statisticsandreports/Derivatives/

675 Nordic countries only.

676 Notifying Parties' response to the SO, Interest Rate Derivatives, Section III.B.

the merged entity after the Transaction"[677]. Indeed, the Notifying Parties contend that "*CME - and not each Party… is each party's most likely and credible challenger in an existing contract (evidenced, inter alia, by CME's recent introduction of Euribor contracts*".

(753) The Notifying Parties then cite derivatives based on US underlyings offered by CME – Eurodollar and Treasuries – as proof of this closeness of competition and competitive constraint. They also cite the recent launch of Euribor and the fact that there is a margin pool of correlated contracts with Eurodollar, and that CME has a similar membership base to the Notifying Parties'. Lastly they allege that CME is "*aggressively marketing its Euribor product against NYSE Liffe*" and that there is "*broad consensus that despite the difficulties, the CME has the means to challenge the merged entity*"[678]. They cite internal documents that would serve as "*testimony of the constraint imposed by the CME*", and make general claims regarding overall allocation of resources and the attempt by NYX and Eurex to enter the US markets as proof that competition is with CME and not between the Notifying Parties.

(754) First, as outlined at Recitals (404) through (406), derivatives based on non-European underlyings do not compete to any significant extent with derivatives based on European underlyings and are therefore, as already indicated. outside the relevant market[679].

(755) Second, CME's Euribor offering concerns future contracts only, and not options. It was introduced by CME on 3 October 2011 and as of 11 November 2011, has only achieved 2,310 Euribor contracts, a minuscule proportion. It has an open interest of 341 contracts on 2 December 2011[680]. CME has also stated that its "*revenue derived from traded Euribor futures has been negligible to date*"[681]. By way of comparison, Eurex had approximately 400 thousand contracts in 2009, 267,000 contracts in 2010, with an open interest in 2010 amounting to 26,000 contracts[682]. This compares with the open interest of 5.6 million contracts of Liffe just for STIR futures, as together with STIR options this would amount to approx. 23 million contracts, with a total volume of approximately 300 million contracts[683].

(756) As regards the margin pool of contracts, the Notifying Parties consider that CME heavily advertises the "*significant margin offsets that traders of its US dollar based*

677 Similar claims are made in "Briefing Paper on the Commitments proposed by the Parties", section "effective competition will remain in interest rate derivatives", p.4.

678 Notifying Parties' response to the SO, Interest Rate Derivatives, Section III.B (e).

679 Certain traders, as outlined in the market definition section, may be "relatively indifferent" to the underlying in the sense that they seek trading opportunities across a range of derivatives products. Such traders seek profitable opportunities wherever they arise. Neither the Notifying Parties nor any other respondent to the market investigation has presented evidence to suggest that this group of traders is constrained in such a way that a decision to trade in one instrument necessarily implies a decision to trade less in any other.

680 CME group volume and open interest report - 9:00 pm preliminary report for business date: 12 February 2011, published on its website. One Euribor contract corresponds to one million euros in notional value.

681 CME written observations to the SO, 31 October 2011, point 7 [...]*.

682 WFE 2010 Annual Statistics.

683 According to figures published on its website by NYX as the "NYSE Liffe European Derivatives Market Report - TOTAL EXCHANGE".

products will enjoy when trading Euribor futures". However, they refer only to a screenshot of the CME website as evidence of this alleged "*heavy advertising*". No other evidence was provided by the Notifying Parties of such a heavy spend on advertising by CME. The Notifying Parties also cite […]*.

(757) Furthermore, the cited web page makes reference to an offset "*of up to 50 percent with Eurodollar and Treasury products*". This is significantly lower as an offset than the Notifying Parties' offerings. As indicated above in relation to Gilts (see Recital **(739)**), the existence of a highly correlated margin pool is acknowledged by NYX as a significant competitive advantage to anyone wishing to enter the market. In this regard, it should be noted that LCH Clearnet offers [80-90]*% offset between short and medium gilts and [70-80]*% offset between long gilts and short sterling (the sterling equivalent of Euribor). LCH also offsets 3 month Euribor for [70-80]*% against the ten year Euro swapnote and offsets Euribor for [60-70]*% against long gilts[684]. It is therefore safe to assume that an offset of 75-80% would be possible between Euribor and the Schatz or Bobl (and indeed the Notifying Parties make similar assumptions in their submissions on potential efficiencies discussed below).

(758) By contrast, offsets offered by CME with Eurodollar are only [50%]* and with US treasury futures in the range of [35-55%]* (and similar offsets are available for customers trading Eurodollar on Liffe). As such, the offsets between the Notifying Parties' respective products are significantly higher than those between these products and those of CME.

(759) CME's offering would be attractive in particular to those customers that trade on US underlying derivative products as offsets are only offered with non-European (US) underlying derivatives. In stark contrast, the Notifying Parties have substantial activities in European underlying derivatives in the relevant markets under analysis and that are able to likely to offer margin offsets to European customers who trade all parts of the European interest rate curve, who are thus likely to obtain far greater offsets when they remain with the merged entity. The CME offering is therefore targeted at customers trading mainly in US underlying products that wish to complement their trading strategies with European products.

(760) This is also demonstrated by the fact that, according to the CME, the matching for the Euribor future will occur on the matching engine located in Chicago. The value proposition of this contract is therefore, according to CME, associated with the margin efficiencies that customers that already trade on CME's platform can realize. As a result, the contract is principally attractive for existing CME US customers who have open interest in correlated products (such as Eurodollar) with CME.[685] Indeed, the fees for trading in Euribor futures at CME are set in dollars[686]. This has been explicitly confirmed by CME itself, which stated that: "*substantially all of the traded volume has originated from the US*"[687].

---

684 See the reply of the Notifying Parties to the Commission's second RFI of 13 September 2001, Annex 12.

685 CME, minutes of a meeting on 1 September 2011, paragraph 5 [...]*.

686 http://www.cmegroup.com/trading/interest-rates/files/euribor-fees-programs.pdf.

687 CME written observations to the SO, 31 October 2011 [...]*.

(761) In this context, CME has stated that it does not specifically target European customers of Liffe, and that its goal is not to shift the liquidity from Liffe but instead offer a complementary product to CME's existing customers.[688] Indeed, CME's Euribor contract "*is a product that will be regulated by the CFTC as part of CME's Designated Contract Market in the US*"[689]. As ICAP states "*CME's presence in Europe is limited and, in any event, it is mostly its US customers that are likely to be trading the CME Euribor contracts and CME does not have broad membership base in Europe*"[690].

(762) Third, it should also be noted that clearing of Euribor contracts by CME is not carried out in Europe, but in the US. As regards the membership of CME, its clearing-house has a very reduced base of members, only 15 as of August 2011.

(763) More generally, entry of trading platforms without an established position in Europe appears to be particularly difficult as concerns European equity and interest rate futures and options. Indeed, while entry in derivatives based on certain underlyings such as commodity derivatives seems to be possible as evidenced by successful entries into Europe by US exchanges (ICE, NASDAQ, CME etc.), no significant entry has occurred for European interest rate and equity futures and options. ICE explains this lack of significant entry by the narrower geographic scope of European interest rate, single equity and equity index derivatives: "*European interest rate and equity derivatives are essentially traded in the European time zone as this is the time zone of the underlying asset. This is a constraint on the ability of US exchanges to become a significant player in European interest rate and equity derivatives.*"[691] As shown above, derivatives in non-European underlyings are not substitutable and fall outside the relevant market.

(764) CME also acknowledged during the market investigation that challenging the incumbent on the Euribor futures market is difficult *"It is easy to offer trading, it is very difficult to displace an established, effective, efficient competitor that has substantial liquidity unless the new entrant can offer significant value proposition that cannot be or is not matched by the incumbent."*[692]

(765) Fourth, reference was also made during the Oral Hearing as well as in the Response to the SO to the fact that the headcount in Europe of CME has increased significantly, so that according to the Notifying Parties it is over 200. The Notifying Parties seem to imply that CME is investing heavily in expansion into the European interest rate derivatives concerned by this Decision. However, according to public information available at the CME website dating from March 2011, the initial focus of the activity of CME in Europe "*will be on commodity products – energy, metals and agricultural – we aim to introduce clearing for OTC financial derivatives, beginning with interest rate swaps, in parallel with the deepening of the commodity clearing*"[693]. At its most recent analyst meeting, relied upon the Notifying Parties to demonstrate that CME is

688 CME, Minutes of a meeting on 1 September 2011, point 6 [...]*.

689 CME, minutes of a meeting on 1 September 2011, point 7 […]*.

690 ICAP, Observations on the SO issued in case M.6166 Deutsche Börse/ NYSE Euronext submitted pursuant to article 16(1) of the Implementing Regulation, 26 October 2011[...]*.

691 ICE, response to question 64 of Q3 - Questionnaire to competitors [...]*.

692 CME, response to question 23 of Q3 – Questionnaire to competitors [...]*.

693 Press release of CME clearing Europe of March 15, 2011 at http://cmegroup.mediaroom.com/index.php?s=43&item=3124&pagetemplate=article.

expanding its presence in Europe, that Commission notes that this expansion is being driven via the setting up of CME clearing Europe (which does not clear Euribor contracts) and of its "*FX and Metals businesses*" that are *"led from London, the global financial center for these business lines*". No reference is made to Euribor futures throughout the presentation[694]. CME Europe clearing is described as executing "OTC Clearing" (see Recital (762)), and hence does not relate to the products concerned by this Decision.

(766) Fifth, in terms of the market investigation, the significant majority of customers, when asked whether they would consider trading Euribor on CME, answered that they have no plans to do so[695]. The Notifying Parties' alleged "*broad consensus*" as to CME having the means to challenge the merged entity relies not only on some very general remarks made by some customers (not in reference to the relevant markets under analysis but made in general terms not referring specifically to European underlyings), but also on a clear minority of customers as well as trading platforms that make such statements as clearly set out in Recitals (559) and (558) respectively.

(767) Most customers and competitors, to the extent they expressed a view, considered that CME has little realistic chance to capture significant market share in the contract, and that it would only achieve volumes if there was large scale support from market makers, or conceivably limited to US traders which are their members but not members of Liffe.[696] As one reply to the second phase market investigation put it: "*History has shown that it is very difficult to shift liquidity from one exchange to another. Liffe launched the Eurodollar contract in direct competition to the CME but has not made any significant headway. Eurex launched in the US but was unable to gain any footprint*."[697]

(768) Other respondents also mentioned liquidity as the key factor for success or failure. [One large customer]*, for instance stated that although "*CME has the potential to be Eurex's / Liffe's main competitor due to customer base connectivity, business profile, skill set & apparent European entry strategy …, this will not be easy due to the strength of the existing liquidity pools at the incumbents*".[698] ICAP stated: "*CME has the platform and deep pockets to make it credible. They will start at a disadvantage to, say, Eurex (who have attempted to poach the Euribor contract) because their distribution across euro players is more restricted (ie only to those that also trade US CME products)*."[699] "*They (CME) will still start a long way behind Liffe (or Eurex) however, and they will be required to devote considerable financial resource to the cause if they are to make any impact at all*."[700]

---

694 CME Group Analyst Day 2011, 4 October 2011 found at http://files.shareholder.com/downloads/CME/1551552047x0x505208/9ec7cd62-744f-47eb-acfd-202685364d07/CME%20Group%202011%20Analyst%20Day%2010_4_11%207AM%20FINAL.pdf.

695 Responses to question 76 of Questionnaire Q8 – Questionnaire to customers – phase II. Question asked: "In relation to CME's plans to launch Euribor futures in autumn 2011, please explain whether you will consider trading this contract with CME and under what circumstances".

696 See responses to question 77 of Q8 – Questionnaire to Customers, Phase II and Q.61 of Q10 – Questionnaire to Competitors, Phase II.

697 BGC, reply to question 77 of questionnaire Q8 – Questionnaire to Customers, Phase II [...]*.

698 [...]*, Reply to question 78 of questionnaire Q8 – Questionnaire to Customers, Phase II [...]*.

699 ICAP, Reply to question 77 of questionnaire Q8 – Questionnaire to Customers, Phase II [...]*.

700 ICAP, Reply to question 78 of questionnaire Q8 – Questionnaire to Customers, Phase II [...]*.

(769) In this respect, Chi-X Europe expressed the view that CME is unlikely to be successful in the absence of an adequate margin pool in Europe. *"CXE considers it very unlikely that CME or other derivative exchanges or clearing houses will be successful in Europe. CME Europe and ICE Clear Europe would need to offer margin synergies with the open interest they manage in the US. CXE considers that such cross jurisdictional benefits are very hard to realise because of the different underlying regulatory and legal environments and bankruptcy laws. Without these, CXE consider that it is difficult to see why any existing European exchange would send them their trade feeds to clear or why the OTC market would use them in preference to the CCP managing their exchange traded open interest."*[701]

(770) Nasdaq OMX summarizes this as follows: "*Importantly, Euribor futures traded on CME will be cleared in the US, most likely because CME has very few customers in Europe whereas in the US it has a broad customer base. European investors would not trade European derivatives on another exchange where liquidity is much lower than on the incumbent even it was a European exchange, let alone a US exchange with US clearing. Since CME consequently does not compete with Liffe for trading of Euribor futures by European investors, the proposed merger will not impact CME's ability to attract liquidity in Euribor futures from European investors. CME does not have the potential for that irrespective of the proposed merger."*[702]

(771) LSE has a similar view: "*CME has no credible clearing pool in Europe – therefore no ability to build business and products completing on innovation; CME does not have a competing product that competes with any of the existing key Eurex or LIFFE products. Therefore as CME has no clearing pool in Europe it is highly unlikely that it can build a credible business in Europe. In a post-merger scenario, it would be even harder for CME to enter the market as the long and short end of the curve will be held by Eurex Clearing*".[703]

(772) Indeed, even the CME Group itself is modest in relation to any success it expects to have with its offering of Euribor futures, implicitly echoing a similar analysis to that furnished by Nasdaq OMX: "*CME hopes to provide its existing customers with a competitive and diverse product set. Trading Euribors on CME would offer CME customers the opportunity to trade Euribors with the benefits of margin offsets against Eurodollar contracts and operational efficiencies of trading Euribor, Eurodollar and FX futures on a single platform (Globex). In addition, it would provide these efficiencies for those clients who trade our highly liquid Eurodollar options products. [...]**."[704]

(773) As regards the internal documents cited by the Notifying Parties, these actually show, contrary to what the Notifying Parties contend, that the Notifying Parties themselves accept that chances of success of CME "*are small*"[705].

---

701 Chi-X Europe response to question 69 of Q3- Questionnaire to competitors [...]*.

702 Nasdaq OMX, reply to question 61 of Q10 – Questionnaire to competitors, phase II [...]*.

703 LSE, reply to question 61 of Q10– Questionnaire to competitors, phase II, [...]*.

704 Nasdaq OMX, reply to question 61 of Q10 – Questionnaire to competitors, phase II [...]*.

705 Notifying Parties' response to the SO, Interest Rate Derivatives, paragraph 121 citing NYC document ENX-00254-00001.

(774) In this regard, Liffe evaluates [CME's potential threat is lower]*.[706] In another internal analysis document, NYX considers that [in the circumstances of the time, an attack would likely be unsuccessful]*[707]

(775) Similarly, an NYX internal document assessing competitive threats stating with respect to CME: *[the threat posed by CME is low to moderate, and it should not be underestimated]**[708]

(776) In another internal document, NYX analyses the likelihood of CME successfully entering STIR derivatives (Euribor) as follows:

> *[Potential attack from Chicago is not likely]*[Concentrated liquidity makes the attack very challenging]*[Moving liquidity away from Europe is difficult in the current political regulatory sistuation]**[709].

(777) In another internal document, again in the context of the possible entry of CME into offering European STIR products, NYX considers that […]*.[710]

(778) [Discussion of CME brand positioning]*.[711]

(779) In conclusion, whilst CME may succeed in occupying a niche position in European interest rate futures and options which serves the needs of a certain but small group of customers, it is not nearly as well placed to compete with the merged entity as the Notifying Parties are placed to compete with each other at present owing, amongst all the factors set out above, to the fact that it does not possess a similarly large and highly correlated margin pool allowing traders to offset positions taken along the European interest rate curve. In view of its limited position in this space, it is unlikely that CME would be in a position to exert a credible competitive pressure to the merged entity post-transaction.

11.2.1.4.3.5.2. Nasdaq OMX

(780) The Notifying Parties referred in a number of instances throughout the procedure to Nasdaq OMX as a "*European exchange that could credibly launch interest rate derivatives in competition with the Parties is Nasdaq OMX. Nasdaq OMX has extensive experience in setting up and operating derivatives market and existing European infrastructure in Stockholm, from which it could expand into other products*"[712] and that

---

706 NYX internal document provided in response to the Commission's RFI of 1 July 2011, with title "Project Blackhawk", 27.04.2010, Reference ENX-00871 -00005, .[although unlikely, the impact of an attack could be high]*.

707 See NYX internal document provided in response to the Commission's RFI of 1 July 2011, Project Blackhawk – Fixed Income derivatives, no exact date available (around May 2009), Reference ENX-00063 -00001, p. 5.

708 See NYX internal document provided in response to the Commission's RFI of 1 July 2011, E-Mail of 15th July 2010 of […]* to ,[…]*, Subject: Competitive Threats – updated.

709 See NYX internal document provided in response to the Commission's RFI of 1 July 2011, Project Blackhawk – Fixed Income derivatives, no exact date available (around May 2009), p.3.

710 See NYX internal document provided in response to the Commission's RFI of 1 July 2011, Project Blackhawk – Fixed Income derivatives, no exact date available (around May 2009), Reference ENX-00063 -00001, p. 5.

711 German original quotes: .[…]*.

712 Notifying Parties' response to the SO, Interest Rate Derivatives, paragraph 135.

"*Nasdaq OMX plans to offer the same interest rate products as NYSE Liffe in Europe, cleared at LCH.Clearnet*"[713].

(781) Nasdaq OMX confirmed that it had "*over the years… continuously analyzed the possibility of launching competing offerings, and it is currently in such a process to explore the opportunity of launching in 2012 together with • • • clearinghouse LCH. Clearnet a new electronic marketplace for exchange traded interest rate derivatives based in London (the "NLX project ").* According to Nasdaq OMX, such plans were elaborated before the announcement of the notified transaction. Nasdaq OMX however stated that "*[i]t is clear from discussions with the dealers that they would like to see competition in European derivatives, but since the announcement of the merger between DB and NYSE Euronext, the dealers are expressing to NASDAQ OMX skepticism that competition would be possible after the NYSE Euronext and DB merger, as the already very high barriers to entry may become insurmountable.*"

(782) Nasdaq OMX specified, however, that dealers have " *indicated that they want to see copycat products on the platform rather than different products from those of the incumbents"* and have *"also pushed for fungibility with the underlying products, which cannot be offered due to current and potential future restrictions from Eurex and Liffe.*"[714]

(783) Therefore, whilst Nasdaq OMX explored the possibility of offering euro LTIR and STIR in competition with Eurex and NYX, it has taken no definitive decision as yet: "*NASDAQ OMX would like to proceed with the launch of the NLX platform, but it is reliant on customer support both to start the platform as well as help it to grow and there is serious concern that the already high barriers to entry would become insurmountable if the merger were allowed to proceed. Following a potential launch of the NLX project numerous other substantial barriers, challenges and uncertainties would have to be overcome or resolved, i.e. inter alia, pending regulatory reform, needed regulatory clearance, and adequate customer support.*"

(784) There is therefore considerable uncertainty as to whether Nasdaq OMX will launch euro interest rate derivatives in competition with the Notifying Parties at all, much less with any degree of success.

(785) Later in the procedure, in the context of the remedies offered, the Notifying Parties argued that the Commission in the SO "*completely ignores"* Nasdaq OMX, *"even though it offers … STIR contracts on a European underlying (the Stockholm Interbank Offered Rate, STIBOR)".*[715]

(786) Although the Commission already noted, for instance at Recital (751), Nasdaq OMX's offering of money market derivatives based on Swedish krona, there is no evidence, whether from the market investigation or brought by the Notifying Parties, that these products are ever used by market participants who wish to gain exposure to euro (or sterling) rates and therefore would constrain the Notifying Parties either at present or in

---

713 Notifying Parties, Presentation at the Oral Hearing, 27 October 2011, Slide 50.

714 Nasdaq OMX, Response to the RFI of 14 November 2011, question 6 […]*.

715 Notifying Parties, Submission of 1 December 2011, "Effective Competition Will Remain In Interest Rate Derivatives".

the future. Even if this were the case, Eurex's offering of Euribor derivatives would clearly constitute a closer substitute.

(787) As regards the margin pool related to Swedish krona, whilst the contracts in question may be correlated with Euribor derivatives, the pool itself is much smaller than the interest rate margin pool of either Party presently and *a fortiori* of the margin pool which the combined entity would control post-merger[716]. Opportunities for offsets against this margin pool would therefore also be very limited in scope even if Nasdaq OMX were to launch a competing Euribor product.

(788) All these factors taken together mean that Nasdaq OMX's entry into those interest rates derivatives in European underlyings where the Notifying Parties are currently active cannot be considered by the Commission as sufficiently likely, timely and of sufficient scale to pose a competitive constraint on the merged entity.

11.2.1.4.3.5.3. ELX

(789) The Notifying Parties have also frequently referred to ELX, a US futures exchange, as an example of a credible potential entrant into interest rate derivatives based on European underlyings. The Notifying Parties state that ELX has "*announced its intention to introduce European interest rate products in competition with NYSE Liffe and Eurex*"[717]. In their response to the SO, the Notifying Parties have considered it to be one of the "major competitorsfurther described as a "*success*" which "*demonstrates the ability of the Parties' customers to switch liquidity*"[718]. According to the Notifying Parties, ELX will launch Bund, Bobl and Schatz futures Euribor futures and given that it already offers U.S. based Eurodollar futures, it "*may thus be able to offer cross-margining opportunities to traders that trade all three products on ELX, resulting in cross-margining opportunities that may well exceed those that the Parties can offer*".

(790) ELX has confirmed that it has "*been recently exploring new opportunities and invested some resources to evaluate the possibility to start trading Euribor, Gilt, Bund, Bobl and Schatz futures on its US platform*".

(791) However, according to ELX, its aim is not to target European-based investors, but to "*target US customers*", so it would have its matching engine based in the US and the contracts would be cleared with OCC in the US. Thus, according to ELX, there is no intention to have a trading or clearing platform in Europe. Any cross-margining opportunities that might arise would thus be for US based traders.

(792) In this context, ELX's very limited market share even for products based on US underlyings should be highlighted. In this regard, ELX has specified that "*for trading interest rate derivative contracts, namely US Treasury interest rate products and Eurodollar contracts... it has market share of around 1-2% in the US*"[719]. ELX has explained this limited market presence by the fact that "*margin requirements at*

716 Trading volumes in interest rates on NASDAQ OMX are less than 5% of the volume traded on Liffe in interest rates, and less than 2% of that of the merged entity (2010 figures).

717 Form CO, paragraph 8.56.

718 Notifying Parties' response to the SO, Interest Rate Derivatives, paragraph 103.

719 ELX, agreed minutes of a conference call of 18 November 2011, paragraph 2 [...]*.

separate clearinghouses for offsetting or risk reducing positions requires additional capital than clearing at one clearinghouse" as well as "*the inability to transfer offsetting positions across clearinghouses creates a risk of execution slippage as well as additional execution fees and commissions*"[720]. This is in line with the Commission's conclusions on the existence of strong entry barriers in these markets (see Section 11.2.1.7 below).

(793) Lastly, as regards interest rate derivative products based on European underlyings, ELX has set a "*hypothetical launch date in the early part of the second quarter of 2012*". However, this is not a definitive decision: "*The outcome of this analysis has been that it is more unlikely than likely that ELX would launch these contracts*".[721] There is therefore even uncertainty as to whether ELX will even launch such instruments for US clients.

(794) These factors taken together mean that ELX's entry into interest rate derivatives in European underlyings cannot be considered by the Commission as sufficiently likely, timely and of sufficient scale to pose a competitive constraint on the merged entity.

11.2.1.4.3.5.4. Other attempts at entry

(795) The Project Rainbow initiative, described below in Section 11.2.1.7.2.1, also focused on an attempt to challenge Liffe in European interest rates. The main reason for this failure appears to have been that LCH Clearnet, […]*, declined to offer margin offset for Rainbow trading with the existing Liffe products on its platform.

(796) The Notifying Parties also at a certain point in the proceedings drew attention to the bid announced on 2 September 2011 by LSE for LCH Clearnet, arguing that this might constitute a basis for the LSE to mount an attack on their interest rate franchise.

(797) The Commission considers that any prospect of entry as a result of this bid is presently speculative and does not meet the criteria of likeliness and timeliness set out at paragraphs 68ff of the Horizontal Merger Guidelines. Firstly, there is no certainty that this planned acquisition will succeed. Secondly, the Notifying Parties have not indicated on what basis they believe such a threat would be more credible than presently, nor presented any evidence or arguments as to why this threat would become more credible as a result of the acquisition, that is to say why LCH would be impeded from acting, under existing ownership, from the way it would be assumed to act as a result of the acquisition. Nonetheless, if LCH possessed some asset such as its pool of open interest in interest rate swaps which might permit it to enable a competitor to mount an attack on the Notifying Parties' existing franchises – especially those of Eurex which is not even a customer of LCH – it presumably would have done so already and project Rainbow would not have failed.

(798) Accordingly, it is concluded that there is no prospect of likely, timely and sufficient entry as a result of the negotiations in which LSE is engaged with a view to acquiring control of LCH Clearnet.

720 ELX, Response to Commission's RFI of 14 November 2011 [...]*.

721 ELX, agreed minutes of a conference call of 18 November 2011, paragraph 3 [...]*.

11.2.1.4.3.5.5. Conclusions

(799) Therefore, the Commission considers it unlikely that any established derivatives exchange and CME in particular could gain meaningful presence in European interest rate futures and options in the absence of a built up margin pool of correlated European contracts. It follows that none of these players would be in a position to discipline the merged entity post-merger.

11.2.1.4.3.6. Conclusion on potential competition in European interest rate derivatives

(800) The various episodes outlined in this Section illustrate the close competitive dynamics prevailing between the Notifying Parties in the area of European interest rate futures and options. In particular, these examples illustrate that Eurex and Liffe are each other's closest potential competitors in this space as they uniquely placed to challenge each other's franchises while there are no other players that would be able to maintain a sufficient competitive constraint on the merged entity post-transaction. In this respect, the main source of potential competitive threat in exchange-traded European interest rate futures and options primarily involves competition between Eurex and Liffe, with no comparable constraint emanating from any other platforms. It follows that the notified transaction will eliminate this close potential competition relationship between the Notifying Parties resulting in a market structure where the merged entity's behaviour will remain unchallenged.[722]

11.2.1.4.4. Competition to introduce new products in the area of European interest rate derivatives

11.2.1.4.4.1. Introduction

(801) Eurex and Liffe also compete closely when it comes to the introduction of new products in the area of European interest rate derivatives. Indeed, numerous replies to the market investigation indicated that, even if major new product launches occur infrequently, innovation continues to be an important theme within the overall area of European interest rates derivatives.

(802) In this context, it should be noted that this type of competition occurs in a broader space encompassing all European interest rate derivatives and therefore the question of whether the market should be further subdivided into STIR and LTIR derivatives is not relevant since it does not change the analysis.

(803) In respect of innovation in European interest rate derivatives, NASDAQ OMX states that "*Fixed income would see the development in new products as a consequence of EMIR and MIFID II. For debt and credit related products … Basel III will influence product evolution starting with a push towards clearing to lighten the banks' balance sheets. Once cleared, suitable contracts may experience increased liquidity and further need for additional transparency that eventually would make them suitable for*

[722] See Horizontal Merger Guidelines, paragraph 60.

exchange trading". CME stated that: "*We believe that innovation will occur in all asset classes over time. We cannot anticipate where and in what form it will occur in the near term.*" TOM stated that: "*Innovation is likely to take place in respect of single stock options, index products, futures, interest rate products, currency and commodity options.*" [723] The Warsaw Stock Exchange stated that: "*Exchanges evolve constantly and that may result in introduction of completely new instruments as well as those similar to already traded products.*" [724]

(804) Amongst customers, [one large customer]* stated "*Given uncertainty of the regulatory environment (EMIR) and how it will impact end users, it is difficult to project how exchanges will respond, adapt or innovate. That said as soon as the regulatory impacts become more clear, [...]* expects the exchanges to innovate. This may be done to protect their existing products or to gain access to new clients.*" [Another large customer]* states: "*Innovation in new 'similar' contracts of the same families as existing contracts will continue, however there is likely to be an increase in new classes of derivatives, for example based on OTC derivative contracts*".[725]

11.2.1.4.4.2. *Competition between the Notifying Parties*

(805) Although some of the more important illustrations of past competition between the Notifying Parties in respect of major new product launches have been provided above, in this regard it should also be recalled that, as argued in Section 11.2.1.2.5 above, in the words of LSE "*innovation takes place on various bases, not just the creation of entirely new products. There can also be innovation in terms of, for example, product quality, price or market environment.*"[726]

(806) Indeed, to take just one example of more incremental innovations, the notices section of NYX Global Derivatives website contains approximately monthly updates on various terms relating to trading Euribor. One important recent change was to the trade matching algorithm, introduced by London Notice 2908 in July 2007[727] and later updated by London Notice 3292 of 11 June 2010[728]. NYX states the goal of this innovation as "*to increase opportunities for traders who add liquidity to the market*"[729].

(807) Indeed, the Notifying Parties' otherwise largely identical Euribor offerings differ in precisely this respect, since on Liffe, the "*central order book applies a time pro-rata trade matching algorithm, but with priority given to the first order at the best price*

723 Nasdaq OMX, CME, TOM, replies to question 72 of Q10 – Questionnaire to competitors, Phase II [...]*.

724 Warsaw Stock Exchange, reply to question 98 of Q1 – Questionnaire to customers, Phase I [...]*.

725 […]*, replies to question 98 of Q1 – Questionnaire to customers, Phase I [...]*.

726 LSEG's response to market testing of commitments, paragraph 3.6(a), [...]*.

727 NYX website, avaialbe at http://globalderivatives.nyx.com/sites/globalderivatives.nyx.com/files/226413.pdf, viewed on 29 November 2011, London Notice 2908.

728 NYX website, available at http://globalderivatives.nyx.com/sites/globalderivatives.nyx.com/files/577758.pdf, viewed on 29 November 2011, London Notice 3292.

729 NYX website, available at http://globalderivatives.nyx.com/sites/globalderivatives.nyx.com/files/226413.pdf, viewed on 29 November 2011, London Notice 2908, paragraph 1.2.

subject to a minimum order volume and limited to a maximum volume cap"[730] whilst on Eurex, "*orders and quotes are matched according to the principle of pro rata matching, which is exclusively based on the principle of price priority.*"[731]

(808) As the Notifying Parties' arguments in this regard have already been dealt with in Section 11.2.1.3.3.4 above, the same arguments apply.

(809) In conclusion, the Notifying Parties compete in product innovation in European interest rate derivatives, both by designing new products adjacent to their existing offerings and by upgrading these offerings in order to stay ahead of potential competition. In this regard, they are each other's closest competitor for the same reasons as this was concluded in respect of potential competition in the preceding Section, since success in new product innovation in this space depends on exactly the same factors as those allowing an exchange to act as a potential competitor. This competition would be lost as a result of the notified transaction.

11.2.1.4.4.3. Arguments made by the Notifying Parties in response to the SO

(810) In addition to the general points made by the Notifying Parties in respect of product innovation and discussed at Section 11.2.1.2.5 and 11.2.1.3.3 above, the SO outlined that many of the innovations in question have served to test new concepts which might have better met market needs, and cannot be dismissed as mere "me-too" innovation (although this also serves an important role in disciplining prices). The SO provisionally concluded that the pressure to preserve a product portfolio which meets market needs would be considerably lessened in the absence of such competition, since this type of innovation would risk cannibalizing existing franchises and therefore would be much less likely to be carried without the competitive constraint that exists today.

(811) In response to this point in the SO, the Notifying Parties argue that "*the main pressure to preserve a product portfolio that meets the market's needs comes from the Parties' strong and powerful customers and their ability to switch liquidity to any other existing or start-up exchange if they do not see their current needs met.*"[732]

(812) The Commission considers that the examples given provide considerable evidence, however, that, to the extent that customers have any such role, this has primarily depended on the pre-merger competition described between the Notifying Parties. This point is taken up again in Section 11.2.1.8 on buyer power below.

730 Euronext website, available at http://www.euronext.com/trader/contractspecifications/derivative/wide/contractspecifications-3657-EN.html?euronextCode=I-LON-FUT, viewed on 29 November 2011.

731 Eurex website, available at http://www.eurexchange.com/trading/products/INT/MON/FEU3_en.html, viewed on 29 November 2011.

732 Notifying Parties' response to the SO, Interest Rate derivatives, paragraph 186.

11.2.1.4.4.4. *Conclusion*

(813) It follows that the notified transaction would eliminate competition between the Notifying Parties as concerns the introduction of new products in the area of European interest rate derivatives, where they are currently each other's closest competitor.

11.2.1.4.5. ***Conclusion on European interest rate derivatives***

(814) As explained and illustrated in this Section, Eurex and Liffe are the only significant players and each other's closest actual and potential competitors in the area of European interest rate derivatives as concerns both existing and new products. The notified transaction eliminates this significant competitive constraint that Liffe and Eurex currently exert upon each other in this space and constitutes a merger to near-monopoly irrespective of whether the market should be further subdivided into STIR and LTIR derivatives or according to the currency. Following the transaction, derivatives users trading European interest rate derivatives will see their choice of platforms significantly reduced which is likely to lead to higher exchange fees and less innovation.

11.2.1.5. COMPETITION BETWEEN THE NOTIFYING PARTIES - SINGLE STOCK EQUITY OPTIONS AND FUTURES

11.2.1.5.1. Introduction

(815) From the outset it should be recalled that this assessment applies for both groups of customers identified in the market definition Section of this Decision, namely the customers that trade only ETDs and the customers that trade both ETDs and OTC derivatives. This is because, as explained in Recital (425) of this Decision, even for customers for whom ETD lookalikes could possibly be an alternative under certain circumstances, the phenomenon of ETD lookalikes in the area of single stock equity derivatives is of minimal importance and therefore not of a nature to alter competitive assessment in this case.

11.2.1.5.2. Actual competition in existing products

11.2.1.5.2.1. *"Home" markets*

(816) The Notifying Parties currently compete for a wide range of existing European single stock equity futures and options. The overlaps are particularly significant in their respective "home" markets, namely Belgium, France, the Netherlands, Portugal and the UK for Liffe and Germany and Switzerland for Eurex.

(817) Eurex offers 985 European single stock futures on its order book and 430 single stock options. It also offers 133 dividend futures (six of these are equity index dividend futures) and a single dividend option on Eurostoxx 50 dividend futures.[733]

[733] Notifying Parties' reply to the second RFI of September 13, of 19 September 2011, annex 4.

(818) Liffe's equity order book portfolio is less extensive than that of Eurex: it offers 291 single stock options and 148 single stock futures based on shares of European companies.

(819) As concerns the overlaps in their respective home markets, Liffe offers on its order book 19 German and 8 Swiss single equity futures, though no single equity options. Eurex, in turn, offers stock options and futures on its order book on blue chips on all the Euronext "home" markets, namely Belgium, France, Netherlands, Portugal and UK. In this respect, the market investigation showed that the Notifying Parties compete head-to-head in trading in a significant range of European single stock options and futures[734].

(820) In terms of revenues, the Notifying Parties are once again closely balanced, with Liffe realizing Euro […]* in 2010 and Eurex Euro […]*[735].

(821) As regards all overlaps in their order books, Eurex and Liffe offer in competition with each other trading in 184 European single stock options and 111 single stock futures. The overlap of the Notifying Parties' order books represents 75% of all single stock futures on Liffe and 11.5% of all on Eurex. For options, it represents 63% of Liffe's portfolio, and 43% of that of Eurex.

(822) In addition, across the range of instruments available to be brought on exchange but which cannot be traded on the order book of both Parties, they overlap in 444 single stock options and 774 single stock futures[736].

(823) The overlap on the order book therefore represents 75% of all single stock futures on Liffe and 11.5% of all on Eurex. For options, it represents 63% of Liffe's portfolio, and 43% of that of Eurex.

(824) On the overall market for European single-stock equity derivatives, the combined market shares of the Notifying Parties would reach levels close to [90-100%]*. Should the market for European single stock derivatives be subdivided between options and futures, then the combined market shares of the Notifying Parties would reach levels higher than [80-90%]*. Indeed, for the period Jan-May 2011, DB accounted for [50-60%]* of all exchange trading of single stock options in the EEA, with NYX representing a further [30-40%]*: meaning the Notifying Parties would represent [80-90%]* in total. In European single stock futures, DB represented [40-50%]* and NYX [40-50%]* of the EEA total: a combined total of [90-100%]*[737].

(825) Should the European single stock derivatives markets be subdivided according to the country of underlying stock, the Notifying Parties' market shares in their core "home" markets of Germany, Switzerland, the UK, France, Belgium, the Netherlands and Portugal would in almost all cases be 100%, with important overlaps in a number of

---

734 AFME, Minutes of a meeting of 24 August 2011 [...]*.

735 Form CO, Annexes D.18 and D.19.

736 Annex 4 to the Notifying Parties' reply of 19 September 2011.

737 World Federation of Exchanges, as provided by AFME, Annex to their reply to Q1 – Questionnaire to customers – paragraph2.7. […]*.

individual stocks, in particular the larger and more liquid internationally traded blue chips. [738]

(826) In futures and options taken together, the picture is as follows[739]:

Table 7: Market shares of the Notifying Parties in single stock derivatives (futures and options) per country, 2010

Country of underlying stock	NYSE Liffe	Eurex	Combined
Belgium	[90-100%]*	[5-10%]*	[90-100%]*
France	[70-80%]*	[20-30%]*	[90-100%]*
Germany	[20-30%]*	[70-80%]*	[90-100%]*
Netherlands	[90-100%]*	[5-10%]*	[90-100%]*
Portugal	[90-100%]*	[5-10%]*	[90-100%]*
UK	[90-100%]*	[0-5%]*	[90-100%]*

Source: Commission's calculations based on the Notifying Parties' Response to the SO[740].

(827) The extent of overlap between Eurex and Liffe in these markets is significant. In this respect, Nasdaq OMX notes that "*Eurex offers derivatives on all single stocks that are covered by the Euro Stoxx 600 equity index, which contains large, mid and small capitalisation companies from a number of different countries. To the extent other derivatives exchanges, including Liffe but also other derivatives exchanges in Europe, offer derivatives contracts on the relevant single stocks, Eurex competes with such exchanges. Likewise Liffe does not only offer derivatives on single stock listed on any of the equities exchanges operated by Nyse Euronext in the EEA but also derivatives on single stock listed on other equities exchanges in the EEA, and in this respect competes with other derivatives exchanges, most notably the respective incumbents. That said, the incumbent has a competitive edge because it normally provides a tighter bid-ask spread due to high liquidity on its platform and can therefore charge relatively higher fees compared to competitors as these are offset from the perspective of customers by lower implicit trading costs (as well as margin benefits)*"[741].

(828) Similarly, ICE states that "*there are a number of overlap products where Eurex and Liffe compete head-to-head, both offering seemingly identical options based on the shares of a number of leading international companies in a variety of sectors, eg Aegon, Ahold, Air France, AkzoNobel, BNP Paribas, Credit Suisse, Dexia, ING,*

738 Notifying Parties' response to the SO, single equity section, paragraph 40. Figures by contracts traded 2010. Omission of Switzerland is due to the Notifying Parties.

739 The Notifying Parties initially provided figures conflated by off-order book trades. These figures were therefore adjusted to reflect on-order book only.

740 See Notifying Parties' Response to the SO, paragraph 40.

741 Nasdaq OMX, reply to question 44 of Q10 – Questionnaire to competitors, phase II [...]*.

Philips, Randstad and Unilever. Eurex competes with Liffe's single stock equity derivatives… with some success".[742]

(829) Again, the internal documents of the Notifying Parties are testimony to the head-to-head competition in the area of European single stock options. Indeed, in the period from 2006 to 2009 NYX closely monitored the introduction by DB of single stock options in particular in France, the Netherlands and the UK as can be verified by the significant number of documents analysed by the Board of Liffe tracking these events.[743] DB documents clearly show that when targeting the introduction of these products, it compares itself directly with the Liffe offering.[744] NYX itself clearly acknowledges the extent of this competition: "*The listed equity derivatives war in Europe is fought between NYX and Eurex, with the latter having a bigger market share due in part of the gravitational effect of Eurex's giant Eurostoxx index contract*"[745].

(830) Should the market be subdivided according to the underlying stock, the extent of the head-to-head competition between the Notifying Parties is illustrated in Tables 8 to 10, which relate to June 2011.[746] Eurex competes head-to-head with Liffe, on order book, for trading in futures on […]* equity underlyings with cash (and derivative) listings on Euronext's home markets: […]* Belgian, […]* Dutch, […]* French and […]* Portuguese. It can be seen in table 8 below that Eurex frequently achieves significant volumes in these instruments, while in nine cases, it has more than half the liquidity.

Table 8: Market shares of the Notifying Parties in futures on single stocks (NYX home markets)

Country	Underlying	Volume	NYX	DB1
Belgium	Inbev NV	537186	92.8%	7.2%
Belgium	KBC Bancassurance Holding	15973	1.0%	99.0%
Belgium	Solvay SA	133472	76.7%	23.3%
France	Air Liquide SA	336784	94.2%	5.8%
France	Alcatel-Lucent SA	279966	73.3%	26.7%
France	AXA SA	4296474	41.3%	58.7%

742 ICE, reply to question 43 of Q10 – Questionnaire to Competitors, Phase II [...]*.

743 As an example, in the NYX document "*Update on actions in French and Dutch markets, Executive Committee*", it is outlined that ".[…]*. Another example is contained in a NYX document entitled "*Derivative risk profile, Q3 2006*", Reference ENX-00291-00002 "*threat from Eurex in Paris IEOs market share. Eurex's market share may reach critical mass and result in sizeable shift of IEO business to Eurex. Key factors are: ".[…]**". Another example is the internal analysis made by Liffe in a Business Report to the members of the Liffe Board dated 17 February 2009 - Reference ENX – 00050 – 00001, p 7 to 9.

744 See for example, DB internal document provided in response to the Commission's RFI of 1 July 2011, .[…]*.

745 NYX internal document, Email of 4 June 2010 at 10:04, Reference ENX-00855 -00001.

746 See Notifying Parties' reply of 19 September 2011 to the RFI of 13 September 2011, annex 5. It should be noted that there may be some degree of volatility in these market shares from month to month.

France	BNP Paribas SA	785675	84.6%	15.4%
France	Bouygues SA	176167	98.0%	2.0%
France	Carrefour SA	732386	86.0%	14.0%
France	Credit Agricole SA	3571817	18.2%	81.8%
France	Groupe Danone SA	615331	94.2%	5.8%
France	Electricite de France	800806	92.3%	7.7%
France	European Aeronautic Defence and Space Company	97221	22.4%	77.6%
France	France Telecom SA	14361100	56.4%	43.6%
France	Lafarge SA	227937	84.6%	15.4%
France	Lagardere SCA	30427	99.4%	0.6%
France	L'Oreal SA	187097	83.6%	16.4%
France	LVMH Moet Hennessy Louis Vuitton SA	616033	98.6%	1.4%
France	Pernod-Ricard	107352	68.4%	31.6%
France	Peugeot SA	25686	8.9%	91.1%
France	Pinault-Printemps-Redoute	46766	97.5%	2.5%
France	Renault SA	19539	15.8%	84.2%
France	Compagnie de Saint Gobain	324029	73.6%	26.4%
France	Sanofi-Aventis SA	2536371	53.1%	46.9%
France	Schneider Electric SA	164911	93.5%	6.5%
France	Societe Generale SA	493634	90.5%	9.5%
France	Societe Television Francaise (T.F.1)	94441	89.6%	10.4%
France	Sodexo SA	37226	28.1%	71.9%
France	Total SA	11373817	71.8%	28.2%
France	Vivendi Universal SA	2441300	90.7%	9.3%
Netherlands	Aegon NV	52866	8.9%	91.1%
Netherlands	Koninklijke Ahold NV	2755671	95.2%	4.8%

Netherlands	Akzo Nobel NV	937996	99.6%	0.4%
Netherlands	ASML Holding NV	585351	99.9%	0.1%
Netherlands	Heineken NV	2002279	98.3%	1.7%
Netherlands	ING Groep NV	1733697	98.2%	1.8%
Netherlands	Koninklijke DSM N.V	499238	96.4%	3.6%
Netherlands	Koninklijke Philips Electronics NV	1668557	97.6%	2.4%
Netherlands	Reed Elsevier NV	3566659	97.4%	2.6%
Netherlands	Royal Dutch SHELL PLC 'A' SHARES EURO	9448373	96.9%	3.1%
Netherlands	Royal KPN NV	11353156	96.7%	3.3%
Netherlands	TNT N.V.	1119899	99.9%	0.1%
Netherlands	Unilever NV	14003374	98.2%	1.8%
Portugal	BANCO BPI STOCK FUTURE	161400	99.8%	0.2%
Portugal	BANCO COMERCIAL PORTUGUES STOCK FUT	1320757	99.5%	0.5%
Portugal	BANCO ESPIRITO SANTO STND FUT	498916	99.1%	0.9%
Portugal	GALP ENERGIA, SGPS, S.A.	60754	0.9%	99.1%
Portugal	JERONIMO MARTINS STND FUT	175625	100.0%	0.0%
Portugal	PORTUGAL TELECOM STOCK FUTURE	1551280	92.8%	7.2%

Source: World Federation of Exchanges, as provided by AFME.

(831) Similarly, as concerns German equity futures, the Notifying Parties compete in […]* names on order book. NYX achieves significant volumes in almost all of these, and has the majority of the liquidity in six.

Table 9: Market shares of the Notifying Parties in futures on single stocks – Germany

Underlying	Volume	NYX	DB1
Allianz AG	33868923	12.1%	87.9%
BASF AG	11438126	52.0%	48.0%
Bayer AG	10133880	63.4%	36.6%

Bayerische Motoren Werke AG	4881856	73.2%	26.8%
Commerzbank AG	339252	0.2%	99.8%
Daimler AG	1063853	34.1%	65.9%
Deutsche Bank AG	11132178	45.6%	54.4%
Deutsche Post AG	382222	8.6%	91.4%
Deutsche Telekom AG	1259926	9.9%	90.1%
E.ON AG	27387011	60.4%	39.6%
Infineon Technologies AG	201524	17.8%	82.2%
Metro AG	2305823	76.9%	23.1%
Munchener Rucksversicherungs Gesellschaft AG	18761286	10.2%	89.8%
Porsche Automobil Holding SE	6595	9.2%	90.8%
RWE AG	6320228	45.0%	55.0%
SAP AG	21167988	36.4%	63.6%
Siemens AG	4277856	23.9%	76.1%
ThyssenKrupp AG	2104551	24.6%	75.4%
Volkswagen AG-PFD	1676073	64.0%	36.0%

Source: World Federation of Exchanges, as provided by AFME.

(832) In single stock options, the Notifying Parties compete head-to-head in […]* underlyings, all on the Euronext markets including the UK. These are […]* UK underlyings, […]* Belgian, […]* French and […]* Dutch[747]. The full table of market shares is as follows:

Table 10: Market shares of Notifying Parties in options on single stocks (NYX home markets)

Country	Underlying	Volume	NYX	DB1
Belgium	FORTIS (B)	266134	100.0%	0.0%
Belgium	ANHEUSER- BUSCH INBEV NV	431276	73.4%	26.6%
Belgium	Belgacom SA	56076	30.8%	69.2%
Belgium	Colruyt SA	11229	89.2%	10.8%

[747] There are no Portuguese overlaps.

Belgium	Delhaize Group	42110	89.8%	10.2%
Belgium	GBL	15651	91.3%	8.7%
Belgium	KBC Bancassurance Holding	210583	74.9%	25.1%
Belgium	Mobistar SA	16542	82.5%	17.5%
Belgium	Solvay SA	47280	72.9%	27.1%
Belgium	UCB SA	53700	75.4%	24.6%
Belgium	UMICORE	27789	93.8%	6.2%
France	ACCOR SA EUROPEAN NEW	135387	90.3%	9.7%
France	Air France KLM	184424	78.7%	21.3%
France	AIR LIQUIDE EUROPEAN	718202	75.2%	24.8%
France	ALCATEL-LUCENT SA EUROPEAN	7919271	92.6%	7.4%
France	Alstom RGPT	880987	79.5%	20.5%
France	Atos Origin SA	27359	83.9%	16.1%
France	AXA SA	5295921	74.5%	25.5%
France	BNP PARIBAS EUROPEAN	3281824	81.7%	18.3%
France	BOUYGUES EUROPEAN	1338085	80.8%	19.2%
France	Cap Gemini SA	310561	80.5%	19.5%
France	Carrefour SA	4230221	87.2%	12.8%
France	Casino Guichard Perrachon SA	41520	61.8%	38.2%
France	Christian Dior SA	4256	43.2%	56.8%
France	CNP ASSURANCES (100)	1477	77.5%	22.5%
France	Credit Agricole SA	3565961	83.3%	16.7%
France	Groupe Danone	1167321	75.6%	24.4%
France	Dassault Systemes SA	27985	62.5%	37.5%
France	DEXIA EUROPEAN	251648	75.5%	24.5%
France	Euro Aero Defense and Space	784751	82.4%	17.6%
France	ELECTRICITE DE FRANCE EUROPEAN	886506	85.1%	14.9%
France	Essilor International SA	49253	87.6%	12.4%

France	France Telecom SA	6848930	81.8%	18.2%
France	GDF SUEZ EUROPEAN	2790154	74.5%	25.5%
France	HERMES INTERNATIONAL (100)	22411	63.7%	36.3%
France	L'Oreal SA	540117	72.4%	27.6%
France	Lafarge SA	689622	83.8%	16.2%
France	LAGARDERE SCA EUROPEAN	81936	100.0%	0.0%
France	LEGRAND SA STD OPTIONS	40	100.0%	0.0%
France	LVMH Moet Hennessy Louis V	961939	80.8%	19.2%
France	METROPOLE TELEVISION (100)	319	100.0%	0.0%
France	MICHELIN EUROPEAN	368119	100.0%	0.0%
France	NATIXIS EUROPEAN	22615	93.1%	6.9%
France	Pernod-Ricard	392770	87.9%	12.1%
France	PEUGEOT SA EUROPEAN	933811	85.9%	14.1%
France	Pinault-Printemps-Redoute	245798	92.0%	8.0%
France	PUBLICIS GROUPE (100)	55103	88.0%	12.0%
France	Renault SA	1452457	86.0%	14.0%
France	SAFRAN SA (100)	26914	89.1%	10.9%
France	Cie de Saint-Gobain	2163477	79.7%	20.3%
France	Sanofi-Aventis	1810229	77.4%	22.6%
France	Schneider Electric SA	623086	77.1%	22.9%
France	SCOR SE	16387	67.2%	32.8%
France	SOCIETE GENERALE EUROPEAN	3875753	85.2%	14.8%
France	SODEXO SA EUROPEAN	55699	47.6%	52.4%
France	STMicroelectronics NV	1830893	89.8%	10.2%
France	SUEZ ENVIRONNEMENT SA (EUROPEAN)	75802	93.1%	6.9%
France	Technip SA	53340	27.7%	72.3%
France	Societe Telev Francaise 1	54892	56.8%	43.2%
France	Thales SA	66841	83.6%	16.4%

France	TOTAL SA EX EVENT PACKAGE EUROPEAN	5052186	80.4%	19.6%
France	UNIBAIL-RODAMCO SE (100)	46287	54.2%	45.8%
France	Valeo SA Amer Phys FLEX Opt	47236	71.8%	28.2%
France	Vallourec SA	153568	86.8%	13.2%
France	VEOLIA ENVIRONNEMENT EUROPEAN	715036	83.2%	16.8%
France	Vinci SA	1275944	85.8%	14.2%
France	VIVENDI SA EUROPEAN	4313535	80.5%	19.5%
Netherlands	AEGON WEEKLY OPTION	8013683	90.3%	9.7%
Netherlands	Koninklijke Ahold NV	3397911	95.5%	4.5%
Netherlands	Akzo Nobel NV	1624145	95.7%	4.3%
Netherlands	ARCELORMITTAL WEEKLY	12260155	100.0%	0.0%
Netherlands	ASML Holding NV	2535773	92.5%	7.5%
Netherlands	KONINKLIJKE BOSKALIS WESTMINSTER N.	384022	99.7%	0.3%
Netherlands	Corio NV	151268	98.9%	1.1%
Netherlands	CSM	262292	99.3%	0.7%
Netherlands	Koninklijke DSM NV	1343838	96.3%	3.7%
Netherlands	Fugro NV	627342	98.1%	1.9%
Netherlands	Heineken NV	787715	91.4%	8.6%
Netherlands	IMTECH N.V.	437088	100.0%	0.0%
Netherlands	ING OLD	18276691	92.4%	7.6%
Netherlands	Koninklijke BAM Groep NV	998562	98.1%	1.9%
Netherlands	Royal KPN NV	6412013	94.9%	5.1%
Netherlands	NUTRECO N.V	174274	100.0%	0.0%
Netherlands	Konin Philips Electronics NV	6022017	89.0%	11.0%
Netherlands	Randstad Holdings NV	732945	95.9%	4.1%
Netherlands	Reed Elsevier NV	832472	86.4%	13.6%

Netherlands	ROYAL DUTCH WEEKLY O	11104677	92.1%	7.9%
Netherlands	SBM OFFSHORE NV	949113	90.7%	9.3%
Netherlands	TNT NV	1405451	93.3%	6.7%
Netherlands	TomTom NV	2024303	97.3%	2.7%
Netherlands	UNILEVER OLD	4462692	88.3%	11.7%
Netherlands	USG PEOPLE N.V. AMERICAN STYLE STOC	661003	98.3%	1.7%
Netherlands	Wereldhave NV	200373	98.4%	1.6%
Netherlands	WOLTERS-KLUWER	264183	82.1%	17.9%
UK	Anglo American plc	174358	99.8%	0.2%
UK	AstraZeneca plc	201654	98.9%	1.1%
UK	Aviva plc	167578	99.8%	0.2%
UK	BAE Systems plc	125310	100.0%	0.0%
UK	Barclays PLC	2895640	99.8%	0.2%
UK	BG Group plc	261324	99.9%	0.1%
UK	BHP Billiton plc	376315	99.7%	0.3%
UK	BP PLC	2765992	99.7%	0.3%
UK	British Sky Broadcasting Group plc	139277	99.9%	0.1%
UK	BT Group plc	554124	98.1%	1.9%
UK	Centrica Plc	58291	100.0%	0.0%
UK	Compass Group plc	20274	100.0%	0.0%
UK	Diageo PLC	225180	98.6%	1.4%
UK	GlaxoSmithKline plc	313369	99.2%	0.8%
UK	HSBC Holdings plc	1130163	99.5%	0.5%
UK	Legal & General Group PLC	146356	100.0%	0.0%
UK	LLOYDS TSB GROUP PLC STND OPT	1934716	99.7%	0.3%
UK	Marks and Spencer PLC	206642	95.6%	4.4%
UK	National Grid PLC	77882	100.0%	0.0%
UK	Prudential plc	264224	99.8%	0.2%

UK	Reckitt Benckiser Group Plc	17220	96.5%	3.5%
UK	Rio Tinto PLC	447710	99.7%	0.3%
UK	Royal Bank of Scotland PLC	777510	99.9%	0.1%
UK	ROYAL DUTCH SHELL PLC 'B' SHARES STND OPT	112203	97.5%	2.5%
UK	RSA Insurance Group Plc	47849	100.0%	0.0%
UK	Sainsbury (J) PLC	123167	99.8%	0.2%
UK	Standard Chartered Plc	95252	99.8%	0.2%
UK	Tesco PLC STND OPT	375635	98.3%	1.7%
UK	Unilever PLC	43062	93.7%	6.3%
UK	Vodafone Group plc	4764355	99.7%	0.3%
UK	Xstrata plc	528827	99.7%	0.3%

Source: World Federation of Exchanges, as provided by AFME.

(833) From Table 10 it can be seen that, amongst the […]* overlaps, DB achieves at least 5% in 75 cases, at least 20% in 27 cases, and the majority of the liquidity in 4 cases. This is a picture which is difficult to reconcile with the Notifying Parties' claim that "*instances where both of the Parties achieve significant trading volumes in respect of derivatives based on equities from the same country are few*"[748] and that, notwithstanding the general tendency of liquidity to settle on a particular platform, the Notifying Parties nonetheless, by virtue of their unique competitive relationship to each other, manage to sustain an ongoing battle for liquidity in single stock derivatives. As emphasised above, elimination of the only competitor in these cases, even in those instances where its market share is modest, would clearly reinforce the market power of the merged entity, which would gain thereby a monopoly position.

(834) It follows that there is considerable competition between the Notifying Parties on order book in single stock futures and options, where they are each other's closest and in most cases only existing competitor, contradicting the Notifying Parties' claim that "*instances where both of the Parties achieve significant trading volumes in respect of derivatives based on equities from the same country are few*"[749]. Indeed in an email from […]* the "*threat of Eurex launching IOEs*" is described as is the plan of action to face this "threat" concluding that "*Further actions underway which will lead to […]**".[750] This competition would be eliminated by the merger.

748 Form CO, derivatives, paragraph 6.4, page 6.

749 Form CO, paragraph 106.

750 NYX internal document provided in response to the Commission's RFI of 1 July 2011, Email from ,[…]*, 06 January 2010 to ,[…]*, Reference: ENX-00209-00001.

11.2.1.5.2.2. Other EEA markets

(835) Outside their "home" countries, the Notifying Parties also compete in futures on equities listed in other European jurisdictions. The Commission and the Notifying Parties have not been able to obtain trading figures on the "home" market for most of these stocks, with the exception of Spanish equity futures. However, this case is also instructive as to competition between the Notifying Parties, which have achieved, together, the majority of liquidity in all of the ten Spanish single stock futures which they both list, with the national market, MEFF, in second or even, frequently, third place, as shown in Table 11[751].

Table 11: Market shares of the Notifying Parties in futures on single stocks (Spain)

Underlying	Volume	NYX	DB1	MEFF
Abertis Infraestructuras SA	1058986	18.1%	67.0%	14.8%
Banco Bilbao Vizcaya Argentaria SA	48139576	44.8%	42.4%	12.8%
Banco Popular Espanol SA	2861365	67.5%	4.3%	28.2%
Banco de Sabadell SA	690193	76.5%	4.7%	18.8%
Banco Santander SA	59241033	65.3%	28.3%	6.3%
Gas Natural SDG SA	1596745	47.5%	48.3%	4.2%
Iberdrola SA	6606078	79.7%	7.1%	13.2%
Inditex SA	968710	72.6%	23.5%	4.0%
Repsol YPF SA	6008526	70.8%	19.4%	9.7%
Telefonica SA	39148283	58.5%	27.7%	13.8%

Source: World Federation of Exchanges, as provided by AFME.

(836) Overlaps in the Notifying Parties' offerings in other stock futures concern […]* US, […]* Italian, […]* Swedish and […]* Finnish.[752] Although the Commission does not have a complete picture of the market in these cases, the Notifying Parties both actively compete, showing they serve an active demand to trade these futures away from the home market. In all but six cases, the smaller of the two Parties has at least 5% of their combined share, and in seventeen cases, the smaller has at least 20% of the combined

751 See Notifying Parties' reply of 19 September 2011 to the RFI of 13 September 2011, annex 5..

752 Credit Suisse, Nestle, Novartis, Roche, Swiss Re, Swisscom, UBS, Zurich Financial Services, AT&T, Intel, IBM, Microsoft, Verizon, Generali, Bulgari, Enel, ENI, Fiat, Intesa Sanpaolo (savings), Mediaset, Mediobanca, Saipem, Snam, Telecom Italia (savings shares), Terna, UniCredit, Nordea, Ericsson, Nokia, Stora Enso, UPM-Kymmene Oyj.

share. The Notifying Parties have only indicated the respective home market as a competitor in any of these cases (namely IDEM for Italian derivatives, Nasdaq OMX for the Scandinavian stocks etc), and assuming this to be the case, the notified transaction results, even for these stocks for which the Notifying Parties are not historically the home market, in a three to two merger, with elimination of almost certainly the closest competitor, since, unlike the national markets, both Eurex and Liffe can offer wide international reach and therefore compete most closely for those customers who do not have a natural focus on the national market.

(837) In their response to the SO, the Notifying Parties offer the following figures for actual competition in instruments from a particular country where they both overlap, although conflating on- and off-order book[753]. In futures and options taken together, the picture is as follows (since OTC does not belong to the relevant market, it has been eliminated from the Notifying Parties' figures which have been adjusted accordingly):

Table 12: Market shares of the Notifying Parties in futures and options on single stocks, 2010

Country of underlying stock	**NYSE Liffe**	**Eurex**	**Combined**	**Others**
Austria	[50-60%]*	[40-50%]*	**[90-100%]***	[0-5%]* (Wiener Boerse)
Finland	[0-5%]*	**[90-100%]***	**[90-100%]***	[0-5%]* (Nasdaq OMX)
Italy	[10-20%]*	[10-20%]*	**[20-30%]***	[70-80%]* (IDEM)
Norway	**[20-30%]***	[0-5%]*	**[20-30%]***	[70-80%]* (Nasdaq OMX and Oslo Boers)
Spain	[40-50%]*	[20-30%]*	**[70-80%]***	[20-30%]* (MEFF)
Sweden	[0-5%]*	[0-5%]*	[0-5%]*	[90-100%]* (Nasdaq OMX)

Source: Commission calculations based on the Notifying Parties' Response to the Statement of Objections, single equity section, paragraph 40.

(838) In addition to the direct elimination of competition, the notified transaction also risks removing remaining competition in those adjacent markets that will not already be dominated by the Notifying Parties. The merged entity would be able to eliminate competition in trading in a number of products within their core asset classes but outside their home geographies

[753] Notifying Parties' response to the SO, single equity derivatives, paragraph 40. Figures by contracts traded 2010.

(839) In this regard, existing smaller competitors have expressed concerns that the merged entity would be in a position to engage in conduct which would undermine such competition. For example, Nasdaq OMX states that "*The merged entity would drive competing platforms out of the market since it would suck in liquidity both for established products currently traded on other exchanges and importantly also for any new product launched by other exchanges (or MTFs) in the future simply because of vastly lower collateral costs for customers. Once competitors would have been driven out of the market (or would have been prevented from entering it) the merged entity would have complete freedom to exploit its dominance by extracting extra fees from customers, which eventually would also deprive customers of alleged margin efficiencies that are currently presented as exceptional benefits of the proposed merger for customers*".[754]

(840) The current state of competition between the Notifying Parties in respect of European single stock options lends support to the above analysis, since, notwithstanding the tendency of liquidity to aggregate on a single platform, significant instances of split liquidity have occurred, and even instances where major national blue chips show much more derivatives trading on the Notifying Parties' exchanges than in their country of origin. This effect can be explained by the "liquidity pull" factor.

(841) Indeed, this explanation finds support inside NYX. An email from […]* to […]* ([…]* of NYX) takes the view that[Eurex's bigger market share in listed equity derivatives is due in part to DB's Eurostoxx contract]*[755] and expressed the concern that […]*.[756]

(842) In this respect, it should be noted that if this threat was perceived before the merger by a participants such as NYX, it would clearly be more relevant post-merger for the remaining smaller competitors in those European equity derivatives which remain traded primarily on their national exchanges, such as Spanish, Italian and Nordic equity derivatives and those from the newer Member States. As a result of the merger therefore, there is a risk that the merged entity would be able to progressively eliminate remaining competition in the trading of their core European single stock equity options and futures which are outside their home geographies.

(843) Indeed, as already indicated in the SO, this effect is not limited to those geographies where the Notifying Parties overlap today and could progressively apply to most or all of the EEA. For example in futures on Danish single stocks, Eurex is not present, but Liffe (including Bclear) already has the vast majority of the liquidity[757]. The effect of the further broadening of the merged entity's margin pool could be to further squeeze out competition from the historical incumbent, Nasdaq OMX.

---

754 Reply to question 5 of Q10 – Questionnaire to competitors, phase II [...]*.

755 Representing in 2010 nearly half of all Eurex revenue, see Annex D.19 to the Form CO and Section 2.4.2.1above.

756 NYX internal document provided in response to the Commission's RFI of 1 July 2011, with title, Email of 4.06.2010 at 10:04, Reference ENX-00855 -00001.

757 Nasdaq OMX, Comments on the SO submitted pursuant to article 16(1) of the Implementing Regulation and observations at the Oral Hearing, 28 and 31 October 2011, pages 3 and 4, [...]*.

11.2.1.5.2.3. Response of the Notifying Parties to the SO

(844) In their response to the SO, the Notifying Parties make a number of points, which can be categorised under four main headings.

(845) The Notifying Parties argue, firstly, that: *"Trading of single equity derivatives is extraordinarily competitive, and the Transaction will not change this fact. Although the SO identifies a number of products where NYX and DB each offer the same product, it fails to explain how NYX and DB are particularly close competitors or how they would be able to exercise any market power post-Transaction"*[758]

(846) Secondly, the Notifying Parties attempt to argue that the Commission has failed to consider a number of competitors and constraints: *"With respect to market definition, the SO concedes that ETD "lookalike" contracts traded OTC – which are available for virtually any exchange-traded single equity derivative product – are a realistic alternative to exchange trading. However, the competitive assessment in the SO fails to take trading of these OTC lookalikes into account. In particular, the SO fails to identify other competitors and take their market shares into account. Just as importantly, the Commission fails to appropriately consider the competitive constraint imposed by OTC trading generally (including off-book trading facilities, which the Commission incorrectly concludes should be considered in a separate relevant product market).*" [759]

(847) Thirdly, the Notifying Parties argue that "*although both Parties offer single-equity derivatives, they are not particularly close competitors. These products are traded in significant volumes only in respect of derivatives based on equities listed in a few countries. In these segments, the increment brought about by the Transaction is minimal, as the bulk of liquidity in each segment is clearly with one Party.*" [760]

(848) Fourthly, the Notifying Parties state that "*the SO identifies a number of overlaps in the Parties' single equity derivatives offerings, including a number of specific single equity derivative products where liquidity is split between the Parties' venues These examples are not indicative of intense competition between NYX and DB in trading and clearing of single equity derivatives products.*"[761]

(849) The Notifying Parties also make arguments relating to entry and buyer power. These arguments are addressed in Sections 11.2.1.7 and 11.2.1.8.

11.2.1.5.2.4. Analysis of the Notifying Parties' response to the SO

(850) As regards the Notifying Parties' first claim, the Commission already outlined in the SO that the Notifying Parties, in their home markets, were not only the closest but each other's only competitors.[762] Outside these home markets, the Commission identified a

[758] Notifying Parties' response to the SO, single equity derivatives, paragraph 1.
[759] Notifying Parties' response to the SO, single equity derivatives, paragraph 3.
[760] Notifying Parties' response to the SO, single equity derivatives, paragraph 3.
[761] Notifying Parties' response to the SO, single equity derivatives, paragraph 30.
[762] See SO, section 2.3.1.1.

number of further examples where the number of competitors would be reduced from three to two as a result of the merger, and considered the Notifying Parties each other's closest competitors in these markets, although even if this were not so, concerns would still arise.

(851) The Notifying Parties confirm the market shares and competitive situation relied upon by the Commission in their response to the SO itself. In two of these cases – Spain and Finland – the merged entity would be by far the market leader. Moreover, the Commission has shown, based on the Notifying Parties' own internal documents as well as concerns raised by third parties, that the reduction in competition would not be limited "merely" to an addition of pre-merger market shares, but that it is likely that the merged entity, due to the gravitational effect of the combined margin pool, would be able to grow further and possibly squeeze out competition entirely in those markets.

(852) Competition between the Notifying Parties is based to a large extent on fees, as already outlined above where it was noted that in relation to Italian single stock futures, which NYX offers both on its order book and through Bclear and where it currently faces competition from both Eurex and IDEM, it introduced fee caps for order book trading of these specific instruments, citing "*aggressive competition from both Eurex and IDEM for the equity derivatives franchise*" and considering that […]*.[763]

(853) There is therefore every reason to conclude that elimination of competition in this case will have exactly the same effects as in other markets, that is, that it will lead to higher prices and/or less choice for customers.

(854) With respect to the second claim, the Commission considered already in the SO any possible constraint from OTC lookalikes, and rejected that such a constraint might be in any way material. The Commission has considered all competitors, of which there are none in the Notifying Parties' home markets (except for the entry on 1 December 2011 of TOM in the Netherlands, discussed below) and at most one in the other markets considered (except for off-order book competition in Norway, where there are two). Moreover, the Notifying Parties themselves, although they often refer to alleged competitors, are not able to identify these competitors, much less their market shares. No other relevant constraints have been identified in the Commission's extensive market investigation.

(855) In respect of the third claim, the Commission considers that it is clearly refuted by the facts already presented above and in the SO, since the overlaps occur in particular in the most liquid traded stocks and often result in significant shares for the other Party.

(856) In respect, finally, of the fourth claim, if the observed pattern of market shares is not indicative of competition between the Notifying Parties, it is difficult to imagine how it could otherwise be interpreted. Competition in this space between the Notifying Parties is widely documented in the market investigation, in the Notifying Parties' internal

[763] NYX internal document, Email of 3 August 2010 from […]* to ,[…]*, ENX-00260. London Notice 3282 of 28 April 2010 applied these caps to order book trades and was followed by London Notice 3290 of 1 June extending this to block trades, see Euronext website available at http://www.euronext.com/fic/000/056/821/568213.pdf and http://www.euronext.com/fic/000/057/695/576950.pdf, both viewed on 30 September 2011.

documents, and in public sources, both from the Notifying Parties and from third parties.

(857) The Notifying Parties do not appear to have any alternative explanation of the observed data. The closest that they come to such a definition is the claim that, because in a minority of the identified overlaps the stocks are components of the Eurostoxx 50 index, "*it is to be expected that significant trading on derivatives of these shares would be traded on DB's venue*". There is no indication why this should be expected, and indeed, as the Commission has shown above, there are examples of other stocks, including German and Swiss stocks which, despite being members of the Eurostoxx 50, and where the cash instrument is primarily traded on DB, have a majority of their derivatives trading volume on Liffe.

(858) It may also be noted that the Notifying Parties have not endeavoured explicitly to rebut the Commission's conclusion in the SO relating to the likelihood that the merged entity would be able to further reduce competition also outside its home markets.

11.2.1.5.2.5. Conclusions

(859) Eurex and Liffe are each other's closest competitors in the broad area of European single stock equity derivatives. As demonstrated in this Section of this Decision, this conclusion holds irrespective of whether the market comprises all European single stock derivatives, is subdivided into options and futures and/or is further subdivided according to countries or even the underlying stock. Indeed, should the market comprise all European single stock derivatives, the proposed transaction would lead to a near monopoly position of the merged entity. Similarly, the notified transaction would lead to a monopoly in order book trading of a large number of single stock equity futures in Notifying Parties' home countries, in particular the most widely traded stocks from Belgium, France, the Netherlands, Portugal, the UK, Germany and Switzerland and a large number of single equity options from Belgium, France, the Netherlands and the UK. In addition, the notified transaction would eliminate actual competition in order book trading between the Notifying Parties in single equity futures for some of the most widely traded stocks in a number of other European countries, namely Finland, Italy, Spain, and Sweden[764]. In doing so, it would lead to a three-to-two merger for trading in the single equity futures in question, with only the respective national incumbent remaining to challenge the merged entity, respectively IDEM (LSE group) in Italy, MEFF (BME Group) in Spain and NASDAQ OMX in Sweden and Finland[765] and eliminate the closest competitor in these markets. Similarly, should the market be subdivided according to underlying stock, the notified merger would lead to a monopoly as concerns futures and options on a number of individual stocks. In addition, the notified transaction would result in a situation in which the merged entity would be able to further leverage the scope and scale of its offering in single equity futures and options in order to eliminate additional competition outside its home markets, resulting in further marginalization of remaining competition in these markets.

764 The identified overlaps between the Notifying Parties in Norway and Austria only concern off-order book trading. In Norway, two competitors remain.

765 The Commission has not analysed whether there is specific European demand for trading in the US stocks where the Notifying Parties overlap but this can be left open for the purposes of this Decision.

(860) It should also be noted that this conclusion applies irrespective of the scope of the geographic market. This is because irrespective of whether the market is global or narrower, Eurex and Liffe, are the only significant players in this space while in some local markets there may be other players active.[766]

(861) As a result, the notified transaction eliminates the closest competitors in the area of European single stock derivatives irrespective of the precise market definition, leading to higher fees, less innovation and *de facto* no choice for customers of a trading platform for these products in the Notifying Parties' home markets as well as a number of other countries.

11.2.1.5.3. Potential competition

11.2.1.5.3.1. Introduction

(862) Given the range of the product offering of the Notifying Parties and the extensive overlap between them discussed above, they remain, for the reasons set out notably in Section 2.1.3, also a real constraint on each other even if one or other may have little to no trading at a given point in time in a given contract. In this regard, it is relevant also to note that […]*.

(863) In addition to this, there are few barriers for either Notifying Party to list new European equity options and futures in direct competition to the other, as they have frequently done in the past.[767]

(864) The Notifying Parties in their response to the SO argue that potential competition is not a concern because entry and expansion are easy.

(865) Entry is addressed in Section 11.2.1.7 below, but in any case, given the fixed costs of entry and given that the merged entity could likely starve an entrant of liquidity by reducing its fees for long enough to repel the initial threat, it cannot be considered that potential entry gives rise to a potential constraint equivalent to that of the other Party which is already present and established on the market and possesses a large and correlated margin pool.

(866) In respect of expansion, although the Notifying Parties argue that any derivatives exchange could list new single stock derivatives on stocks outside of its home country or countries, they fail to provide any examples of this happening, and indeed, the market investigation did not identify any. Even in the case of LSE, which has long had a derivatives trading platform, that platform does not list, much less achieve any volume in, derivatives on UK stocks. Nasdaq OMX does not list any derivatives on stocks from outside its home countries, with the exception of certain non-EEA

[766] See Section 11.1.1.2.3.3 of this Decision.

[767] In addition, where the incentive to list on the central order book is absent, on Liffe's side, the additional option remains of admitting a contract to clearing on BClear with a view to capturing some wholesale or flexible volumes. Although it is not the policy of Eurex to do this, it admits a larger number of instruments to trading on the central order book, and so the effect is similar.

instruments. Indeed, as analysis of past entries shows Eurex and Liffe are each other's closest potential competitors in this area.

(867) It may thus be concluded that the Notifying Parties constrain each other as closest potential competitor across the entire range of their single equity future and options products. It is only in the event that they were to list a single stock derivative in one of the non-home EEA markets, which is not listed by the national market for that particular stock, that it might in certain instances be a closer potential competitor than the other Party. Such an event would likely be of limited commercial significance and is unlikely to materialise.

11.2.1.5.3.2. No other player could maintain sufficient competitive pressure on the merged entity post-merger

(868) As explained in the introduction to this Section of this Decision, Eurex and Liffe are uniquely well placed to enter each other's markets in the area of European single equity derivatives. There is no other competitor that could exert similar competitive pressure in this area as the Notifying Parties exert on each other pre-merger.

11.2.1.5.3.2.1. Entry by cash MTFs: Turquoise and BATS/Chi-X Europe

(869) In their response to the SO, the Notifying Parties state that Commission's findings as regards the entry of MTFs into the derivatives space where the Notifying Parties are active is "*not supported by the single example of Turquoise, in particular where the slate of potential entrants is as diverse as those in the Table above*" (the table sets out MTFs active in the cash markets such as Sigma X, UBS MTF, TOM MTF, NX MTF, Quote MTF, Burgundy, Equiduct, Smartpool, Chi-X Europe and BATS).[768]

(870) In this context, the Notifying Parties have also made general statements that "*MTFs impose a significant competitive constraint on the Parties and will impose an even more significant constraint in the future as a result of market and regulatory developments...*"

(871) The general attempt of Turquoise to enter derivatives trading in competition with the Notifying Parties is discussed in the Section 11.2.1.7 below. In respect of single stock equities, the Notifying Parties state that "*Turquoise is therefore a viable existing competitor that is likely to expand in the near future*". This statement is incorrect, since Turquoise does not offer single stock equities (other than on Russian underlyings as successor to LSE's EDX platform), and achieves almost no volume in the one contract it does list in competition to the Notifying Parties, the FTSE 100 index. Although Turquoise may have expressed a desire to enter some of these markets, the evidence on the file indicates that it has no prospect of significant commercial success at present.

(872) The plans of BATS/Chi-X Europe to enter the market are even less advanced, and whilst it is true that single stock derivatives similar to those of the Notifying Parties can probably be listed without infringing any IP rights, and are therefore easier to list than

[768] Notifying Parties' response to the SO, Equity Index Derivatives, paragraph 47.

index products, they are also far less attractive since a large majority of turnover is in the index and not in individual equity derivatives[769]. It is therefore doubtful whether single stock derivatives alone would be sufficient to constitute a business case for entry even if all the other barriers to entry – in particular the gravitational effect of the margin pool – could be overcome. This point has also been made in the context of the market test of the proposed remedies in this case, which is further discussed below.

(873) In this regard, the Commission notes that other than the TOM entry into derivatives (discussed below), the Notifying Parties have not brought any new evidence in their response to the SO, nor indeed any evidence at any earlier stage of the proceedings, to show how these MTFs, currently active in cash markets, will effectively enter the derivatives space in a likely, timely and significant way.

(874) As this Decision outlines, cash markets and derivative markets exhibit very different characteristics (see, for example, Recitals (941) and (950)). Contrary to what occurs in cash markets, the open interest and cross margining play a very important role and constitute significant barriers to entry in the derivatives markets concerned, making effective entry by these players unlikely, not timely and/or not sufficient in order to deter or defeat the anti-competitive effects of the merger.

11.2.1.5.3.3. *TOM*

(875) In their response to the SO, the Notifying Parties provide, as regards The Order Machine (TOM), a document purporting to evidence *"the fact that NYX has been closely following TOM's entry into derivatives […]*"*[770].

(876) The Commission notes that this document is very recent, dated 14 October 2011 (post-dating the SO in this case by nine days), and refers to TOM initiating activity in 1 December 2011 only. The Notifying Parties have not produced any documents from an earlier period proving that TOM's entry was "closely followed", even though its plans to do so have been known since at least the beginning of the year.

(877) This document states that […]*. According to the information provided, the only currently announced plans relate only to single stock derivatives for the Amsterdam market. […]*[771]. Furthermore, according to TOM, market participants are claiming that these fees "*only benefit the members who trade in large sizes in volume*" - that is to say those who can also benefit more from open interest and cross margining possibilities. These are therefore very specific and localised targeted actions by NYX. This is explained given the localised threat posed by TOM for Dutch single equity derivatives.

(878) Moreover, TOM has very limited distribution possibilities, as it has only a handful of members, compared to more than […]* members of Liffe. The Commission also notes that […]*. There is therefore some legal uncertainty as to whether TOM will indeed be able to operate in the marketplace, even if just in the Netherlands.

769 For example, of a total of €275.1m Eurex sales revenue in 3Q11, €8.9m came from European Single Stock products, whilst €51.6m came from European Interest Rate derivatives and €136.3m came from European Equity Index derivatives – source Deutsche Borse 3Q11 Interim report, page 9.

770 Notifying Parties' response to the SO, Introduction, paragraph 9.

771 TOM, response to Commission's RFI of 14 November 2011, [...]*.

(879) The Commission therefore concludes that not only is there legal uncertainty as to whether TOM will be able to operate a derivatives business, […]*, that it has at this stage a very limited distribution network (a handful of members). It may therefore be concluded that the likelihood of sustained entry is in doubt or unknown, that it is at best a localised threat for a limited number of single equity instruments, that its expansion possibilities are unknown, that the time necessary to implement such eventual expansion would be uncertain, as would be the scale at which it would occur.

11.2.1.5.3.4. Conclusion on potential competition in the area of European single stock derivatives

(880) As demonstrated in this Section, Eurex and Liffe are each other's closest potential competitors in the area of European single equity derivatives irrespective of the precise product and geographic market definition. This unique competitive constraint would be eliminated post-merger while there is currently no other player that could sufficiently constrain the merged entity post-merger.

11.2.1.5.4. Competition to introduce new products in the area of European single stock derivatives

(881) As in the case of interest rate derivatives, numerous replies to the market investigation confirmed that innovation continued to be an important theme within the Notifying Parties' core equity franchises. Thus NASDAQ OMX states that "*in equity related products the trend goes towards products that cater for more specific needs/investment opportunities or risk mitigation such as dividend, volatility, duration in contracts*".[772]

(882) Indeed, DB has developed a suite of products around dividend and volatility futures. It currently offers single stock dividend futures in 87 underlyings, including all of the Eurostoxx 50 components, which number numerous underlyings where the regular futures and options liquidity is primarily on Liffe.[773] This offering was launched in January 2010, following the earlier launch in June 2008 of dividend futures on the Eurostoxx index itself.[774]

(883) According to a recent report carried out by Reuters, "*Dividend futures on the index … already amount to a significant market on Eurex, with trading of about 10,000 contracts per day for a total volume of around 23 billion euros ($33.4 billion) in 2009, a Eurex spokesman said. Based on investor and dealer queries and anecdotal evidence, the exchange expects trading in the new single company dividend futures to become a significant percentage of that volume, he added, citing about half as a rule of thumb*."[775]

---

772 Reply to question 72 of Q10 – Questionnaire to competitors, Phase II [...]*.

773 DB's internal document provided in response to the Commission's RFI of 1 July 2011, ".[…]*.

774 See Eurex website, available at http://www.eurexchange.com/about/press/press_577_en.html, document entitled "Eurex to Launch New Futures on Dividends of Dow Jones EURO STOXX 50", viewed on 21 September 2011.

775 http://www.reuters.com/article/2010/01/11/dividend-futures-eurex-idUSLDE60A1OO20100111, viewed on 21 September 2011.

(884) Dividend futures on single stocks have yet to be launched by Liffe. However, the competitive threat is taken seriously by Eurex, which, at a moment when its own project to list single stock dividend futures is falling behind, states that "*This raises the threa*[t] *that Euronext Liffe will be the first to enter this segment and might be in a position to win the OTC business in single name dividend products, in a similar way as we did it in the EuroSTOXX50 Index product*"[776].

(885) This threat is then also specifically identified later in the document submitted to the Board for its decision to launch these products, identifying Liffe as a "potential threat" as "*Competitive listing by other (major derivatives exchanges), especially where these are seen as the "home market" i.e. Euronext on French names - it has been confirmed (by DB) that Euronext LIFFE intends to launch Single Stock Dividend Futures*"[777].

(886) Indeed, the notified transaction carries with it the further risk that not only will the merger eliminate competition in product innovation between the Notifying Parties, but also innovation by smaller third parties which might currently have a chance of success in some areas.

(887) Nasdaq OMX expresses this concern as follows: "*The proposed merger would have a negative impact on innovation in derivatives products and technology solutions. There will be no innovation competition between Eurex and Liffe for new types of exchange traded derivatives. Since customers would trade a new product on Eurex/Liffe only because of the large margin pool, the merged entity would be able to suck in liquidity in any innovative products launched by another derivatives exchange or MTF simply by launching a copy cat product. The merged entity could accordingly very easily reap all the benefits of a product innovation by a competitor simply because of the margin efficiencies it could offer. Moreover the proposed merger will eliminate competition between the two most important innovative forces regarding new types of exchange traded derivatives. Apart from that, competition of new market entrants with Eurex and Liffe on price, technology and innovation in existing and new categories of ETDs will be stifled.*"[778]

(888) In their response to the SO, the Notifying Parties do not address specifically innovation in this area and do not discuss the apparent competition in single stock dividend futures.

(889) It follows that Eurex and Liffe compete closely in bringing new products in the area of European single stock equity derivatives, competition which would be eliminated post-merger.

11.2.1.5.5. Conclusion on single stock equity options and futures

(890) The significant instances of actual and potential competition between Eurex and Liffe that have been outlined in this Section illustrate that the Notifying Parties are each other's closest actual and potential competitors within the European single equity futures and options space irrespective of the precise product and geographic market definition. The market investigation has confirmed that competition in this area has

776 DB internal document,.[…]*.
777 DB internal document .[…]*.
778 Reply to question 71 of Q10 – Questionnaire to competitors, phase II [...]*.

primarily involved Eurex and Liffe, with no evidence of credible attempt by other platforms to challenge the Notifying Parties in their core equity options and futures markets, whether by means of launching lookalike contracts or in terms of innovation. This competition between the Notifying Parties – referred to by NYX as a "war" involving the Notifying Parties as the only two protagonists[779] – would be eliminated by the notified transaction while there is no other competitor that could credibly step in and discipline the merged entity's behavior.

(891) The notified transaction by removing the significant competitive constraint that Liffe and Eurex currently exert upon each other in the market for European single stock equity futures and options constitutes an effective merger to monopoly within their home markets and a three-to-two merger in respect of underlyings from a number of other EEA Member States, with the prospect that their position will be strengthened still further. Given the particularly close competitive relationship existing between the Notifying Parties before the merger, the transaction results in the elimination of the closest actual and potential competitor.

(892) As a result of the notified transaction, users are likely to see their choice of platforms significantly reduced while the merged entity would have the ability and incentive to increase fees and other elements of pricing and diminish innovation.

11.2.1.6. COMPETITION BETWEEN THE NOTIFYING PARTIES: EQUITY INDICES

11.2.1.6.1. Actual and potential competition in existing products

(893) According to figures provided by the Notifying Parties, Eurex offers 72 Equity Index Futures and 77 Equity Index Options on its order book. Most of these are based on Stoxx and Eurostoxx and cover various segments of the indices. In addition to its Stoxx products, Eurex also offers, *inter alia*, the German Dax index, Dow Jones indices, MSCI, the OMX Helsinki 25 index, and the Korean Kospi 200. It does not offer FTSE or Eurofirst indices. It further offers a volatility index future and a volatility index option, both on the VStoxx volatility index.[780]

(894) Liffe offers 7 equity index options and 17 equity index futures on its central order book.[781] These include futures on the national AEX, BEL20, CAC40, PSI-20 and FTSE 100 indices, the FTSE 250 index, dividend futures on the AEX, CAC and FTSE, the FTSE Eurofirst 80 and 100 indices[782], the FTSE Eurotop 100 index[783], the MSCI

779 NYX internal document provided in response to the Commission's RFI of 1 July 2011, Email of 4.06.2010 at 10:04, ENX-00855 -00001.

780 Notifying Parties' reply to the Commission's RFI of 13 September 2011, annex 4.

781 Notifying Parties' reply to the Commission's RFI of 13 September 2011, annex 4.Through BClear, it is possible to bring a total of 22 equity index options and 75 equity index futures into the exchange clearing environment.

782 The FTSEurofirst 80 index is a tradable index that covers the euro zone. The FTSEurofirst 100 index consists of the 60 largest companies ranked by market capitalisation in the FTSE Developed Europe Index and 40 additional companies selected for their size and sector representation. See http://www.euronext.com/fic/000/010/560/105607.pdf (viewed on 20 September 2011).

783 Designed to represent the performance of the 100 most highly capitalised blue chip companies in Europe.

Europe and eurozone indices[784], the Japanese TOPIX index, and two real estate indices. Options are offered on the AEX, BEL, CAC and FTSE.[785]

(895) According to the Notifying Parties, in 2011, to date, there had been approximately 77000 futures contracts in MSCI European sector indices entered in Bclear and no trading in the MSCI global indices.[786]

(896) To date in 2011, there have been 5.6 million futures and 1.4 million options contracts traded in the Stoxx sector indices.

(897) Given the IP rights associated with equity indices, Eurex and Liffe presently directly overlap in only the MSCI Japan index, where according to the Notifying Parties, Eurex achieved no volume to date in 2011.[787]

(898) As a result, the Commission considers, in line with the market definition for European equity index derivatives, that the Notifying Parties do not compete in relation to existing European equity index derivatives. notified transaction would not lead to significant impediment of effective competition by elimination of actual and/or potential competition in respect of trading of national equity index derivatives in the Notifying Parties' home markets or derivatives based on pan-European indices, since, as set out in the market definition Section 11.1.1.2.2.2.3 above, these products belong to separate relevant product markets owing in particular to their being protected by IP rights.

11.2.1.6.2. Competition in product innovation

(899) The Notifying Parties do, however, have a history of competing in new product launches in the area of trading and clearing of European equity indices. Third parties, such as Chi-X Europe in combination with Russell, also have concrete intentions to enter at least the pan-European segment of the market with new products.

(900) The following examples illustrate historical competition between the Notifying Parties in European equity derivatives as well as innovation by them in this area.

11.2.1.6.2.1. Eurostoxx vs Eurofirst

(901) The first and most important example of competition between the Notifying Parties is competition in derivatives contracts based on pan-European indices. In 1998, Eurex

---

784 The MSCI Europe Index is a free float-adjusted market capitalisation weighted index that is designed to measure the equity market performance of developed markets in Europe, and consists of the following 16 country indices: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom. The MSCI euro index is similar in construction but excludes the non-members of the eurozone, i.e. Denmark, Norway, Sweden, Switzerland and the UK. MSCI is an independent global provider of indices and other financial products (see http://files.shareholder.com/downloads/MSCI/1407958773x0x453382/FE6BCA96-392F-417A-9A64-00D82DCCFF76/123837_017_BMK.PDF, viewed on 20 September 2011).

785 Notifying Parties' reply to the Commission's RFI of 13 September 2011, annex 4 .

786 Notifying Parties' reply to the Commission's RFI of 13 September 2011, p.8.

787 Notifying Parties' reply to the Commission's RFI of 13 September 2011, p.8.

launched a contract based on the Eurostoxx index, which by the end of 1999 had already become a larger index than the German national DAX[788]. In 2003, NYX responded by launching the Eurofirst derivative contracts, co-created with the FTSE group, believing that the Eurostoxx contract was not appropriately designed and hoping that the new contract would attract more liquidity than the contracts on the Eurostoxx.[789] According to LSE, Euronext competed with aggressive pricing and changed the clearing location to LCH Clearnet s.a. in 2007 to enable margin offset against AEX, CAC and BEL. After its launch, Eurofirst 80 peaked with c.100,000 contracts in December 2008 but has since fallen back.[790]

(902) While Eurofirst ultimately has not gained significant traction, this episode illustrates the competition in innovation. In 2010, Eurex achieved around […]*% of its turnover from indices alone, of which the Eurostoxx represents more than […]*[791].

11.2.1.6.2.2. *Volatility index futures*

(903) In 2005, Eurex introduced volatility index futures, allowing investors to create pure volatility exposure or to hedge the volatility risks of equity market positions. The Vola Futures are based on the volatility indexes VSTOXX, VDAX-NEW, and VSMI, covering pan-European, German, and Swiss equity markets. In June 2009, it launched Vstoxx mini-futures.

(904) This innovation was followed by Liffe in September 2006 with the launch of variance futures on the FTSE 100, AEX and DAX on Bclear[792]. In September 2007, it launched order-book trading in volatility index futures on AEX, CAC and BEL.[793]

11.2.1.6.2.3. *Index dividend futures*

(905) The Notifying Parties have also emulated each other in the launch of dividend futures on indices. Eurex was first to market, launching in June 2008 dividend futures on the Eurostoxx index[794]. In May 2009, Liffe responded with dividend futures on the FTSE 100, and then in December 2009 on the CAC 40. AEX was added subsequently[795]. The

788 Stoxx News, 25 November 1999.

789 NYX' internal document provided in response to the Commission's RFI of 1 July 2011 illustrates that the objective at the time was to "Win next battle on European derivatives; Eurostoxx 50: too narrow, room for another product". Pan-European Index Business case, Presentation to the Euronext Management Board, 18 December 2002.

790 Follow-up Questions Following Meeting on 1 July 2011 with LSEG […]*.

791 Form CO, derivatives, Paragraph 6.242 and Annex D.19.

792 Presentation titled "Variance Futures", at www.euronext.com/fic/000/010/990/109901.ppt, viewed on 21 September 2011.

793 Press release titled "Euronext to launch volatility indices" at http://www.euronext.com/fic/000/023/447/234473.pdf, viewed on 21 September 2011.

794 Press release titled "Eurex to Launch New Futures on Dividends of Dow Jones EURO STOXX 50", available athttp://www.eurexchange.com/about/press/press_577_en.html, viewed on 21 September 2011.

795 http://globalderivatives.nyx.com/fr/stock-indices/nyse-liffe/dividend-index-futures, viewed on 21 September 2011.

millionth contract on FTSE 100 dividends was traded 10 months after its launch[796]. Eurex followed the launch of Eurostoxx futures with dividend futures on the DAX and the Swiss index, SMI797.

(906) This competitive interaction between the Notifying Parties is discussed by DB in a presentation on "introduction of Options on Eurostoxx 50 Index Dividend Futures" dated 28.4.2010.

11.2.1.6.3. Response of the Notifying Parties to the SO

(907) In response to the SO, the Notifying Parties raise four main points[798]:

(908) Firstly, they argue that the Commission has based its conclusions on "*three isolated and dated historical examples of derivatives product introductions*" whereas it should have assessed likely future competitive effects. The Notifying Parties claim that "*the market structure has changed so significantly since the time of the three examples cited in the SO that they cannot be used to draw reliable conclusions about future conduct*".

(909) Second, the Notifying Parties argue that "*product innovation in equity indices is not driven by competition between exchanges – it originates with index providers and major bank customers in the OTC space*" and that the incentives to innovate and create new indices will not change following the notified transaction.

(910) Thirdly, the Notifying Parties argue that there are numerous existing and future competitors that are at least as significant – if not more significant – potential competitors in equity index derivatives as either NYX or DB.

(911) Fourthly, the Notifying Parties argue that the Commission's conclusions are in contrast to the responses of major market participants that do not consider that the notified transaction will lessen competition in innovation or new product introduction.

11.2.1.6.4. Analysis of the Notifying Parties' response to the SO

(912) In response to the first point made by the Notifying Parties, it is incorrect to argue that the Commission based its preliminary conclusions in the SO purely on the examples given[799]; these were, as the name suggests, merely examples. By the very nature of innovation, the precise form it may take in the future is difficult to precisely predict.

(913) In this regard, the issues in respect of innovation in equity indices are fundamentally no different than those which apply to innovation in all areas of the Notifying Parties' activities as set out in Section 11.2.1.2.5 and 11.2.1.3.3 above.

---

796 http://www.hedgeweek.com/2010/03/25/40434/ftse-100-dividend-index-futures-reach-one-million-milestone, viewed on 21 September 2011.

797 http://www.eurexchange.com/download/documents/publications/flyer_index_div_fut_en.pdf, viewed on 21 September 2011.

798 Notifying Parties' response to the SO, Equity index derivatives, paragraph 2.

799 See paragraph 359 of the SO.

(914) In respect of the second point made by the Notifying Parties, it is similar in its reasoning to the arguments made in relation to innovation in the OTC space generally. These arguments have already been addressed at Recitals (589) et seq. above. To recapitulate, the innovation in question concerns the launching and establishment of a successful exchange traded contract, whether or not this has first been "incubated" OTC, as well as the timing and commercial terms on which this is offered to the market.

(915) As regards the claim that innovation is carried out by index providers, and not by exchanges, this, as has been shown in Section 8.2.2 on index licensing above, does not accurately portray the competitive dynamics which pertain between exchanges on the one hand and index providers on the other.

(916) Whilst it is true that index providers endeavour to develop indices which will be attractive to market users, they also depend for this purpose on the ability of exchanges to develop and maintain a liquid pool of trading in derivatives on the index in question. There is therefore a symbiotic relationship between the innovation of the index provider on the one hand and the innovation consisting in bringing derivatives on this index to the market, carried out by the exchange, on the other.

(917) It is therefore not relevant to the competitive analysis whether indices are produced by the merged entity itself or by third parties which then would necessarily rely on the merged entity for distributing derivatives products on these indices, given the unique size and scope of the margin pool which it would have post-merger in a series of highly correlated European equity index derivatives. It should be noted that, while the Notifying Parties do not currently allow offsets between indices and single stock derivatives (though Eurex Clearing has concrete plans to do so in the near future), they do allow significant offsets between the highly correlated individual indices themselves.

(918) The overwhelming competitive advantage which the merged entity would possess was underlined by the observation of Chi-X Europe at the Oral Hearing that "*the merged entity will control the trading and clearing of 7 of the leading European equity indices… represent[ing] over 95% of the business in [European] index traded derivatives. A new entrant to [European] equity index derivatives would not be in a position to offer the same margin offsets and would consequently face a much higher hurdle to successful entry than is currently the case.*"[800]

(919) Indeed, in this regard it should be noted that not only competition in innovation by the Notifying Parties would be adversely affected by the merger, but also that third parties (both index providers such as Russell and exchanges such as Chi-X Europe) might no longer have the means or incentive to innovate in this area post-merger, as they would face insurmountable barriers to entry given the combined margin pool of the merged entity and considering that the Notifying Parties would very likely be in a position to counter innovations from third parties with innovations of their own.

(920) The third point raised by the Notifying Parties – the question of entry barriers into equity index derivatives – is also addressed in Section 11.2.1.7 below (see in particular Recitals (957) and (958)). High margin offsets apply on Eurex between the Eurostoxx

[800] Chi-X Europe, presentation at Oral Hearing, 28 October 2011, [...]*.

and DAX contracts, and on Liffe between FTSE, AEX, BEL 20, CAC 40 and the Portuguese PSI index as well as with the Eurofirst ([>50%]*)[801]. All of these products would be part of a single margin pool post-merger, representing a formidable barrier to entry.

(921) The Commission acknowledges that it is conceivable that, as the Notifying Parties argue, there exist some possible future innovations in the ETD index space for which other competitors may be as well placed as the Notifying Parties, in particular CME and NASDAQ OMX which have established US indices. However, the possible innovations in question do not concern European equity index derivatives. Given the established position of each of the Notifying Parties in European equity index derivatives, they are each other's closest competitor in this space.

(922) In relation to the fourth point, whilst the Commission accepts that certain customers and competitors consulted during the market investigation did not expect an impact of the transaction on innovation, the overall conclusions based on the market investigation, on the Notifying Parties' internal documents, and on the history of competition between them, as set out in the various Sections 11.2.1.2.5 and 11.2.1.3.4 dealing with new product introduction above, all support the Commission's conclusion that innovation would be significantly negatively affected as a result of the notified transaction.

(923) Within the European innovation space for equity indices thus defined, the Notifying Parties would have all the same advantages, and competitors suffer from all the same barriers to entry, as apply in European interest rates and European single stock derivatives.

11.2.1.6.5. Conclusion on European equity index futures and options

(924) It follows from the analysis outlined in this Section that, owing to IP rights associated with equity index derivatives, Eurex and Liffe do not compete as concerns existing equity index derivatives. Similarly, they are not each other's potential competitors in this area.

(925) However, Eurex and Liffe are each other's closest actual competitors in the area of bringing new European equity index products on the market. This competition would be eliminated post-merger. While there is another potential competitor with plans pre-merger to try to enter this market, Chi-X Europe, given the significant advantage of the merged entity which will control virtually all European equity index derivatives post-merger, it is unlikely that Chi-X Europe would be in a position to credibly constrain the merged entity in this area.

11.2.1.7. BARRIERS TO ENTRY AND EXPANSION

(926) According to the Horizontal Merger Guidelines, *"when entering a market is sufficiently easy, a merger is unlikely to pose any significant anti-competitive risk. Therefore, entry analysis constitutes an important element of the overall competitive assessment. For entry to be considered a sufficient competitive constraint on the merging parties, it must*

[801] [>50%]* for the PSI.

be shown to be likely, timely and sufficient to deter or defeat any potential anti-competitive effects of the merger."[802]

(927) In this case, the Commission analysed to what extent entry into the relevant derivatives markets concerned by this Decision would be likely, timely and sufficient in case anti-competitive effects were to materialise post-transaction. In this context, the Commission identified three main barriers to entry, two of which are generally applicable to all derivatives markets including those concerned by this Decision and one of which is specific to equity index derivatives.

11.2.1.7.1. High barriers to entry and expansion into European equity and interest rate derivatives

11.2.1.7.1.1. Introduction

(928) The General Court has held that "*the mere "threat" of an entry is not sufficient [...] What counts is the prospect of an entrant which offsets the anti-competitive effects specifically established in the contested decision at the stage of the assessment.*"[803]

(929) Barriers to entry can be defined as features of the market, which give the incumbent firms an advantage over potential competitors[804]. In order to constitute a barrier to entry, it is therefore not necessary that this barrier entirely excludes competitors from the market. According to the Court of First Instance, barriers to entry "*...may consist in elements of various natures, in particular economic, commercial or financial elements, which are likely to expose potential competitors of the established undertakings to risks and costs sufficiently high to deter them from entering the market within a reasonable time or to make it particularly difficult for them to enter the market, thus depriving them of the capacity to exercise a competitive constraint on the conduct of the established undertakings.*"[805]

(930) It follows that the Commission has to establish that entry is not only a theoretical and remote possibility, but will be an immediate and actual threat for the merged entity, thereby exerting a competitive constraint on them to such an extent that they would refrain from any merger-induced anti-competitive behaviour[806].

(931) As will be outlined further in this Section, potential new entrants into the market for European exchange-traded derivatives are faced with high barriers to entry given the importance of liquidity and open interest and the related netting and cross-margining benefits. Furthermore, the possibility for competitors to offer equity index derivatives and thereby also gain a foothold in the related single equity derivatives products is also limited given that the benchmark index products are protected by intellectual property rights. The existence of a large installed base of existing users which "distributes" the

802 Horizontal Merger Guidelines, paragraph 68.
803 Case T-342/07, Ryanair Holdings v Commission, Judgment of 6 July 2010, Recital 239.
804 Horizontal Merger Guidelines, paragraph 70.
805 Case T-282/02 Cementbouw Handel & Industrie v Commission, [2006] ECR II-319, Recital 219
806 See Case COMP/M.4439 *Ryanair / Aer Lingus*, recital 547.

exchange's products to investors, characterised by unavoidable sunk connection costs, is also an important barrier to entry.

(932) In the context of establishing liquidity and benefiting from related cross-margining possibilities, it is important to distinguish at the outset between entry into markets where an incumbent exchange has an established position; and entry into entirely new types of contracts which are not significantly correlated to the contracts of the incumbent. Where an incumbent exchange has an established position and runs a closed vertical silo model, barriers to entry are high given the stickiness of liquidity and the open interest in fungible or correlated contracts held in the incumbent's CCP. By contrast, in cases where new contracts are introduced which are not significantly correlated to the contracts of the incumbent, these entry barriers would be significantly lower while the user base might still play a role.

(933) Indeed, contrary to what appears to be suggested by the Notifying Parties in their response to the SO, no competition concerns were identified by the Commission in respect of product innovation in completely new types of contracts (see Recital (560) above), that either have low correlation with existing contracts or constitute entirely new classes to which no or insignificant margin offsets are possible. These will therefore not be discussed further in this Section.

11.2.1.7.1.2. General barrier: Open interest in fungible or correlated contracts and cross-margining

(934) Generally speaking, the higher the liquidity of a given platform in a given instrument, the more significant the advantage held by a trading venue since it will offer narrower bid-ask spreads, greater depth in the order book, and lower risk as regards the price at which a customer will be able to trade out of the same position in the future.

(935) Furthermore, as the Notifying Parties have explained in the Form CO[807], for traders that have open interest in one trading venue, collateral requirements for additional trades on the same venue can be lower because of netting and cross-margining opportunities (when calculating margin requirements across the user's portfolio of different products, risk correlations between different products are taken into account).

(936) In their response to the decision opening the proceedings, the Notifying Parties claimed that liquidity – not access to cross-margining opportunities or cost of collateral – represents the principal reason why it is difficult to persuade traders to switch from a highly liquid to an illiquid trading venue, irrespective of whether the entrant offers significant cross-margining opportunities[808].

(937) In their Response to the SO, the Notifying Parties also consider that cross margining "*advantages are not so large as to have a material deterrent effect on entry. All successful new entrants in the derivatives market have succeeded by offering genuinely innovative products that have utility for customers and represent an attractive value*

807 Form CO, derivatives section, 6.181.

808 Notifying Parties' response to the decision opening the proceedings, Competitive Assessment, paragraph 38.

proposition. History has shown that cross-margining benefits are not sufficient to deter or frustrate new entrants with such superior offerings". To sustain their position in the Response to the SO, the Notifying Parties frequently refer to the case of CDS derivatives. For example, they state that "*ICE won the battle for CDS derivatives against the Parties, although it did not – in contrast to the Parties – have any meaningful presence in contracts other than energy and commodity contracts. These examples show that access to a large margin pool of correlated contracts is not a decisive factor to challenge another exchange".*

(938) The Commission notes that the CDS example upon which the Notifying Parties heavily rely to support their position that cross-margining is not a relevant barrier refers to an example of the introduction of a completely new product in the ETD space, with no prior liquidity or cross margining possibilities, that is to say a situation where all players start from a level playing field (in other words "Type III" innovation as defined above, involving the greenfield launch of new ETDs). This example is therefore not relevant in the context of this analysis[809].

(939) Indeed, on the basis of the evidence on the file, the Commission considers that cross margining does constitute an important element that constitutes an important barrier to entry as regards the derivatives markets which are the subject of this Decision.

(940) First, as mentioned above, the Commission does not contest that cross margining benefits for completely new products (that is to say with no or limited margin offset possibilities with existing products) are not a determinant factor of success and therefore this argument does not need to be analysed further.

(941) Second, the characteristic of derivatives markets whereby counterparty risk is managed for a significantly long period of time (as opposed to cash markets where settlement takes place within a few days of trading), means that the posting of collateral by users in derivatives markets can be significant, as can, therefore, the corresponding benefits of an efficient margining regime.

(942) Third, the more significant the pool of open interest is in any given derivative contract, the more possibility there is of netting positions against each other so that collateral only needs to be posted against the net position[810].

(943) Fourth, the higher the open interest a customer has in a particular contract and within a given margin pool, and the closer the correlation between the contracts in question, the more significant are the cross margining possibilities that exist (on the assumption that the users holds a number of offsetting positions, which particularly characterizes the activity of dealers), leading to a decrease in the amount of collateral that needs to be posted by the user.

---

809 Although there might be a degree of correlation between certain CDS contracts and certain contracts of the Notifying Parties, it is unclear, for a variety of reasons including the nature and payoff of the underlying and supervisory considerations, whether this could or would lead to any significant margin offset. This seems not to have been an issue in Eurex's attempts to enter the CDS market. In any case, this example falls outside the scope of concerns outlined in this Decision.

810 Meaning that opposing trades in the same contract cancel each other out and thus eliminate collateral requirements. This is equivalent in collateral terms to 100% offset (but also avoids other fees).

(944) Indeed, liquidity, netting and cross-margining are closely connected as both liquidity providers and liquidity takers would wish, all other things being equal, to trade on the platform where they already have open interest, either in the same contracts in order to be able to net positions or in similar contracts in order to be able to benefit from cross margining.

(945) In this respect, Barclays states: *"A key measure of an exchange's success as a new entrant in the derivatives trading space is quickly to establish meaningful open interest in a targeted set of contracts. Open interest attracts both buy-side and sell-side market participants to the exchange*"[811]. The combination of both liquidity and open interest lowers the cost of trading, through netting and margin offsets between long and short positions on highly correlated products, which has been considered by a significant majority of customers as a crucial factor for new entry to be able to capture liquidity. As one customer puts it "*as a minimum the new entrants would have to offer competitive pricing on execution fees and have open access into the relevant CCP for that instrument*."[812]

(946) This is also explained by Euro CCP, a CCP, that states that "*[P]ortfolio level margining could bring substantial savings to clearing members by reducing the amount of collateral they need to post to the CCP without compromising risk management by offsetting correlated open positions in a clearing member's obligations to the CCP*"[813].

(947) There are therefore significant economies of scale and scope that occur in the clearing of derivatives, giving holders of large margin pools important advantages over potential competitors. It should be noted that the Notifying Parties implicitly acknowledge this advantage when discussing barriers to entry in the context of equity index derivatives as they argue that for a: "*genuinely innovative equity index product*" there is "*no liquidity advantage and so open interest and netting do not provide any advantage*"[814]. *A contrario*, this means that for existing products there is a liquidity advantage as well as an open interest and netting advantage for the incumbent.

(948) Absent any cross-margining agreements or other clearing arrangements amongst CCPs, the clearing model currently prevailing in Europe for ETDs[815], and for the Notifying Parties' derivatives exchanges in particular, is a model whereby only contracts traded on the exchanges' own trading venue are fungible amongst each other and where margin offsets are only possible between contracts traded on the exchanges' own trading venues. In other words, the incumbent exchanges do not provide access to their margin pools for contracts that are executed on a competing trading venue, nor do they allow their provider of clearing services to do so.

---

811 Barclays, response to Question 60 of Q8 – Questionnaire to customers, Phase II [...]*.

812 Tullett Group, response to Question 60 of Q8 – Questionnaire to customers, Phase II [...]*.

813 Minutes of conference call with EuroCCP on 2 September 2011 [...]*.

814 Notifying Parties' response to the SO, Booklet 5 (Equity Index Derivatives), paragraph 47. It should be noted that, whilst this is true, margin offset is still a significant factor for index derivatives, as mentioned at Recital (917) above and in the analysis of remedies below in Section 13.

815 As explained below, this model is different from the fully fungible model for the clearing of options in the US where the Options Clearing Corporation (OCC) clears fully fungible options traded on a number of exchanges.

(949) It follows that a new entrant that would start offering a similar or the same contract (in terms of economic exposure) as the incumbent exchanges could not offer netting and cross-margining of these contracts with the same or similar contracts traded on the incumbent venues. Trading at the new entrant's exchange would therefore necessarily translate into higher margin requirements for its customers. This would necessarily have a deterrent effect on potential customers and could prevent them from either starting to trade a particular contract on the new entrant's platform or from switching from the incumbent to the new entrant's exchange. The market investigation has shown that this factor is typically a very considerable barrier to the establishment of liquidity on the competing platform.

(950) In this respect, Nasdaq states that "*it is generally difficult for a new entrant to capture liquidity in existing European instruments due to the "open interest issue" (i.e. customers wanting to open and close out positions on one and the same platform in order to benefit from offsetting of margins)*".[816] LSE concurs, considering that "*open interest pools and lack of margin off-set act as significant barriers to entry that do not exist in cash equity markets*" describing it as "*the most significant barrier to entry is having access to a clearing pool which will enable customers to maintain open interest in an efficient manner, which means having a sufficiently material pool of open interest to enable efficient offsetting of initial margin*"[817]. This is also the position of Chi-X Europe, which at the Oral Hearing contrasted derivatives markets to cash markets, stating that "*the existence of "stickier" liquidity and the importance of cross-margining and open interest in derivatives means that customers cannot quickly or easily shift liquidity between platforms.*"[818] AFME, the Association for Financial Markets in Europe, representing a significant number of customers of exchanges (such as brokers and banks), stated at the Oral Hearing that "*since derivatives positions are held for significantly longer than in cash equities, the cost of financing margin requirements is a far more material – in fact dominant, component of the all-in cost of trading*[819]".

(951) This is also reflected in DB's internal documents where it is stated that *"greenfield market entry for benchmark products is almost impossible"*[820] and by the statement of a customer of one of the Notifying Parties, who specified that "*only if the clearing arrangements are open (as with the OCC in the US or with some open licensing agreement to clear copyrighted indices) can a new exchange be credible when trying to challenge an incumbent*."[821]

(952) In the trading and clearing model operated by the Notifying Parties, it is the trading venue that creates a market for the trading of its own derivatives contracts[822] and controls the open interest in the contracts. The effect of owning the contract on the

816 Nasdaq OMX, response to question 54 of Q10 – Questionnaire to competitors on derivatives, Phase II [...]*.

817 LSE, response to question 26 and 46 of Q10 - Questionnaire to competitors on derivatives – Phase II [...]*.

818 "Chi-X Europe's Perspective", Speaking Notes at Oral Hearing of 28 October 2011, slide 8, [...]*.

819 AFME, written comments, Oral Hearing, 28 October 2011, [...]*.

820 See DB internal document provided in response to the Commission's RFI of 1 July 2011[…]*.

821 BNP Paribas Arbitrage, response to question 51 of Q1 – Questionnaire to customers [...]*.

822 This is in contrast to a cash exchange which serves as a venue for the trading of products offered by issuing companies. Since MiFID, securities can be admitted to trading on Regulated Markets/MTFs regardless of the venue on which they are listed.

likelihood of new entrants being successful is illustrated in DB's internal documents: *"At least with derivatives, the exchanges actually do own the contracts being traded and so it is much harder for newcomers to wrestle liquidity in these instruments away from the incumbents.*"[823]

(953) The fact that access to an incumbent's margin pool could facilitate entry of trading platforms is clearly demonstrated by DB's internal documents: *[…]**.[824]

(954) The difference between entry into those derivatives markets where there is the possibility for several platforms to access the same pool of open interest and those markets where a vertical silo model prevails is well illustrated by looking at US options and futures. For US options, the OCC operates a model where there is one common clearing pot, whereby the nine member exchanges are able to offset their open interest in that pot against all the correlated positions of the other member exchanges allowing for competition at the level of the exchanges. New entrants (including NYSE Liffe US[825]) have not only been able to enter but have been able to obtain significant market shares[826]. This clearing model does not apply to US futures. For US financial futures, it is observed that nearly all liquidity concentrates on a single exchange, CME. CME runs a closed vertical silo which does not allow for any offsetting of positions with other futures exchanges.

(955) In the markets affected by the notified transaction, namely European interest rate derivatives and European single stock derivatives, the vast majority of liquidity is established on the Notifying Parties' platforms and the corresponding open interest is held in the CCPs controlled by the Notifying Parties.

(956) The Notifying Parties' offering of trade registration, confirmation and clearing of block and flexible versions of European equity futures and options (as described in Sections 11.2.2 and 11.2.3) which are cleared in the same margin pool as ETDs traded on the order book further increases the size of the margin pools held by the Notifying Parties.

(957) The same can be said for the margin pools held by the Notifying Parties as concerns equity indices, where the Notifying Parties hold some of the most significant indices based on European underlyings. In this context, the Notifying Parties have in their Response to the SO argued that cross margining is relevant in "*only very limited circumstances*" and that in this area it is not a barrier to entry, offering the example of the ICE offering of the Russell 2000 equity index. The Commission notes, however, that the ICE example relates to an index on US and not European underlyings, as ICE has explicitly stated[827] and that, in any event, merely offering an index does not mean that barriers to entry are low. As discussed at Recitals (920) to (922) above relating to new equity index products, such barriers to entry due to the established market position

---

823 See DB internal document provided in response to the Commission's RFI of 1 July 2011[…]*.

824 See DB internal document provided in response to the Commission's RFI of 1 July 2011:"[…]*.

825 See NYSE website, available at http://www.nyse.com/press/1238667419972.html, viewed on 5 December 2011.

826 OCC, agreed minutes of a meeting of 1 September 2011 [...]*. Indeed, DB itself acknowledges the "intense competition in US options business", DB Internal Document, […]*.

827 ICE, response to questionnaire Q10 – Questionnaire to competitors – Phase II. ICE stated that "*ICE has no offerings in European equity indices",* [...]*.

and existing margin pool of highly correlated products of the Notifying Parties are in fact considerable[828].

(958) Additionally, the barrier to entry in single stock derivatives resulting from the pool of open interest and liquidity in index products – the "gravitational effect" referred to elsewhere by NYX[829] – is not only related to possible margin offsets but also to the desire of certain market participants to trade the index and some of the component underlying derivatives (as well as the index and the component cash equities) together.

(959) In this regard, Nasdaq OMX states that "*as the Commission rightly noted in the Statement of Objections, traders often implement trading strategies covering a number of single stock equity derivatives within one country. Traders of derivatives on single stocks listed in a given country, like mutual funds, will within their portfolio risk management strategy want to hedge the general market volatility risk associated with the relevant stocks by taking opposite positions in derivatives on an index that mirrors this market risk… The fund manager will want to trade the index derivative on the same exchange as the single stock derivatives to benefit from collateral savings through cross margining of correlated contracts…. A derivatives exchange unable to offer such highly liquid benchmark index derivatives will therefore not be appealing to traders, neither for the trading of index derivatives nor, as part of an overall portfolio risk management strategy, for the trading of single stock derivatives relating to the index derivative*"[830].

(960) The Notifying Parties' combined offering of both STIR and LTIR products on European underlyings that would result from the transaction, would also lead to a increase in the margin pool of closely correlated assets on which unrivalled cross-margining opportunities could be offered.

(961) Therefore the Notifying Parties could offer cross-margining for new contracts with correlated contracts in which open interest already exists, whereas new entrants (or those with open interest in less correlated contracts, such as commodities or US interest rate derivatives) would not have such possibilities.

(962) In this respect, the London Stock Exchange states that: "*Currently, a new entrant has to contend with two split pools of open interest and the chances of it getting some comparable scale are therefore marginally better than if a new entrant were faced with one monolithic open interest pool, at which point these chances would be eradicated - there would be no incentive for trading participants to use the new entrant's pool when they already have all their open interest in one single venue"*.[831]

(963) Finally, in their submission of 1 December 2011 in the context of the remedies offered, the Notifying Parties argue that the example of the Battle of the Bund used by the Commission in the SO does not support the Commission's argument in relation to the importance of the margin pool to competition. However, this comparison is inappropriate, since the Commission is not required to show that this barrier to entry

828 On correlation between index products generally see also Recital (1371) of this Decision.

829 See, for example, Recital (829) of this Decision.

830 Nasdaq OMX, Comments on the SO at pages 8 and 9 and comments at the Oral Hearing, 28 October 2011, [...]*.

831 LSE Response to question 55 of Q10 – Questionnaire to Competitors, Phase II [...]*.

was decisive at all points in the past, even under very different market circumstances, but rather to assess those barriers to entry which currently exist and can reasonably be predicted to continue to exist within the timeframe of the Commission's assessment[832].

(964) Therefore, it is concluded that the markets concerned by the notified transaction, namely European interest rate and equity derivatives, are characterised by high barriers to entry in that the netting and cross-margining benefits available to incumbent and closed clearing margin pools, give incumbent firms considerable advantages over rival trading platforms.

11.2.1.7.1.3. Certain popular derivatives contracts are protected by IP rights: case of equity index derivatives

(965) The Notifying Parties explain in the Form CO that indices are proprietary, trademarked products, most of which are generally licensed by their owners to only a single derivatives exchange.[833]

(966) As already indicated in Section 8.1.2 on the index licensing market above, the most important equity index derivatives offered by Eurex are based on the EURO STOXX 50 and DAX indices.[834] Eurex has licensed trademarks for the EURO STOXX 50 from its affiliate STOXX and for DAX indices from DB. The most important equity index derivatives offered by Liffe are based on the CAC 40 and AEX, as well as the FTSE 100 for Liffe[835]. Liffe holds trademarks in the AEX, BEL 20, CAC 40, and PSI 20 indices and Liffe is a non-exclusive licensee of the trademarks to the FTSE 100 and other FTSE indices (which are licensed from FTSE, which is owned by the LSE and the Financial Times).

(967) The possibilities for entry in equity index derivatives appear to be hindered by intellectual property (IP) rights in addition to the general barriers to entry linked to access to open interest described above and that are applicable to interest rate, single stock equity derivatives and equity index derivatives. The Notifying Parties explained in their response to the decision opening the proceedings[836], that although the notified transaction will bring these indices under common ownership, it will not have any effect on the pre-existing situation in respect of either Party's incentives to license its indices, as neither Party today has an incentive to license its indices to other exchanges.

(968) Equity index derivatives are among the most traded derivatives products in Europe. In particular, Eurostoxx 50 derivatives are the most popular and liquid contracts in Europe. 77% of Equity index options and 85% of Equity index futures traded at Eurex are based on the Eurostoxx 50 index.

(969) Internal documents show that […]*% of Eurex sales revenue is from European index trading.[837] These data are consistent with the market perception of the importance of

832 Horizontal Merger Guidelines, paragraph 9.
833 Form CO, Derivatives, paragraph 7.53.
834 Form CO, Derivatives, paragraph 7.53.
835 Form CO, Derivatives, paragraph 7.53.
836 Notifying Parties' response to the decision opening proceedings, paragraph 48.
837 DB Internal document, .[…]*.

these indices: described by the customer association AFME as "*the market standard*"[838], whilst according to LSE, the Eurostoxx 50 "*contracts are one of the most liquid European index derivatives, alone accounting for approximately 60% of all exchange-traded index contracts*"[839].

(970) Given their popularity and the correlation with European single stock derivatives as well as the desire on the part of customers to trade these products together, the inability to obtain a licence to list derivatives on these benchmark indices may also make it uneconomical to attempt entry into the neighbouring single stock derivatives markets.

(971) This is illustrated by BATS, which specifies that: "*Being able to trade a contract that was fully fungible with existing open interest at a clearing level, costs the same to clear as a Eurex or Liffe trade and was not exposing our trading platform or our customers to any IP risk would create an opportunity where trading activity could be initiated on rival platforms. This trading activity would attract a wider range of market participants which in turn may allow that platform to launch new products"*.[840]

(972) In the same vein, TOM states that *"Financial instruments based on an index or indices have become very popular in the market in the aftermath of the financial crisis in 2008. These products are expected to stay very liquid in the coming time. Consequently, the offering of indices products are material to the success and chances of success of any new entrant including TOM. Therefore, it is of utmost importance, that new market operators are not unfairly blocked from trading derivatives products based on indices of its own markets and relating to other markets. This would stifle the competition between exchanges and be detrimental to further product innovation and to achieving the MiFID goals of an integrated market by encouraging more competition between exchanges and in the end better investor protection as it is detrimental to the interests of investors and ensuring best execution."*[841]

(973) This is in line with the entry undertaken by Eurex itself into the single equity space in particular with French, Dutch and UK single equities, amply documented above in Section 11.2.1.5., where Eurex entered first with the single equities underlying its Eurostoxx 50 product and later expanded to the full Eurostoxx 600.

(974) In their response to the decision opening the proceedings, the Notifying Parties submit that all the benchmark index contracts can in any event be economically replicated with look-alike products, so any prospective entrant which can offer a unique value proposition is today in a position to win liquidity. In this respect, BATS, however, stated that "*It is likely that NYSE Euronext / Deutsche Börse would challenge the IP on a lookalike product*"[842].

(975) In the same vein, Nasdaq OMX highlighted that *"The launch of derivatives on an identical replication of an index without a license would raise IPR issues. Derivatives on a similar new index are unlikely to attract significant liquidity. Derivatives on a*

838 AFME, written comments, at Oral Hearing,paragraph 27, [...]*.
839 LSE, response to question 14 of Q3 – Questionnaire to competitors [...]*.
840 BATS, response to question 76 of Q10 – Questionnaire to competitors, Phase II [...]*.
841 TOM, response to question 76 of Q10 – Questionnaire to competitors, Phase II [...]*.
842 BATS, response to question 157 of Q3 – Questionnaire to competitors, Phase I [...]*.

look-alike index that does not have the same design/construction as the established index are not substitutable with derivatives on the established index from the demand side point of view. For this reason customers will be even more unwilling to shift liquidity away from the incumbent than they already would be because of the open interest issue if the competing exchange offered a product that is identical with the contract traded on the incumbent"[843].

(976) Moreover, even when a license can be obtained, as has been possible for Turquoise to the FTSE 100 index which is the only index of those traded by the Notifying Parties in which they do not own or control the IP, as explained below this is not necessarily sufficient to attract significant liquidity onto the alternative platform: fungibility and/or at least margin offset may be required.

(977) On the basis of the above, the Commission considers that barriers to entry in European equity index derivatives are particularly high because the popular equity indices are IP protected and, with the exception of the FTSE, the IP is controlled by the Notifying Parties who have made clear they have no incentive to, and would not, license these indices to competing exchanges. Any replication of indices would be difficult and susceptible to be legally challenged. Given the popularity and the correlation with European single stock derivatives and desire of customers to trade these together, the inability to obtain a licence to list derivatives on these benchmark indices may also deter entry into these neighbouring markets.

11.2.1.7.1.4. Membership base

(978) In addition to the two main barriers described above, another significant barrier to enter the markets for European equity and interest rate derivatives is the need to build up an installed base of users acting as a "distribution network" of the Notifying Parties products to end investors, which in the case of these markets is the venues' membership base. Both Notifying Parties have a large membership base consisting of customers who trade European equity and interest rate derivatives. These members have – and need to have – a connection in place with the Notifying Parties and have incurred the necessary sunk and ongoing costs to do so. Therefore new contracts added on the platform directly reach all members of the exchange.

(979) The Notifying Parties in their Response to the SO contest that membership bases are a relevant barrier to entry, in particular referring to "*two recent major races for attracting liquidity in new products (credit default swaps and carbon emissions) that were won*" by platforms other than Liffe or Eurex[844]. In that same paragraph of their response to the SO, they also allege that it would be straightforward and easy to join another exchange and that the Commission has ignored the "*success that exchanges such as ELX or NYSE Liffe U.S., which started from scratch have had in the U.S*".

(980) The Notifying Parties fail to address, however, the fact that new entrants would need to spend time and make significant investments to build up an effective distribution base via a critical mass of membership and that these customers would need to incur sunk

843 Nasdaq OMX, response to question 79 of Q10 – Questionnaire to competitors, Phase II: [...]*.

844 Notifying Parties' response to the SO, Equity Index Derivatives, paragraph 103.

costs associated with developing and setting up connectivity with the new entrant's platform without any guarantee at all that the new venue will be successful, a situation which is in marked contrast to that of ELX and NYSE Liffe US which clear through the OCC and FICC, open access utilities.

(981) Indeed these costs have been considered as a relevant barrier for new entrants by a number of players during the market investigation. For example, one respondent notes that "*there are no other participants with anything like the existing customer distribution, (technology and network distribution, customer lists, trading agreements), which means that any new players would be playing catch-up for many years.*"[845] By way of comparison, it should be noted that Liffe has more than […]* members[846], whilst TOM has a handful of […]* members and that according to public information, Turquoise has only 39 members.[847]

(982) These elements also apply to platforms active in other asset classes as such platforms would also need to first build up a relevant membership base (customers who trade commodities derivatives, for example, are usually not the same customers as those trading equity and interest rate derivatives).

(983) On the basis of the above, the Commission considers that membership base and associated distribution network constitutes a barrier to entry into European derivatives markets, especially for *de novo* players.

11.2.1.7.2. Historical attempts at entry into European exchange traded equity and interest rate futures and options

(984) The Notifying Parties have argued throughout the procedure that derivatives markets are dynamic and that successful cash MTFs such as BATS, Chi-X Europe and Turquoise as well as the alternative trading operator TOM are likely entrants in derivatives markets and that sophisticated customers enjoying buyer power could also sponsor such entry.[848] However, entry into European equity and interest rates futures and options is difficult as entrants face the inherent competitive disadvantage vis-à-vis incumbents which derives mainly from the absence of access to open interest held by the Notifying Parties in correlated contracts and to the margin pool of the incumbents, as analysed in detail above in Section 11.2.1.7.1.2. Indeed the Notifying Parties have failed to point to any historical instances in the interest rate, single equity and equity indices market where successful or even significant entry has taken place.

11.2.1.7.2.1. Customer-sponsored entry – project Rainbow

(985) Throughout the procedure, the Notifying Parties have claimed that their largest derivatives customers (major banks and large trading firms) exercise strong buyer

845 ICAP, reply to question 31 of Q8 – Questionnaire to Customers, Phase II [...]*.

846 This relates to the full list of members and includes instances where there are several entities from the same group.

847 See Turquoise website, available at http://www.tradeturquoise.com/tq_members.shtml, last viewed on 25 January 2011.

848 Form CO, Derivatives, section 7.

power by virtue of the very real prospect that they will sponsor the entry of new competitors[849]. In this regard, the Notifying Parties state that "*because they control the vast majority of the liquidity in the derivatives marketplace, these banks are in a position to guarantee liquidity to MTFs and have an incentive to route transactions through MTFs and, in the future, OTFs, in which they have a financial interest*".[850] The Notifying Parties argue that such sponsored new entrants could be existing derivatives trading venues, which can be helped to list new product categories, or simply *de novo* entrants (either owned by the Notifying Parties' customers or receiving assurances of trading volumes from the Notifying Parties' customers).

(986) In their Response to the SO, the Notifying Parties[851] offer the example of the recent selection of "*an organized venue to trade and clear CDS*" as exemplifying the "*banks' ability to direct liquidity to their own sponsored platforms… after ICE agreed to give dealers an equity stake and a share of clearing revenues*".

(987) Once again, the Commission notes that this refers to an example of introduction of a completely new product in the OTC space with little relevant correlation with the existing products of the Notifying Parties and therefore with no prior liquidity or cross margining possibilities, that is a situation where all players started from a level playing field. This example can therefore be clearly rejected for the purposes of this analysis as it refers to "Type III" innovation or greenfield entry as defined in Section 11.2.1.2.5 above.

(988) The example of a failed venture a few years ago, the so-called Project Rainbow, is more relevant in the current context. It shows that without the ability to offset margins with contracts traded on the incumbent derivatives exchanges, entry is unlikely to be successful. That is, the same barriers to entry apply irrespective of the nature of the new entrant and past attempts at sponsored entry show that entering derivatives markets is subject to substantial hurdles mainly relating to access to a margin pool of correlated contracts.

(989) In 2007, a consortium of banks and derivatives trading firms undertook a venture to launch a new trading platform for financial futures. Project Rainbow participants approached LCH.Clearnet with a proposal to clear contracts traded on the platform that would be fungible and would therefore be offset against the open interest in similar Liffe contracts, which were already being cleared by LCH.Clearnet. Liffe entered into negotiations with LCH.Clearnet following which LCH.Clearnet decided to reject Project Rainbow's proposal. Subsequently, in October 2008, LCH and Liffe announced the creation of LiffeClear with an exclusive ring-fenced pool of open interest available only to LiffeClear. The view from market participants was that faced with a resulting inability to offer fungible contracts and gain access to LiffeClear's open interest, Project Rainbow failed and was subsequently wound down in 2008.[852] [853]

---

849 Form CO, Derivatives, section 7.7.

850 Notifying Parties' response to the SO, Introduction, paragraph 22.

851 Notifying Parties' response to the SO, Introduction, paragraph 22.

852 [...]*.

853 Agreed minutes of a teleconference call with Chi-X Europe of 18 August 2011, paragraph 13 [...]*.

(990) In their response to the decision opening the proceedings, the Notifying Parties claim that the establishment of LiffeClear in 2009 was not connected to the announcement of Project Rainbow in 2007, and that LiffeClear was not formed to frustrate competition from Project Rainbow. Regardless of the reasons for the creation of LiffeClear, the failure of Project Rainbow was linked to the clearing arrangements which prevented netting and cross-margining positions in equivalent contracts traded on different exchanges. As explained by [one large customer]*: "*Project Rainbow aimed to create an efficient platform on which to trade futures and options that will compete directly with incumbent F&O exchanges which have a monopoly in their product sets, and offer significantly lower transaction fees. In the first phase the products launched were intended to compete with LIFFE (predominantly STIR products), with future phases planned for products to compete with EUREX and ICE Major impediment to the project was clearing - the arrangements between Liffe and LCH, and the in-house clearing arrangements of ICE / Eurex, prevented clients netting and cross-margining their positions in equivalent contracts traded on different exchanges.*"[854] Similarly, Chi-X Europe explained that the main reason the Rainbow consortium did not succeed despite 18 months of development was the lack of fungibility in clearing.[855]

(991) In their response to the SO, the Notifying Parties do not address the Commission's analysis of Project Rainbow in the SO.

(992) Responses from the Notifying Parties' customers have further emphasised that ultimately, the failure of any such customer-sponsored initiatives was due to exclusive links between exchanges and their clearing-houses. For instance, the Kyte Group stated *"We have been approached by other exchanges who were seeking support for new lookalike products and a few years ago we were approached by an MTF ("Altex") that wanted to compete directly with Liffe but they failed to succeed because of the exclusive nature of the clearing house arrangements with the exchange".*[856]

(993) On the basis of the above, the Commission considers that without access to a margin pool of correlated contracts it is very unlikely that a new entrant, even one in which exchange customers participate or sponsor, could successfully enter derivatives trading in products which the merging parties hold the vast majority, if not all, of the liquidity and open interest.

11.2.1.7.2.2. Entry by cash MTFs (example of Turquoise Derivatives)

(994) The difficulties associated with entering derivatives markets are well illustrated by the recent attempted entry by LSE through its Turquoise Derivatives platform. Having been refused a licence to Eurostoxx by Stoxx Ltd, a member of the DB group (see above), Turquoise Derivatives entered the market in June 2011 with a FTSE 100 futures contract, an equivalent of which is also traded on Liffe.[857] Turquoise Derivatives uses LCH.Clearnet as its clearing services provider for derivatives traded on its platform.

854 [...]*, response to question 66 of Q8 – questionnaire to customers, Phase II, [...]*.
855 Chi-X Europe, agreed minutes of a teleconference call of 18 August 2011 [...]*.
856 Kyte Group Limited, response to question 65 of Q8 – questionnaire to customers, Phase II, [...]*.
857 LSE, response to question 60 of Q3 – Questionnaire to competitors [...]*.

(995) In theory, Turquoise's product should appear to be attractive to customers since it uses the latest generation trading system SOLA, combines cash and derivatives trading and offers a significantly lower per transaction headline trading and clearing fee compared to that charged by Liffe.[858] With the aim of rendering itself more attractive to customers, Turquoise requested from Liffe margin offset with FTSE 100 contracts and other correlated contracts cleared by and traded on Liffe.[859] However, Liffe refused the Turquoise request for both fungibility and initial margin offsets.[860]

(996) As a result, Turquoise appears to be facing significant problems in building up liquidity on its platform, with only approximately a total of only 3,800 contracts having been traded since June 2011 to November 2011[861] (as compared to more than 32.5 million contracts in 2011 (up to 31st October) for Liffe[862]).

(997) In the SO, the Commission set out that the reasons for this very limited liquidity on the Turquoise platform was due to the reluctance of potential customers to switch to Turquoise's platform motivated by the lack of possibility to offset positions traded on Turquoise with their open positions in the FTSE 100 derivatives traded through Liffe's incumbent platform[863].

(998) The Notifying Parties argued in their response to the decision opening the proceedings that "*it is always easy for a potential competitor to claim that access to the margin pool of an incumbent is a prerequisite for successful competition*". They argued that this "*is usually a smokescreen for the fact that the new entrant does not have a convincing value proposition for customers"*. In the specific case of Turquoise, the Notifying Parties argue that the reason for not attracting liquidity is not because it lacks access to Liffe's open interest, but rather because it is offering a 'me too' product[864]. The Notifying Parties also contend in their Response to the SO that the Commission has relied only on statements of LSE (the owner of Turquoise) and that the market investigation does not support the Commission's findings. They cite only one customer, [...]*, in that the lower fees charged are "*not sufficient to compensate for the poor liquidity…*" as evidence that the only barrier is liquidity and that a "copy cat" product cannot be successful given that it would lead to split liquidity.

(999) In fact, a number of customers consulted during the market investigation noted that the contracts offered by Turquoise and Liffe provide for identical economic exposure and specified that the fees charged by Turquoise are significantly lower than those charged by Liffe. Indeed, according to AFME "*its product is 66% cheaper across headline trading and clearing fees up to 100 lots*"[865]. Nevertheless, Turquoise is not considered as an alternative due to the inability to obtain margin offsets with trades on other platforms. For instance, the customer cited by the Notifying Parties themselves, [one large customer]* stated "*Contracts are the same but not fungible, therefore introducing*

858 LSE, response to question 60 of Q3 – Questionnaire to competitors [...]*.
859 LSE, response to question 14 of Q3 – Questionnaire to competitors [...]*.
860 Letter from NYSE to Turquoise dated Friday 8 April 2011.
861 See Turquoise website, available at http://www.tradeturquoise.com/doclibrary/derivatives_stats_ytd.pdf, viewed on 03 December 2011.
862 See Euronext website, available at http://www.euronext.com/fic/000/067/598/675986.xls.
863 See SO, paragraph 435.
864 Notifying Parties' response to the decision opening proceedings, paragraph 41.
865 AFME, written comments, at Oral Hearing, 28 October 2011, paragraph 24, [...]*.

basis risk. We would give serious consideration to trading on Turquoise if the contracts were to become fungible. Fees are less on Turquoise but the saving is not sufficient to compensate for the poor liquidity, basis risk and margining inefficiency"[866].

(1000) This clearly shows the difficulties that a player without an open interest where it can benefit from significant cross margining possibilities has to be able to overcome in order to become an effective competitor. In this context, AFME has also stated that "*the headline clearing or margining costs on Liffe do not reflect the margin benefits available to market participants with positions already open in the product on Liffe… and so the limited volumes in Turquoise products do not enable clients to reliably to achieve any material margin offsets*"[867].

(1001) Furthermore, the low likelihood of Turquoise successfully entering the market is also reflected in NYX's internal documents:*[…]**[868] *[…]**.[869]

(1002) Another example of recent entry, by TOM into the Dutch equity derivatives market, has been discussed in Section 11.2.1.5.3.3 above.

(1003) In addition to barriers related to clearing and index licensing, the Notifying Parties themselves discuss in internal documents the difficulty for MTFs to enter successfully the derivatives space with new products. *"For [the MTFs] to be successful in [new] derivative products requires heavy investments in research, product development and marketing - functions they have not focused on historically"*.[870]

(1004) On the basis of the above, the Commission considers that new entrants such as MTFs wishing to establish themselves in the derivatives space face very significant barriers to entry which would lead to a low likelihood of entry, in insufficient scope and would not occur in a timely and sustained manner.

11.2.1.7.3. The prospect of sufficient and timely post-merger entry is unlikely

(1005) Barriers to enter the markets for exchange-traded European equity and interest rate derivatives are already very high today. These high barriers mean that entry is not only difficult as demonstrated by various failed attempts, but to the extent that it were to occur, any entrant would be unlikely to gain traction and sufficient liquidity in these instruments within a reasonable timeframe. As a result, it is unlikely that any entry would give rise to a player having the ability to sufficiently constrain the merged entity and discipline its market behaviour.[871] Indeed, these high barriers to entry, illustrated by

---

866 [...]*, question 69 of Q8 - Questionnaire to customers, Phase II [...]*.

867 AFME, written comments, at Oral Hearing, 28 October 2011paragraph 24, [...]*.

868 The counter referred to can be found in NYX internal document: Memo with date April 14, 2011 to […]* from […]* with title Re: FTSE 100 Index Futures - Turquoise response, Reference ENX - 00021 – 00001 and can be summarised as follows: […]*.

869 NYX internal document: Memo with date April 14, 2011 to […]* from […]* with title Re: FTSE 100 Index Futures - Turquoise response, Reference ENX - 00021 - 00001. A similar internal document regarding the same Turquoise action states that "[…]* (NYX internal document from April 2011: Memo on FTSE 100 index futures - Turquoise Response ENX – 00262).

870 See DB internal document provided in response to the Commission's RFI of 1 July 2011 […]*.

871 Respondents have also pointed to the fact that barriers to entry may increase as a result of the merger. In this respect, the London Stock Exchange states that: "*Currently, a new entrant has to contend with two*

a number of failed attempts, make it all the more likely that the competitive harm resulting from the notified transaction would materialise post-merger.

(1006) Given that the barriers to enter in these markets are exogenous, this analysis remains valid even if the merged entity were to attempt to exercise market power. Indeed, it is unlikely that any such attempt would incentivize new entrants to enter or increase their chances for success. If anything, such entry will become more difficult post-merger as the new entrant would have to face even larger margin pool of the merged entity.Therefore, the Commission considers it unlikely that sufficient and timely entry would take place post-merger to mitigate the anti-competitive effects of the notified transaction.

11.2.1.7.4. Conclusion

(1007) As demonstrated in this section, barriers to entry into European financial derivatives markets and the markets for European interest rate and equity derivatives are extremely high and have been historically difficult to overcome. This is evidenced by failed attempt at entry in the past and the duopolistic market structure where Eurex and Liffe are the only credible competitors.

(1008) It follows that it is unlikely that the anticompetitive effects stemming from the proposed transaction could be counteracted by a timely and sufficient entry post-merger.

11.2.1.8. THE MERGING PARTIES' CUSTOMERS HAVE NO COUNTERVAILING BUYER POWER AND NO POSSIBILITIES OF SWITCHING SUPPLIERS

(1009) In their response to the decision opening the proceedings, the Notifying Parties claimed that their biggest customers enjoy significant buyer power which would discipline the merged entity's behaviour post-merger.[872] In their response to the SO, the Notifying Parties claimed, citing an ISDA report, that the vast majority of derivatives are held by 14 dealers. According to the Notifying Parties, these dealers are major banks and "*make far larger profits in OTC trading than they make serving as brokers for exchange trades, so they have a strong incentive to route their customers' transactions to their own platforms, as well as to conduct their own substantial OTC derivatives trading on their own platforms*"[873].

---

split pools of open interest and the chances of it getting some comparable scale are therefore marginally better than if a new entrant were faced with one monolithic open interest pool, at which point these chances would be eradicated - there would be no incentive for trading participants to use the new entrant's pool when they already have all their open interest in one single venue": LSE Response to question 55, Q10 – Questionnaire to Competitors, Phase II [...]*. BATS also claims that "*the merger is likely to increase the barriers to entry as the merged entity will have no incentive to provide access to clearing, as it will control approximately 90% of the ETD margin pool in Europe and thus will be shielded from competition and would control how and at which speed entry may occur. As providing access would allow for such competition, the merged entity would have no interest to grant such access*": BATS, agreed minutes of meeting on 26 August 2011 [...]*.

872 Form CO, Derivatives, paragraph 7.7.

873 Notifying Parties' response to the SO, Introduction, paragraph 20.

(1010) The Notifying Parties then claimed that these major banks/OTC derivatives dealers "*often own or back the MTFs that compete with the Parties' exchanges"* and that because *"they control the vast majority of the liquidity in the derivatives marketplace, these banks are in a position to guarantee liquidity to MTFs and have an incentive to route transactions through MTFs and, in the future, OTFs, in which they have a financial interest*". The position of the Notifying Parties is, as set out in Section 11.1.1.2.2.1.6(b) above, that these banks/dealers have the possibility to control the order flow and the liquidity thus acting as gatekeepers. Indeed, according to the Notifying Parties, their "*main customers – the major global banks – exercise tremendous power over the exchanges*"[874].

(1011) According to the Horizontal Merger Guidelines[875]: "*countervailing buyer power in this context should be understood as the bargaining strength that the buyer has vis-à-vis the seller in commercial negotiations due to its size, its commercial significance to the seller and its ability to switch to alternative suppliers.*"

(1012) As regards the Notifying Parties' claims: first, the cited ISDA report to which the Notifying Parties allude (see Recital (1009)), but which they do not name, is in fact entitled "*Concentration of OTC Derivatives among Major Dealers*" (Commission emphasis). The report therefore neither includes nor refers to ETDs. The Notifying Parties have not provided any supporting evidence for their claims as regards derivatives on exchange.

(1013) Second, as outlined above in the Section on market definition (see Recitals (375) et seq.), there are significant limits to the manner in which broker-dealers may choose how to route orders from their customers, as even in those instances where alternative routes are possible (between OTC and on exchange), this option is rarely left by clients to brokers. As explained, once exchanges have succeeded in gaining liquidity, no dealer would consider it beneficial to move all of its business OTC, where no such benefits could accrue. Indeed, as stated by NYX at the Oral Hearing: "*they go where the best liquidity is*", which is in any event also normally required either under binding "best execution" obligations or bilateral agreements which customers may have with brokers.[876]

(1014) Third, for European interest rate and equity derivatives, the Notifying Parties' customers are not simultaneously their competitors, nor the owners of their competitors, as the Notifying Parties claim. As explained in detail in the previous Recital and in Section 11.1.1.2.2.1.7 above, those market participants operate in a different space than regulated exchanges as they either generally focus on OTC trades that cannot be executed on exchanges' order books as they are either of large size or not standardised enough to be eligible for exchange trading or simply pass trades onto exchanges on customers' behalf. As regards the MTFs to which the Notifying Parties refer, these are in all instances active only in cash markets and have not penetrated the derivatives space in which the Notifying Parties are active to any significant or relevant extent - which is explained by the high barriers to entry and expansion amply demonstrated in Section 11.2.1.7 above.

---

874 See footnote 308 of this Decision.

875 Horizontal Merger Guidelines, paragraph 64.

876 […]*, See recording of Oral Hearing, 27 October 2011, afternoon session, at 03:02:20.

(1015) Fourth, the market investigation has not substantiated any of the Notifying Parties' claims relating to countervailing buyer power. Indeed, not buyer power but rather [...]*, who therefore made their observations known anonymously via AFME "*out of concern to avoid damaging the commercial relationships of individual members which are dependent on the parties for their day to day business*"[877]. This tends to indicate the opposite of customers who can dictate terms and conditions to the Notifying Parties.

(1016) Fifth, the Notifying Parties do not seem to claim that individually a particular dealer could take its business elsewhere and thereby exercise countervailing power, but rather that this would be done collectively. Underlying this statement is that this would be the only way for the dealers to be able to continue to benefit from a substantial open interest and related cross-margining benefits. No attempt to substantiate this claim of collective action has however been made by the Notifying Parties during the procedure. Such collective action would have to involve a very substantial number of players as the top 20 represent less than […]*% of Liffe and Eurex volumes[878]. Such coordination to move open interest would entail a complex set of agreements which would be difficult to execute in practice, not least given the number of players involved (between the CCPs, between the members that hold open interest, requirements of best execution, difficulty of ensuring compliance with such an agreement, and potential antitrust considerations). The Notifying Parties have not offered any examples of prior occasions where such open interest has been shifted *en masse* by coordinated action.

(1017) To the extent that customers might be able to coordinate in order to switch liquidity to a competing existing venue, which as outlined in Section 11.2.1.7.2 above appears difficult, the most likely and indeed only plausible alternative venue to trade the contracts in question, due to the size and composition of its margin pool, is the other Notifying Party, an option which would disappear as a result of the merger[879].

(1018) Further, no such entry has taken place or has been successful to date as outlined Section 11.2.1.7.2. The only notable example was the Project Rainbow attempt, explained in the Section 11.2.1.7.2.1. It did not succeed due to open interest and cross margining issues. Goldman Sachs explains the difficulties in this type of initiative: "*these initiatives have so far failed to attract meaningful liquidity despite lower fees. This is because buyers want to be where sellers are and vice versa and market participants benefit from netting efficiencies if their contracts reside with a single counterparty*"[880].

(1019) Indeed, the only examples of successful sponsored entry provided by the Notifying Parties are in markets outside those concerned by this Decision, namely markets in which the Notifying Parties do not meaningfully operate. These markets – such as US options – differ in terms of their economic structure from the markets concerned by this

877 AFME, observations at the Oral Hearing, 28 October 2011, paragraph 5 , [...]*.

878 Commission analysis based on data provided by the Notifying Parties, see Recital (1257) et seq.

879 According to the Horizontal Merger Guidelines, paragraph 31, customers are particularly vulnerable to price increases where there are reduced possibilities of switching, and in such cases, a merger may affect these customers' ability to protect themselves against increases in prices. The proposed transaction would significantly reduce customers' ability to switch to another supplier, since it would reduce the number of suppliers effectively to one.

880 Agreed minutes of a teleconference call with Goldman Sachs of 19 September 2011, [...]*.

Decision. The other example offered relates to ICE and concerned CDS. As outlined in Sections 11.2.1.2.5 and 11.2.1.3.3 and Recital (938) above, this did not entail the shifting of any open interest as this was a completely new product in the ETD space.

(1020) The argument made by the Notifying Parties according to which discounts to liquidity providers and market makers is also evidence of buyer power has not been substantiated. Price differentiation in favour of, for example, high frequency traders does not in itself demonstrate buyer power but can rather reflect economically rational pricing behaviour given the associated benefits that exchanges derive from the customers in question.

(1021) It follows that the market power of the merged entity would not be constrained to any significant extent by buyer power on the part of its customers.

11.2.1.9. CONCLUSIONS ON COMPETITION BETWEEN THE NOTIFYING PARTIES IN TRADING AND CLEARING OF EXCHANGE TRADED DERIVATIVES

(1022) Therefore, on the basis of the above analysis, and in view of the absence of countervailing factors, it is concluded for the purpose of this Decision that the notified transaction is likely to lead to a significant impediment to effective competition by eliminating the closest actual and potential competitor and creating a dominant or near monopoly position in the following markets, and this irrespective of the precise geographic market definition and for all categories of customers:

a. The market for trading and clearing of existing and new European exchange-traded interest rate futures and options, and this independently of whether or not this market were to be divided between short and long term interest rate derivatives and/or on the basis of the currency of the underlying; and

b. The market for trading and clearing of existing and new European exchange-traded single stock futures and options, and this independently of whether or not this market were to be defined at the basis of single underlyings, all underlyings of a given nationality, or all EEA underlyings.

(1023) In addition, the notified transaction would lead to a significant impediment of effective competition in the area of new exchange-traded European equity index futures and options by eliminating the closest competitor.

(1024) Given that it is unlikely that a timely entry would occur and sufficiently constrain the merged entity in its market behaviour, and in the absence of countervailing buyer power, the Notifying Parties' customers would likely face higher fees, less product innovation and would *de facto* have no choice of trading platform for these products.

11.2.2. Off-order book services – registration, confirmation and CCP clearing of block size ETD contracts

11.2.2.1. INTRODUCTION

(1025) As indicated in Section 11.1.2 on market definition above, the Notifying Parties both provide off-order book services for essentially the same set of instruments as they allow to be traded on the order book[881]. In addition, as mentioned and as further explained in Recitals (1045) *et seq.* below, it is possible to register and clear block size trades on Liffe in Eurex lookalike ETDs which are not offered on Liffe's order book.

(1026) The off-order book service essentially comprises the same services as on-order book trading, less the trading layer, since trades entered into a block trade entry service are prearranged OTC. Nonetheless, once entered into the block service, these trades become fully fungible with their order book equivalent and may also be netted against trades on the order book. Such trades, even if they are agreed OTC, are usually referred to as trades "on exchange", by which it is meant that all parameters of the trade correspond to those of trades carried out on the order book of the exchange.

(1027) The arguments presented in relation to on-order book trading in Section 11.2.1 above relating to both actual and potential competition therefore equally apply to off-order book services as well, since the contracts concerned are identical. Indeed, the Notifying Parties have not always been able to distinguish, even for their own activities, between volumes traded on- and off-order book[882] and, for reasons of simplicity in the presentation, instances where competition occurs partly or wholly off order book have been included in Sections 11.2.1.4 and 11.2.1.5 above. […]*[883]. There are nonetheless certain specificities of off-order book services which need to be addressed in this Section.

11.2.2.2. DEMAND FOR OFF-ORDER BOOK SERVICES

(1028) As outlined in Section 11.1.1.2.2.1.3 above on market definition, the role of OTC as an alternative to the exchange (so-called "lookalikes") is very constrained – it is only an alternative for certain large players, for certain contracts, and for certain trading needs, which cumulatively are uncommon and usually in this case dictate the choice of OTC regardless of the exchange offering. Even where a trade in an exchange contract is agreed away from the exchange, the market investigation has shown that it is almost always brought into the exchange environment using the exchange's off-order book facility, at least if a liquid order book in the instrument exists. This is because doing so offers numerous advantages and very few disadvantages under the vast majority of circumstances.

(1029) The following quotes are typical in this regard:

---

881 Block size trading may, however, not be offered for certain instruments. This usually concerns only certain assets with very limited turnover on the order book, as for example certain commodity futures.

882 Form CO, Derivatives, paragraph 6.289.

883 Form CO, Derivatives, paragraph 6.289.

(1030) Chi-X Europe states that: "*Exchanges offer 'Wholesale Trading Facilities' to support the needs and preferences of their members to get their OTC trades executed under specific conditions e.g. in large size, in look-alike contracts, into clearing. As such it is rare for firms to trade OTC what they can trade on exchange when there is depth and tightness of price. Indeed, exchange members' customers have a clear preference for transacting on-exchange rather than OTC whether it be to e.g. meet fund related rules and regulations, secure central pricing, participate in a multi-lateral market or avoid duplication of positions*"[884].

(1031) Nasdaq OMX states that: "*Compared to OTC trading, off-order book trading reduces counterparty risk (because all contracts benefit from central counterparty clearing) and furthermore reduces operational risk inherent in back-office administration of OTC transactions, e.g. manual paper-based processes. Processing trades off-order book in an exchange environment also offers customers more flexibility than OTC trading. For example, customers are not bound to close out a position via the broker the customer opened it with. Furthermore customers like hedge funds can better meet the operational challenges of speedy reporting of net asset value to their investors if they trade off-order book instead OTC. Moreover customers can be sure that a trade off-order book will not fail, as may be the case in the OTC market where it is only possible to trade if another party is available that is willing to enter into a contract at the conditions envisaged. In sum, customers seeking the privacy and flexibility of the OTC market without the operational and counterparty risks associated with OTC trading will prefer off-order book trading to OTC trading, in particular if the price is competitive.*"[885]

(1032) ICAP states that there is "*little purpose in executing an OTC derivative unless a tailor-made solution is required*"[886].

(1033) FOA notes that: "*This kind of substitutability [between ETDs and OTC lookalikes] is not just economic but risk-dependent and the risk profile will vary significantly between exchange-traded and an OTC "lookalike" contract. In addition, exchanges have intellectual property in the contract design of their listed contract which means that "lookalike" OTC derivatives could be challenged. Risk management or trading needs of individual customers may mean that the only option is to use a "lookalike" OTC contract for a period of time … [after which] the customer will switch from the OTC exposure to the traded exposure. Another element may be that an OTC counterparty may accept collateral that may not otherwise be eligible for acceptability by CCP*." [887]

(1034) [One large customer]* states that the circumstances under which it would trade an OTC lookalike are "*limited – we would normally trade a contract of this type on exchange*". "*In Europe, lookalikes will exist, but they are not widely traded*"[888].

(1035) [...]* [889]

---

884 Chi-X Europe, response to question 8 of Q3 – Questionnaire to Competitors [...]*.

885 Reply to question 13 of Q10 – Questionnaire to competitors, Phase II [...]*.

886 ICAP, Observations on the SO submitted pursuant to article 16(1) of the Implementing Regulation , 26 October 2011, paragraph 6.7 [...]*.

887 Reply to question 17 of Q8 – Questionnaire to customers, Phase II [...]*.

888 Reply to question 17 and 18 of Q8 – Questionnaire to customers, Phase II [...]*.

889 Reply to question 18 of Q8 – Questionnaire to customers, Phase II [...]*.

(1036) DZ Bank states: "*Hypothetically every ETD can have a look-alike OTC version. As successful ETD products have high liquidity, the probability that there is OTC trading in a look-alike OTC derivative is low*." Société Générale also points out that "*listed options all have, in theory, their look-alike OTC version, but this is not the case for futures*." Unicredit Bank states: "*Generally speaking this would make not much sense to create a look-alike OTC derivative, as in this case you can directly use ETDs*." [890]

(1037) The importance of the service and of competition between the Notifying Parties has similarly been confirmed by the market investigation. For example, [one large customer]* states that: "*as a best estimate, the bank executes approximately €5bn per year in listed single stock futures on either Eurex (via OTC block trade facility) or BClear*".[891]

(1038) The proportion of overall volumes resulting from trades negotiated away from the order book but subsequently brought into the exchange environment is illustrated in Table 13 below:

Table 13 - Trades negotiated away from the order book and then brought into the exchange environment as a proportion of all trades on the platform in question

	NYX	**DB**	**Combined**
[…]*	[0-5%]*	[10-20%]*	[10-20%]*
[…]*	[10-20%]*	[50-60%]*[892]	[10-20%]*
[…]*	[20-30%]*	[40-50%]*	[30-40%]*
[…]*	[80-90%]*	[60-70%]*	[70-80%]*
[…]*	[40-50%]*	[40-50%]*	[40-50%]*

Source: Commission calculations based on Annex D.20 to the Form CO, Derivatives Section. The off-book figures include all OTC facilities such as BClear and OTC Flex and relate only to the Notifying Parties' European venues.

11.2.2.3. COMPETITION BETWEEN THE NOTIFYING PARTIES

11.2.2.3.1. Introduction

(1039) Block trades can be entered into Liffe environment through one of three systems – Bclear (discussed further in Section 11.2.3 below since it has a dual functionality, both off-order book and flex), as well as its Block Trading Facility (BTF) and the Prof Facility. The predominant route in the London market is Bclear for equity and index derivatives, although for historical reasons the BTF has been maintained in that market as an alternative route for index and single stock options, whilst it is the main route for

890 Replies to question 18 of Q8 – Questionnaire to customers, Phase II [...]*.

891 Reply to question 22 of Q8 – Questionnaire to customers, phase II [...]*; see also minutes of call with UBS, 16 September 2011, point 4 [...]*.

892 On a low total of 0.7 million contracts.

wholesale trade entry in fixed income products[893]. [In the Paris market, the BTF is the only wholesale route available, while in Amsterdam and Brussels only the Prof Facility is available, which offers less flexibility than BTF]*[894].

(1040) Block trades in Eurex listed ETDs can be entered into that environment using Eurex's Block Trade facility[895].

11.2.2.3.2. Interest rate derivatives

(1041) The Commission has obtained limited specific information allowing it to distinguish between on- and off-book trading as regards competition between the Notifying Parties in European interest rate products. Since, however, (i) Liffe's BTF does also apply for Euribor packs and bundles, and all of the Eurex money market products are also available through its BTF, (ii) as shown in Recital (485) above there is no reason to consider that there exists a significant constraint as a result of the option to keep positions fully in the OTC environment and (iii) in any case these two service offerings are intrinsically linked, the same arguments apply in relation to actual and potential competition for off-order book services as set out for on-order book services for interest rates (Sections 11.2.1.4.2 and 11.2.1.4.3). In particular, each of the Notifying Parties is the other's closest competitor in relation to off-book services for European interest rate derivatives. The Notifying Parties did not present any arguments or otherwise contest the Commission's preliminary conclusions in the SO in this regard.

(1042) Indeed, the Commission further notes that none of the "competitors" cited by the Notifying Parties in their response to the SO, and indeed repeatedly throughout the procedure, offers off-book services in European interest rate futures and options. This is a logical consequence of the fact that in order to do so, by definition, also on-book services in these derivatives would need to be offered, and (with the recent and very limited exception of CME for Euribor), there are no other venues where these contracts can be traded on order book. The same arguments as set out in 11.2.1.7.1 relating to obstacles to entry and expansion apply.

(1043) It is therefore concluded that the notified transaction will eliminate both actual and potential competition between the Notifying Parties in regard to off-book services for European interest rate derivatives. This is so irrespective of whether the market should be further subdivided between European short-term and long-term derivatives, and/or between products based on euro and sterling rates traded off-book but brought on exchange for registration. Indeed, the very significant competitive constraint that both Notifying Parties exert over each other under each of these alternative market definitions would in all cases be eliminated post-merger.

11.2.2.3.3. Single stock options and futures

(1044) Off-order book trading is particularly important in single stock options and futures. Eurex volume trading data for February 2011 shows that approximately 99% of single-

[893] On this aspect of the BTF, see http://www.euronext.com/editorial/wide/editorial-4243-EN.html, viewed on 28 September 2011.

[894] Form CO, Derivatives, paragraph 6.108.

[895] Form CO, Derivatives, paragraph 6.109.

equity futures and 53% of single-equity options were traded off-order-book before being brought onto the exchange[896].

11.2.2.3.3.1. Competition in products listed by both of the Notifying Parties

(1045) Eurex's off-order BTF allows trade registration only in standard Eurex ETDs[897] and the extent of overlaps between the Notifying Parties in such ETDs is therefore the same as in the case of on-order book trading. On Liffe's side, in addition to its BTF, Prof Facility and Bclear allowing trade entry of block trades in standard Liffe ETDs, it is also possible to use Bclear to enter trades in contracts not listed on the Liffe order book, including contracts offering a similar economic exposure to Eurex ETDs.

(1046) NYX itself recognises internally the role played by Bclear in this space in the competition with Eurex as (referring to single equity options in three very liquid French blue-chips, […]*) "*these 3 classes are among the most involved in Eurex threat and Bclear has proven to be efficient in repatriating part of the Eurex business on these names*"[898].

(1047) Even though it has made requests to the Notifying Parties, the Commission has obtained only limited specific data distinguishing on- and off-book trading as regards competition between the Notifying Parties in respect of the set of equities where they also overlap on the order book. Since, however, as shown in Section 11.1.1.2.2.1.3 above there is no reason to consider that there exists a significant constraint on off-order book services as a result of the option to keep positions fully in the OTC environment and in any case on- and off-order book service offerings are intrinsically linked, similar conclusions may be held to apply in the case of off-order book services to those already outlined above in respect of on-order book trading in the same ETDs in Section 11.2.1.5.

(1048) The Notifying Parties have not provided any evidence to rebut the findings of the Commission that competition in respect of those contracts where the Notifying Parties overlap occurs at least to a similar degree off-order book. The Notifying Parties limit themselves to general criticisms that "*no quantitative evidence of the degree of competition between the Parties in off-book trading*" has been identified. The Notifying Parties also claim that "*the SO makes no attempt to assess the large number of trade-matching services for cleared OTC derivatives, which provide the exact same service as the Parties' off-book trading facilities*"[899].

(1049) Firstly, both the SO and this Decision clearly show the extent of the overlap between the Notifying Parties, identify those areas in which the merged entity would face no competition in off-book services at all post-merger (home markets for single equity futures and options, and all European interest rate futures and options), and identify those areas in which it would face a single competitor (all of those where they overlap

896 Form CO, Derivatives, footnote 44.
897 Notifying Parties' reply to question 1 of the Commission's RFI of 21 September 2011.
898 NYX internal document, Email from ,[…]*, 03.01.2008, Reference: ENX – 00174 – 0001.
899 Notifying Parties' response to the SO, single equity derivatives, paragraph 88.

outside home markets, for single equity derivatives only, and with the exception of Norway where there would be two remaining competitors, see Section 11.2.1.5.2.2 above).

(1050) As concluded when discussing actual and potential competition in on-order book trading of single equity futures and options in Section 11.2.1.5 above, such competition is real and significant. Indeed, given the significant volumes achieved on the order book in a number of instruments by the Party which does not list (though it may offer trading in) the underlying stock, competition in the off-order book space, where pricing competition is significant and incumbency advantages lower, may be more intensive still.

(1051) Indeed, the Commission further notes that none of the "competitors" cited by the Notifying Parties in their response to the SO, and indeed repeatedly throughout the procedure, offers off-book services for single equity futures and options in competition with the Notifying Parties in their home markets. This is a logical consequence of the fact that in order to do so, by definition, also on-book services in these derivatives would need to be offered, and there are presently no other venues where these contracts can be traded on order book[900]. The same arguments as set out in 11.2.1.7.1 relating to obstacles to entry and expansion apply.

(1052) In view of these structural features of the market and the fact that the combination leads, in most cases, to a monopoly, and moreover involves a non-insignificant increment to market share and the elimination of a significant competitive force in multiple markets or market segments, the Commission considers that the evidence presented, which includes significant quantitative elements (all of which, however, derive from the Notifying Parties which are the source of the data in question), demonstrates the competition that would be eliminated as a result of the merger.

11.2.2.3.3.2. *Universal stock futures*

(1053) A particular episode of competition focused on capturing wholesale trading involved Liffe's Universal Stock Futures, which are global products with contracts available on an international list of stocks in seven major currencies: euro, Danish krone, Norwegian krone, pound sterling, Swedish krona, Swiss franc and US dollar[901].

(1054) Internal documents of NYX show clearly that it considered that Eurex was a significant threat when it announced its entry into this product area in 2005 and that Eurex "*launched single stock futures on the same day as Bclear, 24 October '05, aggressively targeting our USFs franchise […]**."[902]

(1055) This was perceived as a real threat to the Liffe franchise: "*The Eurex threat to our USF market, conversations with users of the product and […]**… are calling for*

900 With the very limited exception of TOM for Dutch equity derivatives, see section 11.2.1.5.3.

901 See Euronext website, available at http://www.euronext.com/fic/000/010/729/107293.pdf viewed on 20 September 2011.

902 NYX internal document, Attachment to Email: Bclear Analysis, dated October 26, 2007, Reference ENX-00167-0001.

immediate action…[…].*"[903] On 1 March 2007, fees for all Universal Stock Futures registered via BClear (excluding those based on UK and US stocks) were reduced to Euro 0.20 per lot with a Euro 200 fee cap.[904]

(1056) RBS states that "*Universal stock options were launched on Liffe in 2004 and then Eurex followed with single stock futures in 2007. This competition between the two exchanges has provided dynamic service innovation and reduced trading costs*".[905]

(1057) NYX's analysis of the USF introduction is also clear as it considers that "*the way to counteract the Eurex threat is to implement an aggressive […]* for USF in Bclear.... The Eurex threat and USF being available on Bclear according to our current vision […]*, leads us to believe that we need to take action now in order to protect the franchise until end of Q1 06 and […]**".[906]

(1058) In 2010, Liffe introduced very low fee caps for USF in Bclear, which may have been related to a perception of continuing threat from Eurex in this area.[907]

11.2.2.3.3.3. Potential competition in off-book services for European single stock futures and options

(1059) As well as actual competitors across a wide range of underlyings as described above, the Notifying Parties are each other's closest potential competitors in off-book services for European exchange-traded single stock futures and options (as shown in Section 11.2.1.5.3 for on-order book trading), since there is no obstacle for one to introduce a contract presently listed by the other and to offer services related to it which benefit from all the advantages of access to the margin pool of the challenger as previously detailed in Section 11.2.1.7.1, an advantage not shared by any other player.

11.2.2.3.3.4. Additional off-book constraint from Liffe with regard to contracts listed on Eurex only

(1060) Furthermore, the possibility also exists of agreeing bilaterally a trade on an underlying traded on Eurex with exactly the same exercise terms as would apply if the trade were carried out on Eurex itself, but then clearing it instead through Bclear, a strategy which therefore might constitute an alternative in some cases to off-book trading of standard ETDs on Eurex. A certain amount of evidence points in the direction of this also constituting a relevant competitive constraint, although (as explained in the Section 11.2.3 on flexible contracts below) the Notifying Parties have not been able to distinguish volumes resulting from this possible use case from those in

903 NYX internal document provided in response to the Commission's RFI of 1 July 2011, Memo from ,[…]*, subject: USF fees structure for 2006, dated 17.10.2005, Reference ENX-00760 -00001.

904 See Euronext website, available at http://www.euronext.com/trader/landing/landinguniversalstockfutures-2731-EN.html viewed on 20 September 2011.

905 RBS, Reply to question 49 of Q8 – Questionnaire to customers, Phase II [...]*.

906 NYX internal document provided in response to the Commission's RFI of 1 July 2011, Memo from ,[…]*, subject: USF fees structure for 2006, dated 17.10.2005, Doc. Nr. ENX-00760 -00001.

907 London Notice No. 3329, http://www.euronext.com/fic/000/059/530/595306.pdf, viewed on 30 September 2011.

which the parameters are flexed. Use of Bclear in this way, while not achieving fungibility with the corresponding Eurex ETD, would still offer margin offsets and elimination of counterparty risk, and is therefore significantly different from trading a Eurex ETD lookalike OTC (therefore remaining outside of an exchange CCP).

(1061) Through Bclear it is possible to bring a total of 2392 product codes corresponding to single stock options and 2287 corresponding to single stock futures into the exchange clearing environment. These represent futures on 1136 single equity underlyings and options on 583 single equity underlyings, including in both cases many traded principally on the order book of Eurex[908]. According to figures provided by the Notifying Parties, 131 German ISINs[909] are available for trade confirmation and clearing with flexible parameters both on Bclear and on Eurex itself. The current Bclear contract list contains 134 German ISINs[910].

(1062) The relevance of this competitive constraint was alluded to in the market investigation. Thus UBS notes: "*Liffe BClear competes with European incumbent derivative exchanges including Eurex.*"[911]

(1063) In the Notifying Parties' view, the SO "*explains that the "incremental" conclusion to be drawn in respect of off-book trading is that "even where trading in the same or lookalike ETD instruments may be carried out OTC, the Notifying Parties nonetheless capture most of the value chain and either compete with each other to do so"*. The Notifying Parties argue that "*the SO provides no evidence of this*"[912].

(1064) During the procedure, the Notifying Parties consistently argued that they face a constraint from OTC trading, but were not always clear on what exactly was meant by this. The Commission in the SO, intended to underline the fact that a trade may be agreed away from the exchange does *not* necessarily mean that the Notifying Parties face a constraint, or in any case not a very significant constraint, as regards trading on-order book. Indeed, the Notifying Parties anyway occupy either a monopoly or duopoly position downstream when the trade in question is reported to the exchange and enters into its clearing system and margin pool[913].

(1065) As argued above at Recitals (316) *et seq.*, it is only a very small part of trades which is not only agreed bilaterally but remains in the OTC environment throughout their lifetime . As pointed out, this constraint, if any, is certainly very minor and is in any case a much less direct constraint on Eurex than the one formed by Bclear.

---

908 Notifying Parties' reply of 19 September 2011 to the Commission's RFI of 13 September 2011, annex 4.

909 International Securities Identification Number.

910 See NYX' website, available at http://globalderivatives.nyx.com/sites/globalderivatives.nyx.com/files/bclear_contract_list_300811.xls, viewed on 23 September 2011.

911 UBS, Replies to questions 74 and 79 of Q1 – Questionnaire to customers, Phase I [...]*.

912 Notifying Parties' response to the SO, single equity derivatives, paragraph 88, paragraph 89.

913 A similar point is made by ICAP at paragraph 6.14 of the Observations on the SO submitted pursuant to article 16(1) of the Implementing Regulation, 26 October 2011. Additionally, this could not be a constraint since the Notifying Parties impose minimum sizes on trades reported through their off order book facilities precisely in order to avoid draining liquidity from the order book.

11.2.2.3.4. Conclusion

(1066) Given that the contracts traded off-book are exactly those (Bclear lookalikes aside) which are traded on order book, the discussion in Sections 11.2.1.3.4, 11.2.1.4.4, 11.2.1.5.4 and 11.2.1.6 above in respect of product innovation applies equally to off-order book services..

(1067) There is similarly no reason to distinguish between on and off order book services as regards any of the other dimensions of competition discussed in Section 11.2.1.3.5 above including technology and market design, or to analyse entry barriers any differently in either case.

(1068) Indeed, the most relevant competitive conclusion to be drawn which is incremental to those discussed in relation to on-order book trading relates to the fact that, even where trading in the same instruments may be carried out OTC, the Notifying Parties nonetheless capture through their off-book facilities most of the value chain in these contracts and compete with each other to do so. Where the Notifying Parties do not compete, they can already internalize through their unique position downstream, compared to the myriad ways in which it is possible to negotiate an OTC trade upstream, any rents available from the trading process.

(1069) Furthermore, the arguments developed in Section 11.2.1.5.2.2 above in relation to the ability of the merged entity to leverage its position into futures and options on equities from outside their current "home" markets and eliminate remaining competition apply equally to off-order book services.

(1070) Therefore, it is concluded that the notified transaction would result in a significant impediment of effective competition in relation to the market, or markets, for off-order book services, namely trade registration, confirmation and CCP clearing, of block size trades in European interest rate, equity and equity index futures and options. The notified transaction would eliminate the closest actual and potential competitor, and create a dominant or near-monopoly position as the merged entity would essentially be the only significant remaining player in these markets, which are characterised by high barriers to entry. As a result, customers would be exposed to higher fees, less innovation and less choice.

11.2.3. Trade registration, confirmation and central counterparty clearing services for flexible versions of European equity futures and options traded OTC

11.2.3.1. INTRODUCTION

(1071) In addition to offering post-trade services for block size trading in their own ETDs, the Notifying Parties also offer the same services in relation to trades in flexible equity and equity index futures and options. As indicated in the market definition Section at Recital (477) above, flex contracts are single equity futures and options that could not be executed on exchange because certain of their economic parameters (such as strike date, strike price, settlement style and exercise style) deviate from those of the standard listed derivatives available on the order book of the exchange in question.

(1072) The ability to process flexible options was offered by Eurex since release 8.0 of its trading system in 2005[914]. Flexible futures were added in release 10.0 in November 2007. Bclear was launched almost simultaneously, with Liffe Connect release 9.0 in October 2005, but offering both off-order book and flex functionality[915].

(1073) Both Bclear and OTC Flex offer identical services aimed at offering wholesale facilities for trade registration, confirmation and CCP clearing of flexible versions of exchange contracts. On OTC Flex, it is only possible to clear contracts on underlyings which are also listed on Eurex's standard order book, but this does include many contracts on which Liffe has the majority of the liquidity. On Bclear, there is a much wider range of products and it is also possible to clear contracts which are not tradable on the central order book of Liffe. In both cases, standard contract terms designed by the exchange apply to the contract. Bclear is, in addition, the primary route for customers to enter OTC trades in standard ETDs into the Liffe environment[916].

(1074) Both the Bclear and the OTC Flex products represent significant parts of the cleared volumes and open interest of both of the Notifying Parties in the equity and equity index options and futures space. For single stock futures, these products even represent, at least in the case of Liffe, the significant majority of volumes and open interest.

(1075) Based on figures from the Euronext Factbook 2010[917], Bclear represents the following fractions of volume, value and open interest in the respective asset classes for 2010:

---

914 See DB's website, available at http://deutsche-boerse.com/dbag/dispatch/de/binary/gdb_content_pool/imported_files/public_files/10_downloads/31_trading_member/10_Products_and_Functionalities/Flyer_Release_8.0_7.pdf, viewed on 23 September 2011.

915 The off-order book functionality of BClear took over the functionality of an earlier block trade system used by Liffe in the UK.

916 Notifying Parties' reply of 16 September 2011 to the Commission's first RFI of 13 September 2011, page 4. In addition, in the Notifying Parties' reply to the Commission's RFI of 21 September 2011, question 3, they explain that "*NYX has retained multiple routes to enter* [block] *trades for historical reasons*".

917 www.euronext.com/fic/000/062/281/622812.xls, viewed on 23 September 2011.

Table 14: Bclear percentage volume, value and open interest by asset class (2010)

	by volume	by value	by open interest
Single stock options	16.2%	25.9%	10.9%
Single stock futures	99.6%	99.6%	47.3%
Equity index options	29.4%	39.8%	38.3%
Equity index futures[918]	7.8%	8.6%	4.0%

Source: Based on figures from the Euronext Factbook 2010.

(1076) Overall, for equity products, Bclear represents 55% by volume, 27% by value and 18% by open interest.

(1077) As indicated in the market definition Section of this Decision, these figures are likely to include a part, presumably limited, relating to Eurex "lookalikes", and a larger part related to off-order book business in Liffe ETDs. The Notifying Parties have claimed that they are unable to isolate this part, since [Liffe does not differentiate between standard and flexible parameters, and does not track trading volumes or other metric on the basis of trading terms]*[919] This is not the case for Eurex, since the Flexible Options and Futures service only offers flexible terms for Eurex underlyings, whereas block trades are entered through a different facility, the Block Trade facility.

(1078) The Bclear service itself is described by NYX as a "*runaway success*" which has "*grown phenomenally with current year-on-year growth of 44%*"[920]. The same source notes that, whilst "*the volume on BClear is largely thanks to the hedge fund community… BClear has proven to be popular among all market participants from existing exchange members to traditional asset management firms*". NYX concludes that further initiatives are in the pipeline as there is "*a steady flow of customer requests for new products*".

(1079) In March 2011, Bclear registered its one billionth contract, and NYX declared that "*today BClear is used by all the major banks and brokers in Europe*"[921].

(1080) The Notifying Parties' internal documents also show not only the importance they attach to these trade registration, confirmation and central counterparty clearing services for flexible versions of European equity futures and options traded OTC , but also that the Notifying Parties are each other's closest competitor.

---

918 All trading on BClear in equity index futures is on standard economic terms, flexible parameters are not catered for (cf reply of Parties to RFI of 20 September 2011, Q.5).

919 Notifying Parties' reply to question 5 of the Commission's RFI of 20 September 2011.

920 See Euronext website, available at http://www.euronext.com/fic/000/051/986/519860.pdf, viewed on 23 September 2011. The document is not dated but from around June 2010.

921 Euronext press release of 9 March 2011, see http://www.euronext.com/news/press_release/press_release-1731-EN.html?docid=970617 (viewed on 26 January 2012).

(1081) This is exemplified by the DB document: "*Eurex - Growth Case - Existing OTC services*", in which the opportunities in OTC clearing are analysed as well as a direct comparison of Eurex Flex/OTC with Bclear.[922] In the document entitled "*Major Strategic Projects 2010 - Meeting of the Group Executive Board*", when analysing developments of 2009, it is specified that [Discussion on how to position a service offering in a successful manner]* [923]

(1082) Indeed, a few months after launching the service in 2006, NYX referred to Bclear as "*the true competitor to Eurex's one stop shop platform, beating Eurex in simplicity, scope, efficiency, scalability*".[924]

(1083) An internal NYX email from 2010 reiterates the importance of Bclear *[…]**[925].

11.2.3.2. COMPETITION BETWEEN THE NOTIFYING PARTIES

11.2.3.2.1. Extent of competitive interaction

(1084) The service offerings of the Notifying Parties overlap to a considerable extent. If single stock underlyings on which the Notifying Parties offer flexible contracts and which achieved positive 2010 volumes are examined, overlaps occur in 59 underlyings, corresponding to 53 options contracts and 19 futures contracts. In all of those cases, there was a competitive interaction between the Notifying Parties, which was frequently considerable. In Table 15, by way of illustration, all cases in which both of the Notifying Parties have at least 10% of the total combined volume on the Notifying Parties' platforms in 2010 are given. In all cases, the Notifying Parties are the only two competitors and therefore the combined market share sums to 100%.

Table 15 – Market shares of the Notifying Parties in futures and options on selected individual stocks

Name	Country	Futures/Options	Total volume	DB %	NYX %
[…]*	[…]*	[…]*	[…]*	[10-20%]*	[80-90%]*
[…]*	[…]*	[…]*	[…]*	[30-40%]*	[60-70%]*
[…]*	[…]*	[…]*	[…]*	[20-30%]*	[70-80%]*
[…]*	[…]*	[…]*	[…]*	[10-20%]*	[80-90%]*
[…]*	[…]*	[…]*	[…]*	[20-30%]*	[70-80%]*
[…]*	[…]*	[…]*	[…]*	[50-60%]*	[40-50%]*
[…]*	[…]*	[…]*	[…]*	[10-20%]*	[80-90%]*

922 See DB internal document .[…]*.

923 DB internal document provided in response to the Commission's RFI of 1 July dated .[…]*.

924 NYX internal document "Eurex - The World's Leading Derivatives Exchange - A viewpoint from the inside", 14/12/2006, Reference ENX-00789 -00011/13.

925 NYX internal document, email from […]* to […]* ([…]* of NYX) and others, on 4.06.2010 at 10:04, Reference ENX-00855 -00001.

[…]*	[…]*	[…]*	[…]*	[20-30%]*	[70-80%]*
[…]*	[…]*	[…]*	[…]*	[20-30%]*	[70-80%]*
[…]*	[…]*	[…]*	[…]*	[40-50%]*	[50-60%]*
[…]*	[…]*	[…]*	[…]*	[40-50%]*	[50-60%]*
[…]*	[…]*	[…]*	[…]*	[60-70%]*	[30-40%]*
[…]*	[…]*	[…]*	[…]*	[20-30%]*	[70-80%]*
[…]*	[…]*	[…]*	[…]*	[60-70%]*	[30-40%]*
[…]*	[…]*	[…]*	[…]*	[10-20%]*	[80-90%]*
[…]*	[…]*	[…]*	[…]*	[50-60%]*	[40-50%]*
[…]*	[…]*	[…]*	[…]*	[10-20%]*	[80-90%]*
[…]*	[…]*	[…]*	[…]*	[50-60%]*	[40-50%]*
[…]*	[…]*	[…]*	[…]*	[10-20%]*	[80-90%]*
[…]*	[…]*	[…]*	[…]*	[60-70%]*	[30-40%]*
[…]*	[…]*	[…]*	[…]*	[80-90%]*	[10-20%]*
[…]*	[…]*	[…]*	[…]*	[50-60%]*	[40-50%]*
[…]*	[…]*	[…]*	[…]*	[70-80%]*	[20-30%]*
[…]*	[…]*	[…]*	[…]*	[70-80%]*	[20-30%]*
[…]*	[…]*	[…]*	[…]*	[30-40%]*	[60-70%]*
[…]*	[…]*	[…]*	[…]*	[10-20%]*	[90-100%]*
[…]*	[…]*	[…]*	[…]*	[10-20%]*	[80-90%]*
[…]*	[…]*	[…]*	[…]*	[10-20%]*	[80-90%]*
[…]*	[…]*	[…]*	[…]*	[10-20%]*	[80-90%]*
[…]*	[…]*	[…]*	[…]*	[30-40%]*	[60-70%]*
[…]*	[…]*	[…]*	[…]*	[30-40%]*	[60-70%]*
[…]*	[…]*	[…]*	[…]*	[30-40%]*	[60-70%]*
[…]*	[…]*	[…]*	[…]*	[10-20%]*	[80-90%]*
[…]*	[…]*	[…]*	[…]*	[10-20%]*	[90-100%]*

Source: Notifying Parties' submission of 16 September 2011.

(1085) From Table 15, it can be seen that Bclear has been successful in making inroads into the OTC clearing of flexible versions of contracts where most of the liquidity in the standard ETD is on Eurex – in many cases to the point where the significant majority of trades, on an appreciable volume of trading, was put through Bclear and not OTC Flex[926]. The underlyings concerned by competition between Bclear and OTC Flex are frequently the largest European blue chip stocks (components of the Eurostoxx 50 are indicated with an asterisk in Table 15 above).

(1086) Conversely, DB has achieved volumes through OTC Flex also in contracts where the standard ETD has most of the liquidity on Liffe, in two cases over 10%[927]. According to the Notifying Parties, about 14% by volume of trading which is put through Bclear concerns underlyings which are available on the Eurex order book, but not on Liffe itself[928].

(1087) Indeed, this success has characterised Bclear for a number of years. As Hugh Freedberg, then CEO and now Chairman of Liffe, stated in November 2006, "*more than 30% of volume transacted through our post trade and clearing service for OTC equity derivatives trading is in options on stocks listed on Eurex, which now seeks to compete in this area*"[929].

(1088) In addition to this, potential competition between the Notifying Parties concerns a very broad range of contracts. Many contracts, indeed, are already available for clearing on both platforms even if one of them does not currently have any volume, demonstrating the ease with which a contract can be offered for clearing in competition with the other Notifying Party if there is customer demand to do so: contracts already available for clearing through both services concern 272 futures and 715 options on a given underlying, a total of 987 overlaps. These concern, for example, 145 UK instruments (counting futures and options separately), 134 French instruments and 131 German instruments.

(1089) […]*[930] [An internal NYX email acknowledged the similarities between NYX's and Eurex's single stock futures]*[931].

---

926 Based on the information which the Notifying Parties have provided, it is not possible to ascertain how much of the BClear volume in these underlyings may, however, be due to contracts with identical economic terms to the standard Eurex ETD and therefore rather compete with off-order book trading on Eurex than with OTC Flex, since all volumes in underlyings not traded on Liffe's central order book are recognised as "flexible" volumes in the statistics provided by the Notifying Parties.

927 The Commission takes it that liquidity in Generali options is mostly on IDEM. The BClear volume against which this is compared may, however, include volumes on standard order book terms since, as the Notifying Parties clarify in their reply to Q.5 of the Commission's RFI of 20 September 2011, "*the standard terms are merely a subset of the available flexible terms*".

928 Notifying Parties' reply of 16 September 2011 to the Commission's first RFI of 13 September 2011, page 14.

929 Open letter to the Financial Times, available at: http://www.ft.com/intl/cms/s/0/59bd1750-6f99-11db-ab7b-0000779e2340.html#axzz1TJtvdq00 (viewed on 26 January 2012)

930 Parties' figures in reply of 16 September 2011 to the Commission's first RFI of 13 September 2011.

931 NYX internal document, Email from "OTC Services" to a variety of recipients, 5 January 2010, ENX-00468-00001.

(1090) The Notifying Parties provided limited information on these overlaps in their initial notification of the transaction and, in their submission of 16 September 2011, did not provide any estimates of overall market share in flexible contracts on any underlying. However, the Commission is nonetheless able to conclude that as regards underlyings where the principal liquidity is on one or other of the Notifying Parties' exchanges, they are each other's closest and frequently perhaps only real competitor for CCP clearing of flexible versions of the contract, as detailed in the remainder of this Section. This conclusion is consistent with the statement of the Notifying Parties themselves that "*there are other exchanges that offer off-book trading services for European equity derivatives. However, to the Parties' best knowledge, none of these offer flexible options or futures which gained significant volume*"[932].

(1091) It should be further noted that the possibility of trading a contract on a "Eurex" underlying OTC and then clearing it through Bclear includes the possibility of trading it with exactly the same exercise terms as on Eurex itself, and therefore constitutes an alternative to off-book trading of standard ETDs on Eurex which, although it does not achieve fungibility with the corresponding Eurex ETD, still offers margin offset and elimination of counterparty risk. Thus UBS notes that: "*Liffe BClear competes with European incumbent derivative exchanges including Eurex.*"[933] This is also confirmed by AFME: " *This type of trading came into being… also for the Parties to compete with each other in certain single stock derivatives which (at least in the case of BClear) are not always available on the order book itself.*"[934]

11.2.3.2.2. Competitive parameters

(1092) The Notifying Parties compete with each other for flow based on price, service offering and available collateral benefits.

(1093) The ability of the Notifying Parties to compete with each other in this area is broader still in scope than for standard ETDs. This is due to the fact that, for flex contracts[935], fungibility is not a consideration and therefore not a barrier to entry – even if all the other barriers referred to in Section 11.2.1.7 are applicable, including the possibility of cross margining. This means that the barriers to entry remain high for third parties, but are lower as between the Notifying Parties themselves due to the similar size and composition of their equity margin pools.

(1094) Competition is mainly on fees as well as scope of product offering (leading to margin benefits) and service level. One market participant described this competition as follows: *"Launching of BClear in Liffe was followed by the launching of Flex contracts in Eurex, and the competition was focused mainly in prices (leading to a capped fee structure extremely cheap for users) and number of underlyings."*[936] Another market participant stated that: *"Liffe (Bclear) followed Eurex into the block equity single stock*

---

932 Notifying Parties' reply of 16 September 2011 to the Commission's first RFI of 13 September 2011, page 13.

933 UBS, reply to question 74 of Q1 – Questionnaire to customers, Phase I [...]*.

934 AFME, agreed minutes of a meeting of 24 August 2011 [...]*.

935 Except where the flexibility merely consists in longer maturities of otherwise standard ETDs.

936 [...]*, reply to question 96 of Q1 – Questionnaire to customers [...]*.

space and have probably achieved greater market share across most European markets due to the increased flexibility offered by the Bclear product."[937]

(1095) A NYX internal document also demonstrates that […]*.[938]

(1096) A 2009 DB document also specifies that […]*.[939]

(1097) In the same vein, a marketing presentation by Eurex from April 2010 lists new fees for its wholesale trading services, which include OTC Flex, several categories of which have been significantly reduced to align with those of Bclear. Those fees which were already lower are left unchanged. Eurex explicitly compared its fees to Bclear's (and not to any other company)[940].

(1098) ICAP notes that "*BClear single stock futures (flex and standard) have been more successful than Eurex's offering due to increased functionality and responsiveness to market demands in terms of breadth of underlying listings. Eurex is slightly more expensive, but the market has primarily been attracted to the Liffe offering … due to functionality rather than fees*"[941].

(1099) An internal NYX email from January 2010 compares the two markets in respect of single stock futures (where it should be recalled that [90-100%]* of volume goes through Bclear on the Liffe side and the overlap in offerings is considerable). This source emphasizes the rivalry, noting that […]*[942].

(1100) The same source underlines the head-to-head competition by noting that […]*.

(1101) This competition would be eliminated by the merger. In this regard, one respondent stated that: *"The amalgamation of the two largest listed futures and option Exchanges in Europe could, given little viable competition, result in a hefty increase in exchange clearing fees, exercise/assignment, cash settlement and delivery fees across all products and instruments. This is of particular concern in Equity Options where there is currently active competition between Eurex and BClear/NYSE on European single stocks and as a result the prices are kept relatively low"*[943].

11.2.3.2.3. Competitors

(1102) The Notifying Parties face limited competition for these services. Those similar services which do exist are narrower in scope and cannot compete with the Notifying Parties even at present, except possibly in niche domestic markets.

---

937 ICAP, response to question 96 of Q1 – Questionnaire to customers [...]*.

938 See NYX internal document provided in response to the Commission's RFI of 1 July 2011, Email from ,[…]*, August 7, 2007, p. 1.

939 DB internal document, .[…]*.

940 Notifying Parties' reply to the Commission's RFI of 20 September 2011, Annex 7, page 91.

941 ICAP Securities Ltd, reply to question 50 of Q8 – Questionnaire to Customers, Phase II [...]*.

942 NYX internal document, Email from "OTC Services" to a variety of recipients, 5 January 2010, Reference ENX-00468-00001.

943 BGC, Response to question 109 of Q1 – Questionnaire to customers [...]*.

(1103) A significant majority of customers questioned was unable to identify any competitor to the Notifying Parties at all in this area. One of the few customers who did specified *that*: "*MEFF, IDEM and EDX offer local product coverage, however they do not offer cross-collateralisation with existing margin pools, which makes costs prohibitive. No other platforms offer pan-European coverage, attempting to enter that market without access to existing margin pools would be unlikely to succeed as a new pool would be uneconomic.*"[944]

11.2.3.2.4. Impact of anticipated regulatory developments

(1104) Demand for the competing services offered by the Notifying Parties will only become stronger as a result of envisaged regulatory reforms described in Recital (1106)et seq..

(1105) The evolving regulatory environment is an important backdrop to the parameters of competition in derivatives markets, and in particular as regards the current and potential near-term future offerings of the Notifying Parties through their Bclear and OTC Wholesale/Flex systems.

(1106) As an immediate reaction to the recent financial crisis, regulatory initiatives were designed both in the Union[945] and globally[946] to increase transparency in financial markets and decrease systemic risk.

(1107) Two main regulatory developments are therefore expected[947]:

- mandatory trading on organised trading venues of all eligible standardised derivatives contracts, and

- a move towards mandatory CCP clearing of eligible OTC derivatives contracts intended to mitigate operational and credit risk associated with OTC derivatives trading.

---

944 [...]*, reply to question 28 of Q8 – Questionnaire to Customers, Phase II [...]*. In its reply to Q10, Nasdaq OMX also refers to its TMC ("Tailor Made Clearing") facility, which offers a similar type of service but is not mentioned by customers as a competitor [...]*. See http://nordic.nasdaqomxtrader.com/Clearing/optionsfuturesclearing/Tailor_Made_Clearing/ (viewed on 16 September 2011).

945 Commission Communication of 4 March 2009 "Driving European Recovery" which emphasised the need to strengthen the Union's regulatory framework for financial services (COM(2009) 114). Commission Communication of 3 July 2009 which assessed the role of derivatives in the financial crisis (Commission Communication "Ensuring efficient, safe and sound derivatives markets" - COM(2009) 332, Staff Working Paper SEC(2009) 905, and Consultation document SEC(2009) 914.).

946 Following the summit in Pittsburgh on 26 September 2009, the G20 Leaders' Statement concluded that: "*All standardized OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties by end-2012 at the latest. OTC derivative contracts should be reported to trade repositories. Non-centrally cleared contracts should be subject to higher capital requirements*." The USA has implemented the Pittsburgh commitments through the enactment of the Dodd-Frank Wall Street Reform and Consumer Protection Act in July 2011.

947 See Communication of 20 October 2009 of the European Commission COM(2002) 563.

(1108) At the European level, the Commission is currently working on two legislative projects addressing these issues: the review of the Markets in Financial Instruments Directive ("MiFID II") which will seek inter alia to move standardised OTC contracts to exchanges or electronic trading platforms; and the draft Regulation on OTC Derivatives, Central Counterparties and Trade Repositories[948] ("EMIR") which, following on from international commitments in the wake of the financial crisis, aims at mandating clearing for eligible OTC derivatives contracts[949].

(1109) The combined impact of these legislative projects will likely derive from the expected shift of derivatives trading business from the OTC environment to trading venues and from bilateral to CCP clearing. As a result, these regulatory developments will provide incumbent exchanges, such as the Notifying Parties, with additional opportunities to compete in capturing derivatives volumes which would absent the regulatory changes stay in the OTC world. This, absent the merger, would be likely to translate into even greater head-to-head competition between Eurex and Liffe, especially as regards flexible equity futures and options, due to the advantages deriving from the size and scope of their respective margin pools. This may quite possibly also apply in respect of European interest rate products.

(1110) Whatever the precise final scope of the legislation in question, the Notifying Parties will be very well placed to compete with each other and capture a certain part, if not the lion's share, of this business. In this regard, Chi-X Europe emphasises the Notifying Parties' advantage stemming from their existing margin pools: "*those exchanges that have deep franchises in certain asset classes will be much better place*[d] *to capture correlated OTC business as they, through their CCPs, can offer risk and margin related efficiencies.* "[950] Following the merger, such competition between the Notifying Parties would no longer exist.

11.2.3.3. MEANINGFUL ENTRY IS UNLIKELY

(1111) Amongst possible entrants in this area, the most frequently, though still rarely, cited by respondents to the market investigation are CME and ICE, through their respective European clearing divisions. However, ample evidence suggests that any competitive constraint that these may form either now or in the future is at best limited or uncertain as regards the core asset classes offered by the Notifying Parties.

---

948 COM(2010) 484.

949 In order to strengthen this move, higher capital requirements are planned to be imposed on non-centrally cleared derivatives contracts in the context of the implementation of the Basel III rules. The Commission issued a public consultation of 2 February 2011 on amendments to the Capital Requirements Directive ("CRD") on regulatory capital of financial institutions in respect of their centrally cleared derivatives trades (http://ec.europa.eu/internal_market/consultations/docs/2011/credit_risk/consultation_paper_en.pdf). The CRD would aim to propose that exposures to a CCP would be subject to a zero own funds requirement as long as the CCP meets certain requirements (to be set out in EMIR and based on CPSS-IOSCO recommendations). Such favourable treatment would not apply to fully bilateral non-cleared OTC derivatives. If the expected CRD legislation materializes, it would constitute an additional strong incentive on financial institutions to put, where possible, their OTC trading volumes through CCP clearing. As a result, it may be expected that the CCP clearing service will grow significantly in importance in the future.

950 Chi-X Europe, reply to question 57 of Q3 – Questionnaire to Competitors [...]*.

(1112) For example, Chi-X Europe notes that "*CME Europe and ICE Clear Europe would need to offer margin synergies with the open interest they manage in the US… such cross-jurisdictional benefits are very hard to realize because of the different underlying regulatory and legal environments and bankruptcy laws.*"[951] [...]*.[952] Indeed, neither CME nor ICE presently offers either trading or clearing in single equity futures at all, even on US underlyings.

(1113) It is particularly significant to note that Turquoise derivatives (formerly EDX) has had a flexible contracts service on Russian underlyings for some time, but has not been able to break into the market for flexible contracts on UK underlyings despite the franchise of its parent, LSE, in the trading of the underlying cash securities, and despite the margin pool available at LCH.

(1114) Similarly, post-trading services for flexible contracts offered by MEFF and Nasdaq OMX are limited in their scope essentially to Spanish and Nordic underlyings respectively[953]. Neither entity appears to have tried or ever considered the scope to enter the market for trading flexible options and futures on underlyings within the scope of Eurex and Liffe's "home" markets.

(1115) In addition, the arguments outlined in the Section above concerning difficulty of entry (Section 11.2.1.7.1.2) as a result of lack of access to margin pool also apply in this context given the link between the trades brought onto the Notifying Parties' clearing facilities and their existing margin pools in these facilities.

11.2.3.4. POINTS MADE BY THE NOTIFYING PARTIES IN THEIR RESPONSE TO THE SO

(1116) The Notifying Parties, in their response to the SO, make several of the same points in regard to flexible options and futures as in regard to off-order book trading. These do not need to be repeated here since the Commission's analysis of these points and its conclusion in relation to them is identical to that presented in the Section on off-order book trading above.

(1117) The Notifying Parties claim that the SO "*completely ignores a number of other providers of similar services in the marketplace; these include MEFF, IDEM, Turquoise Derivatives, and NASDAQ OMX.*"[954] This claim is, however, incorrect since the SO clearly stated that none of these third parties had any product offering in competition with the Notifying Parties, notwithstanding possessing (with the exception of IDEM) comparable technology and a comparable service offering in respect of a different set of underlyings. This strongly suggests that there is no demand for expansion of the service offerings of any of these alternative providers, a fact which is fully consistent with the conclusion that the existing margin pool of the Notifying Parties is a strong barrier to entry in this market.

---

951 Chi-X Europe, reply to question 69 of Q3 – Questionnaire to Competitors [...]*.

952 [...]*.

953 According to the Nasdaq OMX website, "*TMC is offered on derivatives on Danish, Finnish, Icelandic, Norwegian, Russian, Kazakhstanian* [sic] *and Swedish shares and indices*", which would imply it has negligible overlap with the Notifying Parties' offerings. See http://nordic.nasdaqomxtrader.com/Clearing/optionsfuturesclearing/Tailor_Made_Clearing/ (viewed on 16 September 2011).

954 Notifying Parties' response to the SO, single equity derivatives, paragraph 89.

(1118) The Notifying Parties go on to claim that the analysis in the SO was "*exclusively related to the current offerings by these competitors and [did not] attempt to assess whether these competitors would pose a viable alternative in response to any attempt to exercise market power by the merged NYX/DB*", further claiming that "*because, as the SO recognizes, competition in this area does not depend on a liquid order book, competitors can quickly and easily expand their offerings in competition with NYX's and DB's offering.*"[955]

(1119) In order for the threat of entry to constrain the merged entity it would need to be "*likely, timely and sufficient to deter or defeat any potential anti-competitive effects of the merger*"[956]. The Commission notes that the Notifying Parties have presented no evidence in support of their claim that "*competitors can quickly and easily expand their offerings*" and furthermore that there is no evidence on the file in support of such a claim. […]*

(1120) For the same reasons as apply in respect of the margin pool deriving from on- and off-book trading of equity and equity index futures and options, entry would be unlikely to succeed due to inability to offer margin benefits on a similar scale. Indeed, the barriers to entry reinforce each other, as it is only the size and composition of the margin pool that is relevant, and not the origin of it, whether it be through on- or off-book trading of standard ETDs or through trading of flexible equity and equity index futures and options or equity and equity index futures and options unavailable on the respective order book.

(1121) In relation to the distinct point made by the Notifying Parties in their response to the SO on the consequences of regulatory reform[957], it is concluded that, as set out throughout this Decision, the margin pool of the merged entity specifically in European equity futures and options would confer upon it a unique advantage and ensure that this class of business, to the extent it was required to be brought onto exchange, would predominantly be brought to the platform of the merged entity, which would therefore be in a position to exercise market power in this regard. For the reasons set out in Section 11.2.1.8 on buyer power above, it is concluded that customers would be unable, even if they had an incentive, to direct this class of business to an alternative platform which was not in a position to offer comparable collateral benefits to those which could be offered by the merged entity.

11.2.3.5. CONCLUSION

(1122) Eurex and Liffe are each other's closest actual and potential competitors in the market for trade registration, confirmation and central counterparty clearing services for flexible versions of European equity futures and options traded OTC. The notified transaction would therefore eliminate this unique competitive constraint that Eurex and Liffe exert on each other in this area.

(1123) The notified transaction eliminates the important competitive relationship between the Notifying Parties, and with high barriers to entry limits the possibilities for

955 Notifying Parties response to the SO, single equity derivatives, paragraph 90.
956 Horizontal Merger Guidelines, paragraph 68.
957 Notifying Parties' response to the SO, single equity derivatives, paragraph 90.

customers to switch to other products or suppliers or to pursue at similar cost other trading strategies such as those available OTC. Moreover, the market investigation has provided no evidence of significant countervailing buyer power. The loss of the existing pricing constraint which has been evident in this area, as well as of the stimulus to innovation, will provide the merged entity with the ability and incentives to increase overall prices and offer less customer choice.

(1124) This market, and competition in it, is closely related to the Notifying Parties' core equity derivative franchises, which have allowed them to develop these additional service offerings, capturing further trade flows from the OTC environment and further reinforcing their core ETD franchises by reducing further the attractiveness of staying in the OTC environment even when a certain degree of flexibility is sought in the contract specifications. Once again, the key element is the scale and scope of the Notifying Parties' respective margin pools, which would be further, and substantially, enlarged as a result of the notified transaction.

(1125) Therefore, it is concluded that the notified transaction would result in a significant impediment of effective competition in relation to the market for trade registration, confirmation and clearing services for flexible European equity and equity index futures and options traded OTC by eliminating the closest actual and potential competitor, and by creating a dominant or near-monopoly position as the merged entity would essentially be the only significant remaining player in these markets, which are characterised by high barriers to entry.

11.2.4. Conclusion on derivatives

(1126) The notified transaction would combine the two leading European derivatives exchanges which are *de facto* the only relevant players in the markets for European financial derivatives. In this context, the notified transaction, if implemented, would eliminate actual and potential competition in a number of derivatives products areas, namely existing and new European interest rate and single stock equity derivatives, and this irrespective of the precise product and geographic market definitions. Similarly, competition in the area of new European equity index derivatives would be eliminated as a result of the notified transaction. In addition, competition between the Notifying Parties in technology, processes, service and market design would also be eliminated.

(1127) As explained in Section 11.2.1.7 and Section 11.2.1.8, barriers to entry into these markets are high and countervailing buyer power weak.

(1128) Given the elimination of the only credible constraint that currently exists in these markets, the merged entity would most likely be able to impose higher trading and clearing fees to customers in the EEA[958] and engage in less product and technology innovation. The *de facto* choice of derivatives trading platforms in the relevant product

[958] Indeed, a number of market participants have expressed concerns about price increases as a result of the merger. By way of example, BGC stated that *"The amalgamation of the two largest listed futures and option Exchanges in Europe could, given little viable competition, result in a hefty increase in exchange clearing fees, exercise/assignment, cash settlement and delivery fees across all products and instruments":* BGC, Response to question 109 of Q1 – Questionnaire to customers [...]*.

areas would go from two to one as a result of which customers would see a reduction in the quality of service.

(1129) Furthermore, the notified transaction, if implemented, is likely to damage competition and innovation in European interest rate and single stock equity derivatives markets at a moment when regulatory initiatives are expected to lead to significantly greater volumes of derivatives being traded and/or cleared on exchange.

(1130) The negative impact of the notified transaction is likely to be significant. Exchange-traded derivatives are of critical importance for the economy. They serve as insurance against price movements and reduce the volatility of companies' cash flows, which in turn results in more reliable forecasting, lower capital requirements, and higher capital productivity. Exchange-traded derivatives also help to create a more liquid financial market for raising capital - this benefits both SMEs and larger firms. With no disciplining force left in the market, the merger is most likely to take away the benefits of price competition from retail and institutional investors and lead to less innovation in these markets where companies and financial institutions constantly look for new alternatives for their risk transfer solutions.

(1131) It follows that the notified transaction is likely to lead to a significant impediment of effective competition by creating a dominant or near-monopoly position and eliminating the closest actual and potential competitor in the markets for:

a. existing and new European exchange-traded interest rate futures and options, and this independently of whether or not this market were to be divided between short and long term interest rate derivatives and/or on the basis of the currency of the underlying.

b. existing and new European exchange-traded single stock futures and options, and this independently of whether or not this market were to be defined at the basis of single underlyings, all underlyings of a given nationality, or all EEA underlyings.

c. Off-order book services for block size European ETD contracts (irrespective of whether this market is further divided on any of the lines considered for on-book trading), and

d. Trade registration, confirmation and CCP clearing services for flexible versions of European equity futures and options traded OTC.

(1132) In addition, the notified transaction is likely to lead to a significant impediment of effective competition in the area of new exchange-traded European equity index futures and options by eliminating the closest competitor.

12. EFFICIENCIES

12.1. INTRODUCTION

(1133) The Notifying Parties submit that the notified transaction will lead to a number of efficiencies. While the Form CO included a section on purported efficiencies deriving

from the notified transaction, providing some high-level estimates of those efficiencies,[959]the Notifying Parties complemented this initial submission only on 5 September 2011[960]. That submission provided some further underlying economic reasoning and data and elaborated on the claimed efficiencies[961]. The Notifying Parties have since further supplemented their efficiencies claims in order to address the Commission's concerns raised in the SO and during the Oral Hearing, and to respond to various requests for information[962]. Those submissions were made on 24 October 2011, 7, 16, 18 and 21 November 2011 and then finally on 5 and 13 December 2011. All those submissions and claims are analysed in detail in the sub-sections dealing with each type of efficiencies claimed by the Notifying Parties.

(1134) According to Article 2(1)(b) of the Merger Regulation, the Commission shall "*consider the development of technical and economic progress provided that it is to the consumer's advantage and does not form an obstacle to competition*". Recital 29 of the Merger Regulation provides that "*in order to determine the impact of a concentration on competition in the common market, it is appropriate to take account of any substantiated and likely efficiencies put forward by the undertaking concerned*" and that it is "*possible that the efficiencies brought about by the concentration counteract the effects on competition, and in particular the potential harm to consumers, that it might otherwise have and that, as a consequence, the concentration would not significantly impede effective competition*".

(1135) Therefore, the Commission takes into account, in its analysis, substantiated efficiencies brought forward by the Notifying Parties and may, in accordance with the Horizontal Merger Guidelines, decide on this basis "*that there are no grounds for declaring the merger incompatible with the common market pursuant to Article 2(3) of the Merger Regulation. This will be the case when the Commission is in a position to conclude on the basis of sufficient evidence that the efficiencies generated by the merger are likely to enhance the ability and incentive of the merged entity to act pro-*

959 Form CO, section 9.

960 Day 21 after the initiation of proceedings together with their response to the decision opening the proceedings.

961 This submission included the following documents: Padilla, J. and Coppi, L. "Compass Lexecon's efficiency analyses: an overview" of 5 September 2011; Padilla, J. and Coppi, L "Revisiting the liquidity effects of the creation of Euronext's integrated cash market" of 5 September 2011; Padilla, J. and Coppi, L "Revisiting the liquidity effects of the creation of Euronext's integrated cash market" of 5 September 2011; Padilla, J. and Coppi, L. "Assessing the liquidity effects of the creation of Euronext's integrated derivatives platform" of 5 September 2011; Padilla, J. and Coppi, L. "Economy-wide implications of the Transaction" of 5 September 2011; and Padilla, J. and Coppi, L. " User benefits in the areas of IT and user access" of 5 September 2011.

962 The Notifying Parties submitted two papers dealing with efficiencies in their response to the SO "Response to Statement of Objections-Transaction related Efficiencies" of 24 October 2011 and Compass Lexecon "Efficiencies from the proposed transaction" of 24 October 2011. Furthermore, the Notifying Parties submitted a memorandum Compass Lexecon "Response to comments at oral hearing" of 16 November 2011. In response to request for information of 3 November 2011 and 17 of November 2011 dealing with IT, collateral and liquidity claimed efficiencies the Notifying Parties submitted additional evidence on 7, 18 and 21 November 2011. On 5 and 13 December 2011 the Notifying Parties submitted additional reports by Compass Lexecon "The relevance of Euronext integration to the Transaction" and "Response to Commission services economic experts' econometric analysis" 13 December 2011".

competitively for the benefit of consumers, thereby counteracting the adverse effects on competition which the merger might otherwise have."[963]

(1136) The Horizontal Merger Guidelines establish a cumulative set of requirements to take efficiencies into consideration. Efficiencies have to benefit consumers, be merger-specific and be verifiable[964].

(1137) First, the "relevant benchmark" in the assessment of efficiency claims is that consumers should be no worse off as a result of the merger. For that purpose, efficiencies have to be substantial and timely, and should, in principle, benefit consumers in those relevant markets where it is otherwise likely that competition concerns would occur.[965]

(1138) In general, efficiencies that lead to reductions in variable or marginal costs are more likely to be relevant for the assessment of efficiencies than reductions in fixed costs as they are more likely to result in lower prices for consumers. Cost reductions, which merely result from anti-competitive reductions in output, cannot be considered as efficiencies benefiting consumers[966].

(1139) Any efficiencies, to be taken into account, have to be passed on to consumers. The scope for pass-on is often related to the existence of competitive pressure from the remaining firms in the market and from potential entry. The greater the possible negative effects on competition, the more the Commission has to be sure that the claimed efficiencies are substantial, likely to be realised, and to be passed on, to a sufficient degree, to consumers[967].

(1140) Second, efficiencies have to be merger-specific and it should not be possible for them to be achieved to a similar extent by less anti-competitive alternatives[968].

(1141) Finally, the efficiencies have to be verifiable so that the Commission can be reasonably certain that the efficiencies are likely to materialize, and be substantial enough to counteract a merger's potential harm to consumers[969].

(1142) It is incumbent upon the Notifying Parties to provide the Commission in due time with all the relevant information necessary to demonstrate that the claimed efficiencies are merger-specific and likely to be realised and that the efficiencies are likely to counteract any adverse effects on competition that might otherwise result from the merger, and that the claimed efficiencies therefore benefit consumers[970].

(1143) In this regard, the Horizontal Merger Guidelines further state that "*it is highly unlikely that a merger leading to a market position approaching that of a monopoly, or leading to a similar level of market power, can be declared compatible with the*

963 Horizontal Merger Guidelines, paragraph 77.
964 Horizontal Merger Guidelines, paragraph 78.
965 Horizontal Merger Guidelines, paragraph 79.
966 Horizontal Merger Guidelines, paragraph 80.
967 Horizontal Merger Guidelines, paragraph 84.
968 Horizontal Merger Guidelines, paragraph 85.
969 Horizontal Merger Guidelines, paragraph 86.
970 Horizontal Merger Guidelines, paragraph 87.

common market on the ground that efficiency gains would be sufficient to counteract its potential anti-competitive effects"[971].

(1144) In the light of these principles and of the very significant competition concerns identified in Section 11.2 of this Decision leading to the creation of a near monopoly in a number of markets, any efficiencies, even if they were found to be verifiable, merger-specific, and likely to benefit consumers, would have to be particularly substantial to outweigh the significant impediment to effective competition in the relevant markets.

12.2. THE NOTIFYING PARTIES' EFFICIENCY CLAIMS

(1145) The Notifying Parties claim that the notified transaction will benefit the users of the Notifying Parties' cash and derivatives exchanges. They argue that it will reduce the costs of operating on these platforms for users, that users will have to pledge less collateral to clear transactions, and that users will benefit from greater liquidity and, therefore, lower implicit trading costs. The Notifying Parties argue that the liquidity effects of the notified transaction will spill over to benefit firms and consumers throughout the economy. They claim that firms will benefit from a reduced cost of capital that governments will be able to fund themselves more cheaply which will free resources for both public and private investment, and that consumers will benefit from greater employment, innovation and economic growth[972].

(1146) To substantiate these claims, five economic reports were submitted by the Notifying Parties[973]:

- Quantification of the reduction in the IT and user access costs of users of DB and NYSE resulting from the consolidation of the trading and clearing platforms of the Notifying Parties;

- Quantification of the annual collateral savings for users resulting from incremental cross-margining opportunities from pooling their clearing operations into a single clearing-house;

- Regressions to quantify the volume of liquidity impact of the integration of the trading and clearing platforms of the Amsterdam, Brussels, Lisbon and Paris cash exchanges between March 2002 and November 2003;

- Regressions to quantify the volume impact of integrating all Euronext's derivatives trading platforms into a single platform, Liffe CONNECT, between March 2003 and November 2004; and

- Evaluation by reference to the existing literature on economics and finance of the potential benefits of the notified transaction for the economy at large; in particular, its implications on the cost of funding of firms and governments, on investment and on economic growth.

---

971 Horizontal Merger Guidelines, paragraph 84.

972 Padilla, J. and Coppi, L., *Compass Lexecon's efficiency analyses: an overview*, 5 September 2011, page 4.

973 See footnote 961 of this Decision.

(1147) In addition, the Notifying Parties expect to realise significant cost synergies, currently estimated at Euro […]* million per year, largely by consolidating duplicative cost centres.

(1148) […]*.

(1149) The Notifying Parties submitted further economic analysis as part of their response to the SO on 24 October 2011[974]. […]*. The Notifying Parties submitted another report on 16 November 2011 as a response to comments from the Commission during the Oral Hearing[975]. […]*. Finally, the Notifying Parties sent additional reports on 5 and 13 December 2011[976]. […]*.

(1150) It is incumbent upon the Notifying Parties to provide sufficient evidence to demonstrate that their efficiency claims are substantial, timely and benefit consumers. In order to allow the Commission to thoroughly assess of those claims, these must be made in "*due time*" and with "*all the relevant information necessary to demonstrate that the claimed efficiencies are merger-specific and likely to be realised*"[977]. It follows that the more complex and lengthy the set of information sent by the Notifying Parties, the more time is needed in order to allow the Commission to make a complete and thorough assessment and thus be sure that any claimed efficiencies are substantial, likely to be realised, and to be passed, to a sufficient degree, on to the consumer.

(1151) The Best Practices for the submission of economic evidence and data collection in cases concerning the application of articles 101 and 102 TFEU and in merger cases[978] (the "Best Practices") establish the need for the Notifying Parties to submit economic evidence along with the codes and underlying data to replicate it in a timely manner. The Best Practices maintain that when these principles are not respected, they *"will receive less consideration and are consequently unlikely to be given much weight"* and *"can constitute grounds for not taking it further into consideration"*.[979] Nevertheless,

---

974 See footnote 962 of this Decision.

975 Compass Lexecon, " Response to Comments at oral hearing", 16 November 2011.

976 Compass Lexecon "The relevance of Euronext integration to the Transaction" 5 December 2011 and Compass Lexecon "Response to Chief Economist's Team's econometric analysis" 13 December 2011.

977 Horizontal Merger Guidelines, paragraph 87. Indeed, in this regard also Best Practices on the conduct of EC merger control proceedings at paragraph 18 sets out that *" it is also recommended that notifying parties put forward, already at the pre-notification stage, any elements demonstrating that the merger leads to efficiency gains that they would like the Commission to take into account for the purposes of its competitive assessment of the proposed transaction. Such claims are likely to require extensive analysis. It is thus in the interests of the notifying parties to present these claims as early as possible to allow sufficient time for DG Competition to appropriately consider these elements in its assessment of a proposed transaction*".

978 Commission Staff Working Paper entitled "Best practices for the submission of economic evidence and data collection in cases concerning the application of articles 101 and 102 TFEU and in merger cases", of 17 October 2011. This document was sent into public consultation on 6 January 2010.

979 Commission Staff Working Paper, *Best practices for the submission of economic evidence and data collection in cases concerning the application of articles 101 and 102 TFEU and in merger cases*, 17 October 2011. Section 2.4 states: *"Reporting and interpreting the results*
33. The results of economic and econometric analysis must be presented clearly, taking the reader through each step of the reasoning17. All empirical analysis, even descriptive statistics of relevant variables (e.g. price series) should be accompanied by all the documentation needed to allow timely replication, as well as a deep understanding of the methodology of any prior data management efforts. Reports which do not allow for replication and in particular econometric analysis not including the

the Commission has undertaken a careful assessment of the submitted economic evidence.

(1152) In this context, it is noted that the first detailed submission on efficiencies (namely, the five economic reports) was provided only 21 days after the initiation of proceedings, with subsequent supplemental submissions even later in the proceedings, with the last submission 90 working days after the initiation of proceedings – thus very late in the procedure. Given the lateness of the submissions together with the significant magnitude of the data provided, the highly complex nature of the submissions made, and the limited resources of the Commission to review the claims within the time constraints set out in Article 10 of the Merger Regulation, it is apparent that the efficiency claims had not been appropriately submitted.

(1153) It is against this background that the Commission has reviewed the efficiency claims submitted by the Notifying Parties.

(1154) On 23 November 2011, an economist meeting was held between the Notifying Parties' economists and the Commission services' economic experts at the request of the Notifying Parties. The purpose of the meeting, which was communicated and agreed beforehand, was to discuss three selected topics related to efficiencies: IT benefits, benefits from collateral savings and liquidity benefits.

(1155) Following the meeting on 1 December 2011, the Notifying Parties sent the Commission a letter in which the Notifying Parties suggested that during the meeting, the Commission services' economic experts had presented new econometric work on the effects of the Euronext integration on liquidity and had refined their thinking on the position taken in the SO concerning the opportunity cost of capital.

(1156) The Commission responded by a letter of 8 December 2011 informing the Notifying Parties that no additional data had been collected by the Commission, that any analysis undertaken by the Commission was based exclusively on the data provided by the Notifying Parties' economists and that any thinking outlined in the meeting was fully consistent with the position outlined in the SO.

(1157) On liquidity benefits, the Commission pointed out that the analysis described by the Commission services' economic experts during the meeting was based on the Notifying Parties' data and confirmed the concerns expressed in the SO that the effect may be artificially generated by a trend. The relevant paragraphs in the SO that refer to this

---

code and data in electronic form will receive less consideration and are consequently unlikely to be given much weight."

"*46. Where economic submissions rely on quantitative data the parties should provide the data and codes timely, in an appropriate format and in accordance with the criteria laid down in section 3 of this document. In particular, the absence of all the necessary elements needed for replication and assessment of an economic submission can constitute grounds for not taking it further into consideration*."

"*ANNEX 1- STRUCTURE AND BASIC ELEMENTS OF A SOUND EMPIRICAL SUBMISSION (…)*
D. Results and implications
• *Parties should explain the details of their models, and share any documentation needed to allow timely replication (e.g. the programming code used to run the analysis)."*

issue are 590, 593-594 and 598 for cash and paragraphs 607, 608 and 610 for derivatives.

(1158) On collateral benefits, during the meeting, the Commission services' economic experts reiterated what had been expressed in paragraph 573 of the SO that opportunity cost is the appropriate efficiency measure and also the position set out in paragraph 583 of the SO that 5% was a strict upper bound that was merely used as a conservative assumption in a calculation in paragraph 583 of the SO. Also, the Commission services' economic experts clarified in the letter that paragraph 574 of the SO already distinguished between collateral posted in the form of cash and collateral posted in the form of securities and that paragraph 575 of the SO already stated the Commission's position that it was clear that the actual or "net" opportunity cost of holding collateral at the CCP was relatively small, compared to a scenario in which the blocked collateral is not generating revenues.

(1159) The Notifying Parties responded on 13 December 2011 to clarify their continued position that the evidence produced at that meeting was new. Nevertheless, the Notifying Parties provided observations on how that evidence fails to call into question any of the results of the Notifying Parties' synergy analysis.

(1160) The Commission analysed these observations carefully and assesses them in Section 12.3 below.

12.3. ASSESSMENT

12.3.1. IT and user access cost savings

12.3.1.1. THE NOTIFYING PARTIES' EFFICIENCY CLAIMS

(1161) The Notifying Parties claim that their customers will enjoy significant, direct, and annual recurrent benefits from the consolidation of the Notifying Parties' trading and clearing platforms in terms of reduced IT and user access costs. The Notifying Parties argue that their customers will see the costs of operating on these platforms fall and estimate that customers will save Euro […]* million per year. More specifically, customers are expected to be able to reduce their costs for cash trading and derivatives trading and connection costs to the clearing-house, whereas Independent Service Providers ("ISVs") are also expected to reduce their costs. More specifically, those claimed cost savings are divided as follows:

(1162) With respect to cash trading, the Notifying Parties estimate that internal savings likely to be achievable by the Notifying Parties' users are expected to amount cumulatively to approximately Euro […]* million per year. This total cash trading cost saving is composed of the following

- […]* heavy users of exchange infrastructure at Euro […]*million each (Euro […]* million in total);

- […]* other users at Euro […]*million each (Euro […]* million in total).

(1163) With respect to derivatives trading, the internal savings likely to be achievable by the Notifying Parties' users flowing from the access simplifications are expected to amount

cumulatively to approximately Euro […]* million per year. This total derivatives trading cost saving is composed of the following:

- […]* largest users at Euro […]*million each (Euro […]*million in total);
- […]* complex and large users: Euro […]* million each (Euro […]* million in total);
- […]* large users: Euro […]* million each (Euro […]* million in total); and
- […]* remaining users Euro […]* to Euro […]* million each (Euro […]* million in total).

(1164) In addition, the Notifying Parties claim that ISVs will also benefit from cost savings because of the need to only implement one release rather than two and that the overall cost savings for ISVs will be around Euro […]* million per year.

(1165) Finally, the Notifying Parties estimate a further Euro […]* million IT and user access cost savings associated with the consolidation of clearing-houses and the lower charges for connectivity that this entails.

12.3.1.2. ANALYSIS

12.3.1.2.1. Verifiability

(1166) In the SO, the Commission questioned the verifiability of the cost savings in the areas of IT and user access[980]. The Commission argued that there were no means to assess the plausibility, reliability, and representativeness of the interview-based cost estimates as presented by the Notifying Parties.

(1167) In their response to the SO and to the Commission's requests for information of 3 and 17 November 2011, the Notifying Parties provided further detail on the number and nature of discussions and email exchanges they had with customers, that serve to substantiate the estimated cost reductions. Given that most of the relevant cost information is in the possession of their customers and the Notifying Parties claim that the latter are reluctant to share information about their precise IT and access costs, the Notifying Parties argue they cannot be expected to estimate the IT and user access cost efficiencies precisely[981]. Moreover, cost savings for consolidating trading platforms are said to vary significantly and in ways difficult to observe[982]. As a result, only "rough" data in some instances could be gathered[983]. The Notifying Parties argue that the

980 See SO, paragraph 585.

981 Notifying Parties' response to the SO, Efficiencies, , paragraph 85 and 86.

982 Compass Lexecon (2011) "Efficiencies from the proposed Transaction" of 24 October 2011, page 29, first bullet point.

983 Notifying Parties' response to the SO, Efficiencies,, paragraph 86: "When attempting to collect the relevant data, the Parties, unsurprisingly, faced a certain measure of reluctance from customers to share information about their precise IT and access costs. In instances when the Parties were nevertheless able to obtain (rough) data, they often had to accommodate their customers' wish not to be identified in the remainder of the proceedings. While the quality of their final estimate is inevitably constrained by these limitations, the essential premise of this efficiency, i.e. that the consolidation of trading and clearing

Commission could and should have quantified the efficiencies more precisely through questionnaires and argues that an unrealistic burden has been placed on them[984].

(1168) First of all, the Commission considers that any alleged difficulties to discuss with IT users the estimated cost reductions is not a reasonable justification to waive the Notifying Parties' obligation to provide the necessary evidence to substantiate any efficiency claims and / or to, at least approximately, quantify the importance of such efficiencies. In this respect it can be reasonably expected that the Notifying Parties either independently or with the support of external consultants or experts would normally evaluate the prospects of cost savings and synergies even before the transaction is implemented[985]. The Horizontal Merger Guidelines further indicate that "*when the necessary data are not available to allow for a precise quantitative analysis, it must be possible to foresee a clearly identifiable positive impact on consumers, not a marginal one*."[986]

(1169) The Commission observes that the Notifying Parties have estimated the actual internal and third-party cost savings enjoyed by the Notifying Parties' customers by extrapolating estimates that follow from sending out a very limited number of *ad hoc* and poorly-designed emails to selected customers with tight turnaround deadlines[987]. In this respect, the Notifying Parties' economic experts state that they have not been involved in the discussions with customers, nor have they vetted the cost savings as estimated by the interviewees[988]. In other words, the Notifying Parties' economic experts have estimated the claimed savings on the basis of the Notifying Parties conveying to them general numbers based on a limited number of unstructured emails. The Commission does not consider that this meets the requisite standard for the basis of an efficiency claim.

(1170) There are […]* customers that are members of both cash platforms and that hence would benefit from claimed cost savings following the notified transaction. The group of customers is subdivided into two member categories (heavy users and other users). Selected customers were asked how much each software release implementation would cost them, and the Notifying Parties have listed a number of concrete cost reduction estimates[989]. It is entirely unclear to the Commission where any of these estimates come

---

platforms will mechanically lead to IT and access cost savings, is neither doubtful nor challenged by the Commission."

984 Notifying Parties' response to the SO, Efficiencies, paragraph 88.

985 The Notifying Parties argue that the cost synergies achieved through the notified transaction "have been identified in documents pre-dating the Transaction" and refer to NYX's internal presentation to its Board of Directors (see Form CO, Section 9 (Efficiencies), paragraph 9.60). The Commission considers that this presentation includes some high-level statements, but no meaningful analysis of any cost savings. The "Estimated synergies" section of this document shows that at this stage the Notifying Parties were unable to quantify the possible synergies (especially in the clearing and market operations areas) and provided a rough estimate of […]* US $ "subject to further due diligence" (see slide 18)".

986 Horizontal Merger Guidelines, paragraph 86.

987 The 7 emails that are supposed to substantiate the cost savings are provided in the Notifying Parties' response to the Commission's information request of 3 November 2011, and in particular Annex 2. Annex 4 seems to contain transcripts of 7 further discussions.

988 Padilla and Coppi (2011), "User benefits in the areas of IT and user access", 5 September 2011, footnote 18, page 8.

989 In particular as stated on page 8-9 of Padilla and Coppi (2011), "User benefits in the areas of IT and user access", 5 September 2011.

from and a follow-up request for information of 17 November 2011 did not result in any guidance or explanation as to the origin and reliability of the estimates provided. In particular, there was no mapping of the evidence in the file into the claimed efficiencies (as requested by the Commission in its request for information of 17 November 2011), instead only general reference is made to a large number of discussions with users and stakeholders and feedback from presentations by the Notifying Parties to several cash users (see reply to request for information of 3 November 2011). In sum, it is entirely unclear how the reported claimed savings per member per group (that are then extrapolated to the entire group and summed across groups) have been constructed. As a result, the evidence submitted by the Notifying Parties does not allow the Commission to verify the claimed cost savings[990].

(1171) There are […]* customers that are members of both derivatives platforms and that hence would benefit from the claimed cost savings following the notified transaction. The group is subdivided into four member categories (largest members, complex and large members, large members, and remaining members). Across the four categories, DB reports written feedback (emails) from seven customers to substantiate the claimed estimated IT savings by customers. The deadline by which users were asked to respond is not reported, but where the deadline can be identified from the emails, it appears extremely short (less than two days and sometimes less than a day). The questions were phrased very generally and informally without any proposed template to ensure comparability in responses[991]. As a result, it is to be expected that the responses are not consistent (in terms of results, definitions used, detail, scope and coverage across members) and do not allow to average cost estimates in any meaningful way[992]. Whereas the reply to the request for information of 17 November 2011 does explain how some of the numbers in the seven emails have been mapped onto the ultimate cost reduction estimates, the mapping is largely discretionary and important entries in the final retained estimates are still left out[993].

(1172) In sum, it is again entirely unclear how the reported savings per member per group (that are then extrapolated to the entire group and summed across groups) have been

990 As reported in Padilla and Coppi (2011), "User benefits in the areas of IT and user access", pages 8-9.

991 Questions read as follows "*(i) Do you think your firm will achieve significant savings as a result of the planned platform consolidation across trading and clearing for NYX and DB and how much would you estimate these savings to be? (ii) Do you think your firm will achieve significant savings as a result of standardisation of business processes across trading and clearing for NYX and DB?*" See page 3 of the Notifying Parties' response to the Commission's information request of 3 November. "*As discussed we would very much appreciate if you could share with us your estimation on internal costs for the implementation/roll out of a Eurex Release (this should comprise cost drivers such as software development, testing, integration, end to end test with the exchange, etc.)*" and "*Question is how much (approx) the implementation of a Eurex release would be for your firm i.e. what is the potential saving were there only to be a single release per annum.*". See page 1 and 2 of Annex 2 of the Notifying Parties' response to the Commission's information request of 3 November 2011.

992 See the Notifying Parties' response to the Commission's RFI of 3 November 2011, Annexes 2 and 4.

993 .[…]*. The paucity and inconsistency of the reported results are at odds with the following claim by the Notifying Parties *"In light of the consistency and similarity in the figures provided by users, the Parties are confident that these estimates are representative of the IT and user access savings that users will realize as a result of the Transaction."* (see page 1 of the Notifying Parties' response to the Commission's RFI of 3 November 2011).

constructed. As a result, the submitted evidence does not allow the Commission to verify the claimed cost savings[994].

(1173) The Notifying Parties claim that ISVs as a group will enjoy Euro […]* million of cost savings per year as only one release needs to be implemented per year rather than two. The Notifying Parties submit that they believe that a large proportion of ISV savings (around Euro […]* million) will be passed on to end-users, since all ISVs using both trading platforms will receive the cost savings, and the ISV market is highly competitive. It is again not specified and hence entirely unclear how the estimation of the cost saving is made.

(1174) Finally, the Notifying Parties claim a further Euro […]* million IT and user access cost savings associated with the consolidation of clearing-houses and the lower charges for connectivity that this entails. The Notifying Parties allocated overlap members to different bandwidth tiers according to the type and size of the required connection to the LCH SA clearing-house. Savings from disposing of the LCH SA bandwidth charges are subsequently estimated by multiplying the overlap members by the respective tier-specific bandwidth charges. Total annual savings from fewer connection and membership charges are estimated to amount to Euro […]* million.

(1175) While it cannot be excluded that there may be a positive impact on customers from avoiding duplication of software maintenance, software updates, and connection charges, it is also likely that there will be costs, at least during any period of transition and migration[995]. Given this, and the lack of reliability based on the significant deficiencies in the evidence submitted by the Notifying Parties, it is concluded that the claimed cost savings have not been substantiated to the required standard.

(1176) Therefore, the Commission considers that the claimed IT and user access benefits are not verifiable.

12.3.1.2.2. Merger specificity

(1177) The Notifying Parties argue that it is unlikely that these savings could be achieved without the merger as it is very unlikely that the Notifying Parties could have accepted, absent the notified transaction, to merge or outsource their trading platforms, which is a key requirement to deliver these efficiencies[996]. The Commission considers that it cannot reasonably be inferred from the submitted evidence that the IT and user access

---

994 Padilla and Coppi (2011), "User benefits in the areas of IT and user access", pages 10-11.

995 See for example the response of the following customer: "*Des coûts car il faudra migrer noter accès Liffe vers Eurex (ou inversement) et ce ne sera surement pas sans couts de DEV, ni gestion de projets.*" (see the Notifying Parties' response to the Commission's information request of 3 November, Annex 2, email 5) or "*One time cost upgrading Basildon: 50.000 euro (2 core switches); One time cost moving Frankfurt to Basildon: 20.000 euro (shipping, installing, configuration, incl. man hours); one time cost upgrading own London hub (InterXion): 50.000 (2 core switches); one time cost software development 1: 15.000 euro …*" (see the Notifying Parties' response to the Commission's information request of 3 November, Annex 4) and "*Extra yearly cost infrastructure 1: 105.000 euro a year, getting an extra cabinet in Basildon; Extra yearly cost infrastructure 2: 36.000 euro a year, upgrading bandwidth in Basildon*" (see the Notifying Parties' response to the Commission's information request of 3 November, Annex 4).

996 Form CO, Section 9, paragraphs 9.60 and 9.61.

benefits would materialise if the merger were to be completed. Therefore, it is not necessary to examine whether these claimed efficiencies could have been realised absent the notified transaction.

12.3.1.2.3. Consumer benefits

(1178) The Notifying Parties argue that the benefits of lower implementation and maintenance costs accrue directly to users through reduced internal and third-party costs.

(1179) In the SO, the Commission specified that any claimed efficiencies may only partially remain with customers, given the merged entity's ability to increase any explicit fee on the set of complementary products and services that the merged entity would offer to customers. The merged entity's incentive to leave efficiency gains from such cost savings with customers depends on the existence of competitive pressure from the remaining firms in the market and from potential entry. If no such or only limited pressure exists, the merged entity can in principle increase any explicit fee so as to partially or wholly claw back any cost savings at customer level. Given the fact that post-merger, no significant competitive pressure would exist in the relevant products in the derivatives trading and clearing markets concerned, such market power would have a price effect which would outweigh any claimed efficiency. Recoupment possibilities would not have to be limited to IT connection charges, but could also take place through membership fees or transaction fees for derivatives trading and clearing as these services are complementary services. To the extent that there were any benefits, these would only accrue to customers if it could safely be assumed that other total price components are left unchanged, which is not the case.

(1180) In their response to the SO, the Notifying Parties claim that the notion that such benefits can be clawed back is irrelevant and erroneous[997]. The Notifying Parties argue that, in contrast with cost savings realised by the Notifying Parties, in order to benefit users, these efficiencies do not need to be "passed on" by the combined entity through price reductions, but they directly lower costs incurred by customers[998]. The Notifying Parties claim that the Commission is conflating its competitive assessment with its efficiencies' assessment[999].

(1181) At the Oral Hearing, the Commission explained that the question of pass-on is relevant regardless of whether the benefit accrues on the producer or consumer side as is also known from the theory of tax incidence[1000],[1001]. The Commission clarified at the Oral Hearing that it was not conflating its competitive assessment with its efficiencies assessment. As in standard merger analysis, the first step is to assess the merger's unilateral effects considering the coming together of the two firms without any changes

997 Notifying Parties' response to the SO, Efficiencies, paragraph 81.

998 Notifying Parties' response to the SO, Efficiencies, paragraph 142.

999 Notifying Parties' response to the SO, Efficiencies, paragraph 148.

1000 The key concept in the theory of tax incidence is that the tax incidence or tax burden does not depend on where the revenue is collected, but on the price elasticity of demand and price elasticity of supply.

1001 Even if cost savings accrue on the side of the customers, if it is clawed back by the merged entity, then it cannot be taken into account as efficiency. See also paragraph 79, 80 and 84 of the Horizontal Merger Guidelines.

in costs or technology. The second step assesses efficiencies and how the price adjusts following cost savings either on the firm or the customer side. This latter price effect is what is commonly called pass-on and is separate from any price effect considered under unilateral effects in the first step.

(1182) The Notifying Parties further submit in their response to the SO that the Notifying Parties would neither have the incentive, nor the ability to wholly claw back the user benefits. The Notifying Parties state that if efficiencies are only "partially" clawed back by price increases, customers will be better off as a result of the merger[1002].

(1183) The Commission agrees that if efficiencies are only "partially" clawed back, consumers would indeed face a net benefit. However, this observation implies that only part of the quantified amount cannot be considered as a consumer benefit, but not the full quantified amount.

(1184) As an attachment to their response to the SO, the Notifying Parties submitted a paper by Compass Lexecon which provided further detail on the merged entity's ability and incentive to wholly claw back benefits[1003]. This paper presents four main arguments. First, the paper argues that efficiencies benefiting users of markets where no competitive issues have been found should be taken into account in the overall assessment of the notified transaction given that there is a significant overlap of customers in different markets. Second, the paper claims a proper analysis of the economics of user benefit capture (as opposed to the economics of cost-efficiency pass-through) suggests that a very significant portion of benefits will remain with users. Third, the paper argues that in order to capture customer benefits, price rises would need to be so large so as to be implausible. Finally, the paper argues that in order to fully capture user benefits, the combined entity would need to be able to price discriminate perfectly between customers, which is extremely unlikely

(1185) The Commission considers that, given the complementarity of IT services and trading services and given the fact that the Notifying Parties can price discriminate at least in part[1004], it appears likely that, to the extent that there are any IT and user savings, pass-on to users would only be partial.

(1186) Therefore, the Commission concludes that, to the extent there may be any IT and user access savings at all (see Section 12.3.1.2.1), there would be some pass-on to (that is net benefits left with) customers, but the size of this effect cannot be determined on the basis of the available data.

12.3.1.3. CONCLUSION ON IT AND USER ACCESS COST SAVINGS

(1187) Therefore, the Commission concludes that the efficiencies claimed by the Notifying Parties in the area of IT and user access costs are not verifiable. Even if they were verifiable, it is unclear whether such savings would be merger-specific and how much of the savings would be passed on to (that is net benefits left with) customers.

1002 Notifying Parties' response to the SO, Efficiencies, paragraph 153.

1003 Compass Lexecon "Efficiencies from the proposed transaction" of 24 October 2011.

1004 See the discussion in Section 11.1.1.2.2.1.4. of this Decision.

12.3.2. Collateral Savings

12.3.2.1. THE NOTIFYING PARTIES' CLAIMS

(1188) The Notifying Parties claim that the notified transaction will allow their common members to achieve significant collateral savings by allowing them to pool their clearing operations into a single CCP, thereby bringing together their highly correlated, risk-offsetting products. The Notifying Parties have simulated the anticipated savings from the notified transaction in each product area on the basis of the savings currently achieved by the Notifying Parties with respect to similar product combinations. An extrapolation of these anticipated savings to the Notifying Parties' overall collateral requirements results in an estimate of approximately Euro 3.1 billion claimed direct collateral savings for customers.

12.3.2.2. ANALYSIS

12.3.2.2.1. Verifiability

(1189) In the SO, the Commission acknowledged that the merger if implemented could give rise to lower collateral requirements for joint clearing members as a result of additional cross-margining opportunities within an enlarged clearing pool. However, the level of any actual savings on behalf of the exchange members that would derive from the lower collateral requirements, in terms of the total cost of trading[1005], were deemed to be unclear and most likely greatly overestimated for a number of reasons.

(1190) First of all, in the SO the Commission considered that the Euro 3.1 billion in collateral savings initially claimed do not represent actual efficiencies for clearing members (customers): it is not the collateral savings but the opportunity cost of holding cash or securities posted as collateral which is the relevant measure of actual cost savings from lower collateral requirements[1006]. Therefore, it is inappropriate to put the nominal collateral savings on the same footing as, for example, the claimed IT and user access cost savings, as the former still need to be translated into actual reduced opportunity costs for customers. Whereas the Notifying Parties state[1007] that none of their submissions has created such confusion and that references have always been made to collateral savings and not cost savings, the Commission observes[1008] that the

1005 See the discussion in Section 2.1.2 of this Decision.

1006 See SO, paragraph 573.

1007 Notifying Parties' response to the SO, Efficiencies, paragraph 65.

1008 Initially, the Notifying Parties were ambiguous about this point. For example, in sheet 5 of the 8 September 2011 Padilla and Coppi presentation "Efficiencies from the NYSE Euronext/Deutsche Börse transaction" entitled "Significant efficiencies accrue directly to users in the form of reduced cost of trading" IT & user access benefits ("direct savings of €[50-100]* million per year") are being listed alongside cross-margining benefits ("€3.1 billion in collateral savings") and liquidity benefits ("up to […]* reduction in bid-ask spread (cash) and […]* increase in volume (derivatives)"). On the same sheet, the words cross-margining "benefits" and cross-margining "efficiencies" are being used to describe the €3.1 billion in collateral savings. A similar ambiguity holds for example in paragraph 4 of the Notifying Parties' response to the 6(1)c decision "Transaction-related efficiencies", 5 September 2011.

Notifying Parties have repeatedly grouped together annual cost savings with collateral savings estimates. Given that the Notifying Parties explicitly agree[1009] that the opportunity cost is the relevant metric if there is a desire to quantify the efficiency as a cost saving, it is surprising that the Notifying Parties did not submit their own quantification of the opportunity cost saving. The Commission stated in the SO that opportunity cost was the appropriate efficiency measure and that the opportunity cost of holding collateral was relatively small given that the blocked collateral generates revenues[1010].

(1191) Given that Eurex Clearing pays interest to its clearing members that provide cash collateral and given that the clearing member remains the legal and economic (coupon- or dividend-receiving) owner of the pledged securities in the case of pledged securities, the actual benefit of freeing up collateral or, alternatively, the actual opportunity cost of having collateral locked up at the CCP would only represent a fraction of the claimed Euro 3.1 billion nominal collateral savings.

(1192) In their response to the SO, the Notifying Parties acknowledged that the opportunity cost of holding cash or collateral, rather than collateral savings as such, determine actual cost savings for their customers[1011]. The Notifying Parties do not estimate, assess or propose what a reasonable opportunity cost would be for the pledged cash and collateral, but they are of the opinion that a 5% opportunity cost (which the Commission had put forward in the SO as a conservative and strict upper bound) or even a lower opportunity cost would still result in large efficiencies[1012].

(1193) The Commission maintains that a 5% opportunity cost would in fact be conservative and a strict upper bound for the actual benefit derived by customers from having to pledge less cash and security collateral. An opportunity cost of 5% would lead to a cost saving of Euro 155 million if the Euro 3.1 billion claimed nominal collateral savings would be taken as the basis.

(1194) Indeed, cash that is not pledged as collateral at Eurex Clearing can typically be invested risk-free by members as overnight deposits in the relevant money markets (for EUR, GBP, USD, CHF, etc.). However, when the cash is pledged as collateral, Eurex Clearing also invests it overnight and pays the accrued interest to the clearing member, after withholding a small fee ([…]* basis points for EUR and CHF, and […]* basis points for USD and GBP cash collateral)[1013]. On this basis the relevant benefit from not having to pledge cash balances as collateral (or alternatively the opportunity cost for having to pledge cash balances) is […]* basis points for EUR and CHF and […]* basis points for USD and GBP cash balances respectively. Note that […]* basis points ([…]* basis points) would be […]* of the 5% opportunity cost that was cautiously and conservatively retained by the Commission to estimate the actual cost savings to members.

1009 Compass Lexecon "Efficiencies from the proposed transaction" of 24 October 2011, page 60.
1010 See SO, paragraph 575.
1011 Compass Lexecon "Efficiencies from the proposed transaction" of 24 October 2011, page 60.
1012 Notifying Parties' response to the SO, Efficiencies, paragraph 63.
1013 See Form CO,Annex C.34.

(1195) Securities that are pledged as collateral to Eurex Clearing still yield income and coupons to the exchange members, as the economic and legal ownership is retained by them (Eurex Clearing does not withhold a fee for non-cash collateral), hence the benefit from not having to pledge the securities (opportunity cost of having to pledge them) may seem to be zero. However, the securities that are locked up as collateral can no longer be pledged or repoed[1014] (in order to access collateralised borrowing facilities from the private sector or the central bank). If members for example were to repo the security to, say, the ECB in return for liquidity, they could avoid tapping unsecured capital markets. The benefit to the members would thus amount to the marginal cost of capital of the members reduced by the cost[1015] of repoing the security (publicly or privately). Importantly, the ECB (as well as any private counterparty) will apply a haircut[1016] to the pledged security in order to manage its risk. The applied haircut can go up to and even exceed 50% of the pledged asset's face value depending on the security, originator, residual maturity, and rating of the pledged security[1017]. In sum, it would seem that the firm's marginal cost of capital net of the cost of repoing the securities would in any case be a strict upper bound for the benefit of not having to pledge securities (as it corresponds to a zero haircut). A strict lower bound may result from applying a large haircut to the upper bound.

(1196) Following the above logic and based on a 5% cost of capital assumption, a reasonable and weighted opportunity cost across cash and securities collateral would lie in a range of […]*. This range corresponds to [Euro [40-60]* million; Euro [100-120]* million] of cost savings for customers, compared to the claimed Euro [120-180]* million. Whereas the true opportunity cost is collateral specific and cannot be estimated precisely with the available information, the Commission considers that the weighted opportunity cost of the lower margin requirements and hence the ultimate efficiency for members as a whole may lie in the [Euro [40-60]* million; Euro [100-120]* million] range if the Euro 3.1 billion claimed nominal collateral range are taken as a basis for the calculation of the opportunity cost. All these numbers are proxies and only serve as estimation of the order of magnitude of savings related to increased cross-margining opportunities. Under current market conditions, the savings are most likely in this range.

(1197) Secondly, in the SO the Commission acknowledged that a significant number of users are members of both Notifying Parties' CCPs and that derivatives contracts across

---

1014 A repurchase agreement, also known as a repo, is the sale of securities together with an agreement for the seller to buy back the securities at a later date. The repurchase price should be greater than the original sale price, the difference effectively representing interest, sometimes called the repo rate. The party that originally buys the securities effectively acts as a lender. The original seller is effectively acting as a borrower, using their security as collateral for a secured cash loan at a fixed rate of interest.

1015 The cost of repoing the security at the ECB amounts to 1.25%. The non-conventional long term refinancing operations (LTRO) are fixed-rate full-allotment tenders introduced by the ECB following the financial crisis to allow banks to receive liquidity for maturities up to 12 months at an annual borrowing cost of currently 1.25% against appropriate and prudently valued (i.e. haircutted) collateral.

1016 The percentage by which an asset's market value is reduced for the purpose of calculating capital requirement, margin and collateral levels in order to have a cushion in case the market value falls.

1017 See the ECB website for a sample of applicable haircuts depending on the type of security, originator, rating, and residual maturity.http://www.ecb.int/press/pr/date/2010/html/sp090728_1annex.en.pdf?33bd383889552c274fd8610b476a17d8 viewed on 26 January 2012.

exchanges may sometimes be characterised by a significant degree of positive correlation[1018]. However, in the SO, the Commission stated that it was not reported to what extent users actually hold significant positions in opposite directions (for instance, a long position in FTSE derivatives against a short position in Euro Stoxx derivatives), which is a prerequisite for collateral offsets[1019] to take place given positive correlations. In the SO, the Commission pointed out that no information had been provided on positions of users who are members of both Notifying Parties' CCPs[1020]. More generally, the Commission argued in the SO that without more granular underlying data, the whole simulation exercise largely remains a black box. As a result, the Commission concluded that the plausibility, reliability, and representativeness of the collateral savings estimates could not be properly assessed by the Commission.

(1198) In their response to the SO, the Notifying Parties provide a stylised snapshot of position data for all members and in all products showing that a substantial proportion of joint CCP members hold positions in opposite directions within each asset class. The percentage of members with positions in opposite directions in the three CCPs concerned among members who hold positions in several CCPs amounts to […]*% for interest rate derivatives products, […]*% for equity index derivative products, and for equity derivatives lies in a range between a low of […]*% for oil and gas equity derivative products and a high of […]*% for real estate equity derivative products[1021].

(1199) The Commission recognises that this evidence suggests that there is a significant proportion of members with offsetting positions between the three CCPs, but considers that this evidence does not allow the Commission to verify to what extent the notified transaction would lead to reduced margin requirements, as the latter also depends on the symmetry (or lack thereof) of the offsetting positions in volume terms. In order to be able to estimate actual offsets, the volumes of the offsetting exposures per product category would need to be considered, which the Notifying Parties did not provide.

(1200) The Notifying Parties claim[1022] that they are reluctant to share confidential data on actual member positions (so that actual offsets can be computed), but this notwithstanding, the Notifying Parties' approach of extrapolating findings based on samples of data and discretionary assumptions may not lead to accurate estimates of the amount of margin requirements that will be saved following the notified transaction.

1018 See SO, paragraph 576.

1019 It should also be noted that in the calculations, the current practice at Eurex Clearing […]* (see footnote 12 of the 5 September 2011 submission "Cross-margining efficiencies induced by the Deutsche Borse/NYSE Euronext merger" by the Notifying Parties' economic consultants). […]* Also for this reason, the claimed margin savings may be overestimated.

1020 See SO, paragraph 576.

1021 Compass Lexecon, "Efficiencies from the Proposed Transaction", 24 October 2011, page 61, table 3.

1022 Padilla and Coppi, "Cross-margining efficiencies induced by the Deutsche Börse/NYSE Euronext merger", 5 September 2011, page 9. "*A precise assessment of the collateral reductions that joint members would enjoy as a result of the Transaction would require: exchanging information relating to the current positions of joint members on the Parties' respective clearing houses to obtain their combined portfolio across exchanges… Moreover, the Parties are reluctant to share confidential data on member positions at this stage. Therefore a precise calculation of the additional cross-margining offsets is not currently possible.*"

(1201) Thirdly, in the SO, the Commission stated that the collateral savings were calculated using the current risk management model of Eurex whereas a new Portfolio Based Risk Management Method (Project Prisma) was introduced to the Eurex Clearing Executive Board […]*[1023]. The Commission considers that, in theory, the right counterfactual would be to base the calculations on the new portfolio wide model. However, given that the new clearing model is not yet available, it would be unreasonable to require its use. In any case, the net benefit of basing the calculation on the new model is uncertain because while it could lead to further margin offsets for products traded in-house, it could also lead to further opportunities across trading platforms.

(1202) Despite the fact that margin requirement savings are not quantified to the extent expected, the Commission acknowledges that the notified transaction is likely to lead to some collateral savings, although it is likely to be at a level lower than the figure of Euro [120-180]* million put forward by the Notifying Parties. Under current market conditions, and on the assumption that the merged entity, notwithstanding its market power, would allow for the described offsets between the correlated products concerned, the savings would most likely be in the range of approximately Euro [40-60]* million to Euro [100-120]* million.

(1203) The Commission therefore considers that the efficiencies associated with the claimed collateral savings are verifiable, but very likely lower than the claimed Euro [120-180]* million.

12.3.2.2.2. Merger specificity

(1204) In the Form CO, the Notifying Parties claimed that the collateral savings are merger-specific[1024]. The Notifying Parties argued it is highly unlikely that they would be able to generate comparable capital efficiencies in the same time frame without the notified transaction, if at all. They submitted that although alternative solutions can be envisaged in theory, they are unrealistic in practice and would not deliver equivalent efficiencies. For illustration, they described two alternative solutions: interoperating CCPs and outsourcing[1025].

(1205) In the decision opening the proceeding, it was concluded that, even though the market investigation provided indications that potential benefits associated with lower collateral requirements due to the increased margin pool of the merged entity could arise from the merger, the Notifying Parties had, at that stage, not provided sufficient evidence that any such efficiencies meet the criteria of the Horizontal Merger Guidelines, and in particular that they could not be achieved through less anti-competitive alternatives[1026].

1023 See SO, paragraph 579.
1024 Form CO, Section 9, paragraph 9.5.
1025 Form CO, Section 9, paragraph 9.20.
1026 Decision opening the proceeding, paragraph 304.

12.3.2.2.2.1. The Notifying Parties' claims

(1206) In their response to the decision opening the proceedings, the Notifying Parties provided their analysis on whether the collateral savings could be achieved through less restrictive means by considering interoperability, outsourcing and margin offset agreements[1027].

a. Interoperability

(1207) The Notifying Parties pointed out that interoperability carries a number of risks and challenges that do not allow the same efficiencies which will flow from the notified transaction to be achieved, particularly for derivatives markets. They pointed to two risks which in their view bear particular consideration: interoperability creates significant exposures between CCPs and if CCPs contribute to each other's default fund, both CCPs will be exposed to the additional risk of loss mutualisation arising from the default of the other[1028].

(1208) The Notifying Parties submitted that for these and other reasons, industry participants have expressed scepticism about the feasibility of interoperability between CCPs[1029]. In particular in respect to derivatives, interoperability among CCPs carries additional risks and complexities that raise questions about feasibility[1030]. In this respect, the Notifying Parties quoted the words of Roger Liddell, the former Chief Executive Officer of LCH.Clearnet, "*I don't think we'll ever see interoperability in derivatives clearing, the risks from contagion are just not worth the benefits*."[1031]

b. Outsourcing

(1209) The Notifying Parties explained that outsourcing of clearing services can be implemented in certain circumstances, but that cross-margining usually does not take place in the context of such outsourcing arrangements[1032].

(1210) The Notifying Parties indicated that an exception to this is the CME/CBOT agreement concluded in 2003, where CBOT outsourced its clearing to CME through a Common Clearing Link, and which allowed cross-margining. The Notifying Parties argue that it is difficult to consider an outsourcing agreement such as the CME/CBOT agreement as a realistic alternative to the notified transaction[1033].

1027 Notifying Parties' response to the decision opening the proceedings - Transaction related efficiencies.

1028 Notifying Parties' response to the decision opening the proceedings – "Transaction related efficiencies", paragraph 25.

1029 Notifying Parties' response to the decision opening the proceedings – "Transaction related efficiencies", paragraph 26.

1030 Notifying Parties' response to Article 6.1.c decision – "Transaction related efficiencies", paragraph 26

1031 See FOW, Forget Interoperability in Derivatives Clearing, July 23, 2010, at http://www.fow.com/Article/2637026/Forget-interoperability-in-derivatives-clearing-says-Liddell.html, viewed on 25 January 2012.

1032 Notifying Parties' response to the decision opening the proceedings – "Transaction related efficiencies", paragraph 27.

1033 Notifying Parties' response to the decision opening the proceedings – "Transaction related efficiencies", paragraph 28.

(1211) First, the Notifying Parties claim that control over the liquidity represented by open interest is regarded by exchanges and CCPs as critical to the success of their businesses. It is therefore unlikely that, absent the merger, the Notifying Parties would have agreed to an outsourcing agreement on derivatives that would allow for cross-margining. The CME/CBOT agreement eventually resulted in the merger of the two exchanges. Thus, it was not an alternative to achieving efficiencies through a merger; rather, it was a step towards, and similar in many respects, to a full combination[1034].

(1212) Second, the Notifying Parties submit that the CME/CBOT agreement took place within a single regulatory jurisdiction. In the Union, cross-border outsourcing would create significantly more regulatory difficulties. In the absence of a single regulatory, capital, customer, and bankruptcy framework, these complications could not easily be lifted[1035].

(1213) Finally, the Notifying Parties referred to Annex C.31 to Form CO, where it is explained that […]*[1036].

c. Margin offset agreements

(1214) The Notifying Parties state that, in theory, they could agree to cross-margin their collateral requirements in a margin offset agreement, without interoperability or outsourcing. According to the Notifying Parties, this scenario is, however, very unlikely in practice and would in any event not deliver the same efficiencies as the notified transaction[1037].

(1215) First, the Notifying Parties argue that they would have no incentive to conclude such agreement absent the merger, […]*[1038].

(1216) Second, the Notifying Parties claimed that from a market risk perspective, margin offset agreements are complex arrangements since they imply a joint risk management and liquidation process for cross-margined positions.

(1217) Third, the Notifying Parties submitted that the number and scope of past cross-margining arrangements have been limited. For instance, the past cross-margining agreement between LCH and the CME, which was launched in 2000 and terminated in 2010, only covered certain instruments of the respective exchanges (selected STIR contracts on CME and LIFFE). Under this agreement, collateral was held separately at each respective clearing organisation ("two-pots" system), which exposed each CCP to

1034 Notifying Parties' response to the decision opening the proceedings – "Transaction related efficiencies", paragraph 29.

1035 Notifying Parties' response to the decision opening the proceedings – "Transaction related efficiencies", paragraph 30.

1036 Notifying Parties' response to the decision opening the proceedings – "Transaction related efficiencies", paragraph 31.

1037 Notifying Parties' response to the decision opening the proceedings – "Transaction related efficiencies", paragraph 32.

1038 Notifying Parties' response to the decision opening the proceedings – "Transaction related efficiencies", paragraph 33.

the other's default risk. According to the Notifying Parties, such an agreement would deliver much more limited benefits than the notified transaction[1039].

(1218) Fourth, the Notifying Parties claim that margin offset agreements may require substantial maintenance costs, in addition to the costs they both incur for their internal cross-margining operations[1040].

(1219) The Notifying Parties concluded that, as with outsourcing and interoperability, margin offset agreements raise very difficult commercial and technical issues and can therefore not be considered as a credible alternative to deliver capital savings of the same magnitude as those generated by the notified transaction. The Notifying Parties therefore argue that absent other credible alternatives, efficiencies generated by the notified transaction must therefore be considered as merger-specific[1041].

(1220) In their response to the SO, the Notifying Parties reiterated their position that they would not be able to generate comparable collateral savings without the notified transaction. They repeated that although alternative solutions – an interoperability agreement, an outsourcing agreement, or a margin offset agreement – can be envisaged in theory, they are unrealistic in practice and cannot therefore be expected to deliver equivalent efficiencies[1042].

(1221) Nevertheless, and in order to further demonstrate that the standard of paragraph 85 of the Horizontal Merger Guidelines is met, the Notifying Parties examined why neither the Single CCP scenario nor the Multi-CCP agreement is a realistic alternative to deliver efficiencies to "*a similar extent*" as the notified transaction.

(1222) First, the Notifying Parties explained that a realistic Single CCP scenario involving NYX and DB would only concern LCHC SA and Eurex Clearing (not NYSE Liffe Clearing) and would in all likelihood not allow for cross-margining, in order to allow both NYX and DB to retain control on the financial integrity of their open interest pool. In this respect, the Notifying Parties point out that exchange operators typically have no incentive to conclude such agreements absent a merger scenario. Such agreements could jeopardize the integrity of their own open interest pools, which is essential to reduce financial risks and possible contagion, and may result in loss of business[1043].

(1223) Second, the Notifying Parties pointed out that a Multi-CCP agreement, if it allowed for cross-margining, would limit such opportunities to clearing members' proprietary accounts and would not cover clearing members' so-called "omnibus accounts" where the positions of clearing members' customers are held, which would considerably diminish the scope of collateral savings.[1044]. By contrast, in a merger, which subjects

---

1039 Notifying Parties' response to the decision opening the proceedings – "Transaction related efficiencies", paragraph 35.

1040 Notifying Parties' response to the decision opening the proceedings – "Transaction related efficiencies", paragraph 36.

1041 Notifying Parties' response to the decision opening the proceedings – "Transaction related efficiencies", paragraph 37.

1042 Notifying Parties' response to the SO Efficiencies,, paragraph 32.

1043 Notifying Parties' response to the SO, Efficiencies,, paragraph 45.

1044 The Notifying Parties explained in paragraph 45 of their response to the SO , Efficiencies, that the reason for such limited coverage is that CCPs typically do not have access to the breakdown of

the common CCP to a single regulatory regime, the consolidation of clients' positions in omnibus accounts could be realised directly by each clearing member. Even if two CCPs agreed to cover their clearing members' omnibus accounts in a hypothetical agreement, they would be obliged to require additional collateral to cover the risk that the consolidated positions of a same clearing member would relate to different customers. This would considerably reduce (and potentially remove) the collateral savings resulting from the agreement[1045].

(1224) The Notifying Parties recalled that, most importantly, under either scenario, fragmented regulatory, customer protection and bankruptcy regimes in different Member States mean that CCPs would expose themselves and their customers to considerable legal uncertainty and risks. According to the Notifying Parties, it is these concerns that explain why there is currently no example of cross-margining agreements for derivatives in Europe, and why, in their view, such agreements cannot be considered as realistic alternatives to the notified transaction[1046].

(1225) Finally, the Notifying Parties concluded that although exchanges or CCPs frequently cooperate in the area of clearing, these agreements are hardly ever used to provide users with additional cross-margining opportunities. The Notifying Parties repeated that the Commission's reference to potential alternative agreements that could deliver similar collateral savings as the notified transaction is therefore unrealistic and cannot be substantiated with a single example of a comparable derivative agreement in Europe.

12.3.2.2.2.2. *Commission's assessment*

(1226) In the SO, the Commission stated that it remained unclear that collateral savings, at least in part, could not be achieved through less restrictive means, for instance through a cross-margining agreement between CCPs or an access agreement to one single CCP[1047]. The Commission noted that whereas the Notifying Parties argue that cross-margining in derivatives could not be achieved (and has never been achieved) in Europe through interoperability or outsourcing agreements, such arrangements appear to exist either on different continents (in the US and Asia) or for other products (for instance cash equity in Europe) .

(1227) As established in the Horizontal Merger Guidelines, "*Efficiencies are relevant to the competitive assessment when they are a direct consequence of the notified merger and cannot be achieved to a similar extent by less anticompetitive alternatives*". The same paragraph of the Horizontal Merger Guidelines clarifies that "*The Commission only considers alternatives that are reasonably practical in the business situation faced by*

---

individual customer positions held in their clearing members' omnibus accounts. Such omnibus positions are directly consolidated at the level of the clearing member and netted for purposes of margin requirements. As a result, even if two omnibus accounts held by two separate CCPs with the same clearing members have offsetting positions, such positions may in fact be ultimately held by different customers subject to different regimes and should not be cross-margined. Because of this uncertainty, CCPs refrain from (and have no incentive to) including omnibus accounts in international cross-margining agreements.

1045 Notifying Parties' response to the SO, Efficiencies, , paragraph 53.

1046 Notifying Parties' response to the SO, Efficiencies, paragraph 43.

1047 See SO, paragraph 581.

the merging parties having regard to established business practices in the industry concerned"[1048].

(1228) No other alternative possibilities were raised during the procedure by market players. The Commission therefore examines these three alternatives.

(1229) Considering the information brought forward by the Notifying Parties and the market investigation, the Commission accepts that certain of these alternatives are not commonly used in the derivatives industry.

(1230) Indeed, as regards interoperability, the constraints, risks and difficulties associated with its set up and operation appear to render it unlikely without comprehensive regulatory intervention.

(1231) As regards the outsourcing agreements alternative, the Commission recognizes that these could only provide collateral benefits should they specifically allow for cross-margining between trades occurring on different trading venues. The Commission accepts that, in the industry concerned, such agreements are not generally observed and therefore cannot be considered as a reasonably practical alternative given the Notifying Parties' business situation having regard to established business practices.

(1232) In the case of margin offset agreements, the Commission recognizes that there are some examples where this has been working in practice[1049]. Therefore the Commission considers such arrangements can be seen as established business practice in the industry concerned. However, it is unlikely that such agreements could deliver a similar level of efficiencies as the notified transaction, because such agreements would likely be restricted to clearing members' proprietary portfolios,[1050] and would therefore not represent the full proportion of the total open interest in each clearing-house.

(1233) The Commission therefore considers that, having considered the additional information provided by the Notifying Parties, the latter have demonstrated that the collateral benefits could not be achieved to the same extent by less anti-competitive alternatives which are reasonably practical in the business situation they face having

---

1048 Horizontal Merger Guidelines, paragraph 85.

1049 At the Oral Hearing a past example of a limited arrangement was brought to the Commission's attention. NASDAQ OMX and LSE set up a structure based on a clearing co-operation agreement between LCH.Clearnet and NASDAQ OMX Stockholm under which members were provided the option of where to clear Nordic equity options and futures. This arrangement was terminated in 2008. The arrangement between NASDAQ OMX and LCH.Clearnet also included Oslo Clearing. Today, LCH.Clearnet and Oslo Clearing still have this arrangement in place for Nordic equity options and futures. See NASDAQ OMX's response to request for information dated 14 November 2011, question 4, [...]*

1050 Limitation of such agreements to proprietary account was confirmed during a meeting with CME "*CME has a one pot cross-margining agreement with OCC for equity products whereby eligible proprietary exposures are put in the combined portfolio where they are jointly margined*", Agreed minutes of meeting with CME, 1 September 2011 (Non-confidential version) [...]* and a meeting with OCC "*OCC and CME have a cross margining agreement in place involving a joint account (one-pot) which is used by clearing members (who are member of both OCC and CME Clearing) for proprietary and market professional business only. OCC and CME agreed on a defined list of what contracts can go into the joint account*" Agreed minutes of a meeting with OCC, 1 September 2011, [...]*.

regard to established business practices in the industry concerned[1051]. However, in view of the fact that there are certain agreements which allow for cross-margining, then it is likely that at least part of these efficiencies can be achieved in a less anti-competitive way than by the notified transaction.

12.3.2.2.3. Consumer benefits

(1234) The Notifying Parties argue that the claimed collateral benefits accrue directly to users.

(1235) In the SO, the Commission outlined that, even though the likely cost savings accrue on the customer side, the merged entity's incentive to leave efficiency gains from collateral savings with customers depends on the existence of competitive pressure from the remaining firms in the market and from potential entry[1052]. Given the fact that post-merger, no significant competitive pressure would exist in the relevant products in the derivatives trading and clearing markets concerned, such market power would have a price effect which would outweigh any claimed efficiency. The cost of posting collateral is only a fraction of the total cost of trading derivatives. The cost of posting collateral should not be considered in isolation, but rather the total price effect on consumers. The price effect resulting from the Notifying Parties' market power could take place through membership fees or transaction fees for derivatives trading and clearing.

(1236) In their response to the SO, the Notifying Parties claim that the notion that such benefits can be clawed back is erroneous[1053]. The Notifying Parties argue that, in contrast with cost savings realised by the Notifying Parties, in order to benefit users, these efficiencies do not need to be "passed on" by the combined entity through price reductions, but they directly lower costs incurred by customers[1054]. The Notifying Parties claim that the Commission is conflating its competitive assessment with its efficiencies assessment[1055].

(1237) At the Oral Hearing, the Commission explained that the question of pass-on is relevant regardless of whether the benefit accrues on the producer or consumer side as is also known from the theory of tax incidence[1056]. The Commission also clarified at the Oral Hearing that it is not conflating its competitive assessment with its efficiencies assessment. As in standard merger analysis, the first step is to assess the merger's unilateral effects considering the coming together of the two firms without any changes in costs or technology. The second step assesses efficiencies and how the price adjusts following cost savings either on the firm or the customer side. This latter price effect is

---

1051 See Case T-342/07 Ryanair holdings v Commission, Judgment of 6 July 2010, paragraph 427 " *The Commission only considers alternatives that are reasonably practical in the business situation faced by the parties to the concentration having regard to established business practices in the industry concerned"*.

1052 See SO, paragraph 582.

1053 Notifying Parties' response to the SO, Efficiencies, paragraph 37.

1054 Notifying Parties' response to the SO, Efficiencies, paragraph 142.

1055 Notifying Parties' response to the SO, Efficiencies, paragraph 148.

1056 See footnote 1000 of this Decision.

what is commonly called pass-on and is separate from any price effect considered under unilateral effects in the first step[1057].

(1238) The Notifying Parties further submit in their response to the SO that they would neither have the incentive, nor the ability to wholly claw back the user benefits. The Notifying Parties state that if efficiencies are only "partially" clawed back by price increases, customers will still be better off as a result of the merger[1058].

(1239) The Commission agrees that if efficiencies are only "partially" clawed back, consumers would indeed face a net benefit. However, this observation implies that only part of the quantified amount can be considered as a consumer benefit, not the full quantified amount.

(1240) As an attachment to their response to the SO, the Notifying Parties submitted a paper by Compass Lexecon which provided further detail on the merged entity's ability and incentive to wholly claw back benefits[1059]. This paper presents four main arguments. First, the paper argues that efficiencies benefiting users of markets where no competitive issues have been found should be taken into account in the overall assessment of the notified transaction given that there is a significant overlap of customers in different markets. Second, the paper claims a proper analysis of the economics of user benefit capture (as opposed to the economics of cost-efficiency pass-through) suggests that a very significant portion of benefits will remain with users. Third, the paper argues that in order to capture customer benefits, price rises would need to be so large so as to be implausible. Finally, the paper argues that in order to fully capture user benefits, the combined entity would need to be able to price discriminate perfectly between customers which is extremely unlikely.

(1241) The Commission notes that the verified collateral benefits relate directly to those markets where competitive issues have been found (equity and interest rate derivatives). Given the fact that the Notifying Parties can price discriminate at least in part[1060], it appears likely that, only a portion of the collateral savings would remain with users.

(1242) Therefore, the Commission considers that it is possible there will be some pass-on to (that is net benefits left with) customers, but the size of this effect cannot be determined on the basis of the available data.

12.3.2.3. CONCLUSION ON COLLATERAL SAVINGS

(1243) As a result, and given that a range of respondents in the market investigation indicated that they expect some collateral savings, the Commission considers that it is likely that some efficiencies would accrue to customers from increased cross-margining opportunities which would therefore translate into collateral savings. However, the Commission also observes that some of these efficiencies, although not to a similar extent, could be achieved through less anti-competitive means. In addition, the

1057 Article 2(1) of the Merger Regulation requires the Commission to take into account, in its merger appraisal, the "economic and financial" power of the undertakings concerned in the concentration.

1058 Notifying Parties' response to the SO, Efficiencies, paragraph 153.

1059 Compass Lexecon "Efficiencies from the proposed transaction" of 24 October 2011.

1060 See the discussion in Section 11.1.1.2.2.1.4 of this Decision.

Commission considers that it is possible that there will be some pass-on to (that is net benefits left with) customers although the size of this effect cannot be determined.

12.3.3. Liquidity impact on integrated cash exchanges

12.3.3.1. THE NOTIFYING PARTIES' CLAIMS

(1244) In the Form CO, the Notifying Parties argued that a major consequence of the notified transaction would be an increase of liquidity resulting in a reduction in the implicit costs of trading. The Notifying Parties claimed that the increase of liquidity would, for instance, come from the increase in the number of participants, improved distribution, and that increased product combinations and innovations will multiply trading opportunities. They further argued that reduced user access costs, as well as reduced implicit costs, will increase user profits, which will spur further participation. In the same way, reductions in collateral requirements will also free up funds for increased trading or other purposes. In a virtuous circle, these benefits increase the incentives for further participation, thereby further increasing liquidity.

(1245) In their submission of 5 September 2011, the Notifying Parties reiterated that the notified transaction increases liquidity and reduces users' implicit costs of trading. The Notifying Parties presented several (theoretical) mechanisms through which stock exchange mergers may increase liquidity and decrease users' implicit costs: (i) a merger between exchanges will increase liquidity if it helps intermediaries to defray the costs of access to the trading platform and of maintaining a continuous market presence. Standardised access to market data, indices and post-trading services also helps the liquidity of integrated cash markets. Harmonised trading functionality, rules and regulations also reduce the regulatory costs of trading in different markets; (ii) liquidity will increase if the merger reduces adverse-selection costs, due to the presence of informed traders. This will happen if the merger has a positive impact on trading activity and the additional order flow comes mainly from uninformed traders or elicits more aggressive competition between informed ones; (iii) a stock exchange merger may also increase liquidity (and lead to lower bid-ask spreads) if it reduces the inventory-holding costs of market makers. This is because the merger is likely to make the order flow more predictable and lowers the costs of rebalancing market-makers' inventories after the execution of large orders; and (iv) liquidity may increase (and bid-ask spreads may fall) because the merger is likely to induce entry by market professionals operating elsewhere, as a result for instance of harmonised rules and admission criteria, and thereby lead to greater competitive pressure both in quote-setting and in brokerage fees.

(1246) The Notifying Parties explained that the empirical literature on effects of exchange mergers is limited, but referred to Pagano and Padilla (2005b)[1061] which found that the creation of Euronext led to a reduction in the bid-ask spreads of the large-cap securities traded in Paris, Brussels, Amsterdam, and Lisbon, and that the integration of those exchanges also led to an increase in traded volume and a reduction in volatility for those stocks. The Notifying Parties argued that, in principle, the liquidity impact of a stock exchange merger should be long lasting because the reduction in access costs, adverse selection costs, inventory costs and the increase in the strength of competition

[1061] Pagano, M. and J. Padilla (2005b), "Efficiency gains from the integration of exchanges: lessons from the Euronext "natural experiment", report prepared for Euronext.

among intermediaries resulting from the merger would likely persist indefinitely. The Notifying Parties explained that Pagano and Padilla were not able to exploit this to test whether the liquidity effects they had identified were indeed the result of the merger, because they only had data until December 2004 – one year after the last integration event. However, the Notifying Parties submitted a new study based on an enlarged dataset to test the robustness of the findings in Pagano and Padilla.

(1247) The Notifying Parties claim that their results confirm Pagano and Padilla's conclusions and demonstrate that the impact on market liquidity that they identified is long lasting. The Notifying Parties estimate that the integration of the different exchanges led to a material reduction in the bid-ask spreads (approximately -50%) and historical volatility (-9%) of large-cap securities traded in Paris, Brussels, Amsterdam and Lisbon, and that it resulted in an increase in traded volume (approximately +25%). The Notifying Parties claim that these effects significantly reduce users' implicit costs.

(1248) The Notifying Parties' reports investigate the impact on bid-ask spreads, volatility and volume in Amsterdam, Paris, Belgium and Lisbon. For these purposes, the Notifying Parties employ multiple regression techniques in an attempt to capture the effect on liquidity resulting from the creation of Euronext.

(1249) The Notifying Parties argue that the experience from the creation of Euronext suggests that the notified transaction will lead to similar benefits. In particular, they contend that the notified transaction will have a positive effect on trading activity and liquidity and will, therefore, reduce the implicit costs of trading. In their response to the SO, the Notifying Parties extrapolate the effect from the Euronext merger and attempt to quantify the expected liquidity gains from the notified transaction and claim that it will create cash efficiencies worth Euro […]* million.

12.3.3.2. ANALYSIS

(1250) In the SO and during the Oral Hearing, the Commission expressed concerns about the identification of the impact of the creation of Euronext on liquidity in cash markets. The Commission questioned the robustness of the results and doubted whether the estimated effects from these particular historical mergers could be mapped onto the notified transaction. Indeed, the current competitive and market circumstances in the cash markets are substantially different to those existing when the mergers creating Euronext took place[1062]. The Notifying Parties confirmed the change in market circumstances throughout the procedure and in certain instances even used it as an argument to question the Commission's analysis[1063]. In their response to the SO and the

---

1062 For instance see the SO at paragraphs 590 and 594. Recital 590: *"…It is not a priori clear that the estimated effects can be mapped onto the proposed transaction, as the competitive and market circumstances are substantially different (market concentration prior to proposed transaction, economies of scale, etc.). Moreover, the Notifying Parties have not attempted to argue to what extent the historical event study is representative for the currently proposed transaction (or why any differences would not matter)."*

1063 See for instance the Notifying Parties' response to the SO, – Introduction, where the Notifying Parties outline significant changes that have occurred over the last years. While this mostly refers to the derivatives market, many of these changes, such as increased reliance in technology, globalisation or new entry among others are also applicable to the cash markets. As described below, the academic literature has also studied the market dynamics since the creation of Euronext.

response to comments at the Oral Hearing, the Notifying Parties provided further robustness checks, but did not address the fundamental concerns on identification and the relevance of the historical data approach expressed in the SO.

(1251) The analysis in this Section is solely based on data employed by the Notifying Parties in their analysis. The analysis confirms the concerns set out by the Commission in the SO[1064] and responds to the claims made by the Notifying Parties in their submissions.

12.3.3.2.1. Verifiability

12.3.3.2.1.1. Inference from historical data

(1252) The Notifying Parties use the integration of the French, Belgian, Dutch and Portuguese stock exchanges between September 2000 and November 2003 as a "natural experiment" to predict the impact of the notified transaction.

(1253) While inference from historical examples of efficiencies and consumer benefits is often informative for alleged efficiencies, the informative nature of historical data hinges on whether past events occur in conditions sufficiently similar to current market conditions. Where market conditions have changed substantially since the time of the historical event, such evidence cannot be of value to make any valid inference about the expected effects of a transaction today. In this respect, the Commission considers that competition and market circumstances in the cash markets have changed substantially since the early 2000s making inferences from past findings of little relevance for assessing the impact of current mergers.

(1254) The Notifying Parties claim that they can eliminate this problem by introducing a number of explanatory variables to control for those circumstances[1065]. This claim is incorrect.

(1255) To reliably identify the effect of the notified transaction under the current market circumstances, a succession of mergers ("natural experiments") that occur under different market circumstances would be required. Only such data would allow to identify how the likely merger effects vary with market conditions.

(1256) Cash markets have undergone a large number of profound changes since the creation of Euronext, for instance: (i) the volumes traded by companies trading in overlapping exchanges have increased substantially (ii) there is an increase in the use of high frequency trading; (iii) with MiFID, MTFs successfully entered the market and started competing face to face with "traditional exchanges", which have led, among other things, to decreases in transaction costs; (iv) there have been episodes of entry prior to MiFID which have led to significant decreases in transaction fees even though the entrant reached insignificant trading volumes.

1064 In particular paragraphs 590, 593-594 and 598 of the SO.

1065 See for example page 7 of Compass Lexecon "The relevance of the Euronext integration to the transaction" 5 December 2011.

(1257) First, the Notifying Parties point out that the notified transaction could increase liquidity because of a "distribution effect", by which it is meant that companies trading in just one platform benefit from being able to distribute a broader range of securities in both platforms. However, the scope for such a distribution effect has shrunk substantially. At the time of the Euronext mergers, the total volume controlled by companies[1066] trading in the different exchanges which then merged into Euronext was low compared to the volume generated by companies trading in both DB and NYSE today. In December 2000 and April 2001, 47% and 43% of the volumes respectively were generated by 22 entities trading in Amsterdam, Paris and Brussels. These entities represent 11% of all the companies with non-zero trades during those months. In April 2010 and December 2010, the companies trading in both Euronext and DB controlled […]*% and […]*% of the volumes respectively[1067]. These entities account for […]*% and […]*% of the firms with non-zero trades in these months. Even if there may be some further scope for a distribution effect, it should be much smaller and cannot be estimated on the basis of the historical Euronext merger (as this would bias the result)[1068].

(1258) Second, High Frequency Trading ("HFT") started in Europe for cash trading in around 2005 and has grown in importance since then. The Notifying Parties point out that one industry participant outlines that: *"HFTs in Europe rose from virtual non-existence in 2005 to representing an estimated 38% of equities trading volume by 2010. The numbers point to a dramatic rise of HFT activity post 2007..."*. [1069] The same market participant states that: *"Recent sound academic research on HFT and its market impact has only been conducted for about four years. Much of it surrounds the impact on the "healthy" functioning of markets. Healthy markets are normally viewed as those which have low transaction costs and display high liquidity and high transparency. A widely held view is that HFT activity increases competition, hence lowering transaction costs. At the same time it is now common knowledge that fragmentation in Europe has*

1066 For the purposes of this analysis, companies are aggregated according to the mother companies using data provided by the Notifying Parties in response to a request for information of 23 September 2011. Given that mother companies have control over the different subsidiaries trading at the different exchanges, it makes no sense to treat the different subsidiaries of for instance, JP Morgan, separately. It should be noted that these figures are a rough approximation and probably are a conservative estimation as all companies have not been able to be matched to the corresponding mother companies.

1067 In April 2010, there were […]* mother companies with overlapping volumes, while in December 2010 there were .[…]*. These figures are based on data provided by the Notifying Parties in response to a request for information of 23 September 2011.

1068 In their submission "The relevance of the Euronext integration to the transaction" of 5 December 2011, the Notifying Parties claim that "*Among the members of the Parties' exchanges, only around […]*% are members of both Parties' exchanges. Although these members account for a larger proportion of volume, it still means there are many members who operate on only one exchange.*" The Commission considers that the correct measure should take into account trading volume and not absolute number of members. The Notifying Parties moreover argue that non-overlapping members gaining access to the products of a second exchange post-merger are not the only source of benefit, but that the ability to trade on a single platform "*using a common order book, using the same clearing house and using the same rule book*" will also generate benefits. The Commission considers that there is a risk of double-counting by treating these as liquidity benefits as most of the mentioned cost efficiencies are being dealt with in separate submissions and calculations.

1069 Compass Lexecon "Response to comments at oral hearing" of 16 November 2011, page 5 where the Notifying Parties refer to a report by Dr. Christian Katz CEO, SIX Swiss Exchange & Member of the Group Executive Board, SIX Group. See http://www.world-exchanges.org/focus/2011-09/m-2-1.php, viewed on 25 January 2012.

actually decreased transparency, however, this may not be the fault of HFT but rather the effect of de-regulation that was not well thought through. The focus of academic analysis has therefore been on the impact of HFT on liquidity. But there is the rub. Liquidity is not only defined as the speed of execution (latency) and the bid-offer spread of securities prices, but also by the depth (the available sizes at different and notably the most narrow, bid-offer spreads) and the resiliency of markets (how long does a market need to recover after a large order is executed). The latter is particularly important for large institutional investors. This is where academia is so far inconclusive. Research seems to indicate that HFTs indeed lower latency and spreads and probably also increase resiliency, but they might have a detrimental effect on market depth"[1070] [1071].

(1259) Furthermore, HFT is believed to have solved some of the potential adverse selection problems of entry into trading.[1072] HFT may solve a pre-existing adverse selection problem, and will then be accompanied by a rise in trade and a fall in bid-ask spreads. On the negative side, HFT can create or exacerbate a pre-existing adverse-selection problem in which case bid-ask spreads should rise and trade declines. In this respect, Jovanovic and Menkveld (2011) find that HFT actually led to a decrease in effective bid-ask spreads but did not affect the number of trades[1073].

(1260) The introduction of MiFID has increased fragmentation in cash markets. This regulation prompted the development of MTFs, such as Chi-X Europe, BATS and

---

[1070] Dr. Christian Katz CEO, SIX Swiss Exchange & Member of the Group Executive Board, SIX Group. See http://www.world-exchanges.org/focus/2011-09/m-2-1.php, viewed on 25 January 2012.

[1071] The SO stated in paragraph 592 that the choice of liquidity measure was not innocuous and suggested that the Notifying Parties also look at market depth. In their response to the SO the Notifying Parties stated that employing market depth *"…would be an unnecessary use of resources given the liquidity measures used in the submitted analysis are widely accepted and suitable."* Compass Lexecon "Efficiencies from the proposed transaction" of 24 October 2011,page 40. In the SO, for instance in paragraph 592, the Commission stated that recent academic literature looks at different measures of market liquidity. Market depth has been suggested by the recent literature as a superior liquidity measure as it reflects the risk that actual trades need to take place at substantially higher bid-ask spreads if there would be few and relatively small limit orders in the order book. See Degryse, H., de Jong, F. and van Kervel, V. (2011): "the Impact of dark trading and visible fragmentation on market quality", September 2011 draft (circulated previously under the title "Equity market fragmentation and liquidity: The impact of MiFID").

[1072] Christian Katz CEO, SIX Swiss Exchange & Member of the Group Executive Board, SIX Group *"It is easy to overlook that HFTs not only pose potential problems for existing market venues but also have actively created new venues. In Europe, similar to ECNs in the US markets, new MTFs were often co-founded by large HFT firms as has been the case for example with Chi-X Europe. HFT firms such as Citadel and Getco hereby generally act as seed investors and seed liquidity providers simultaneously. By providing consistent bid-offer spreads for securities listed on regulated markets, applying for instance techniques such as lit pegging, they make otherwise illiquid market venues come to life. Academically speaking they overcome "adverse selection" which might prevail in new venues because fundamental investors shun away from markets with supposedly large informational asymmetries. Practically speaking such HFT seeders are acting as market makers on new venues linked to securities listed in their home markets similarly as they do in exchange-listed derivatives linked to underlying cash markets. This quality of HFTs makes them a highly valuable additional set of market players in an environment such as Europe where de-regulation from 2007 was specifically introduced to create competition between market venues."*, available at http://www.world-exchanges.org/focus/2011-09/m-2-1.php, viewed on 25 January 2012.

[1073] Jovanovic, B. and Menkveld, J: *Middlemen in Limit-Order Markets* Manuscript, VU University Amsterdam, 2011.

Turquoise, between 2007 and 2008 to become major market participants in cash markets. The proliferation in venues has increased competition, reducing bid-ask spreads and overall transaction costs[1074]. In this respect, it is worth noting that some of the interested third parties appeared dissatisfied with the "fragmentation" in the market over the last few years[1075]. Some of these third parties claimed that it was in their interest to have a stable platform that could provide confidence and reliable information to their investors and that could be undermined by such "fragmentation". What is termed "fragmentation" in this context is in fact the successful and beneficial notion of competition that MIFID has facilitated[1076]. Moreover, this competition and proliferation of additional venues has not only been beneficial in terms of fees, choice etc., but has in fact led to decreases in bid-ask spreads substantially and enlarged the volumes traded by investors[1077]. It should also be noted that the upcoming use of smart order routing technology (combining the information in different central limit order books into a single system) makes liquidity on different platforms available to customers on a single screen, reducing any negative impact of market fragmentation.

(1261) Furthermore, there have been strong complementarities between HFT technology and MiFID. HFT technology has dramatically changed the nature of competition among venues. Participation externalities are quite high in human-intermediated exchanges as traders prefer to be where other traders are.[1078] The introduction of technology in the different venues has prompted cuts in transaction fees and the development of new venues such as Chi-X Europe as *"[p]articipation externalities are severely reduced when markets change from humans on floors to machines on electronic markets where search costs are significantly reduced"*.[1079] In particular, Menkveld (2011) shows that the entry of HFT in both Chi-X Europe and Euronext coincided with a 50% drop in bid-ask spreads[1080].

(1262) The Notifying Parties further claim that the notified transaction would make access to both exchanges more cost-effective and convenient. As regards costs, it is observed that today, costs have already been dramatically reduced by competition as a result of MiFID. Comparing European equity trading platform fees for 2009 against 2006, the last full-year pre-MiFID, Oxera's analysis shows that trading customers have benefitted from significant declines in costs per transaction across almost all European financial centres. The aggregate reduction in trading platforms costs per transaction across all

---

1074 Menkveld, J. (2011): "High Frequency Trading and The New-Market Makers" EFA 2011 Paper, page 5.

1075 L'Oreal's presentation at the Oral Hearing, 28 October 2011, afternoon session.

1076 A plea for less "fragmentation" in this regard is, in its full logical extension, a plea for one exchange venue (in the same way, this is the logical extension of the Notifying Parties' claim that all exchange consolidations lead to greater liquidity).

1077 For instance, bid-ask spreads for l'Oréal's share have nearly halved since the entry of MTFs (Chi-X Europe's presentation at the Oral Hearing, 28 October 2011, morning session). The important reduction in bid-ask spread and more generally in transaction costs following the entry of MTFs has been shown by Menkveld, J. (2011): "High Frequency Trading and The New-Market Makers" EFA 2011 Paper. Page 5 Available at SSRN: http://ssrn.com/abstract=1722924, or Oxera report "Monitoring prices, costs and volumes of trading and post-trading services", May 2011 among many others.

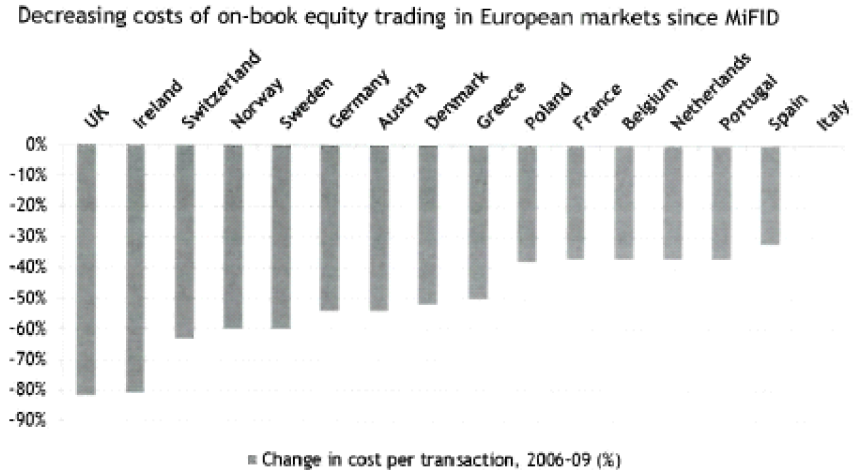
1078 Pagano. M (1989): "Trading volume and asset liquidity" *The Quarterly Journal of Economics.* 104 (2), 255-274.

1079 Menkveld, J. (2011): "High Frequency Trading and The New-Market Makers" EFA 2011 Paper, page 5

1080 Menkveld, J. (2011): "High Frequency Trading and The New-Market Makers" EFA 2011 Paper, page 1.

markets was 60%, with the UK showing the sharpest decrease (81%)[1081] as shown in Figure 8.

Figure 8: Decreasing costs of on-book equity trading in European markets since MiFID



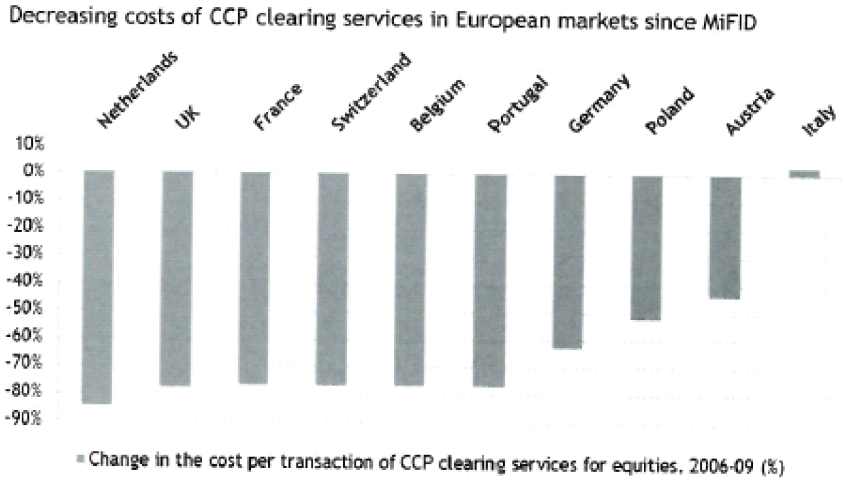
Source: Presentation prepared by LSE, 1 July 2011, EU Capital Markets – Obstacles to Turquoise Derivatives – Briefing for the European Commission, slide 22.

(1263) The benefits of significant reductions in equity trading costs since the introduction of MiFID were mirrored in CCP clearing services. Oxera's analysis shows that, again comparing 2009 to 2006, the average reduction in costs per transaction of CCP clearing services for equities across all financial centres was 73%[1082] as shown in Figure 9.

1081 Presentation prepared by LSE, 1 July 2011, EU Capital Markets – Obstacles to Turquoise Derivatives – Briefing for the European Commission, slide 22 [...]*.

1082 Presentation prepared by LSE, 1 July 2011, EU Capital Markets – Obstacles to Turquoise Derivatives – Briefing for the European Commission, slide 23 […]*.

Figure 9: Decreasing costs of CCP clearing services in European markets since MiFID



Source: Presentation prepared by LSE, 1 July 2011, EU Capital Markets – Obstacles to Turquoise Derivatives – Briefing for the European Commission, slide 23.

(1264) The impact on costs from increased competition resulting from MiFID is such that, if there were to be any beneficial effect resulting from the notified transaction, the marginal effect of it is likely to be very small. All in all, and as shown by academic literature, these reductions in transaction costs have been associated with an increase in volumes and reductions in bid-ask spreads.

(1265) Competitive conditions changed even before the introduction of MiFID. Already, in May 2004, LSE entered the market to compete with Euronext Amsterdam. LSE launched DTS on 24 May 2004 to offer electronic order book trading in the top 50 Dutch equities, as an alternative to trading on Euronext Amsterdam. As reported by the UK Competition Commission in its evaluation of the proposed acquisition of LSE by DB or Euronext NV, trading fees were up to 50% lower than those offered by LSE for domestic trading.[1083] In its analysis, the UK Competition Commission found that *"Euronext's econometric analysis of average trading fees between December 1999 and December 2004 suggests that Euronext Amsterdam's fees reduced by approximately 30 per cent as a direct result of DTS"*[1084]. It is worth noting that the authors of that report are also the authors of the econometric reports submitted to the Commission in this procedure. Furthermore, the UK Competition Commission observed that despite its lack of success, "*DTS appears to have generated a significant response from Euronext, at*

1083 UK Competition Commission. Final report on Deutsche Börse AG, Euronext NV and London Stock Exchange plc- A report on the proposed acquisition of London Stock Exchange plc by Deutsche Börse AG or Euronext NV. Recitals 5.40 to 5.45. See http://www.competition-commission.org.uk/rep_pub/reports/2005/504lse.htm, viewed on 25 January 2012.

1084 UK Competition Commission. Final report on Deutsche Börse AG, Euronext NV and London Stock Exchange plc- A report on the proposed acquisition of London Stock Exchange plc by Deutsche Börse AG or Euronext NV, Recital 5.42 where the Competition Commission makes reference to LECG *Efficiency gains from the integration of exchanges: CC econometric questions*. 8 June 2005.

least in the short term. Between January 2004 and May 2004, Euronext introduced three separate price changes:

(a) harmonization of Euronext tariffs across its various exchanges, which in the Netherlands resulted in lower prices for larger trading firms and higher prices for smaller ones;

(b) a further lowering of all fees by 10 to 25 per cent from April 2004. Passive orders were discounted by 50 per cent, and trading firms only charged for passive orders up to their first 60000 trades. The latter changes appear to have been specifically directed at keeping liquidity on Euronext; and

(c) a temporary reduction in price from May until July 2004. This further reduced marginal fees (by 10 to 40 per cent over the second change, depending on volume).

On 1 February 2005 Euronext introduced a revised harmonized tariff."[1085]

(1266) Contrary to what is claimed by the Notifying Parties,[1086] the academic literature has also shown that this entry is far from having a negligible effect. In fact, Euronext did cut its fees by 50% on 23 April 2004. In this respect, Foucault and Menkveld (2008) examined this entry event and found results consistent with those reported by the UK Competition Commission.[1087] In particular, Foucault and Menkveld (2008) found that intermarket competition improves consolidated depth, as it intensifies competition among liquidity providers and forces market organizers to cut their fees. However, Foucault and Menkveld (2008) also find that in their model, intermarket competition hurts customers not using smart order routing systems when it leads to a decline in the incumbent market cumulative depth and it reduces a liquidity provider's total expected profits.

(1267) Finally, the factors mentioned above in Recitals (1257) to (1266) are only a limited set of circumstances that have changed over the last ten years and which had an effect on liquidity. There appear to be other relevant factors which have changed over time. For instance, it cannot be excluded that there are secular trends in willingness to trade equity that have increased expected volume (relative to volume in Frankfurt or London) and thus reduce bid-ask spreads. In particular, investment behaviour has shifted into equities. Figure 10 shows that there has been a general increase in asset holdings over the period 2002 – 2007, and more importantly, that there has been a shift towards equity. The change in allocation towards equity took place to a different degree in different countries. Figure 11 shows that the asset allocation of institutional investors differs markedly by country. First, there is a different qualitative trend between the UK and continental Europe. Secondly, there is a difference for France (traditionally more banking oriented) relative to Germany. Therefore, there is a potential issue that there

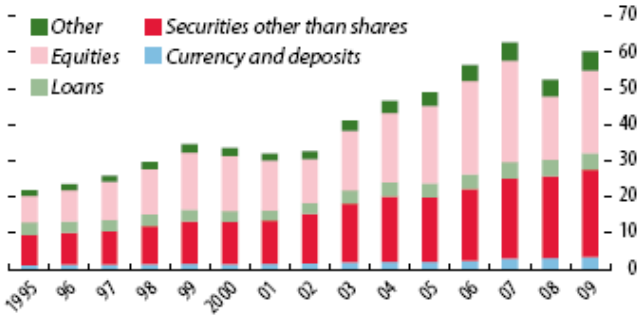
1085 UK Competition Commission. Final report on Deutsche Börse AG, Euronext NV and London Stock Exchange plc- A report on the proposed acquisition of London Stock Exchange plc by Deutsche Börse AG or Euronext NV, Recital 5.45.

1086 Compass Lexecon "Response to comments at oral hearing" of 16 November 2011, page 14.

1087 Foucault, T. and Menkveld, A. (2008): "Competition for order flow and smart order routing systems", *Journal of Finance*, 63, 1, 119-158.

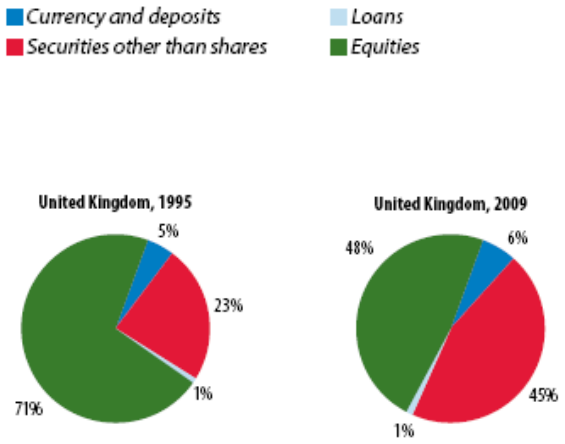
are specific trends in investment behaviour which have an impact on liquidity and which differ across countries. These would be omitted.

Figure 10: Asset allocation of Institutional Investors (in trillion of US dollars)[1088]



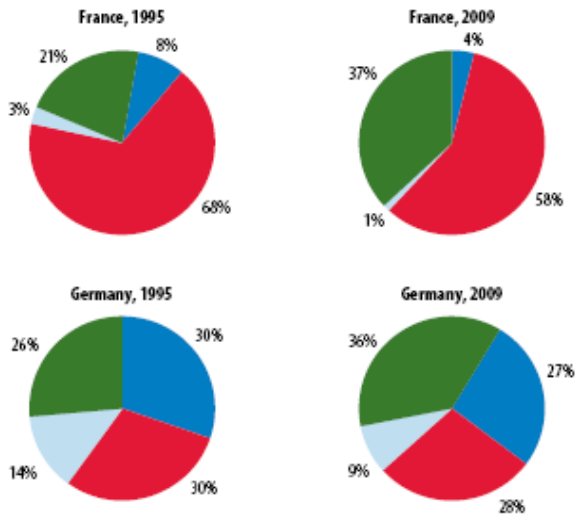
Source: Presentation prepared by LSE, 1 July 2011, EU Capital Markets – Obstacles to Turquoise Derivatives – Briefing for the European Commission, slide 24.

Figure 11: Global Asset Allocation of Institutional Investors by Selected Country[1089]



1088 Global Financial Stability Report, International Monetary Fund (IMF), September 2011, Chapter 2: Long-term investors and their asset allocation: where are they now?, figure 2.1, Data based on assets under management by institutional investors in 17 OECD countries.
See http://www.imf.org/external/pubs/ft/gfsr/2011/02/pdf/ch2.pdf, viewed on January 2012.

1089 Global Financial Stability Report, International Monetary Fund (IMF), September 2011, Chapter 2: Long-term investors and their asset allocation: where are they now?, figure 2.4.
See http://www.imf.org/external/pubs/ft/gfsr/2011/02/pdf/ch2.pdf, viewed on January 2012.



(1268) Therefore, the Commission considers that, given the multitude of changes which have taken place over the last ten years, it is impossible to impute any efficiency gain from a 2002 merger into a transaction that to be completed in 2012.

12.3.3.2.1.2. *Identification of the impact of the mergers at the time*

(1269) Even if the use of historical data were appropriate in this case, the analysis submitted by the Notifying Parties would still fail to identify the impact of the mergers at the time. The Commission observes that the impact identified from the Euronext merger may be capturing an increasing trend in liquidity already existing pre-merger which is not adequately controlled for. The Commission notes that the estimation of the merger effect cannot be identified if it simply approximates the impact of an underlying time trend in the data, after having introduced a number of control variables. This identification problem has been spelled out in the Section dealing with efficiencies in the SO. For instance, the SO stated in paragraph 593 that the *"Although the Notifying Parties run multiple regressions and introduce control variables, the actual econometric analysis may yield biased results if the explanatory variables are mis-specified or if important explanatory variables are omitted."* The SO further pointed out in paragraph 598 that *"[t]he Notifying Parties rely on an event study methodology, whereby exchange mergers enter as simple before/after dummy variables. Such an approach neglects the underlying trends in transaction volumes that are being processed on different platforms. The recent literature relies on more sophisticated methodologies that allow for more time-variation in exchange market fragmentation and concentration. Indeed, daily traded volumes in the exchanges studied and competing trading venues (some of which have not been included in the Parties' approach such as dark pools) evolved dynamically over time, which is not captured by a simple before/after dummy variable. Therefore, the results submitted by the Parties may be biased."*

(1270) First, there is a clear trend in the raw data averaged across securities[1090]. The graph in Figure 12 below replicates the graph presented by the Notifying Parties for the Amsterdam exchange in their response to comments at the Oral Hearing, applied also to the other three exchanges. The graphs in Figures 12 and 13 show the average monthly bid-ask spreads for the period 1997 to 2010 without controlling for any explanatory variables[1091]. In addition to the graph the Notifying Parties provided for the Amsterdam exchange, additional graphs have been included for the other exchanges using the data supplied by the Notifying Parties, including data for the period 1997-2000[1092]. The different merger events are marked by three vertical lines.

(1271) In Figure 12, three elements are particularly noteworthy: (i) there is a decreasing trend in average bid-ask spreads[1093] occurring before any of the three mergers takes place; (ii) systematically there is a spike at the time of the merger after which there is a swift return to trend; and (iii) a clear effect of the financial crisis starting from March 2007 is observed which is associated with an upward deviation from the trend in average bid-ask spreads.

(1272) There may be good reasons that would explain the decreasing trend in average bid-ask spreads pre-2002. For instance, the Paris Bourse introduced a new electronic trading technology, the Nouveau Système de Cotation[1094] as an upgrade of the CAC system (Cotation Assistée en Continu - CAC) in 1995. In Amsterdam, following the merger of the Amsterdam Stock Exchange Association and the European Options Exchange, the new company Amsterdam Exchanges compiled the AEX index of Dutch blue-chip companies and adopted a one-stop shopping model, which included clearing and settlement services, a central securities depository and data services, to provide investors with a constant flow of high-level information[1095]. In addition, just before the Euronext mergers, in January 1999, stocks on all stock exchanges in the eurozone started to be quoted in euro.

(1273) The decreasing pre- and post-merger trend in bid-ask spread is particularly noticeable in the case of the CAC 40. It is noteworthy that when the merger between Brussels and Paris occurred (the first dotted line) and with the beginning of the crisis (end of 2007), an upward deviation from the trend is observed. Likewise in the case of BEL 20, spikes in the trend are observed just after the merger with Paris or even after the merger with Lisbon. By March 2007, the effect of the financial crisis can clearly be identified where upward deviation from the trend is observed. A very similar pattern is also observed in the case of AEX. It is noteworthy that the Notifying Parties describe the pre-2002 evolution of the spreads as "broadly flat" while the post-merger period as one

---

1090 For these purposes, and in line with what the Notifying Parties report, the estimated fixed effects of a model that only includes time dummies for each month but no other explanatory variables are considered.

1091 Below and in the Annex the regressions introducing quarterly effects interacted with each of the exchanges are presented.

1092 Compass Lexecon, Response to comments at oral hearing,16 November 2011. The 1997-1999 data were provided by the Notifying Parties' consultants in an email sent on 21 November 2011.

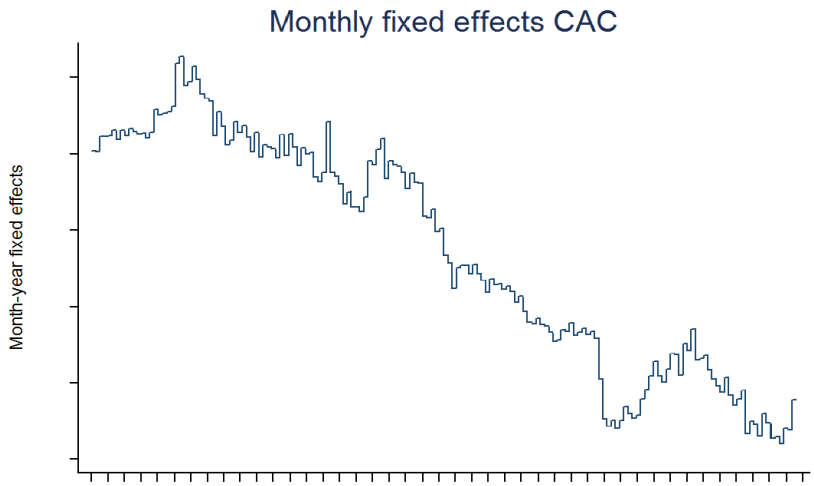
1093 The analysis conducted by the Notifying Parties actually employs the log of the normalised bid-ask spread, but for ease of exposition, hereafter, it is referred to as the bid-ask spread.

1094 See http://www.comprendrelabourse.com/Initiation/init_6.htm, viewed on 25 January 2012.

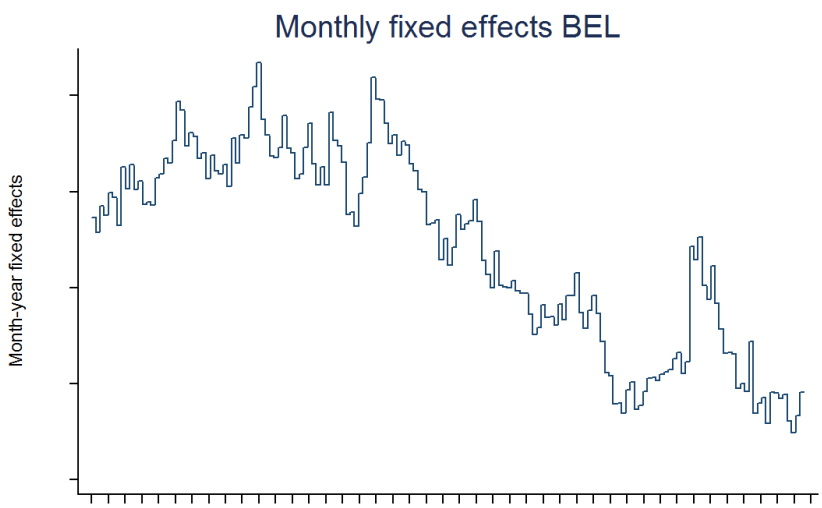
1095 NYSE Euronext website, see http://corporate.nyx.com/who-we-are/history/amsterdam, viewed on 25 January 2012.

characterised by a "downward trend"[1096]. This distinction is clearly at odds with the graphs below in Figure 12[1097].

Figure 12: Monthly fixed effects – France, Belgium and the Netherlands



[ ]*



[ ]*

1096 Compass Lexecon Memorandum "Response to the Chief Economist's Team's econometric analysis" of 13 December 2011, page 9.

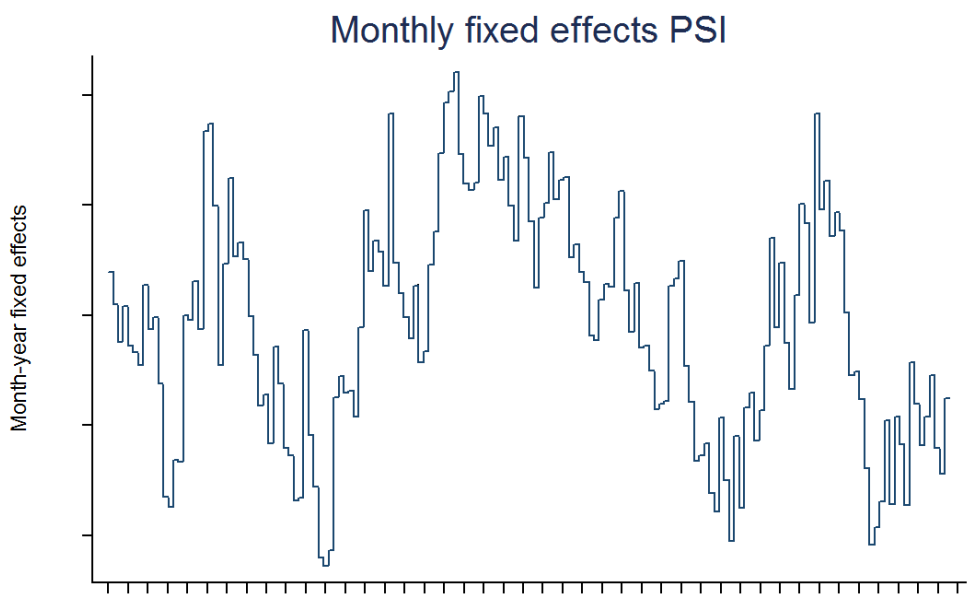
1097 The vertical lines in Figure 12 indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

[ ]*

(1274) In the case of the PSI, there is substantial volatility in average spreads across the sample period. It is observed that already prior to the mergers, bid-ask spreads have dropped substantially, while shortly after the first merger, a spike is observed. After the merger with Lisbon, there seems to be a downward trend in spreads which is reversed upwards as of the summer of 2007, and reversed downwards again following the Lehman Brothers bankruptcy in 2008 as can be seen in Figure 13[1098]. As an overall result, the average spreads are in a similar range before the first and after the third merger.

[1098] The vertical lines in Figure 13 indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

Figure 13: Monthly fixed effects - Portugal



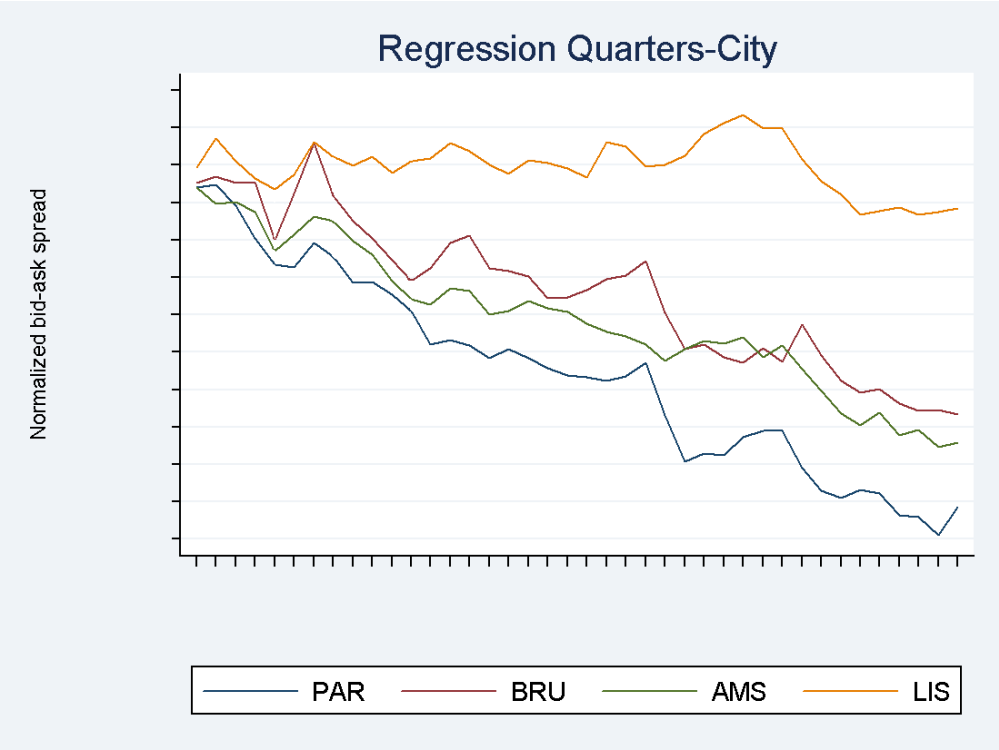
[ ]*

(1275) Since there are numerous underlying factors which potentially influence bid-ask spreads, the Notifying Parties have introduced explanatory variables to control for some of the other factors driving the size of bid-ask spreads. However, the Notifying Parties do not include any time effects in their analysis other than seasonal controls for the twelve months of the year, and the actual merger events that they include in their specification. Merger events are dummy variables which take a value of one after the merger for all securities affected by the merger. The merger effect claimed by the Notifying Parties is picked up by the coefficients associated with these dummy variables. If, after including the explanatory variables that the Notifying Parties use for their regressions, a secular trend in the data would still be observed, the merger effect in their estimation would be biased and pick up part of the residual trend in the data. The concern is that the merger dummies pick up that trend in the data. They would therefore wrongly attribute the trend in the data to a merger effect. Given the many changes in the industry not controlled for in the specification, this amounts to a serious identification problem.

(1276) In order to test whether this problem is potentially present, the model specification has been broadened and a regression with the same explanatory variables as the Notifying Parties has been run replacing the merger effect with time fixed effects. The Notifying Parties' specification is therefore run, but now includes quarterly dummies interacted with the exchange-specific effects. This is a generalisation of the Notifying Parties' specification which enables the specific effect on bid-ask spread attributed to each quarter and to each exchange to be captured. The coefficients associated with each quarter and exchange are then plotted in the graphs presented below in Figure 14.

Importantly, a strong decreasing trend over time is observed which is difficult to explain as arising from the merger.[1099] Indeed, the trend already exists prior to the Euronext merger, indicating that other factors that occurred prior to the merger were already driving bid-ask spreads down. Similar to the raw data, these estimates preserve the property that during the merger, there is an upward deviation from the trend to later return to the trend. This is true for all locations except for Lisbon where there is no trend and no perceptible change after the merger[1100].

Figure 14: Quarter-year-index coefficients on normalised bid-ask spread



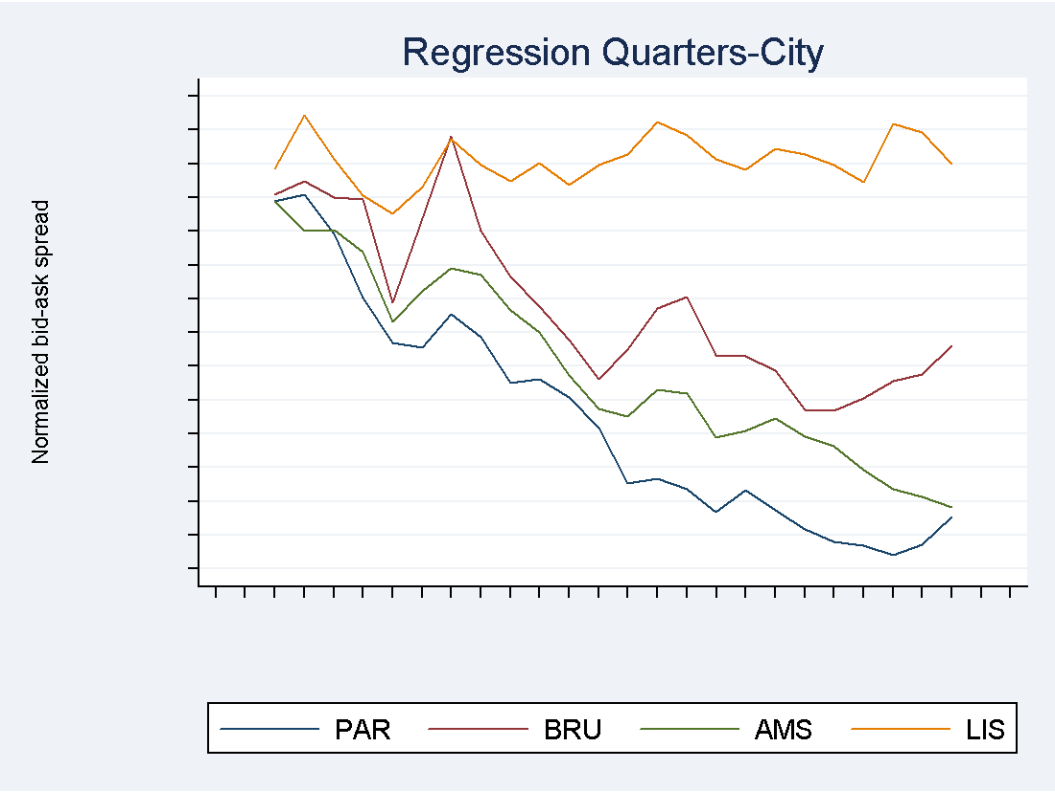
[ ]*

(1277) If the dataset is limited to 31 December 2006 in order to exclude the impact from MTF after MiFID, the same upward deviation is observed as can be seen in Figure 15.

1099 The regression specification is provided in the Annex. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, the MTF volume for Chi-X Europe and BATS, market capitalisation and the security price. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of normalised bid-ask spread.

1100 See the Annex for the analysis based on other liquidity measures than bid-ask spreads. The Notifying Parties have put forward an array of liquidity measures to sustain their claim that the creation of Euronext led to an increase in liquidity. Subsequently they argue that such improvement in liquidity would equally result from this notified transaction. The identification problems described for the analysis of bid-ask spreads presented in Section 12.3.3 of the Decision similarly occur for these additional set of liquidity measures. In any case, it is not clear how the alleged effects on volatility, turnover, the value of traded volume and volume would translate into efficiency gains. As explained in Recital (1142), the burden of proof to verify the efficiencies is on the Notifying Parties. They do not clarify in which way the alternative liquidity measures can be mapped into efficiency gains.

Figure 15: Quarter-year-index coefficients on normalised bid-ask spread on a reduced sample (01/01/2000-31/12/2006)



[ ]*

(1278) These results are also robust if the regressions are run separately for each city[1101].

(1279) If the estimations from the Notifying Parties were picking up a merger effect, the estimation should pick up a level effect that would look like a step effect. This is not what is observed. Instead, a decreasing trend which appears to be picked up by the merger dummies employed by the Notifying Parties to control for the Euronext merger is observed.

(1280) The Notifying Parties have argued that the Commission's time fixed effects model is a flawed specification[1102]. They have claimed (i) that this model includes variables that should not have been part of the model; (ii) that the specification prevents the control variables from capturing trends present in the actual data in a theoretically consistent way; (iii) that the model pools data from all exchanges into a single regression and

[1101] The Notifying Parties claim (Compass Lexecon Memorandum "Response to the Chief Economist's Team's econometric analysis" of 13 December 2011) that the city-specific regressions show a different picture. The Commission has not been able to replicate Compass Lexecon's results (their Figure 3) as the Notifying Parties have not submitted the underlying code along with their report as is clearly established in the Best practices for the submission of economic evidence. The graph above, however, uses the Commission's correct specification and, hence, shows that the results are robust. The details of the regressions used are reported in the Annex.

[1102] Compass Lexecon Memorandum "Response to the Chief Economist's Team's econometric analysis" of 13 December 2011.

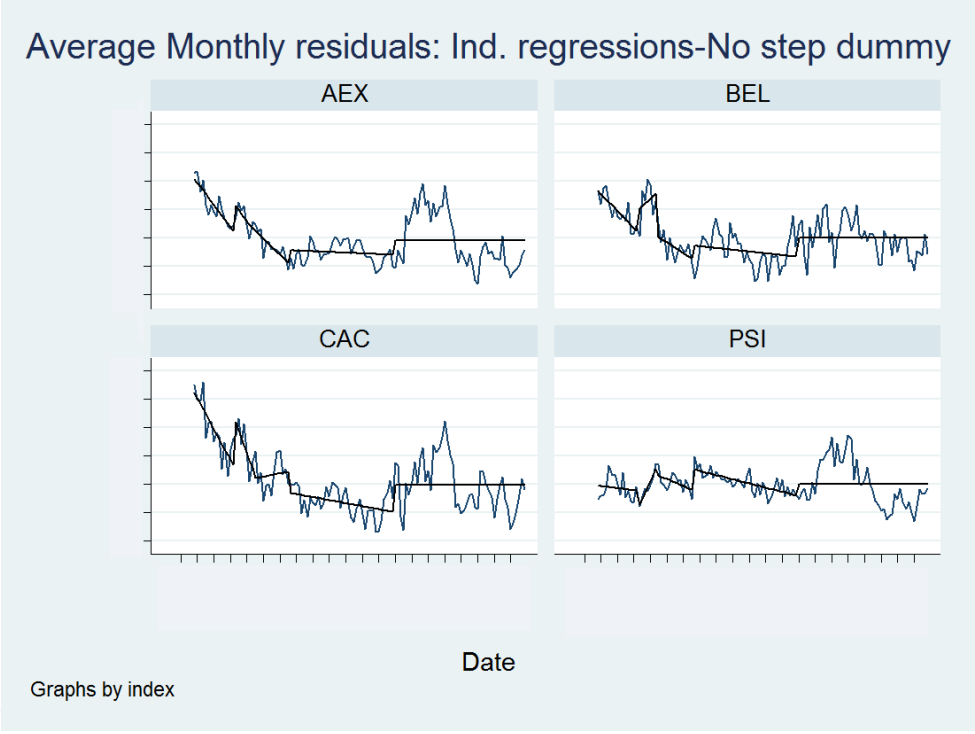
forces all control variables other than the quarter-year time fixed effects to have the same effect across all exchanges, and that this restriction causes the model to produce the trends presented by the Commission; and (iv) that the trend presented is forced into the model artificially and that there is no omitted trend once the control variables suggested by the Notifying Parties are used.

(1281) The assessment of these claims is as follows. First, the Commission's time fixed effects model generates a pre-merger period downward sloping trend both when the regressions are run on a pooled dataset and when they are run separately for each exchange. This establishes that the results are not driven by the pooling. Second, even if the included time effects model would be misspecified[1103], it can be shown that the control variables used by the Notifying Parties' are clearly unable to pick up the underlying downward tendencies, especially for the pre-2002 period. The residuals of a regression model show the part of the model's explained variable (in this case: the logarithm of bid-ask spreads) that is not explained by the model's explanatory (control) variables. The residuals of a regression model which as control variables has only the variables used by the Notifying Parties (and excluding the step variables representing the different mergers) show that these control variables are not able to control for the underlying trends in the data. That is, even after controlling for the effect of these variables, there is still a pre-2002 downward trend in the bid-ask spreads as can be seen in Figure 16. This implies that part of the drop in the spreads is attributable to non-merger specific causes. In other words, these results confirm that there exists an identification problem with the Notifying Parties' modelling[1104].

1103 Model misspecification is argued by the Notifying Parties in Compass Lexecon report "Response to Chief Economist's Team's econometric analysis", 13 December 2011. In particular, the Notifying Parties argue in section 3 on page 5 that "*When assessing econometric estimations it is important to check whether estimation results are consistent with economic theory and common-sense. Where they are not, it suggests that the model is not correctly specified… the CET's model fails to generate coefficient on the control variables which are consistent with economic theory and logic*". The Commission notes that the model specifications put forward by the Notifying Parties equally suffer from counter-intuitive signs on selected control variables. The fact that Notifying Parties leave out the "tick change dummy" control variable that enters the CET's specification with the correct sign but which enters their specification with the wrong sign biases and invalidates the comparison of both specifications in Table 3. The Commission notes that the "tick change dummy" variable enters with the counterintuitive sign already in the 16 November 2011 Compass Lexecon submission "Response to comments at oral hearing" (Table 2, Table 4, Table 5, etc.). The Commission also observes that the tick change dummy even appears when the sample is capped in December 2006 (Tables 4 and 5 of the Compass Lexecon report "Response to Chief Economist's Team's econometric analysis", 13 December 2011), which is nonsensical given that the tick change was only performed in 2007 (see page 8 of Compass Lexecon "Revising the liquidity effects of the creation of Euronext's integrated cash market", 5 September 2011). To the extent that the Notifying Parties claim CET model misspecification on the basis of control variables that enter with a counterintuitive sign, it would equally apply to their own model and hence their results.

1104 The residuals plotted are monthly averages. The control variables are the logs of DAX volatility, volume traded on the Frankfurt exchange, the last price of the security, market capitalisation, month- and security fixed effects. The regressions are run separately for the four exchanges. The black lines (that is, the added non-vertical lines) are trends fitted to the residuals with different slopes allowed for the different merger periods, and also for a different slope after 2007. The first trend slopes, for the period before the Paris-Brussels integration, are always statistically significantly different from zero. The results also hold when the GDP variable is also included in the list of control variables. The details of the regressions are reported in the Annex.

Figure 16: Monthly average residuals from the Notifying Parties' specification by stock exchange



[ ]*

(1282) Even if it were possible to disentangle the trend existing prior to the merger from the actual effect of the merger, it would be expected that the effect of the merger should be limited to a certain time window, otherwise the merger dummies would be picking up many other unobservable effects which have increased liquidity over time. In particular, there are changes from 2005 onwards (for instance, increased use of high frequency trading) for which the data do not exist to identify them. This biases upward the magnitude of estimated merger efficiencies.

(1283) In addition, the specification presented by the Notifying Parties includes a non-exhaustive list of events which occurred between 2000 and 2010. These events are included in their specification as single-day events. In their subsequent submissions, the Notifying Parties specify these events to control for 5 days before and after the event. However, events such as the terrorist attack in New York and Washington on 11 September 2011 or Lehman Brothers' bankruptcy on 15 September 2008 among many others have had a longer lasting effect. For instance, following some comments from the Commission at the Oral Hearing, the Notifying Parties introduced a permanent effect to control for the introduction of a new regulation in France back on 3 May 2001 and the entry of DTS between May 2004 and September 2005. As a result, it is observed that by introducing a permanent or longer lasting effect, the estimated impact of the merger significantly decreases. It cannot be excluded that other unobserved events may have had persistent effects, especially since the list of events employed by the Notifying Parties is limited.

(1284) The identification problem also exists if the omitted factors cause not trends but rather permanent changes in the level of spreads. As indicated, these events can be, for example, the introduction of HFT or entry.

(1285) It should also be noted that the MiFID volume variable used by the Notifying Parties in their regressions does not include the volume generated by all related MTFs (trading volume of Turquoise is not included). This implies that the magnitude of drop in spreads due to the effect of MiFID is underestimated. The unexplained effect shows up in the estimated merger effects and, hence, contributes to the identification problem. Furthermore, it is known that there have been entrants obtaining low volume but having a large impact on fees, which feeds through to bid-ask spreads. This would lead to further bias.

(1286) As already described in the SO, the Notifying Parties' analysis therefore suffers from a severe identification problem[1105]. As spelled out in the SO in paragraphs 595-603, there are problems of omitted variables, variable misspecifications and concerns with the methodological choices which make it impossible to disentangle the effect of the Euronext merger on liquidity from other trends or events in the market.

12.3.3.2.1.3. Criticism on the calculation of Euro […] million*

(1287) Even if the nature of the efficiency claim were to be acknowledged, *quod non*, there is still a significant issue in the way in which the parameters have been employed to quantify any effect. The Notifying Parties estimate the total monetary savings derived from the reduction of the bid-ask spread stemming from the notified transaction at Euro […]* million. This estimate is the result of applying a weighted average reduction in bid-ask spreads across all phases of the Euronext mergers to the EUR average bid-ask spreads of different selected securities in 2010 and multiplying the latter by the 2010 trading volumes[1106] of the securities traded in the Notifying Parties' exchanges. The Notifying Parties have failed to demonstrate that the estimates are conservative, and that the robustness checks carried out for the underlying regression model do not lead to substantially lower figures,

(1288) It is not clear which regression specification the Notifying Parties have retained as the basis for their estimation. Moreover, given the wide range of model specifications, any choice seems to be discretionary to a certain extent, which may not be innocuous as different model regressions lead to substantially different integration impact coefficients and hence savings estimates. Furthermore, the uncertainty about the estimates varies significantly and the confidence interval is not taken into account when generating efficiency estimates.

(1289) The Notifying Parties claim that the weighted average reduction in bid-ask spreads amounts to […]*% following the Euronext mergers, leading to a total monetary

[1105] See the SO for instance in paragraphs 590, 593-594 and 598.

[1106] The Notifying Parties exclude volumes generated by market makers because the former can adjust the level of bid-ask spread according to the level of liquidity. Therefore, they are indifferent between high and low liquidity.

proposed saving of Euro […]* million if applied to the 2010 volumes[1107]. The latter is the result of entering the different integration phase regression point estimates corresponding to one specific regression specification[1108] into a spreadsheet. There are significant doubts about the correctness of this claim. From the underlying spreadsheet and technical annex, it appears as if the Notifying Parties have applied a weighted average bid-ask spread reduction of […]*% in order to come to a Euro […]* million estimate of total savings, in contrast to what is being claimed[1109]. A bid-ask spread reduction of […]*% would have resulted in a total projected monetary saving of Euro […]* million, rather than Euro […]* million[1110].

(1290) Moreover, it is not clear where the claimed […]*% cost reduction and corresponding confusion comes from. When plugging in the regression point estimates of regression model 6 in table 4[1111] of the Notifying Parties spreadsheet, the Commission indeed ends up with a weighted average reduction in bid-ask spreads of […]*%, so the Notifying Parties may have switched from specification 6 to specification 5 without updating the main text and findings accordingly[1112].

(1291) The choice of model 5 over model 6 is questionable, given that only the latter controls for GDP per capita.[1113] It could be that the Notifying Parties felt uneasy about relying on point estimates that are not statistically significant, as the phase 2 point estimate is not statistically different from zero for a typical confidence level. However, the phase 2 point estimate is also not statistically different from zero at the 95% confidence level for model 5. When only statistically significant estimates are retained, the resulting savings estimate can differ dramatically and may be as low as Euro […]* million[1114].

(1292) Furthermore, the extrapolation is unrealistic. As described in Recital (1276) above, the coefficients employed by the Notifying Parties to compute the liquidity savings

---

1107 Padilla and Coppi (2011), "Efficiencies from the proposed Transaction", 24 October 2011, amongst others Table 1 on page 55, first paragraph of page 54 and last paragraph of page 55.

1108 It appears as if the regression coefficients from model specification 5 in Table 4 of Padilla and Coppi "Revisiting the liquidity effects of the creation of Euronext's integrated cash market" of 5 September 2011 have been retained. This model specification leaves out important control variables such as GDP per capita, market capitalisation, price of the security, etc.

1109 Padilla and Coppi (2011), "Efficiencies from the proposed Transaction", attachement B, 24 October 2011. This file was only sent to the Commission on 17 November 2011.

1110 The estimates in Table 1 of Padilla and Coppi (2011), "Efficiencies from the proposed Transaction" of 24 October 2011, do not correspond to a […]*% weighted average bid-ask spread reduction (despite the claim in the title), but rather to a […]*% reduction. A […]*% reduction would be the result if the regression coefficients of specification 6 of Table 4 were to be used.

1111 Padilla and Coppi "Revisiting the liquidity effects of the creation of Euronext's integrated cash market" of 5 September 2011.

1112 This confusion is even more unfortunate given that the alleged […]*% reduction in bid-ask spreads (which turns out to be […]*%) is being used as an input when estimating the savings from derivatives trading.

1113 Neither of both models control for other relevant control variables such as security price and market capitalisation. When the latter control variables are added, point estimates change dramatically once again. See for example Tables 1 and 2 of Compass Lexecon Memorandum "Response to comments at oral hearing" of 16 November 2011.

1114 This would be the result if only the statistically different coefficients of model 5 in Table 1 were retained from the Compass Lexecon Memorandum "Response to comments at oral hearing", 16 November 2011.

capture the decrease in bid-ask spread resulting from factors which occur all over the period. Instead, it seems appropriate to limit any potential effect on bid-ask spreads to a specific time window after the merger. In light of the specification run by the Commission on the basis of the Notifying Parties' data and plotted in the graphs, it is observed that these coefficients are significantly lower and may even be close to zero in the case of Lisbon in the period closest to the merger. Also, the estimates for Amsterdam are much smaller with a tighter time window. This is reflected by the fact that, for example, when estimating their models on a more limited sample (2000-2005), the Notifying Parties find that the effects of the first and third mergers drop dramatically and in some cases lose statistical significance[1115]. It is important to note that the Notifying Parties have failed to provide the estimated total savings implied by these alternative models.

(1293) Finally, the claimed effects of the Euronext mergers are very heterogeneous. Euronext brought together first the Brussels and Paris exchanges, then the Amsterdam exchange and finally the Lisbon exchange. It is known from Nielsson (2009) that potential effects on liquidity stemming from the Euronext merger are heterogeneous among different securities types. Nielsson's analysis evaluates the liquidity impact on all stocks and not just the large caps, as performed by the Notifying Parties. Nielsson concludes that the small and medium firms did not enjoy any increased liquidity effect from the Euronext merger. Furthermore, there is a very different effect across securities. Again, Nielsson (2009) finds that the Euronext merger had no liquidity effect on the Dutch securities. Nielsson argues that this lack of effect on liquidity is due to the strong foreign ownership of Dutch equities (67% of Dutch stocks were controlled by foreign investors)[1116]. With so much heterogeneity, it is unclear whether it should be concluded that the notified transaction has an effect more like the effect in Amsterdam or the effect in Paris at the time.

12.3.3.2.1.4. Results from the market investigation

(1294) In their response to the SO, the Notifying Parties argue that 76% of responsive market participants expect increased liquidity from the notified transaction[1117]. To arrive at this figure, the Notifying Parties base themselves on 37 responses for which they provide the reference in footnote 52 of their paper "Response to statement of objections - transaction-related efficiencies".

(1295) Only six of the 37 responses relate to expectations of increased liquidity in cash markets, including four responses to questionnaire 1 which was sent to 269 direct exchange customers (116 customers responded) and two responses to questionnaire 2, which was sent to 131 indirect exchange customers (39 customers responded)[1118].

1115 Compass Lexecon Memorandum "Response to comments at oral hearing" of 16 November 2011, Annex A, Table 16.

1116 Nielsson, U. (2009): “Stock Exchange Merger and Liquidity: The Case of Euronext”, *Journal of Financial Markets*, vol. 12, issue 2, May. Figures extracted from FESE (2002): "Share ownership structure in Europe".

1117 Notifying Parties' response to the SO, Efficiencies, , pages 14-17.

1118 Response of Banco BPI, Metzler Investment, WGZ-Bank AG Westdeutsche Genossenschafts-Zentralbank, Landesbank Hessen-Thüringen (responses to Question 167 of Questionnaire Q1, – [...]*.

(1296) Among the six respondents, one respondent, Alpha Strategien Triple MH SEB Master Kapitalanlagegesellschaft, assumes more liquidity but explicitly stated in its overall response to the questionnaire that it is not active in equity trading. Another respondent states that the merger may potentially lead to higher liquidity (that is to say the respondent is not certain). Therefore, when the figure of 76% is put into context, it appears that a total of four respondents have made a clear reference to an expectation of increased liquidity in cash equity markets.

(1297) The Commission therefore considers that the Notifying Parties have significantly overstated the expectations voiced in the market investigation. Less than a handful of respondents made reference to expectations of increased liquidity in the cash markets. In this respect, it is worth noticing that as described above in Recital (1260) interested third party interventions in favour of the notified transaction as a means to provide a stable environment for investors to trade stocks are unsubstantiated and have failed to observe that "fragmentation" of cash markets and technological developments have in fact increased liquidity by significantly reducing bid-ask spreads over the last years. Technological development has made it possible to access reliable information and benefit from trading simultaneously in different exchanges. This fact has been endorsed by the academic literature which has shown that the market fragmentation enabled through MiFID and technological development have been drivers in increased market liquidity[1119].

(1298) Therefore, the Commission considers that the claimed liquidity benefits for cash markets are not verifiable.

12.3.3.2.2. Merger specificity

(1299) It cannot reasonably be inferred from the submitted evidence that the cash liquidity benefits would materialise if the merger were to be completed. Therefore, the Commission considers it is not necessary to examine whether these efficiencies could have been realised absent the notified transaction.

12.3.3.2.3. Consumer benefits

(1300) The Notifying Parties argue that the claimed benefits accrue directly to users. As pointed out in the SO, even though the claimed liquidity cost savings accrue on the customer side, the incentive on the part of the merged entity to leave efficiency gains from increased liquidity with customers depends on the existence of competitive pressure from the remaining firms in the market and from potential entry. Given that in the cash market, there is competitive pressure from other venues, the Commission would expect a partial pass-through of any potential cash related efficiencies.

(1301) However, the Commission notes that, as outlined above in Section 12.3.3.2.1, the claimed liquidity-related efficiencies in the cash market have not been verified.

Response of Alpha Strategien Triple MH, SEB Master Kapitalanlagegesellschaft to Questions 88.1 of Questionnaire Q2 [...]*. Response of [...]* to Questions 89 of Questionnaire Q2 [...]*.

1119 See for instance the references included in footnotes 1071, 1077 and 1087 of this Decision.

(1302) Therefore, the Commission considers that, to the extent there were to be any cash liquidity benefits, it is possible that there will be some pass-on to (that is net benefits left with) customers, but the size of this effect cannot be determined on the basis of the available data.

12.3.3.3. CONCLUSION ON LIQUIDITY IMPACT ON INTEGRATED CASH EXCHANGES

(1303) Therefore, the Commission concludes that the efficiencies claimed by the Notifying Parties in the area of liquidity savings for the cash market are not verifiable. Even if they were verifiable, it is unclear how much of the savings would be passed on to customers (that is would materialise as net benefits for consumers). In any event, the claims of the Notifying Parties appear exaggerated based on the available evidence.

12.3.4. Liquidity impact of integrated derivatives trading platforms

12.3.4.1. THE NOTIFYING PARTIES' CLAIMS

(1304) As described above in Recital (1244), in the Form CO, the Notifying Parties made a general statement that the notified transaction would lead to an increase of liquidity resulting in a reduction in the implicit costs of trading.

(1305) In their submission of 5 September 2011, the Notifying Parties claim that the integration of Euronext's derivatives trading platforms in Amsterdam and Paris into LiffeCONNECT had an economically and statistically significant impact on the liquidity of Euronext's derivatives platforms[1120]. In particular, the Notifying Parties claim that the integration of Euronext's derivatives trading platforms increased the daily traded volumes of the AEX, CAC-40 and FTSE-100 equity index futures. According to the Notifying Parties, this effect is found to be material, statistically significant and robust. The Notifying Parties argue that Euronext's past experience demonstrates that the notified transaction will have a positive effect on trading activity and liquidity and will, therefore, reduce the implicit costs of trading.

(1306) In their response to the SO, the Notifying Parties explain that the econometrics study on derivatives liquidity was unable to calculate directly the reduction in bid-ask spread for derivatives traders[1121]. Instead, the Notifying Parties estimated the cost savings for derivatives by assuming that the increase in liquidity from the notified transaction had an effect of the same magnitude as cash trading and found, based on further assumptions, that the saving for derivatives would be around Euro […]* billion.[1122]

12.3.4.2. ANALYSIS

(1307) In the SO and during the Oral Hearing, the Commission expressed concerns about the identification, questioned the robustness of the results and conveyed doubts whether the estimated effects can be mapped onto the notified transaction, as competitive and

---

1120 Padilla, J. and Coppi, L. "Assessing the liquidity effects of the creation of Euronext's integrated derivatives platform" of 5 September 2011.

1121 Compass Lexecon "Efficiencies from the Proposed Transaction" of 24 October 2011, page 55.

1122 Compass Lexecon "Efficiencies from the Proposed Transaction" of 24 October 2011, page 58.

market circumstances have substantially changed. The Commission also observed that the Notifying Parties' analysis is limited to three equity index futures contracts and that the Notifying Parties have not shown whether any effect found for these contracts could be mapped to other derivatives contracts (options on these equity indices or futures/options on other underlyings) or whether opposite effects can be expected for other (more or less liquid) contracts. Finally, the Commission questioned the merger specificity and whether efficiency gains from increased liquidity would be left with customers.

(1308) The analysis in this Section is solely based on data employed by the Notifying Parties in their analysis. The analysis confirms the concerns set out by the Commission in the SO[1123] and responds to the claims made by the Notifying Parties in their submissions.

12.3.4.2.1. Verifiability

12.3.4.2.1.1. Identification – inference from historical data

(1309) The identification concerns raised in the context of cash trading equally hold true, all other things being equal, in the context of derivatives trading (see Section 12.3.3.2.1). In short, there are significant limitations in the natural experiment evidence provided by the Notifying Parties, due to the fact that changed circumstances potentially invalidate the extrapolation of past event impact estimates to the impact of current and qualitatively different events. In order to be able to estimate the effects of a new and qualitatively different merger with greater reliability, merger events that take place towards the end of the sample period (ideally of different size) would need to be observed.

12.3.4.2.1.2. Criticism of the estimation approach and the calculation of actual cost savings

(1310) Setting aside the fundamental identification concerns, the Commission observes that the Notifying Parties state that "*for the purpose of illustration*" they aim to "*give a sense of the order of magnitude of the savings expected to accrue to users*" in the area of derivatives trading.[1124] The calculation of the benefits is performed indirectly and based on a number of largely discretionary assumptions. This shortcut and indirect approach has significant shortcomings, which is relevant because the claimed resulting efficiencies for derivatives trading make up [50-80]*% (Euro […]* million) of the total claimed benefits for cash and derivatives trading and because the underlying assumptions are not innocuous and possibly overestimate the resulting cost saving.

(1311) One of the assumptions retained by the Notifying Parties is that the reduction in implicit costs from the notified transaction for derivatives trading would be similar as for cash trading. To justify this assumption, the Notifying Parties refer to their finding that trading volumes seem to go up at least as much for derivatives trading as for cash

[1123] In particular paragraphs 607, 608 and 610 of the SO.

[1124] Compass Lexecon "Efficiencies from the Proposed Transaction" of 24 October 2011, page 55.

trading following the historical mergers. From these volume-related observations across entirely different regression models, the Notifying Parties conclude that the implicit cost reduction following a merger for derivatives trading must also at least be as high as for cash trading, namely […]*%. To begin with, and as discussed above, this figure itself is biased upward and, hence, unreliable. There are, however, further concerns with the Notifying Parties' methodology to verify the existence of merger-specific efficiencies for derivatives trading.

(1312) The retained […]*% implicit cost reduction is inconsistent with the reported cash trading cost savings for two reasons. First, as spelled out in Recital (1289) above, the Notifying Parties used a different weighted average reduction in bid-ask spread in order to quantify their cash trading cost saving estimate. Second, it is inappropriate in this context to equate the concepts "implicit cost reduction" with "bid-ask spread". The latter may be a narrower concept as the former may include bid-ask spreads, but possibly also margin and collateral costs, technical and operational overhead costs, price-impact costs, etc. Hence, to claim that a given reduction in bid-ask spreads can be mapped one-to-one onto a broader implicit cost reduction may overestimate the true cost saving. Moreover, and more importantly, the employed shortcut is not appropriate both in general as well as in this specific case. It cannot simply be assumed that the impact of merger events on (narrowly or broadly defined) implicit costs across different asset classes is similar, based on the fact that the impact of different mergers on volumes across different asset classes is similar, given that the triggering events, underlying assets, regression approaches, price and demand elasticities and initial conditions may differ substantially.

(1313) Moreover, the […]*% weighted average bid-ask spread reduction is applied to a rough estimate of total implicit cost of trading (Euro […]* million).[1125] Importantly, the total implicit cost of trading in turn is inferred from the revenues from both exchanges (which are deemed explicit costs from the point of view of the exchange users) and an assumed split of total trading costs between explicit trading costs and implicit trading costs ([…]*% versus […]*%, respectively). In the approach taken, ultimate cost reductions will mechanically be found to be higher the higher the proportion of implicit costs to total trading costs. Whereas according to the Notifying Parties, the literature suggests that implicit costs for cash trading represent between 30% and 50% of total trading costs, the Notifying Parties believe that a higher proportion of implicit costs is warranted for European exchanges given that *"the bulk of explicit costs are unrelated to exchanges as they are represented by brokerage or other intermediaries fees that are not set up by the Parties"*.[1126] When brokerage fees are thus excluded from total trading costs, the Notifying Parties arrive at a split of […]*% explicit trading costs and […]*% implicit trading costs.

(1314) The Commission considers that the brokerage and other intermediary fees that are being left out by the Notifying Parties also cover the broker or intermediary exchange costs for executing the trade on behalf of its client.[1127] As a result, at least part of those

[1125] Compass Lexecon "Efficiencies from the Proposed Transaction" of 24 October 2011, page 58, table 2.

[1126] Compass Lexecon "Efficiencies from the Proposed Transaction" of 24 October 2011, page 57 lines 2-5.

[1127] This is also confirmed by Pagano and Padilla (2005), "The Economics of Cash trading: An Overview", page 23: "Brokerage commissions provide revenues to brokers from which they must pay the trading and post-trade fees, charged by the exchange and clearing and settlement institutions respectively."

brokerage fees should not be discarded from the calculation of the split between explicit and implicit exchange trading costs. If the split between explicit and implicit fees would thus be slightly altered to, say, […]*% explicit and […]*% implicit trading costs, the estimated cost savings would drop significantly from Euro […]* million.[1128] This shows that the claimed and estimated efficiencies are extremely sensitive to the assumed split between explicit and implicit trading costs. The Commission also notes that in distinguishing between implicit and explicit trading costs, the Notifying Parties refer to literature that covers equity and cash trading, but not derivatives trading.[1129] For these reasons, the Commission considers that the assumed split between explicit and implicit trading costs is likely to be exaggerated, which potentially biases the alleged efficiencies upwards.

(1315) Furthermore, it is not clear why the Notifying Parties have not sought to estimate the reduction in bid-ask spreads directly.

12.3.4.2.1.3. *Liquidity measure*

(1316) The Notifying Parties base their estimation on equity index futures data only, and perform the impact analysis on daily traded volumes of the equity index futures (number of single contracts of futures). It is not explained why other liquidity measures such as bid-ask spreads or volatility have not been considered.

(1317) Furthermore, the Notifying Parties point out that the merger could increase liquidity because of a distribution effect, where companies trading in just one platform could benefit from being able to trade in both platforms. At the time of the integration of the different derivatives trading platforms as a result of the Euronext mergers, the total volume controlled by companies[1130] trading in the different exchanges which then merged into Euronext was lower than that generated by companies trading in both LIFFE and Eurex today. Although the change in overlap is lower to what was observed in the cash side, there is still a non negligible effect.[1131] [In February 2003, a majority of volumes were generated by a small number of entities trading both on Paris and London]*. […]*.[1132] […]*.

1128 The figure would further drop to €[…]* million if the split explicit versus implicit was .[…]*.

1129 Compass Lexecon "Efficiencies from the Proposed Transaction" of 24 October 2011, footnotes 68, 69, 70, 71 and 72.

1130 For the purposes of this analysis, companies are aggregated according to the mother companies using data provided by the Notifying Parties in response to a request for information of 23 September 2011. Given that mother companies have control over the different subsidiaries trading at the different exchanges, it makes no sense to treat the different subsidiaries of for instance, JP Morgan, separately. It should be noted that these figures are a rough approximation and probably are a conservative estimation as all companies have not been able to be matched to the corresponding mother companies.

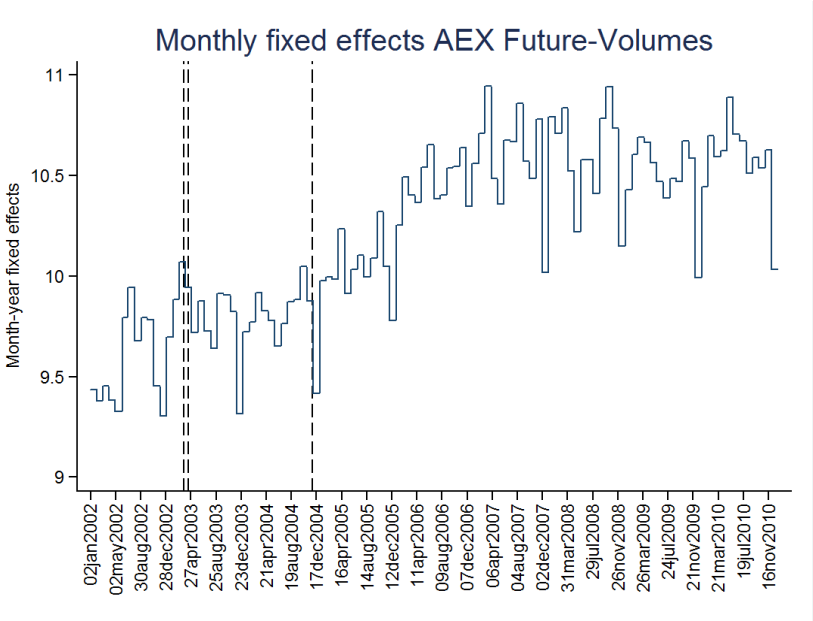
1131 It should be noted that the Notifying Parties have been unable to retrieve the data for Amsterdam for the years 2000 to 2005. Therefore, the current estimate for the overlap in 2003 is conservative and the volume generated by companies overlapping in the different exchanges is likely to be higher.

1132 In December 2010, there were […]* mother companies with overlapping volumes out of a total of […]* companies which generated positive volumes. For the whole of 2010, there were […]* companies overlapping in both platforms out of a total of […]* companies which traded during 2010. Comparing the figures for February 2003 with the figures for February 2010 (i.e. same month) would lead to the same conclusion. During February 2010 […]*% of trades were generated by companies trading on both

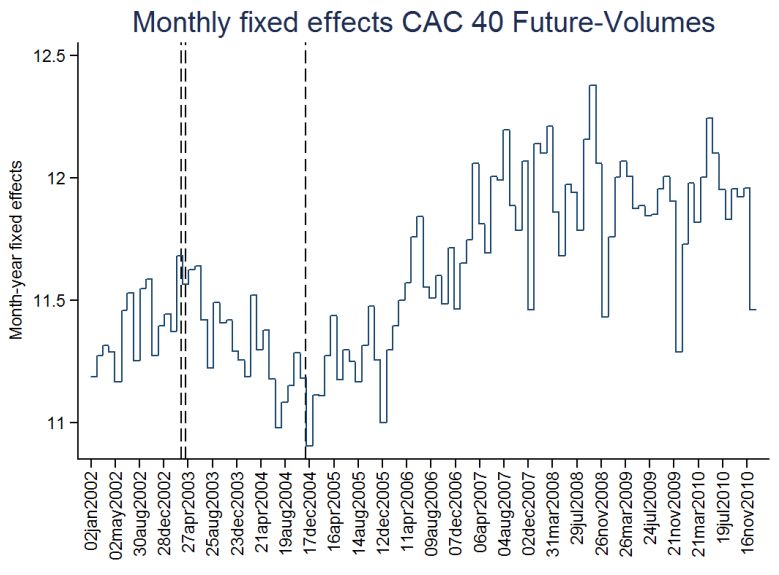
12.3.4.2.1.4. Identification of the impact of the mergers at the time

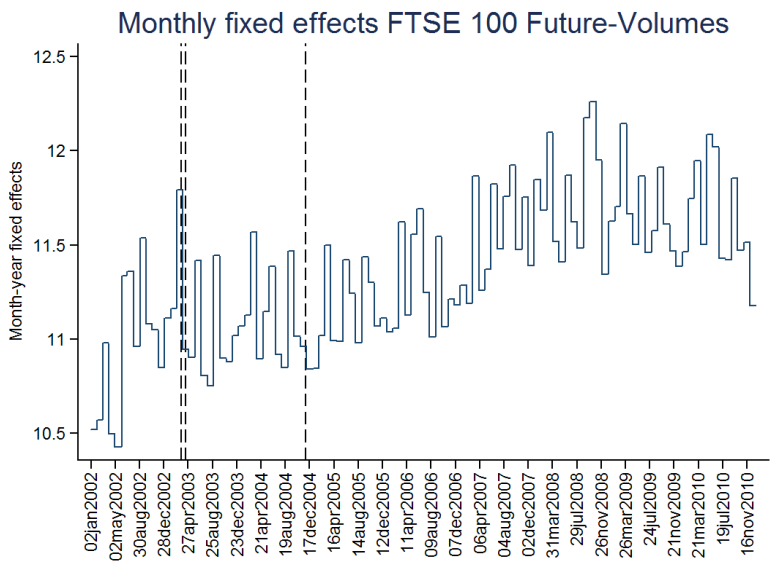
(1318) Similar to Section 12.3.4.2.1, graphs showing the average monthly effects of volumes for the different futures have been plotted without including any additional explanatory variables. Vertical lines to identify the different mergers have been included: the migration of the Brussels derivatives market (24 March 2003), the migration of the Paris derivatives market (14 April 2003) and the migration of Amsterdam derivatives market (29 November 2004). As described previously, a trend in volumes over time for AEX, CAC and FTSE is observed as can be seen in the graphs in Figure 17. Using the data provided by the Notifying Parties, this time, the pattern and trend that is observed for the three indices belonging to LIFFE is not significantly different from that of DAX, SMI and Euro Stock. As such, the deficiencies outlined in the cash liquidity Section in this respect are also applicable to the derivatives.

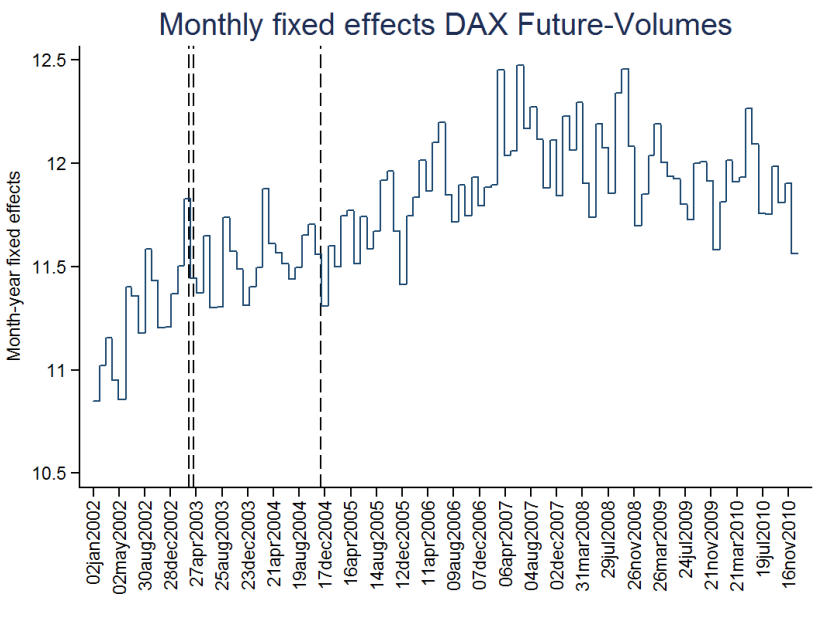
Figure 17: Year-month fixed effects on volumes for futures

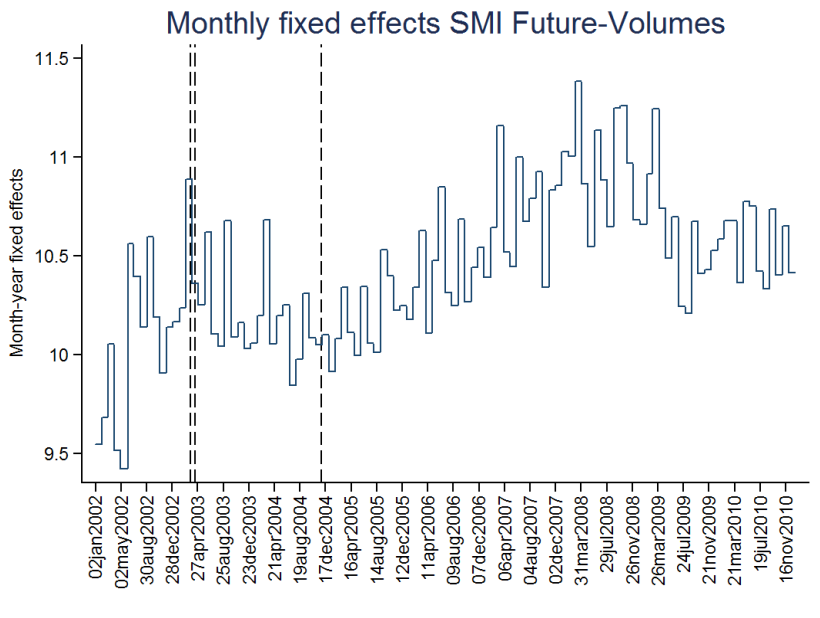


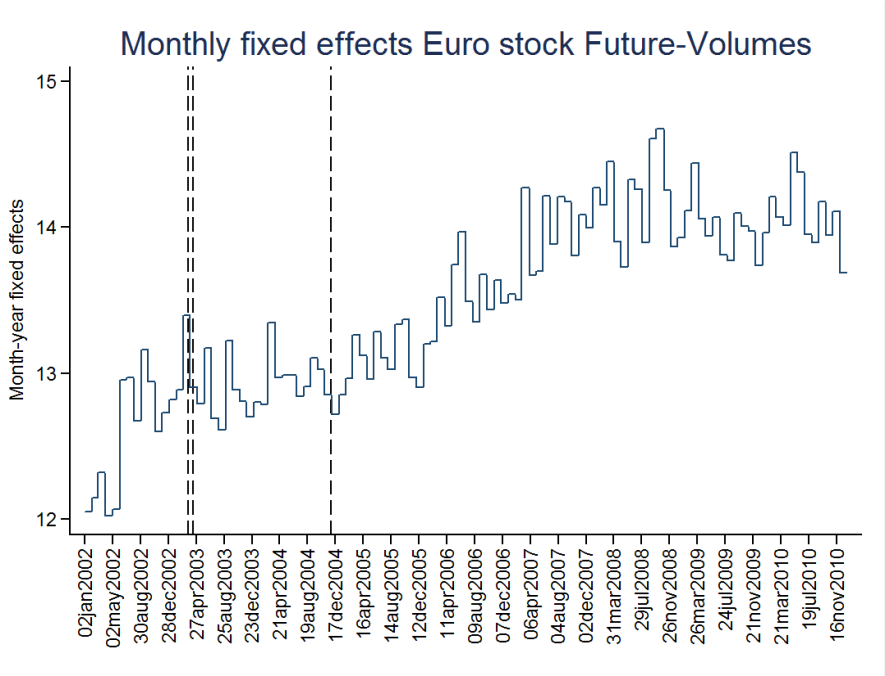
platforms. There were […]* mother companies ([…]*%) with positive volumes out of a total of […]* mother companies which traded during February 2010.


Monthly fixed effects CAC 40 Future-Volumes
Month-year fixed effects
12.5
12
11.5
11
02jan2002
02may2002
30aug2002
28dec2002
27apr2003
25aug2003
23dec2003
21apr2004
19aug2004
17dec2004
16apr2005
14aug2005
12dec2005
11apr2006
09aug2006
07dec2006
06apr2007
04aug2007
02dec2007
31mar2008
29jul2008
26nov2008
26mar2009
24jul2009
21nov2009
21mar2010
19jul2010
16nov2010


Monthly fixed effects FTSE 100 Future-Volumes
Month-year fixed effects
12.5
12
11.5
11
10.5
02jan2002
02may2002
30aug2002
28dec2002
27apr2003
25aug2003
23dec2003
21apr2004
19aug2004
17dec2004
16apr2005
14aug2005
12dec2005
11apr2006
09aug2006
07dec2006
06apr2007
04aug2007
02dec2007
31mar2008
29jul2008
26nov2008
26mar2009
24jul2009
21nov2009
21mar2010
19jul2010
16nov2010


Monthly fixed effects DAX Future-Volumes
Month-year fixed effects
12.5
12
11.5
11
10.5
02jan2002
02may2002
30aug2002
28dec2002
27apr2003
25aug2003
23dec2003
21apr2004
19aug2004
17dec2004
16apr2005
14aug2005
12dec2005
11apr2006
09aug2006
07dec2006
06apr2007
04aug2007
02dec2007
31mar2008
29jul2008
26nov2008
26mar2009
24jul2009
21nov2009
21mar2010
19jul2010
16nov2010


Monthly fixed effects SMI Future-Volumes
Month-year fixed effects
11.5
11
10.5
10
9.5
02jan2002
02may2002
30aug2002
28dec2002
27apr2003
25aug2003
23dec2003
21apr2004
19aug2004
17dec2004
16apr2005
14aug2005
12dec2005
11apr2006
09aug2006
07dec2006
06apr2007
04aug2007
02dec2007
31mar2008
29jul2008
26nov2008
26mar2009
24jul2009
21nov2009
21mar2010
19jul2010
16nov2010



12.3.4.2.1.5. Results from the market investigation

(1319) As outlined above in Recital (1294), in their response to the SO, the Notifying Parties argue that 76% of responsive market participants expect increased liquidity from the notified transaction by basing themselves on 37 responses which they reference in footnote 52 of their paper "Response to statement of objections - transaction-related efficiencies".

(1320) 30 responses related to expectations about derivatives markets including 14 responses to questionnaire one which was sent to 269 direct exchange customers (116 customers responded), 7 responses to questionnaire 2 which was sent to 131 indirect exchange customers (39 customers responded) and 10 responses to questionnaire 5 which was sent to 136 corporate customers (57 customers responded).

(1321) 12 respondents outlined that there may be some potential for increased liquidity, but are rather uncertain[1133]. Two respondents state that they expect liquidity to improve, but in the same sentence refer to negative effects on trading fees.[1134] One respondent's

[1133] Response of Exane Group to Question 111 of Questionnaire Q1 [...]*; Response of BGC Cantor Fitzgerald to Question 111 of Questionnaire Q1 [...]*; Response of DRW Investments to Question 110 of Questionnaire Q1 [...]*; Response of ING Bank to Question 110 of Questionnaire Q1 [...]*; Response of DekaBank to question 55 of Questionnaire Q5 [...]*; Response of [...]* to Question 110 of Questionnaire Q1 [...]*; Response of Instituto de gestao da tesouraria e do credito publico to Question 110 of Questionnaire Q1 [...]*; Response of Eurohypo to Question 54.2 of Questionnaire Q5 [...]*; Response of Rorento to Question 54.2 of Questionnaire Q5 […]*; Response of Coca-Cola Enterprises Inc. to Question 54.2 of Questionnaire Q5 [...]*; Response of [...]* to Question Q47.2 of Questionnaire Q2 [...]*; Response of [...]* to Question 47.2 of Questionnaire Q2 [...]*.

[1134] Response of Dexia to Question 110 of Questionnaire Q1 [...]*; Response of [...]*to Question 110 of Questionnaire Q1 [...]*.

answer is conditional on reduction of double listings.[1135] Another respondent only refers to the fact under the assumption that the merger would increase liquidity, then market participants would benefit. This leaves 14 respondents who stated that liquidity could increase.[1136]

(1322) A liquidity effect may be expected in case a specific contract trades pre-merger on two different platforms, but would trade post-merger on one platform. This general idea that consolidation of split order books increases liquidity may explain the results of the market investigation. Respondents may have in mind a liquidity effect from consolidation of split order books. For instance, SEB AG explicitly states that "*Liquidity will increase, if product double-listings are avoided*"[1137]. However, this idea would only be relevant for certain single stock derivatives contracts for which no liquidity benefits have been evaluated by the Notifying Parties and which is a rather small portion compared to equity index derivatives and interest rate derivatives. In any case, new technology allows traders to look at global liquidity instead of liquidity at separate trading venues, reducing any negative impact of market fragmentation.

(1323) In light of the above, the Commission considers that the Notifying Parties have significantly overstated their claims of increased liquidity in derivatives markets based on the market investigation. Whereas indeed some customers have voiced expectations that liquidity will increase, it was only a limited group of customers given the total number of customers who responded.

(1324) Therefore, the Commission considers that the claimed liquidity benefits for the derivatives market are not verifiable.

12.3.4.2.2. Merger specificity

(1325) It cannot reasonably be inferred from the submitted evidence that the derivatives liquidity benefits would materialise if the notified transaction were to be completed. Therefore, it is not necessary to examine whether these efficiencies could have been realised absent the notified transaction.

12.3.4.2.3. Consumer benefits

(1326) The Notifying Parties argued that the claimed benefits accrue directly to users. As pointed out in the SO, even though the claimed liquidity cost savings accrue on the customer side, the incentive on the part of the merged entity to leave efficiency gains

---

1135 Response of SEB AG to Question 52.2 of Questionnaire Q5 [...]*.

1136 Response of BVI to Question 48 of Questionnaire Q2 [...]*; Response of Banco Santander Totta to Question 48 of Questionnaire Q2 [...]*; Response of [...]* to Question 48 of Questionnaire Q2 […]*; Response of Landesbank Berlin to Question 111 of Questionnaire Q1 [...]*; Response of WestLB to Question 110 of Questionnaire Q1 [...]*; Response of Equinet to Question 110 of Questionnaire Q1 [...]*; Response of Caerus Trading to Question 110 of Questionnaire Q1 [...]*; Response of Banco BPI to Question 167 of Questionnaire Q1 [...]*; Response of [...]*to Questions 47 of Questionnaire Q2 [...]*; Response of Landesbank Saar to Question 54.2 of Questionnaire Q5 [...]*; Response of IFCO Systems to question 54.2 of Questionnaire Q5 [...]*; Response of CMA CGM S.A. to Question 54.1 of Questionnaire Q5 [...]*; Response of Société Générale to Question 109 of Questionnaire Q1 [...]*;Response of Boussard&Gavaudan Asset Management to Question 47.2 of Questionnaire Q2 [...]*.

1137 SEB AG, response to question 52.2 of Questionnaire Q5 [...]*.

from increased liquidity with customers depends on the existence of competitive pressure from the remaining firms in the market and from potential entry. In this respect, the Commission has found that the Notifying Parties would face no significant competition in the derivatives markets concerned, and therefore that the pass through of any efficiency and consequently the net benefits of consumers would be limited. The lack of disciplining pressure in the derivatives trading and clearing markets concerned would provide the ability and incentives to the Notifying Parties to increase membership fees or transaction fees for derivatives trading and clearing to outweigh any potential liquidity efficiency in the derivative market.

(1327) Therefore, the Commission considers that, to the extent there were to be any derivatives liquidity benefits, there would be some pass-on to (that is net benefits with) customers, but the size of this effect cannot be determined on the basis of the available data.

12.3.4.3. CONCLUSION

(1328) Therefore, the Commission concludes that the efficiencies claimed by the Notifying Parties in the area of liquidity savings for the derivatives market are not verifiable. Even if they were verifiable, it is unclear how much of the savings would be passed on to customers (that is would materialise as net benefits for consumers). In any event, the claims of the Notifying Parties appear exaggerated based on the available evidence.

12.3.5. Economy-wide efficiencies

(1329) The Notifying Parties claim in their submission on efficiencies that the liquidity effects of the notified transaction will not only benefit direct users of the Notifying Parties' platforms, but will also have significant benefits on the wider economy.[1138] The claims of the Notifying Parties in relation to economy-wide benefits of the notified transaction are founded on the assumption that it will result in increased liquidity[1139]. In order to consider any effects that follow-on from the liquidity effect, it first needs to be established whether there is a verifiable effect on liquidity in the claimed direction. As explained in Sections 12.3.3 (Liquidity impact on integrated cash exchanges) and 12.3.4 (Liquidity impact of integrated derivatives trading platforms), the level and direction of such a claimed effect are unclear and have not been verified.

(1330) In this context, it should also be noted that in their response to the SO, at the Oral Hearing and in their submissions of 1 and 20 December 2011 in relation to the proposed remedies, the Notifying Parties have also put forward more general arguments relating to alleged benefits of the notified transaction to the economy as a whole, including by facilitating the access of SMEs and larger businesses to equity finance, leading thereby to job creation. These also seem to be exclusively reliant upon claims of the transaction resulting in increased liquidity. The Commission has already outlined that no such liquidity benefits have been demonstrated by the Notifying Parties to result from the transaction to the requisite standard. To the extent that any such claimed

---

1138 Notifying Parties, Submission of 5 September 2011,"Economy-wide implications of the Transaction"

1139 Notifying Parties, Submission of 5 September 2011, "Economy-wide implications of the Transaction" where the Notifying Parties state that "*This paper considers whether the liquidity effects of the Transaction will also have benefits on the wider economy*".

economy-wide efficiencies might be purported to exist resulting from factors other than the claimed increase in liquidity, it was not demonstrated by the Notifying Parties how these might arise, the mechanism of how such efficiencies might work, nor indeed any detail or substantiation of any kind to support such claims. As such, the Commission considers that the claimed economy-wide efficiencies are not verifiable.

12.3.6. Cost synergies

(1331) The Notifying Parties expect cost synergies resulting from the notified transaction in the following business segments: technology, clearing, market operations and corporate overhead. The Notifying Parties have estimated these savings to amount to Euro […]* million per year post integration, largely by consolidating duplicative cost centres. The Notifying Parties claim that substantially improving their cost structures is essential to remaining competitive and further developing the benefits of their regulated markets. According to the Notifying Parties, the cost savings generated by the notified transaction would therefore bound to inure to the benefit of users, and could not be achieved absent the notified transaction.

(1332) In the SO, the Commission considered the claimed cost savings to be reductions in fixed costs and pointed to the Horizontal merger guidelines: "*cost efficiencies that lead to reductions in variable or marginal costs are more likely to be relevant to the assessment of efficiencies than reductions in fixed costs; the former are, in principle, more likely to result in lower prices for consumers*"[1140]. Additionally, the Commission specified that in any case, given the fact that post-merger, no significant competitive pressure would exist in the markets concerned as set out in the competitive assessment Section, it is unlikely that the Notifying Parties will have an incentive to pass on such cost savings fully to customers.

(1333) In their response to the SO, the Notifying Parties claim that the Commission cannot simply assume that fixed costs will not benefit users. The Notifying Parties point out that the Commission's reasoning is based on the premise that "*post-merger no significant competitive pressure would exist in the markets concerned as set out in the competitive assessment section*" but that this statement says nothing about competitive pressure in markets that are not covered in the SO (for instance, cash) where, the Notifying Parties are subject to intense competitive pressure and buyers have strong countervailing power.

(1334) Despite the arguments put forward by the Notifying Parties, and in light of the Horizontal Merger Guidelines, it is concluded that given the fact that post-merger, no significant competitive pressure would exist in the markets concerned as set out in the competitive assessment Section and the fact that different products offered by the Notifying Parties are complementary product serving the same customers, it is unlikely that fixed cost savings will be passed on to customers.

12.4. CONCLUSION ON EFFICIENCIES

(1335) Therefore, the Commission concludes that:

[1140] Horizontal Merger Guidelines, paragraph 80.

(i) the claimed reduction in the IT and user access costs of users of DB and NYSE resulting from the consolidation of the trading and clearing platforms of the Notifying Parties are not verifiable and even if it was (*quod non*), it remains unclear whether these savings would be merger-specific and how much of these savings would be passed on to customers;

(ii) some collateral savings are verifiable, although not at the level claimed by the Notifying Parties. However, some of the expected collateral savings could be attained through less anti-competitive means while only some of the savings are likely to be passed on to customers given the elimination of the significant competitive constraint the Notifying Parties may currently exercise on each other with respect to collateral policy; and

(iii) the liquidity impact of integrated cash and derivatives trading platforms is not verifiable and even if it were (*quod non*), it cannot be determined how much of the savings would be passed on to customers.

(1336) As set out in the Horizontal Merger Guidelines, *"it is highly unlikely that a merger leading to a market position approaching that of a monopoly, or leading to a similar level of market power, can be declared compatible with the common market on the ground that efficiency gains would be sufficient to counteract its potential anti-competitive effect"* [1141].

(1337) In the light of these principles and of the near monopoly resulting from the proposed transaction in a number of relevant markets as established in this Decision, any efficiencies, even if they were found to be verifiable, merger-specific, and likely to benefit consumers, would have to be particularly substantial to prevent the significant impediment to effective competition set out above, including the loss of actual and potential competition and the loss of competition in innovation.

(1338) As set out in Section 12.3 of this Decision, only the collateral savings are verifiable. IT and user access benefits and liquidity benefits are not verifiable. The verifiable collateral savings are of an order of magnitude of Euro [40-120]* million. However, only part of that amount is merger-specific and only part of the merger-specific amount is likely to be passed on to customers. Therefore, the efficiencies that are verifiable, merger-specific and likely to benefit customers are most likely limited.

(1339) Given the relatively small size of fees compared to the total cost of trading[1142], the Commission considers it likely that the Notifying Parties would have the ability and the incentive to increase fees (or reduce rebates) substantially. For it to become unprofitable for the merged entity to increase its fees to an extent so that the fee increase outweighs the verifiable collateral savings, trading demand would have to be extremely elastic. This means that the fee increase would need to lead to a very large reduction in trading volume at the merged entity's trading platform. Given that the notified transaction would lead to the elimination of the closest actual and potential competitor, and the high barriers to entry and expansion in the markets in question,

[1141] Horizontal Merger Guidelines, paragraph 84.

[1142] See the Notifying Parties statements in Compass Lexecon "Efficiencies from the Proposed Transaction" of 24 October 2011, page 57.

customers will have no alternative or possibility to switch to another platform. But the gains from using derivatives on exchange for hedging and investment purposes are expected to remain high relative to the changes in fees. Therefore, the Commission considers it likely that the merged entity would have the ability and the incentive to increase fees substantially[1143].

(1340) The verified annual cost savings can be put into perspective by expressing them as a percentage of the annual total revenues of the Notifying Parties from their derivatives business. The range of Euro [40-120]* million per year[1144] represents […]* of the total annual revenues of the Notifying Parties from their derivatives business[1145]. Another way to put the verified annual cost savings into perspective would be to divide the annual cost saving by the total number of contracts traded on the Notifying Parties' platforms per year. The Notifying Parties' total on-book and off-book trading volumes by number of LTIR, STIR, equity index and single-stock derivatives contracts in 2010 is […]*[1146]. The upper bound of Euro [100-120]* million divided by […]* gives […]* per contract and the lower bound of Euro [40-60]* million divided by […]* gives […]* per contract[1147]. This illustrates that a fee increase of […]* per contract would already be sufficient to recoup the collateral cost savings. This calculation assumes that all customers pay the same fees. However, the Notifying Parties are able to price discriminate as set out in Section 11.1.1.2.2.1.4 above. This means that the Notifying Parties could selectively impose price increases to those customers who are more price inelastic.

(1341) On the basis of the evidence that the Notifying Parties submitted, the Commission cannot conclude that the efficiencies resulting from the proposed transaction would be substantial, likely to be realised, and likely to be passed on to a sufficient degree to the consumer, and that they would thus enhance the ability and incentive of the merged entity to act pro-competitively for the benefit of consumers, thereby counteracting the significant impediment of effective competition resulting from the notified transaction.

(1342) Accordingly, the Commission considers that the efficiencies that the notified transaction might bring about are not sufficient to counteract the significant impediment to effective competition resulting from the notified transaction and established in this Decision.

1143 The Notifying Parties have suggested that "In order for the merged entity to fully claw back user benefits, implausibly high fee increases would be required". Compass Lexecon "Efficiencies from the proposed transaction" of 24 October 2011, page 25. However, the Notifying Parties base themselves on the fact that there are liquidity benefits of nearly Euro .[…]*. As set out in Section 12.3.3 and 12.3.4 above the liquidity benefits are not verified.

1144 This assumes that the full amount would be merger-specific and remain with customers, which is not likely as set out in Section 12.3.2 above.

1145 The calculations are based on data provided in Section 1 of the Form CO. .[…]*.

1146 Annex D.20 of the Form CO.

1147 This is a rough estimate as the number of contracts executed in 2010 is used for the calculation. It should be recalled that current transaction fees are of an order of magnitude of EUR […]* (depending on the product and the identity of the customer) and that other recoupment possibilities (membership fees, connectivity charges, etc) are also possible. A similar estimation was set out in paragraph 583 of the SO.

13. COMMITMENTS

13.1. ANALYTICAL FRAMEWORK

(1343) Where the Commission finds that a concentration raises competition concerns in that it could significantly impede effective competition, in particular as a result of the creation or strengthening of a dominant position, the parties may seek to modify the concentration in order to resolve the competition concerns and thereby gain clearance of their merger.[1148]

(1344) Under the Merger Regulation, it is the responsibility of the Commission to show that a concentration would significantly impede effective competition. The Commission then communicates its competition concerns to the parties to allow them to formulate appropriate and corresponding remedies proposals[1149]. It is then for the parties to the concentration to put forward commitments.[1150] The Commission only has power to accept commitments that are deemed capable of rendering the concentration compatible with the internal market so that they will prevent a significant impediment of effective competition in all relevant markets where competition concerns were identified.[1151] To this aim, the commitments have to eliminate the competition concerns entirely[1152] and have to be comprehensive and effective from all points of view.[1153]

(1345) In assessing whether the proposed commitments will likely eliminate the competition concerns identified, the Commission considers all relevant factors including *inter alia* the type, scale and scope of the proposed commitments, judged by reference to the structure and particular characteristics of the market in which the competition concerns arise, including the position of the Notifying Parties and other participants on the market.[1154]

1148 See Commission notice on remedies acceptable under Council Regulation (EC) No 139/2004 and under Commission Regulation (EC) No 802/2004 (the "Remedies Notice"), OJ 2008/C 267/01, paragraph 5.

1149 However see Case T-209/01 *Honeywell International, Inc. v. Commission* [2005] II-05527 "*It must be held that in matters relating to merger control the Commission cannot be required, over and above the obligation to set out its objections in a statement of objections and to supplement that statement if it should then decide to adopt new objections, to indicate, after service of the statement of objections and before adoption of the final decision, its current thinking as to the possible means of resolving the problems it has identified (see, to that effect, Case 53/69 Sandoz v Commission [1972] ECR 845, paragraph 14; Joined Cases C-204/00 P, C-205/00 P, C-211/00 P, C-213/00 P, C-217/00 P and C-219/00 P Aalborg Portland and Others v Commission [2004] ECR I-123, paragraphs 192 and 193; Case T-87/96 Assicurazioni Generali and Unicredito v Commission [1999] ECR II-203*)."

1150 Remedies Notice, paragraph 6.

1151 Remedies Notice, paragraph 9.

1152 See also Case C-202/06 P Cementbouw Handel & Industrie v Commission [2007] ECR 2007 I-12129, paragraph 54: "*it is necessary, when reviewing the proportionality of conditions or obligations which the Commission may, by virtue of Article 8(2) of Regulation No 4064/89, impose on the parties to a concentration, not to determine whether the concentration still has a Community dimension after those conditions or obligations have been complied with, but to be satisfied that those conditions and those obligations are proportionate to and would entirely eliminate the competition problem that has been identified.*"

1153 Remedies Notice, paragraph 9 and 61.

1154 Remedies Notice, paragraph 12.

(1346) In order for the commitments to comply with these principles, commitments must be capable of being implemented effectively within a short period of time.[1155] Where, however, the Notifying Parties submit remedies proposals that are so extensive and complex that it is not possible for the Commission to determine with the requisite degree of certainty, at the time of its decision, that they will be fully implemented and that they are likely to maintain effective competition in the market, an authorisation decision cannot be granted. [1156]

(1347) As concerns the form of acceptable commitments, the Merger Regulation leaves discretion to the Commission as long as the commitments meet the requisite standard.[1157] Structural commitments will meet the conditions set out in Recital (1344) above only in so far as the Commission is able to conclude with the requisite degree of certainty that it will be possible to implement them and that it will be likely that the new commercial structures resulting from them will be sufficiently workable and lasting to ensure that the significant impediment to effective competition will not materialise.[1158]

(1348) While divestiture commitments are generally the best way to eliminate competition concerns resulting from horizontal overlaps, other structural commitments, such as access remedies, may be suitable to resolve concerns if those remedies are equivalent to divestitures in their effects.[1159] Commitments relating to the future behaviour of the merged entity may be acceptable only exceptionally in very specific circumstances.[1160]

(1349) For access remedies to have an equivalent effect to divestitures, they must facilitate market entry by competitors to the extent that actual entry of new competitors would be timely, likely and sufficient to counteract any harm stemming from the concentration. If it cannot be concluded that the lowering of the entry barriers by the proposed commitments will likely lead to an effective entry of new competitors in the market, the Commission will reject such a remedies package. [1161]

(1350) It is against this background that the Commission assessed the viability, the workability, the effectiveness and the ability of the proposed commitments to entirely eliminate the competition concerns identified in Section 11.2 of this Decision. In this context, the Commission also analysed whether the proposed commitments are likely to lead to a timely and sufficient entry by a player capable of exerting competitive constraint on the merged entity so as to offset the anti-competitive effects arising from the concentration.

1155 Remedies Notice, paragraph 9.

1156 Remedies Notice, paragraphs 13, 14 and 61ff.

1157 Case T-177/04 *easyJet v Commission* [2006] ECR II-1913, paragraph 197: "*Article 6(2) of Regulation No 4064/89 provides that the Commission may authorise a merger if the commitments proposed by the parties dispel the serious doubts as to the compatibility of the merger with the common market. Regulation No 4064/89 thus lays down the objective to be achieved by the Commission, but leaves it a wide discretion as to the form which the commitments in question may take.*"

1158 Remedies Notice, paragraph 10.

1159 Remedies Notice, paragraph 19.

1160 Remedies Notice, paragraph 17.

1161 Remedies Notice, paragraph 63.

(1351) The Commission's conclusions with respect to the suitability of the submitted commitments are based on all available evidence, including the results of the two market tests and its own analysis against the criteria for acceptable remedies in merger cases contained in the Remedies Notice.[1162]

13.2. DESCRIPTION OF THE PROPOSED COMMITMENTS

(1352) In order to address the competition concerns identified by the Commission in the SO, the Notifying Parties initially submitted a first set of commitments on 17 November 2011 pursuant to Article 8(2) of the Merger Regulation. Those commitments were replaced by a revised set of commitments submitted on 21 November 2011 (hereinafter referred to as "Commitments of 21 November 2011"). The market test of this set of commitments was launched on 22 November 2011 in order to gather the views of relevant market participants[1163] on the effectiveness of the commitments and their ability to restore effective competition in the markets where competition concerns were identified (the "first market test").

(1353) Following the results of the first market test,[1164]the Notifying Parties submitted a new set of Commitments on 12 December 2011. Those commitments were further amended and replaced by commitments submitted on 14 December 2011 (the "Commitments of 14 December 2011"). The market test of the Commitments of 14 December 2011 was launched on the same day (the "second market test").

13.2.1. The Commitments of 21 November 2011

(1354) The initial remedies package submitted on 21 November 2011 was essentially composed of two commitments, namely a divestment of parts of the Notifying Parties' single equity derivatives business (the "Divestment Commitment") and an offer to grant access to the merged entity's margin pool for certain interest rate and equity index derivatives contracts (the Independent Third Party Access or "ITPA Commitment").

1162 In their 17 January 2012 Submission in support of merger clearance, the Notifying Parties claimed that the Commission based its market test on responses from biased market participants and therefore that the market test should have been discounted by responses from all competitors as well as the Notifying Parties' customers which they claim are their competitors. In this respect, the Commission first notes that it made a critical, comprehensive and objective analysis of all responses. Second, the Commission notes that if the market participants the Notifying Parties claim are their competitors were to be excluded from the market test, it would mean that the Commission would have exclude close to a half of respondents and rely on responses of 53 companies out of total of 88. Third, the Commission notes that at the request of the Notifying Parties, it included close to 20 additional market participants in the second market test. Last, the Commission notes that even if it were to rely only on the responses of market participants that the Notifying Parties consider as not biased, the overall results of the market test would be similar. Out of those customers of this group that declared to have knowledge of derivatives markets and provided meaningful answer, a majority of 14 customers expressed a negative view on the proposed commitments while a minority of 10 customers were positive (some of them without substantiating their answers).

1163 The market test included various Notifying Parties' customers and competitors, clearing-houses, and regulators and supervisory bodies.

1164 A State-of-Play meeting between Commission services and the Notifying Parties took place on 6 December 2011 to inform the Notifying Parties on the outcome of the market test.

13.2.1.1.SUBSTANCE OF THE PROPOSAL

13.2.1.1.1. Divestment Commitment

(1355) Pursuant to the Divestment Commitment, the divestment business in the area of single stock equity derivatives as specified in the Commitments of 21 November 2011 included the following main assets:

- NYX's single equity derivatives contracts listed on NYSE Liffe in London, U.K., including open interest created on the LIFFE CONNECT central order book platform and an ongoing right to the contractual/rules based framework in which the rights arise and subsist, except single stock equity options on Belgian, French, Dutch, Portuguese, and U.K. ("NYX's home markets") underlyings, and including the open interest, a non-exclusive license to use and modify certain intellectual property, certain IT-related services, historical market data, necessary staff/employees;

- NYX's Bclear facility, except as it relates to equity index derivatives, commodity derivatives, and single equity options contracts on underlyings listed in NYX's home markets, including contracts and open interest for all single equity futures contracts (regardless of the country of underlying) and all single equity options contracts on underlyings from countries other than NYX's home markets, available through NYX's Bclear facility, licenses, permits, and authorisations for software, dedicated hardware systems and documentation; and

- DB's contracts and open interest in single stock equity options available on the central order book, through OTC block trades, and through OTC Flex based on U.K., French, Dutch, and Belgian, underlying stocks operated as part of the Eurex Deutschland and Eurex Zurich trading platforms, with related assets, including historical market data.

13.2.1.1.2. ITPA Commitment

(1356) The ITPA Commitment as specified in the Commitments of 21 November 2011 consisted in the commitment to provide access to the merged entity's clearing-house and margin pool, including the services related to risk management, infrastructure and network as well as default mechanisms, to eligible Independent Third Parties ("ITPs") for certain eligible derivative contracts, based on European bond, European equity index or European interest rate underlyings. Essentially, for contracts to be eligible for the ITPA under the commitment package of 21 November 2011, ITP contracts had to have a correlation coefficient[1165] no greater than 85% compared to contracts already in the merged entity's margin pool including contracts of the merged entity and other

[1165] See footnote 158 for definition of correlation. Contracts having 100% correlation can be netted if they are fungible.

contracts that had been introduced into the margin pool pursuant to these commitments.[1166]

(1357) Pursuant to the ITPA Commitment, introduction of identical products to those already in the merged entity's margin pool would not be allowed in principle. Howver, there is one exception: during the first year following the launch of a new product[1167], by an ITP or the merged entity, any other ITP and the merged entity would be in a position to launch derivatives contracts to be cleared and cross-margined through the merged entity's clearing-house that are identical or similar to the new product. Once this one-year innovation period has elapsed, any contract to be introduced to the merged entity's margin pool would have to meet the eligibility criteria defined by the correlation thresholds.

(1358) For a third party to be eligible as an ITP, it had to operate a regulated market domiciled in the European Union and be authorised to trade interest rate and equity index derivatives by the competent supervisory authorities.[1168]

(1359) The access to the merged entity's margin pool would be granted to ITPs following an application procedure managed by an ITPA Committee which would be composed of four members, including one independent member. [1169] ITPA would be granted under the terms of a five-year Clearing Services Agreement ("CSA"),[1170] subject to a number of access charges determined by the merged entity on a Fair, Reasonable and Non-Discriminatory ("FRAND") basis.[1171]

1166 Pursuant to Section B.5.c) of the ITPA Commitment "Existing Contracts" shall mean (i) all Established Parties' Contracts, (ii) all Derivatives Contracts that are not Established Parties' Contracts, whether of an ITP Market, a Market operated by the Parties or any of their Affiliated Undertakings (a "Parties Market") or any third party, cleared by the Clearing-house with a Launch Date that does not fall within a one-year innovation period prior to the Contract Clearing Request Date of a proposed ITP Contract (such period, "Innovation Period"), and (iii) all Derivatives Contracts that are not Established Parties' Contracts and that are traded on a Parties' Market but are not cleared by the Clearing-house.
The correlation coefficient will be calculated in accordance with a specified mathematical formula by setting the price values in the time series of each contract to the fair value of the respective contract.
As concerns equity index derivatives, apart form the correlation coefficient requirement, eligibility for ITPA is conditional on the value of assets under management linked to the Equity Index Underlying in excess of EUR 500 million over a 3-month period prior to the date on which a relevant request for ITPA is determined to be complete.

1167 Launch date being defined as *"the earlier of (i) the public announcement of a proposed Derivatives Contract (e.g. a press release to its trading community) by an ITP Market, a Parties' Market or any third party market, or (ii) the start of clearing of this Derivatives Contract by the Clearinghouse."*

1168 See point 1 d) of the ITPA commitment.

1169 The role of the ITPA Committee is essentially three-fold: (i) to determine whether applications are complete or what additional information is required; (ii) to determine whether the relevant applicant and proposed derivatives contract satisfy the criteria for ITPA; and (iii) to ratify any modifications to the standard form of CSA proposed by the merged entity's clearing-house to reflect legal and market developments (for example changed business models of the clearing members) from time to time.

1170 The ITP may request a shorter term, provided, however, that the minimum term of a CSA shall not be less than three years. The merged entity's clearing-house will assist the ITP (at cost) for up to six months following the end of the CSA to migrate the ITP contracts to a clearing-house appointed by the ITP.

1171 Under the ITPA Commitment, ITPA will be subject according to the following access charges: (i) a cost-based ITPA Connection Charge and (ii) a cost-based ITPA Contract Implementation Charge, payable as of the clearing readiness of the merged entity's clearing-house, respectively in respect of the ITP Market and of the particular ITP contract; (iii) a cost-based monthly ITPA Maintenance Charge;

(1360) The ITPA remedy was meant to be in place for a period of three years from closing of the transaction, with a possibility of being extended by the Commission for one additional two- year period.

13.2.1.2. RESULTS OF THE FIRST MARKET TEST

(1361) During the first market test almost 200 questionnaires were sent to various market participants, namely competitors, customers, post-trade services providers and financial regulators and over 100 replies were received.[1172]

(1362) The notifying Parties were informed of the results of the first market test at a State of Play meeting of 6 December 2011.

(1363) The results of the first market test were overall negative. A significant majority of market participants expressed concerns about the workability and the effectiveness of the proposed remedies package as well as its ability to restore competition in the derivatives markets concerned.

13.2.1.2.1. Divestment Commitment

(1364) Specifically, as concerns the proposed divestment business, market participants expressed concerns that the carved-out divestment business consisting in a combination of parts of NYX' and DB's single equity derivatives businesses lacked sufficient scale and was comprised of the least liquid and therefore unattractive contracts. In addition, the market test revealed that single equity derivatives contracts exist in a symbiotic relationship with the underlying cash equities on the one hand and with equity index derivatives on the other hand. For instance, one customer explained that "[o]*ffering trading of single stock derivates by an exchange only would be successful, if it would* [be]* *combined with the trading of equity index contracts*."[1173] As a result, market participants considered that in the absence of cross-margining opportunities with closely connected contracts, the divested margin pool would most likely be quickly eroded. Similarly, customers explained that because equity derivatives are often physically settled, they are also closely tied to the cash equities on which they are based. As a result, the purchaser would need to be active in cash trading and clearing of the underlying equities, similar to Liffe and Eurex.

---

and (iv) a monthly ITPA Contract Clearing Charge including the clearing fee, to be agreed between the merged entity's clearing-house and the ITP for any ITP contract.

1172 More precisely, the Commission sent 183 questionnaires: 44 to competitors (20 replies); 115 to direct exchange customers (74 replies); 10 to regulators (7 replies); and 14 to clearing-houses and Euroclear (5 replies). As was the case for the market investigation (see above footnote 18 of this Decision), in its assessment of the market test, the Commission considered only informative responses, i.e. the Commission has not taken into account the replies of those market participants who declared that they were not able to respond to certain questions due to lack of information, experience and/or knowledge.

1173 DZ BANK AG, response to question 7 of questionnaire Market test of commitments offered on 17 November 2011 – Customers [...]*. 26 out of 36 customers considered that the divested margin pool cannot be viable on a lasting basis without open interest in other products. 11 out of 11 competitors indicated that a purchaser of the divestment business could not successfully run this business without offering, in particular, equity index derivatives: see responses to question 19 of questionnaire "Market test of commitments offered on 17 November 2011 – Competitors."

(1365) Given that the divestment business did not foresee divestiture of any of these symbiotic products, the link would be broken putting strain on the sustainability of the divestment business over time. This is because the sustainability of a margin pool depends on a cross-selection of contracts, the ability to offer margin offsets and the breadth of the product portfolio. As a result, market participants expressed serious concerns about the viability on a lasting basis of the divestment business.

(1366) As concerns the technical aspects of the transfer of the divestment business, the market test provided indications that while technically speaking, the transfer of open interest is possible, there are a number of hurdles associated with such an exercise which could affect the incentives of customers to maintain the open interest with the new acquirer and which would have to be adequately addressed. In this context, a majority of customers that responded to the first market test indicated that their likely reaction to the divestment of the concerned business would be to close out their current open interest in the divested contracts and/or transfer their open interest to the merged entity or in any event to the pool where more liquidity is concentrated.[1174] Indeed, as clearly stated by a customer, "*Clients must be economically motivated to transfer open interest. Normally an equivalent set of conditions will not induce customers to transfer open interest from one location to another. Therefore, notwithstanding whether open interest may be readily transferrable or not, the question perhaps should be whether a post-merger environment is likely to produce circumstances that are advantageous for clients. In the absence of the two largest European exchanges competing with each other, there is no reason to believe clients would wish to transfer positions regardless of technical ease.*"[1175]

(1367) Similarly, competitors pointed out that any transfer of margin pool would necessarily imply connectivity costs for customers which would further decrease customers' incentives to transfer their contracts to the new acquirer and support its business. In the same vein, regulatory uncertainties inherent to such a transfer would also have to be managed. In this context, financial regulators […]* pointed at difficulties related to such a transfer[…]*[1176]

(1368) Overall, market participants generally indicated that the scope of the proposed divestment business was insufficient to restore the competition that would be lost as a result of the proposed merger between Eurex and Liffe in the area of single equity derivatives. This was because of the mix and match approach to the divested contracts, the lack of cross-margining opportunities with other products and the issues associated with the transfer of the open interest.

1174 See responses to question 3 of questionnaires "Market test of commitments offered on 17 November 2011 – Customers." Out of 41 informative responses, 20 customers indicated the view expressed in the text, while only 8 indicated that they would move their open interest to the Purchaser. The choice of 10 of the remaining customers would be dependent on the identity of the Purchaser, as summarised by one customer, "*on who the purchaser is. i.e availability of margin offsets, membership, cost of trading platform*" (Citigroup Global Markets Limited, response to question 3 of questionnaire Market test of commitments offered on 17 November 2011 – Customers [...]*), while for the other 3 it would depend on the clients' choice or other exogenous factors.

1175 BGC (Cantor Fitzgerald Group), response to question 8 of questionnaire Market test of commitments offered on 17 November 2011 – Customers [...]*.

1176 […]*.

(1369) It follows that competitors were almost universally of the opinion that the proposed divestment business was commercially unattractive. Only Wiener Boerse and NASDAQ OMX[1177] indicated that they would be potentially under certain conditions interested in acquiring the divestment business in its form as specified in the commitments.

13.2.1.2.2. ITPA Commitment

(1370) As concerns the ITPA Commitment, the first market test identified that besides a range of key concerns relating to the very workability of any access arrangement, the fundamental shortcoming of the proposal was that the scope of the ITPA was limited to new contracts.

(1371) Indeed, according to the market participants the limitation of the ITPA commitment to materially new contracts (defined by a correlation coefficient of less than 85% with all existing contracts of the merged entity) would preclude the introduction of virtually all existing contracts based on European financial derivatives that are currently traded by the Notifying Parties and their competitors as well as any innovations based on existing products such as product adjacencies. By way of example, Chi-X Europe explained in relation to the indices it is currently working on in cooperation with Russell that "*the correlation of CXE's range of Chi-X Europe Russell Indices (CHERI) with EURO STOXX 50 are: CHERI Euro 40: 99.85%; CHERI Eurozone: 99.48%; CHERI Pan Europe 60: 95.44%; CHERI PanEurope: 95.90%*"[1178] and therefore would be excluded from the scope of the ITPA Commitment. In the same vein, the LSE specified that, despite the fact that "*one would anticipate that the FTSE MIB index (the benchmark stock market index for stocks listed in Italy) would be significantly differentiated from the EuroStoxx 50*", "*the inclusion of various blue chip pan-European stocks in each means that the correlation co-efficient is 96%.*"[1179]

(1372) Similarly, the scope of the definition for eligible ITPs was criticised as being unclear and possibly too restrictive. Indeed, it was suggested by competitors that under a certain reading, non-regulated markets and MTFs in particular would be excluded from the scope of the ITPA commitment. In this respect, many potential entrants were not able to

---

1177 However, despite NASDAQ expressing a conditional interest in the divestment business, NASDAQ expressed serious doubts about the viability of the business and its chances to successfully compete with the merged entity: *"We believe that the value of the divestment business is limited due to the tremendous competitive advantage that DB NYX would hold over us or any other buyer. In our case, we would assign the greatest value to Nordic-stock-based products because of our existing presence in this region. By contrast, since we lack substantial presence elsewhere in Europe, acquiring the remainder of the package would be a highly risky and speculative endeavor. We think the same would hold true for any other potential buyer. Given the combined entity's clearing pool size, distribution network, and overall dominance in this business, competitively challenging it in single-stock derivatives would be a brave proposition. We believe that the price any potential acquirer would be willing to pay would reflect the low chances of ultimate competitive success."* See NASDAQ OMX response to question 25 of questionnaire Market test of commitments offered on 17 November 2011 – Competitors [...]*.

1178 Chi-X Europe, response to question 29 of questionnaire Market test of commitments offered on 17 November 2011 – Competitors [...]*.

1179 London Stock Exchange, covering letter to the response to questionnaire Market test of commitments offered on 17 November 2011 – Competitors [...]*.

assess their eligibility on the basis of the definition provided in the commitments.[1180] Uncertainties in this regard were also highlighted by some regulators. […]*[1181] […]*[1182]

(1373) As concerns the procedure to obtain access, market participants generally expressed concerns about the role and the composition of the ITPA Committee as well as the timeframes within which decisions on the eligibility of ITPs and contracts were to be taken. Indeed according to market participants, the Commitments of 21 November 2011 did not provide for sufficient safeguards that the access procedure would be conducted in a non-discriminatory and timely manner.[1183]

(1374) In relation to the one-year innovation period during which it is foreseen that a new contract can be copied by the merged entity or another ITP, some market participants expressed concerns that the limitation period is, first, inconsistent with its purpose to provide competitors with incentives for innovating and introducing new contracts, a protection should be given in the first period after launch and, under these circumstances, one year would be a too short term for a derivative to prove its success.[1184] Second, such a limitation could affect the incentives of new entrants to introduce new contracts as their innovations could be copied by the merged entity, which would have the advantage of its very substantial margin pool, and which would therefore put the new entrant at a disadvantage in the eyes of its customers. Indeed, as specified by ICAP, the "*risk of the merged entity quickly copying an ITP contract and entering aggressively to eliminate ITP entry may well act as a significant disincentive to entry by an ITP*."[1185]Similarly, according to competitors, the one-year innovation period invalidates the effectiveness of the remedy itself.[1186] Indeed, while ITPA aims at creating an equal footing framework under which competition should occur, it is unlikely to achieve its aim because, as clearly outlined by CME, "*the merged entity's copycat product would have an advantage due to the merged entity's distribution*

1180 See replies to question 43 of questionnaire Market test of commitments offered on 17 November 2011 – Competitors, reading "*In your view, does the test for eligible ITP provide for an objective and clear-cut criterion to determine those entities entitled to apply for ITPA? In this context please explain whether under the wording provided for in the commitments there is any room for interpretation that could create uncertainly as to who qualifies as ITP and possibly exclude certain applicants*." Only London and Warsaw Stock Exchanges replied yes to this question, but the former added that there is "*room for misinterpretation [...] in relation to the criterion for determining eligibility for ITPA, where there is some scope for disagreement over whether an MTF from another jurisdiction is bound by the same regulatory obligations as the Parties' regulated markets*", [...]*, and the latter "*room for some interpretation may be in the case of "the same regulatory obligations", as there may be slightly different obligations in various Member States*" [...]*. Moreover Barclays, which also replied yes to the above-mentioned question, when asked whether the test for an eligible ITP provided for in the Commitments encompassed all potential new entrants in this area, declared not to be in a position to comment [...]*.

1181 […]*.

1182 […]*.

1183 See replies to questions, mong the others, 17, 22, 30 and 39 of Market test of commitments offered on 17 November 2011 – Customers and to questions 51 and 52Market test of commitments offered on 17 November 2011 – Competitors.

1184 See replies to question 27 of Market test of commitments offered on 17 November 2011 – Customers and to question 40 Market test of commitments offered on 17 November 2011 – Competitors.

1185 ICAP, response to question 52 of questionnaire Market test of commitments offered on 17 November 2011 – Competitors [...]*.

1186 See replies to question 40, 41 and 42 Market test of commitments offered on 17 November 2011 – Competitors.

network, scale benefits, and its ability to absorb low margins on the new product"[1187]. In the same vein, Chi-X Europe stated that "*the merged entity should be allowed to compete with an ITP's new product in the first 12 months. The merged entity would already have a very significant competitive advantage and could easily replicate the new contract should it choose to do so. Furthermore, the merged entity would be aware of ITPs intentions well in advance of the rest of the market given the need to negotiate commercials and contracts, define requirements and timetable system changes. The 12 month period itself should not start until the ITP has gone live with its new product.*"[1188]

(1375) Customers also expressed dissatisfaction with such a limitation of direct competition and specified that if anything, this would limit ITP's chances for success in this product. In this respect, a customer expressed the view that "[p]*rohibiting competition between products after a one year launch period is not a concept we have come across in any other industry or sector (financial services or any other industry) and appears to be designed to erect competitive barriers and create a monopoly position. If the merged entity can immediately copy any products launched by an ITP it is easy to imagine this being used to kill off the ITP's product and ensure that the merged exchange's version succeeds in its place. The correlation point is material here and erects a significant barrier to entry for new products, but when the barrier is passed then the merged firm can immediately replicate and seek to take the liquidity. This seems anti-competitive*."[1189] Regulators, and the FOA in particular, expressed similar concerns: "*the one-year limit will provide an opportunity for the merged entity to list the same contract and trade it in competition with the new derivative contract - in so doing, the merged entity could reduce the chances of the new contract introduced by an ITP establishing sufficient liquidity and open interest - once one year has elapsed, no other competitor can become an ITP for this contract unless the 85% correlation criteria is met.*"[1190]

(1376) Concerns were also expressed about the various access charges set out in the commitments. First, market participants pointed out that some charges such as the minimal monthly clearing charge set at EUR […]* may not be adequate. Whilst LCH.Clearnet explained that "[t]*here is no comparator as there is no case where an exchange offering trading services in listed derivatives has access to the same clearing provider as a competitor and obtains offsets with products traded by the competitor,*"[1191] EuroCCP indicated that "[...]* *It is unclear why the Contract Clearing Charge is subject to a […]* Euro per month minimum.*"[1192] Second, a general concern was expressed in relation to the possibility to set access charges in a transparent and

---

1187 CME, response to question 40 of questionnaire Market test of commitments offered on 17 November 2011 – Competitors [...]*.

1188 Chi-X Europe, response to question 40 of questionnaire Market test of commitments offered on 17 November 2011 – Competitors [...]*.

1189 Nomura, response to question 27 of questionnaire Market test of commitments offered on 17 November 2011 – Customers [...]*.

1190 FOA, response to question 27 of questionnaire Market test of commitments offered on 17 November 2011 – Customers [...]*.

1191 LCH.Clearnet, response to question 35 of questionnaire Market test of commitments offered on 17 November 2011 – Clearing-houses [...]*.

1192 EuroCCP, response to question 35 of questionnaire Market test of commitments offered on 17 November 2011 – Clearing-houses [...]*.

non-discriminatory manner in view of the fact that the merged entity will operate an integrated vertical silo model where trading and clearing fees are bundled in one fee. In this respect, competitors indicated that there is no commercial benchmark reference for such charges and, to be transparent, any fee-setting mechanism would necessarily require unbundling of trading and clearing fees of the merged entity and a considerable degree of regulatory oversight.[1193]

(1377) Overall, according to the results of the market test, and in view of the complexity of the proposed remedy, the ITPA commitment would be difficult to implement and monitor as there is ample room for discrimination on the part of the merged entity, in particular as concerns the determination of eligible ITPs, of eligible "new" contracts and of access fees.

(1378) Most importantly, competitors also indicated that the proposed access commitments would not lower the barriers to entry such that sufficient and timely entry is likely to occur neither in the market for trading and clearing of European equity index derivatives, nor in that for trading and clearing of European interest rate derivatives.[1194] Indeed, none of the actual or potential competitors indicated that they would consider applying for access pursuant to the ITPA remedy as designed in the commitments of 21 November 2011.

13.2.1.2.3. Overall package

(1379) As concerns the suitability, workability and the effectiveness of the overall package, with one exception,[1195] all competitors indicated that the Commitments of 21 November 2011, combining a divestment and access remedy in different product areas, would not provide a new entrant with the tools to effectively compete with the merged entity on an ongoing basis.[1196] In particular, according to competitors that responded to the first market test, even if one company were to take advantage of both the divestment and access remedy, it would not be able to constrain the merged entity in a similar way as Eurex and Liffe constrain each other pre-merger.[1197]

(1380) This is not only because the size of the divestment business as specified in the Commitments of 21 November 2011 is very small compared to that of the merged

---

1193 See responses to question 46 of questionnaire Market test of commitments offered on 17 November 2011 – Competitors.

1194 See responses to questions 56 and 57 of questionnaire Market test of commitments offered on 17 November 2011 – Competitors. In both cases, 9 out of 11 competitors indicated that the proposed access commitments would not lower the barriers to entry.

1195 Warsaw Stock Exchange, response to question 69 of questionnaire Market test of commitments offered on 17 November 2011 – Competitors [...]*: "*We believe that the proposed package is designed to preserve the current level of competition, ie. it prevents the current level of competition to decrease. It does not necessarily mean that any other company will be able to compete with the merged company in every market. Taking account the current interest rates derivatives volumes, this business is already concentrated on Euronext.Liffe and the merger will not change this situation to a great extent*."

1196 See responses to question 69 of questionnaire Market test of commitments offered on 17 November 2011 – Competitors.

1197 See responses to question 71 of questionnaire Market test of commitments offered on 17 November 2011 – Competitors. Only the Warsaw Stock Exchange believed that "*the package is designed specifically to preserve the current level of competition, and it may be successful. We believe it is not necessary that all the divestments are acquired by one company*" [...]*.

entity, but more importantly, because of the splitting of the purchaser's margin pool, which would put the Purchaser at an inherent disadvantage vis-à-vis the merged entity. Indeed, in the context of the interplay between the various parts of the commitments package, market participants expressed concerns that the combination of the various legs of the commitments would lead to the splitting of the margin pool as different contracts would be subject to different clearing arrangements. This is because interest rate and equity index contracts eligible for ITPA would be cleared within the margin pool of the merged entity whereas single equity derivatives and other non eligible contracts would have to be cleared at another clearing-house. This would affect customers' incentives to trade with the merged entity's competitors, given that customers, as shown by the market test, prefer trading at a platform offering widest possible product portfolio automatically increasing cross-margining possibilities.[1198]

(1381) To build up enough critical mass to be viable, the divestment business would have to have access to a margin pool of correlated contracts with already existing sufficient scale or to that of the merged entity. Either way, the problems affecting each leg of the remedy package, highlighted above, would prevent the Commitments of 21 November 2011 to be effective even when a single competitor were to benefit from the whole package.

(1382) On this basis, virtually no competitor considered that the proposed remedies package would have the potential to create a viable competitive business which could replicate the constraint that pre-merger the Notifying Parties exert on each other and, therefore, effectively compete with the merged entity in the area of derivatives trading and clearing in Europe (specifically in the area of European single stock equity derivatives, European interest rate derivatives (short-term and long-term) and European equity index derivatives).[1199] Moreover, no competitor considered that the remedies package as a whole could be effectively implemented in practice.[1200]

(1383) In terms of monitoring of the overall package while they considered that the proposed package could be in theory monitored in practice,[1201] competitors indicated that the negotiation of access agreements for specific new contracts would be burdensome and lead to situations of conflict. Similarly, competitors expressed

---

1198 See responses to question 42 of questionnaire Market test of commitments offered on 17 November 2011 – Customers. 30 out of 45 customers pointed out the disadvantages of having the single stock equity business in a different margin pool than interest rate and equity index contracts, in particular in terms of the higher cost of trading as a consequence of not being able to benefit from cross margin offsets of a consolidated clearing portfolio.

1199 See responses to question 72 of questionnaire Market test of commitments offered on 17 November 2011 – Competitors. Only the Warsaw Stock Exchange, in its reply to question 69 of questionnaire Market test of commitments offered on 17 November 2011 – Competitors, indicated that "*the proposed package is designed to preserve the current level of competition, ie. it prevents the current level of competition to decrease. It does not necessarily mean that any other company will be able to compete with the merged company in every market. Taking account the current interest rates derivatives volumes, this business is already concentrated on Euronext.Liffe and the merger will not change this situation to a great extent*" [...]*.

1200 See responses to question 73 of questionnaire Market test of commitments offered on 17 November 2011 – Competitors.

1201 See responses to question 74 of questionnaire Market test of commitments offered on 17 November 2011 – Competitors.

concerns that in the absence of regulatory oversight, the non-discriminatory and transparent application of the various eligibility criteria could not be properly enforced.

(1384) On the basis of these results of the market test and the Commission's analysis of the Commitments of 21 November 2011 it was concluded that the Commitments of 21 November 2011 were considered as insufficient to resolve the competition concerns identified in the SO, difficult to be implemented in practice and unlikely to be effective in practice as no entrant stated unconditional interest in either leg of the remedy.[1202]

13.2.2. Commitments of 14 December 2011

(1385) In view of the results of the first market test, the Notifying Parties submitted a new package of commitments on 12 December 2011, subsequently amended by a package of 14 December 2011 (the "Commitments of 14 December 2011).

(1386) As compared to the Commitments of 21 November 2011, the Commitments of 14 December 2011 essentially contains some changes to the previous commitments (as concerns both the Divestment Commitment and the ITPA Commitment); and a new commitment to grant a licence to Eurex's trading software for interest rate derivatives.

13.2.2.1. AMENDED DIVESTMENT COMMITMENT

(1387) As concerns the Divestment commitment, the Commitments of 14 December 2011 contains two main changes as compared to the Commitments of 21 November 2011.

(1388) First, to address the criticism of adopting a "mix and match approach"[1203] by combining NYX's and DB's contracts, the Divestment business would comprise the entire NYX single equity derivatives business, including in NYX's home markets where the divestment would be subject to relevant regulatory approvals. In case, and to the extent, the approvals are not obtained in some of these countries, DB's business in those countries would be divested. In practice, this means that depending on regulatory approvals the Divestment business would have two alternative scopes: either it would comprise the single equity derivatives business in all NYX markets, or it would be a combination of NYX business and DB's business in markets where regulatory approval was not obtained for the relevant NYX business.[1204]

(1389) Second, to address the criticism of a split margin pool between various types of contracts, the Notifying Parties proposed, at the option of the Purchaser, to make available the merged entity's clearing for the contracts comprised in the Divestment business and any other single equity derivatives contracts listed on the Purchaser's platform. The offered clearing service would include cross-margining with single equity and equity index contracts cleared at Eurex Clearing. However, the commitment does

---

1202 The Notifying Parties were informed of the results of the first market test at a State of Play meeting of 6 December 2011.

1203 As a matter of principle, commitments whereby assets come from several parties cerate additional risk about the viability and competitiveness of divestment business. See Remedies Notice, paragraph 37.

1204 If the regulatory approvals were not obtained in any of the NYX home markets, the scope of the Divestment business would be exactly the same as the one proposed in the Commitments of 21 November 2011.

not foresee fungibility[1205] of the Purchaser's contracts and the merged entity's contracts based on the same single equity underlying and therefore netting is expressly excluded from the scope of the commitment. This new commitment to provide access for single equity derivatives would be of benefit to the Purchaser of the Divestment business only.[1206]

13.2.2.2. AMENDED ITPA COMMITMENT

(1390) As regards the ITPA commitment, the modifications brought about in the Commitments of 14 December 2011 concern three main areas, namely the level of correlation thresholds for certain eligible contracts, the definition of ITPs eligible to apply for access and the role and composition of the ITPA Committee. Besides these three areas, some changes to the application for access procedure and the firewall mechanism were also included in the new proposal.

(1391) First, as concerns the correlation thresholds, the new proposal maintains the overarching idea that only materially new contracts are eligible for access pursuant to the commitments. However, in response to the criticism that the set correlation thresholds were too low and therefore excluded most of the contracts that are either currently traded by the Notifying Parties' competitors or are in product development stage, the Commitments of 14 December 2011 provide for higher correlation thresholds for some categories of contracts. In particular, the Commitments of 14 December 2011 contain increased correlation coefficients for eligible bond and equity index derivatives contracts therefore bringing the admissible correlation coefficient to 90% for Eligible Bond Contracts and to 99% for Eligible Equity Index Contracts. However, the correlation coefficient for Eligible Interest Rate Contracts remains unchanged as compared to the level set in the Commitments of 21 November 2011, and therefore remains at the level of 85%.[1207]

(1392) Second, as concerns the definition of eligible ITPs, the new proposal seeks to address the criticism expressed in the first market test where it was pointed out that non-regulated markets, such as MTFs, were excluded from the scope of eligible entrants.[1208] While there is no explicit provision including MTFs within the scope of eligible ITPs, the Commitments of 14 December 2011 no longer contain a requirement whereby an eligible ITP has to be bound by the same regulatory obligations as the Notifying Parties. As a result, the ITPA Commitment will be available to any market domiciled in

---

1205 See footnote 110 for definition of fungible contracts. Positions in contracts that are fungible can be netted against each other without resulting in any basis risk. For contracts to be fungible exchanges owning the contracts have to recognize that two contracts created by two different exchanges are the same contracts.

1206 This is in contrast with the ITPA Commitment which is market-wide, encompassing all eligible ITPs.

1207 The only change to the definition of eligible interest rate derivatives contract is in the formula for calculation of the relevant correlations which is not set in reference to *"observed value of the respective underlying rate of the respective contract"* that is the actual market rate and not a *"fair value of the respective contract"* as initially set in the commitments of 21 November 2011.

1208 Point 1(d) of the ITPA Commitment of 21 November 2011 contained the following definition of eligible ITP Markets: *"any market domiciled in the EU and authorized to trade interest rate or equity index derivatives contracts, as applicable, by the competent supervisory authorities of a Member State of the European Union and bound by the same regulatory obligations as the applicable Parties' Markets under EU law as implemented in the Member States."*

the Union that is authorised to trade interest rate and equity index derivatives by the relevant supervisory authorities. However, the Commitments of 14 December 2011 contain a new provision whereby the ITPA Committee will be responsible to determine whether an ITP applicant is suitable for concluding a Clearing Service Agreement (CSA) in light of its sufficient liquidity, transparency rules and market supervision arrangements.[1209]

(1393) Third, the Commitments of 14 December 2011 bring a change to the composition of the ITPA Committee. Under the new set-up, the ITPA Committee would have eight members instead of four members provided for in the Commitments of 21 November 2011. Four out of eight members would be employees of Eurex and four members would be independent of the merged entity. The new commitments introduce a function of a chair of the Committee which would be held by a Eurex member and would hold the tie-breaking vote.

(1394) Finally, the Commitments of 14 December 2011 shorten the application procedure for admission to clear ITP contracts by 10 working days, provide for a possibility for ITPs to extend the duration of the CSA at their own discretion indefinitely, and improve the firewall mechanism by ring-fencing the employees handling ITPs data vis-à-vis the merged entity. In addition, the duration of the ITPA commitment as provided for in the Commitments of 14 December 2011 can be extended by the Commission for several two-year periods.[1210]

13.2.2.3. NEW INTEREST RATE SOFTWARE LICENCE

(1395) Finally, the Commitments of 14 December 2011 contain a new remedy in the area of interest rate derivatives, namely a commitment to grant a licence to Eurex' interest rate trading software (hereinafter referred to as "the Licence Commitment"). Pursuant to this commitment, the merged entity would grant a licence to its interest rate trading software to independent third parties willing to trade interest rate contracts, including contracts identical to those traded by the merged entity. However, clearing functionality is explicitly excluded from the commitment, therefore these contracts would not be eligible for access to the merged entity's margin pool pursuant to the ITPA commitment.[1211]

(1396) According to the Licence Commitment, the licence to Eurex interest rate trading software would be granted on a non-exclusive basis against a lump-sum or on a royalty bearing basis. The licence does not comprise the source code of the software and therefore the software maintenance and development services of the licensed software would be provided by the merged entity in accordance with a pre-agreed scheme.

1209 Point 1(d) of the ITPA Commitment of 14 December 21 November 2011 contained the following definition of eligible ITP Markets: " *any market domiciled in the European Union and authorized to trade interest rate or equity index derivatives contracts, as applicable, in the European Union by the competent supervisory authorities of a Member State of the European Union and determined by the ITPA Committee to have in place sufficient liquidity, transparency rules, and market supervision arrangements that facilitate the necessary level of regulatory information sharing with the Clearinghouse and its supervisors so as to allow the Clearinghouse to evaluate the risks associated with its ITP Contracts*".

1210 As opposed to one two-year period provided for in the commitments of 21 November 2011.

1211 Only interest rate contracts meeting the correlation thresholds would be eligible for ITPA.

13.2.3. Notifying Parties' informal pledge to freeze trading and clearing fees for 3 years

(1397) In addition to the formally submitted Commitments of 21 November 2011 and of 14 December 2011, on 15 December 2011, the Notifying Parties, by way of letter, informally offered to state publicly, that "*for a period of three years following the consummation of the merger, it [the merged entity] has no plans to raise its combined published standard trading and clearing fees for derivatives contracts traded on their European derivatives exchanges.*"[1212] Any such plans would be *"subject to change at any time due to market developments, legal or regulatory constraints or other circumstances"*.[1213]

13.3. OVERALL ASSESSMENT OF THE COMMITMENTS OF 14 DECEMBER 2011

(1398) The market test of the commitments package formally submitted on 14 December 2011 was launched on the same day (the "second market test"). At the request of the Notifying Parties, the scope of the respondents to the second market test was enlarged to include a number of companies, principally active as issuers in cash markets, which the Notifying Parties considered as relevant to include for the purpose of gathering views of market participants on the viability, effectiveness and workability of the proposed commitments in the area of derivatives.[1214]

(1399) As a result, over 150 questionnaires were sent to various categories of market participants, namely competitors, customers, post-trade services providers and financial regulators. Close to 100 respondents provided their replies to the second market test.[1215]

(1400) The second market test sought to assess whether the changes brought about to the initial set of the Commitments of 21 November 2011 were such as to render the proposed merger compatible with the internal market. In particular, the Commission enquired whether the scope of the new set of Commitments of 14 December 2011 was sufficient to entirely remove all competition concerns resulting from the proposed merger, whether the commitments were viable and likely to be effective in practice and whether the commitments were likely to lead to a sufficient and timely entry that would restore competition likely to be lost as a result of the notified transaction in the derivatives markets concerned by this Decision.

1212 Deutsche Boerse, NYSE Euronext, Letter to Vice-President Almunia, 15 December 2011.

1213 Deutsche Boerse, NYSE Euronext, Letter to Vice-President Almunia, 15 December 2011.

1214 By an e-mail of 13 December 2011 NYX submitted a list of customers who should in its view be included in the market test. The list included 18 companies, namely [...]*. The Commission sent a questionnaire market testing the Commitments of 14 December 2011 to all of these market participants. 11 companies replied to the questionnaire, only two of which filled the questionnaire. Nine of these companies replied that they are not in apposition to respond to the questionnaire due to the lack of knowledge of derivatives markets.

1215 More precisely, the Commission sent 161 questionnaires: 3 to competitors (16 replies); 106 to customers including the additional customers as specified in the Notifying Parties' e-mail of 13 December 2011 (64 replies); 7 to regulators (7 replies); and 11 questionnaires to post trade services providers (4 replies).

13.3.1. Results of the second market test

(1401) As was the case for the first market test, the second market test was also overall negative. Despite the changes brought about to the initial package, a significant majority of market participants indicated that their views on the package remained substantially unchanged in light of the new proposal.[1216]

(1402) Indeed, virtually all competitors[1217] and a majority of customers[1218] considered that the remedies package as designed in the Commitments of 14 December 2011 does not have the potential to create an effective and viable competitive force in the markets concerned by this Decision. This is because, according to the market participants, post-merger, the bulk of the liquidity in the derivatives contracts concerned would still be concentrated on the merged entity's venues, and the remedies package does not have the potential to alter this balance. Indeed, the lack of fungibility of contracts together with the limitations to the ITPA commitment and the dependence on the merged entity for the provision of critical services are all elements which would prevent a potential new competitor from achieving sufficient scale to be viable and to compete against the merged entity on a lasting basis.

(1403) In the same vein, a majority of customers[1219] and almost all competitors[1220] considered that the revised remedies package is insufficient to restore competition lost as a result of the notified transaction. Indeed, while the remedies proposal could under certain circumstances have the potential to be adequate in the area of European single stock equity derivatives, the current competitive constraint exerted by the Notifying Parties on each other across the whole scope of derivatives products concerned would not be restored as a result of these commitments. In sum, the market test revealed that market participants consider the overall changes to the initial package to be limited and insufficient to resolve the competition concerns stemming from the notified transaction.

1216 See replies to question 4 and 5 of questionnaires Market test of commitments offered on 14 December 2011 - Customers to customers and Market test of commitments offered on 14 December 2011 - Competitors to competitors: competitors (with the only exception of Börse Düsseldorf [...]*) and the significant majority (with the exception of 3) indicated that they maintained their view on the overall package. However, as concerns the Divestment business, a number of respondents indicated that their views with respect to the viability of the Divestment business in the area of single stock equity derivatives changed in view of the new proposal.

1217 10 out of 11 competitors that replied to question 6 of questionnaire Market test of commitments offered on 14 December 2011 – Competitors.

1218 24 out of 44 customers that replied to question 6 of questionnaire Market test of commitments offered on 14 December 2011 - Customers .

1219 Only 8 customers out of 36 that replied to question 7 of questionnaire Market test of commitments offered on 14 December 2011 - Customers indicated that the scope of the revised remedies package would be sufficient to restore the current competition between Liffe and Eurex in the markets concerned by the present transaction, while 24 expressed negative views in this regard. 4 customers indicated that the restoration of competition would depend on a number of factors, including, amongst other things, the identity of the purchaser of the Divestment Business.

1220 10 out of 12 competitors that replied to question 7 of questionnaire Market test of commitments offered on 14 December 2011 – Competitors.

13.3.1.1.SCOPE OF THE COMMITMENTS OF 14 DECEMBER 2011

13.3.1.1.1. Divestment Commitment

(1404) As concerns the new structure of the Divestment commitment whereby, subject to the relevant regulatory approvals, all NYX' contracts would be divested, both customers and competitors indicated that this constituted an improvement to the previous version of the package, thereby enhancing its chances to be competitive. However, market participants also pointed to the substantial execution risk associated with the proposed alternative scope of the Divestment business. This is because the uncertainties related to obtaining the regulatory approvals may put in doubt the very feasibility of this new proposal. In this context, BATS/Chi-X Europe noted that *"Experience shows gaining regulatory approval for such a project can take many months, carries execution risk, additional costs and the possibility of business migrating to other venues.*"[1221] From the customer side, Bank of New York Mellon expressed the view that "*the commitment structure presents a degree of uncertainty that may well decrease the number of potentially interested parties.*"[1222] Exane Group specified that *"[t]he divested business is already quite weak compared to Eurex. Its position would be even weaker so if it looses one country and gets Eurex weaker operation instead.*"[1223]

(1405) The Commission also market tested the new offer to grant access to the merged entity's margin pool to the Purchaser of the Divestment business for divested single equity contracts as well as any single equity contracts traded on the Purchaser's platform. While customers generally welcomed this offer which, provided a Purchaser is found, would enhance the competitiveness of its offering, they also expressed a view that the lack of fungibility is a serious shortcoming which may impact the real value of such access.[1224] In this respect, Citigroup noted that *"Margin offsets will potentially assist, however the cost of funding is based on risk models. Risk models analysis net position exposures. Without true netting, risk/funding will remain the same. Unlikely to create a viable alternative to trading without support for cross platform netting."*[1225] Similarly, BNP Paribas expressed the view that *"This proposal is useful but stops short of offering full fungibility as the OCC in the US"*[1226] while Nomura explained that *"The access offered is somehwat helpful but is unlikely to create a viable alternative. The*

1221 BATS/Chi-X Europe, response to question 11 of questionnaire Market test of commitments offered on 14 December 2011 – Competitors [...]*.

1222 Bank of New York Mellon, response to question 11 of questionnaire Market test of commitments offered on 14 December 2011 – Customers [...]*. See also the reply to the same question by [...]*.

1223 Exane Group, response to question 11 of questionnaire Market test of commitments offered on 14 December 2011 – Customers [...]*.

1224 See replies to question 12 of questionnaire Market test of commitments offered on 14 December 2011 - Customers: 27 out of 34 customers which replied to this question stressed the importance of fungibility and netting opportunities as decisive factors to create a viable trading venue competing with the merged entity, while only 6 considered the offer of cross-margining sufficient. Tibra Trading, for example, considered that "*Cross-margning is beneficial, but viability and competitiveness would also depend on fees and systems*" (response to question 12 of questionnaire Market test of commitments offered on 14 December 2011 – Customers […]*.)

1225 Citigroup, response to question 12 of questionnaire Market test of commitments offered on 14 December 2011 – Customers [...]*.

1226 BNP Paribas, response to question 12 of questionnaire Market test of commitments offered on 14 December 2011 – Customers [...]*.

lack of netting of divested contracts and the merged entity's contracts implies the clearing solution is not intended to offer open access to clearing in the fullest sense as end users will be obliged to treat the contracts as separate contracts for clearing purposes and the positons will need to be managed separately for delivery/expiry purposes."[1227]

(1406) As a result, many customers indicated that under these circumstances, the lack of fungibility between the Purchaser's contracts and the contracts of the merged entity may affect their incentives to trade these contracts with the Purchaser of the Divestment business as compared to the merged entity.[1228] For instance, Susquehanna International Group Limited indicated that *"We believe that that the lack of such cross product netting greatly weakens the potential to create a viable alternative in trading of European single stock equity derivatives. The lack of netting increases the costs of doing business and would tend to lead to all trading being concentrated in single venue where the positions in instruments are nettable."*[1229] Similarly, Citigroup stated that it would have *"Very little incentive which will depend on appetite of underlying client. Without fungibility of netting – no incentive"*[1230] while Exane said that *"In our view this would not be an efficient incentive to trade European single equity derivatives contracts with the new Purchaser."*[1231]Similarly, customers also indicated that their incentives to trade on the Purchaser's platform would also depend on other factors such as the liquidity of these contracts on the Purchaser's platform or the fees charged by the Purchaser.[1232]

(1407) In addition, the market test provided indications that for viability reasons, the scope may not be sufficient.[1233]In particular, this would be due to the fact that the Divestment

---

1227 Nomura international, response to question 12 of questionnaire Market test of commitments offered on 14 December 2011 – Customers [...]*.

1228 See replies to question 13 of questionnaire Market test of commitments offered on 14 December 2011 - Customers: 19 out of 28 customers indicated that the lack of fungibility would affect their incentives to trade European single equity derivatives contracts with the new Purchaser, while only 2 specified that it would not have any impact. For the remaining 9 customers, see below in the text and footnote 1232 of this Decision.

1229 Susquehanna International Group Limited, response to question 12 of questionnaire Market test of commitments offered on 14 December 2011 – Customers [...]*. In the same vein, the response to the same question by [another customer]*: "*We believe that no netting could create an "all or nothing" situation, where players decide to take all their positions down to one single venue where they can maximize their cash usage*" [...]*.

1230 Citigroup, response to question 13 of questionnaire Market test of commitments offered on 14 December 2011 – Customers [...]*.

1231 Exane Group, response to question 13 of questionnaire Market test of commitments offered on 14 December 2011 – Customers [...]*.

1232 9 out of 28 customers who replied to question 13, customers of questionnaire Market test of commitments offered on 14 December 2011 - Customers.

1233 See responses to question 10 of both questionnaires Market test of commitments offered on 14 December 2011 - Customers and Market test of commitments offered on 14 December 2011 - Competitors. 19 out of 31 customers and 6 out of 9 competitors did not consider that the proposed revised Divestment business had sufficient scale and scope to be operated as a viable stand-alone business competing with the merged entity in the area of European single stock equity derivatives, whilst 7 customers and 1 competitor had a positive view in this regard. The remaining 5 customers and 2 competitors that replied to this question indicated that the viability of the Divestment business would depend on several factors, including the rules and the costs of access and the Purchaser's identity (for

business was limited to single stock equity derivatives. In this respect, to be viable, the Divestment business would need to include the underlying equity instruments, some of the most attractive stock future and option products and benchmark index products. Such broader scope of the Divestment business would, according to the market test, increase cross-margining opportunities and compensate internal costs associated with the transfer of the business to the Purchaser. In this respect ICE noted that *"The 'improved' divestment package "still amounts to only 15 per [cent]* of the [average]* daily volume of all of Liffe's derivatives products"*.[1234]

13.3.1.1.2. ITPA Commitment

(1408) As concerns the scope of the ITPA Commitment as specified in the Commitments of 14 December 2011, the second market test indicated that changes to the correlation coefficients were rather cosmetic as the fundamental limitation whereby contracts directly competing with those of the merged entity's existing benchmark products are excluded from the scope of the ITPA Commitment remained unchanged.

(1409) As such, notwithstanding these changes, all competitors[1235] and the majority of customers[1236] indicated that the new levels of the correlation coefficients would not allow the merged entity's competitors to introduce contracts which would compete with the merged entity's current/existing derivatives. Indeed, the market test revealed that *de facto*, there are no contracts that customers would like to trade which would meet the eligibility criteria as set in the proposed ITPA Commitment.[1237]

---

the customers), and the lack of the underlying equity instruments and the operation costs (for the competitors).

1234 ICE, response to market test of commitments offered on 14 December 2011 – Competitors [...]*.

1235 See replies to question 24 of questionnaire Market test of commitments offered on 14 December 2011 - Competitors.

1236 See replies to question 19 of questionnaire Market test of commitments offered on 14 December 2011 - Customers: 18 out of 31 customers indicated that they do not believe that the new correlation levels would allow the merged entity's competitors to introduce contracts which will compete with the merged entity's current/existing European interest rate derivative and European Equity Index derivative contracts, whilst 9 of them expressed the opposite view.

1237 See replies to question 24 of questionnaire Market test of commitments offered on 14 December 2011 - Customers and to question 26 of questionnaire Market test of commitments offered on 14 December 2011 - Competitors.

As regards customers, the question addressed by the Commission read: "*In your view, are there any interest rate or bond contracts for which you as a customer would like to have alternative trading options but which would not be covered by the proposed ITPA Commitments?*" It required a YES/NO response together with an explanation. 3 out of 34 respondents indicated that their decision to trade depended on their client's choice, while amongst the rest, 14 replied yes and 17 replied no. Nonetheless, 5 out of these 17 customers appeared to have misunderstood the question in responding to the multiple choice part of the question and indicated no as answer, but then explained that they were not looking at trading opportunities in contracts other than existing ones (one of them, Unicredit Bank, indicated that "[i]*t should be avoided that there is only one institution that can fix prices and conditions to the products as a monopolist. So, maybe in case of a 85% max correlation is not sufficient to allow competition, the factor should be revisable*" […]*). Therefore, it was generally confirmed that there was no significant interest for contracts other than existing ones (or which are not highly correlated with already existing contracts) and therefore excluded from the ITPA Commitment.

(1410) The second market test also confirmed the concerns as regards the appropriateness of correlation as a tool to determine eligible contracts and the conflicts which may arise in this respect given that correlation tends to evolve over time.[1238]

(1411) As regards the scope of eligible ITPs, the second market test provided indications that the revised definition, despite providing somewhat more clarity, is still not sufficiently objective and clear-cut to determine those entities entitled to apply for the ITPA. Indeed, all competitors expressed concerns in relation to the definition of eligible ITPs as specified in the Commitments of 14 December 2011:[1239] According to the competitors, although MTFs would seem to be included in the scope of eligible ITPs, the definition contains new vague terms in relation to the sufficient liquidity etc. leaving a scope for interpretation to the ITPA Committee. This lack of clarity and the discretion of the ITPA Committee in the determination of eligible ITPs could potentially narrow the range of eligible applicants in practice. In this regard, BATS/Chi-X Europe, whilst considering that the revised definition of eligible ITPs does now include MTFs having appropriate regulatory approvals, noted that "*the criteria also stipulates that the ITPA Committee will determine (at its sole discretion and among other things) whether or not the platform has in place "sufficient liquidity". Given any new contract will not have any liquidity until listed for trading this criteria presents significant execution risk and should be removed. The other criteria like transparent rules and suitable market supervision arrangements also leave room for interpretation and we would argue that if we have satisfied our regulator on these matters this should be sufficient for the ITPA Committee.*"[1240] In the same vein, CME observed that "*it appears the eligibility requirements as written may create a narrow group of potential competitors. Further, the addition of an eligibility requirement allowing the ITPA committee to determine whether a market has sufficient liquidity to be an eligible ITP could prevent start-ups from gaining ITP status,*"[1241] whilst ICAP indicated that "*it would appear the criteria are subjective - what exactly constitutes sufficient liquidity, whose transparency rules and will they consider existing waivers and thresholds, market supervision for which kinds of entities (only RMs, or MTFs, OTFs and SIs as well?).*"[1242] As a result, competitors when asked to asses whether their company would meet the test for an eligible ITP as specified in the revised commitments were not able to reply with certainty.[1243] Moreover, it was pointed out

---

1238 See replies to question 23 of questionnaire Market test of commitments offered on 14 December 2011 - Customers, where while 12 out of 23 respondents indicated that this tool would be appropriate, 11 expressed concerns.

1239 See replies to question 27 of questionnaire to Market test of commitments offered on 14 December 2011 - Competitors.

1240 BATS/Chi-X Europe, response to question 27 of questionnaire to Market test of commitments offered on 14 December 2011 - Competitors [...]*.

1241 CME, response to question 27 of questionnaire to Market test of commitments offered on 14 December 2011 - Competitors [...]*.

1242 ICAP, response to question 28 of questionnaire to Market test of commitments offered on 14 December 2011 - Competitors [...]*. See also Nasdaq OMX, response to question 27: " *As to the wording, the discretion to be vested with the DB/NYX-dependent ITPA Committee to determine if the ITP has "sufficient liquidity, transparency rules, and market supervision arrangements that facilitate the necessary level of regulatory information sharing with the Clearinghouse and its supervisors so as to allow the Clearinghouse to evaluate the risks associated with its ITP Contracts" contributes to the uncertainty as to who qualifies as an ITP*" [...]*.

1243 See replies to question 28 of questionnaire to Market test of commitments offered on 14 December 2011 - Competitors. See, e.g., Nasdaq OMX, replying that " *it appears that NASDAQ OMX would*

that the definition of eligible ITPs would exclude from the scope of the ITPA Commitment players operating markets not domiciled in the EU.[1244]

(1412) Similar concerns in relation to the definition of ITP as provided for in the Commitments of 14 December 2011 were expressed by a majority of customers.[1245]

13.3.1.1.3. Licence commitment

(1413) As concerns the Licence commitment, the second market test indicated that this commitment would not be sufficient to restore competition in the trading of existing interest rate derivatives. Indeed, the substantial majority of both customers and competitors indicated that the licence to interest rate derivatives software is not an asset necessary to effectively compete in the area of European interest rate derivatives under current market conditions as most of them already have access to such software.[1246] [1247]For instance ICE noted that *"many of the potential competitors in interest rate derivatives already possesse the necessary software capability, or could develop it internally. Alternatively, the software could be obtained from third party software developers."*[1248]

(1414) It follows that the trading software is not an actual barrier to entry into market for trading and clearing of benchmark European interest rate derivatives. In this regard, ICAP indicated that "*it is not the platform itself, but client access and integration to the trading platform that would be the most difficult hurdle to overcome if such entry were attempted. As such, the software license is immaterial and will not enable new entry in a competitive manner. In this respect, it should be recalled that the current remedies do not in fact provide for user access to execution and clearing in any meaningful way and so any licence to use execution software would be at best a small concession. In fact, it is telling in this respect to note that licensing of trading software already is offered by a*

---

qualify. However, as stated above, the wording of the definition of "ITP market" create a large amount of uncertainty as to who qualifies as an ITP and we can therefore not be sure" [...]*, whilst LSE's reply reads: "*It is assumed that the Parties' intention is to allow MTFs to be eligible for ITPA. If so, then it is possible that Turquoise could meet the test. However, as noted in our response to Question 27, above, it would be helpful to clarify this point*" [...]*.

1244 In this regard Nasdaq OMX in its response to question 27 of questionnaire to Market test of commitments offered on 14 December 2011 – Competitors [...]*, noted: "*As a general remark it is somewhat surprising to note that the parties so bluntly disqualify any market domiciled outside the EU from the ITP, as they have argued throughout the merger review process for a global geographic scope of the market and further pointed to CME as the main potential competitor.*"

1245 See replies to question 25 of questionnaire to Market test of commitments offered on 14 December 2011 - Customers, where while 12 out of 25 respondents indicated that the definition of eligible ITP would be sufficiently clear, the remaining indicated that it is not clear and/or it leaves room for interpretation to the ITPA Committee.

1246 See responses to questions 30 of questionnaire Market test of commitments offered on 14 December 2011 - Customers and 41 of questionnaire to Market test of commitments offered on 14 December 2011 - Competitors: 25 out of 32 respondents among the customers and 9 out of 11 competitors indicated that licence to interest rate derivatives software is not necessary to compete, whilst only 7 customers and 2 competitors express a positive view in this regard.

1247 7 out of 10 respondents to question 39 of questionnaire Market test of commitments offered on 14 December 2011 - Competitors indicated that they own a software or a licence to third-party software allowing it to offer trading of interest rate derivatives.

1248 ICE, response to the questionnaire Market test of commitments offered on 14 December 2011 – Competitors [...]*.

number of exchanges, including the parties."[1249] Similarly, [one large customer]* noted that "[o]*btaining critical mass of liquidity and efficient clearing margin relationships are crucial for competing in the execution space. Software is much less of a barrier*."[1250]Finally, ICE noted that while *"this appears to be the key 'improvement' in respect of interest rate derivatives […] in practice this concession is immaterial."*[1251]

(1415) In addition, even if the software were to be an asset having the potential to help new entrants to compete in the area of European interest rate derivatives, the proposed Licence commitment would be insufficient. This is because it does not include clearing functionality, network management or distribution link, nor the relevant source code. As a result, the licensee would be dependent on the merged entity for support and system development.

13.3.1.2. VIABILITY AND EFFECTIVENESS OF THE COMMITMENTS OF 14 DECEMBER 2011

13.3.1.2.1. Divestment Commitment

(1416) While some respondents indicated that the Divestment business may be viable, given the network nature of the industry, various market participants expressed doubts about the chances that the isolated divestment business would succeed as a viable business under the market conditions as resulting from the merger, in particular facing the merged entity with its pricing power and a wide portfolio of contracts.[1252] In this regard, from the customer side, BGC indicated that "[n]*ormally, stand alone businesses have limited chances for success, and the global trend toward consolidation in both the exchange and banking spheres (an element of the logic behind the proposed merger) means that a stand alone business will not necessarily be the end result of the auction of Divested Businesses."*[1253] In the same vein, ICAP indicated that "*it is difficult to see that this business could survive when not offering cross-margining against the respective Index futures (which the parties are not divesting)*" and also that "[t]*he cost to the purchaser of hosting the divested contracts (without the successful home markets and index businesses to defray these costs) is likely to outweigh the revenue income achieved from them.*"[1254]

1249 ICAP, response to question 41 of questionnaire Market test of commitments offered on 14 December 2011 – Competitors [...]*.

1250 [...]*, response to question 30 of questionnaire Market test of commitments offered on 14 December 2011 – Customers [...]*.

1251 ICE, response to the questionnaire Market test of commitments offered on 14 December 2011 – Competitors [...]*.

1252 See replies to question 10 of both questionnaires Market test of commitments offered on 14 December 2011 - Competitors and Market test of commitments offered on 14 December 2011 - Customers: an overall analysis of the replies to this question can be found at footnote 1233of this Decision. See for instance BCG (Cantor Fitzgerald Group)'s response to question 10 of Market test of commitments offered on 14 December 2011 - Customers [...]* stating that: *"There is a remote possibility that the Purchaser may operate a viable stand alone single stock equity derivative business to compete with the merged entity. However, as stated above, the strong pricing power of the dominant merged entity combined with other structural factors mentioned in question 9 make this an unlikely event."*

1253 BGC (Cantor Fitzgerald Group), reply to question 10 of questionnaire Market test of commitments offered on 14 December 2011 – Customers [...]*.

1254 ICAP, reply to question 10 of questionnaire Market test of commitments offered on 14 December 2011 – Customers [...]*.

(1417) To emphasise the weakness of the isolated business limited to single stock derivatives, one customer indicated that the break-up of NYX "*would also be the end of the complementary strength and network efficiencies of NYX home markets' as they will no longer offer cash equity and index, interest rate and equity derivatives products at one exchange group*."[1255]

(1418) In this context, it was also pointed that the divested single equity contracts are so-called "niche products" and that high volume derivatives will remain with the merged entity.[1256] Indeed, ICAP noted that *"The divested contracts represent only approximately 15% of Liffe's revenue (and an estimated less than 2% of the combined DB/NYSE revenue): their commercial viability is therefore limited."*[1257]

(1419) In addition, as pointed out in the first market test, the incentives of customers to transfer their business to the potential Purchaser may be limited which may lead to a quick erosion of the divested open interest. This is because the migration of contracts is associated with a number of various costs that customers would have to bear. In this context, one of the Notifying Parties' customers, ICAP, noted that *"The client cost and inconvenience in migrating the contracts (across front, middle and back office) is likely to outweigh the additional utility they would get from migration, hence it is unlikely that the clients would want to move their positions. This would be true despite the transitional services offered by the parties in the current remedies as there would still be plenty of client costs (network/connectivity and margining modules and management) considerations even within this (temporary and short-term) 'solution'."*[1258] Similarly, another customer explained that "*setting up such a business is not an easy process and clients wil [sic] remain sceptical of the new entity"*.[1259]

(1420) Some customers reiterated the functional dependency between single equity derivatives and equity index derivatives. In this respect, it was noted that "*Any entrant would need to offer an index contract along with the underlyings and the index would need to be active and used as a benchmark by investors and traders."*[1260] This view was also expressed by other market participants. TOM well summarised the competitors' general view, indicating that "[f]*or any market operator who seeks to succeed in the derivatives trading landscape indices products are vital to achieve and maintain a*

1255 Anonymous, submission concerning the Commitments offered on 14 December 2011, [...]*.

1256 See responses to question 10 of questionnaire Market test of commitments offered on 14 December 2011 – Customers.

1257 ICAP, response to response to question 10 of questionnaire Market test of commitments offered on 14 December 2011 – Customers [...]*, which also indicated that it could be the case that "*the contracts NYSE-DB are proposing to divest of are the weaker parts of their portfolio. The divestiture probably saves them the license fees and costs of winding down the Bclear platform and certain of the divested contracts (which they may have closed down anyway in order to realize the synergies of the proposed merger). Accordingly, despite the revisions to the remedy, this could still be construed as merely an opportunistic 'concession'*."

1258 ICAP, response to question 10 of questionnaire Market test of commitments offered on 14 December 2011 – Customers [...]*.

1259 ICF Kursmakler, response to question 10 of questionnaire Market test of commitments offered on 14 December 2011 – Customers [...]*.

1260 Nomura, response to question 10 of questionnaire Market test of commitments offered on 14 December 2011 – Customers [...]*.

viable derivatives trading business."[1261] In the same vein, LCH.Clearnet indicated that the Divestment business is not viable "*as it does not include NYX's index portfolio. Any viable competing business would have to be able to provide trading services in these same products to be attractive to market users.*"[1262]

(1421) In addition, as mentioned above, the viability of the Divestment business, and therefore the effectiveness of the remedy, would also be undermined by the lack of fungibility (between Purchaser's single equity derivatives and the equivalent contracts in the merged entity's margin pool), which would disincentivise customers from migrating their position towards the Purchaser and would rather lead them to move their trades on trading venues offering greater fungibility and netting opportunities. In this regard, the view of Bank of New York Mellon well summarises the results of the market test on this point when it indicated that *"even if the divested assets theoretically could be operated as a viable business, it still remains the case that the proposed commitments do not in any way preclude the merging parties (and in particular Eurex and Eurex Clearing) from continuing to operate a competing business (i.e. continue to trade the same contracts). In the absence of such a non-compete restriction that applies for at least three years from the date of the effective transfer of the relevant contracts, it is highly doubtful that a purchaser of the Divestment Business will be able to attract and retain sufficient liquidity in the single equity options contracts that it will be trading.*[1263]

13.3.1.2.2. ITPA Commitment

(1422) The second market test highlighted that all competitors and the significant majority of customers did not consider that the revised access remedy would have an effect equivalent to a divestiture of one of the Notifying Parties' businesses and thus would not be effective in restoring competition in the area of European interest rate and equity index derivatives.[1264]

(1423) Indeed, despite the amendments to the initial ITPA Commitment, the proposed access remedy still presents a number of shortcomings affecting its effectiveness in practice. These shortcomings principally relate to the scope of eligible contracts limited by the correlation coefficient, the innovation period and the cost of access, as well as

---

1261 TOM, response to question 6 of questionnaire Market test of commitments offered on 14 December 2011 - Competitors [...]*, to which it referred in the reply to question 10.

1262 LCH.Clearnet, response to question 10 of questionnaire Market test of commitments offered on 14 December 2011 – Post-trade service providers [...]*.

1263 Bank of New York Mellon, response to question 10 of questionnaire Market test of commitments offered on 14 December 2011 – Customers [...]*.

1264 See replies to question 21 of questionnaire Market test of commitments offered on 14 December 2011 - Competitors (with the exception of Wiener Boerse [...]*) and to question 16 of questionnaire Market test of commitments offered on 14 December 2011 - Customers to competitors (28 out of 39 respondents expressed this view). It is worth noting that out of the 3 responses to this question provided by the additional customers indicated by the Notifying Parties (question 25 of questionnaire Market test of commitments offered on 14 December 2011 – New Customers), only 1 respondent indicated that the ITPA would be equivalent to a divestment, while another customer indicated that, despite the fact that the ITPA could be equivalent to a divestment, "*as the environment is changing the same time, one cannot restore pre-merger levels*" (UCB, response to question 25 of questionnaire Market test of commitments offered on 14 December 2011 – New Customers [...]*.)

the fact that the independence of the ITPA Committee is not fully acknowledged by market participants.[1265]In this respect, Landesbank Berlin indicated, that "[f]*or a competitor it is easier to start with an established product as with a new innovation. Therefore a divestment will always have a greater impact to restore competion [sic] than the ITPA*."[1266] In the same vein, BATS/Chi-X Europe "*does not think access to the margin pool will have an effect equivalent to a divesture for the simple reason that the correlation criteria precludes any contracts entering Eurex clearing that could compete with the combined entity's franchise. This is an overriding issue even if all the other concerns related to accessing Eurex clearing, conflicts of interests, competing priorities, costs, governance etc. can be met*."[1267] Similarly, ICAP noted that "*The scope of the access to the merged entity's margin pool is so limited and the conditions under which access may be obtained so punitive (even under the amended access remedy) that no commercial enterprise would want to approach the merged DB-NYSE entity to negotiate access to clearing. The composition of the ITPA committee also amplifies the unworkability of the remedy given that access to clearing is entirely within the control of the merging party. And finally, despite the barriers, should success be achieved by a 3rd party in any area, as clearer to the solution the merged entity will share in the rewards. NYSE-DB has devised a no lose 'concession' in this regard*."[1268]

(1424) According to market participants, the limitation of the scope of the ITPA Commitment to new contracts fundamentally affects the practical impact that such a remedy may have in the market. Indeed, the actual scope of the products that would be eligible for access pursuant to this commitment and are likely to have success is in reality very small. This is because there is little demand for such contracts in the market. In this respect, ICE explained that *"[t]ypically, investors require derivatives contracts which have little or no basis risk between the underlying instrument and the derivatives [contracts]*. In other words, it would be very hard to create a product useful for investing or hedging in European [interest]* rate or bond markets that is not going to be very similar to an existing product."*[1269]

(1425) It follows that market participants considered that the ITPA Commitment is unlikely to recreate effective competition in the markets by allowing an effective entry. [1270] In this regard, Exane indicated that "*the new entity would be seen as a weaker one with*

1265 In this regard, see replies to question 28 of Market test of commitments offered on 14 December 2011 – Customers and 37 of Market test of commitments offered on 14 December 2011 – Competitors.

1266 Landesbank Berlin, response to question 16 of questionnaire Market test of commitments offered on 14 December 2011 – Customers [...]*.

1267 BATS/Chi-X Europe, response to question 21 of questionnaire Market test of commitments offered on 14 December 2011 – Competitors [...]*.

1268 ICAP, response to question 16 of questionnaire Market test of commitments offered on 14 December 2011 – Customers [...]*.

1269 ICE, response to questionnaire Market test of commitments offered on 14 December 2011 – Competitors. [...]*.

1270 See responses to questions 26 and 27 of questionnaire Market test of commitments offered on 14 December 2011 - Customers: 19 out of 21 customers and 17 out 21 respondents indicated that the access remedy as designed in the ITPA Commitment would not be effective in practice so that effective competition to the merged entity will arise in the area of, respectively, European interest rate derivatives and European equity index derivatives. On the competitor side, see replies to questions 35 and 36 of questionnaire Market test of commitments offered on 14 December 2011 – Competitors: 5 out of 6 and 8 out of 9 competitors indicated that the ITPA Commitment will not be effective in practice to restore competition in the area of, respectively, European interest rate and European equity index derivatives.

little prospect, dependent on the merged entity through the ITPA and vulnerable to what happens next. As commitment to a platform necessitate important investment, it might be abandoned by clients."[1271]Similarly, ICE noted that *"the ITPA Commitment will not, in practice, stimulate sufficient additional competitive pressure on the parties to compensate for [the]* adverse impact on competition."*[1272]

(1426) In addition, some market participants pointed to the fact that the proposed access commitment may have an opposite effect to the one it is trying to achieve and instead of fostering competition, it may solidify the merged entity's dominant position and make future entry even less likely. In this respect Nomura indicated that "[t]*he ITPA commitment can be viewed as an attempt to create a clearing monopoly. Any meaningful competition driven by margin efficiency will mean third party trading venues are forced to use the merged firm's clearing house. Further the merged firm does not permit its contracts to be cleared elsewhere. Accordingly the merger skews the market to creating a clearing monopoly whilst prohibiting other vertical silos (trading venues combined with clearing house) or stand alone clearing house from offering similar services and hence competing with the merged firm.*"[1273]

(1427) Finally, some respondents to the market test expressed concerns about the complexity of the proposed ITPA Commitment and its ability to be effectively implemented. This is because the proposal raises a range of complicated issues which have the capability to undermine the effectivness of the proposed commitment. In this respect, ICE noted that *"in particular, the definitions of Eligible Interest Rate and Eligible Bond Contracts provided in the revised commitments are complex and appear somewhat arbitrary, and may not be sufficiently clear to determine, in advance of any request for access, which interest rate derivatives [contracts]* are eligible for access. Moreover, the correlation[']* calculations depend heavily on data created and analyses conducted by DB/NYX, raising issues as to the objectivity of any assessment and complicating any possible third party verification."*[1274]

13.3.1.2.3. Licence commitment

(1428) According to the second market test, the Licence commitment is unlikely to be effective in practice as it has little relevance for the Notifying Parties' competitors who in most cases already own or licence such software. While some competitors indicated that in theory, the Licence Commitment could lower the barriers to entry, any such lowering would not be material, as there are other factors more relevant and compelling for effective entry.[1275]

1271 Exane, response to question 16 of questionnaire Market test of commitments offered on 14 December 2011 – Customers [...]*.

1272 ICE, response to questionnaire Market test of commitments offered on 14 December 2011 – Competitors [...]*.

1273 Nomura, response to question 16 of questionnaire Market test of commitments offered on 14 December 2011 – Customers [...]*.

1274 ICE, response to the questionnaire Market test of commitments offered on 14 December 2011 – Competitors [...]*.

1275 See replies to question 43 of questionnaire Market test of commitments offered on 14 December 2011 - Competitors.

13.3.1.3. ATTRACTIVENESS OF THE COMMITMENTS OF 14 DECEMBER 2011 FOR NEW ENTRANTS

(1429) The second market test aimed at verifying whether the new set of commitments was altogether sufficiently attractive for market participants so that an effective entry by a player able to discipline the merged entity post-merger was likely to occur.

13.3.1.3.1. Divestment Commitment

(1430) At the State of Play meeting of 9 December 2012, the Notifying Parties indicated to the Commission that they had been in contact with several potential Purchasers for the Divestment Business, and indicated that three of them, namely [Competitor 1]*, [Competitor 2]*, and [Competitor 3]*, had shown interest in the Divestment business as offered in the Commitments of 21 November 2011. Nonetheless, only [Competitor 1]*indicated its conditional interest in its reply to the first market test.[1276] Therefore, the Commission sought to verify this interest with the other third parties specified by the Notifying Parties. To this end, on 14 December 2011 the Commission held conference calls with [Competitor 2]* and [Competitor 3]* respectively to clarify their position as regard their possible interest in purchasing the Divestment business.[1277]

(1431) In this regard, [Competitor 2]*[1278] indicated that "*the divestment business in its form as described in the commitments of 17 November 2011 would not be viable and hence [Competitor 2]* would not be interested in acquiring it.*"[1279] Similarly, [Competitor 3]* [...]*[1280].

(1432) The second market test generally confirmed that the attractiveness of the Divestment business was doubtful and in all cases conditional upon a certain number of additional elements. With the only exception of [Competitor 2]*,[1281] no competitor expressed interest in purchasing the business.[1282] Even the two market participants who indicated to be potentially interested in the first market test now indicated that they would not be interested. More concretely, [Competitor 1]*indicated that it would not be interested in purchasing the Divestment business as it believed that it would not be able to sustain competition with the merged entity which would be in a position to fully leverage its market power and drive out the new Purchaser of the market.[1283] Similarly, [Competitor 4]* indicated that it would not be interested because "*the cost-income relation would not be favorable* (sic)".[1284]As concerns [Competitor 2]*, its interest would be

---

1276 [...]*,response to question 25 of questionnaire Market test of commitments offered on 17 November 2011 – Competitors[...]*.

1277 [...]*.

1278 [...]*.

1279 Agreed minutes of the conference call with [...]*of 14 December 2011 [...]*.

1280 Agreed minutes of the conference call with [...]*of 14 December 2011 [...]*.

1281 [...]*.

1282 See replies to question 12 of questionnaire Market test of commitments offered on 14 December 2011 – Competitors. [...]*.

1283 [...]*, response to question 12 of questionnaire Market test of commitments offered on 14 December 2011 – Competitors [...]*.

1284 [...]*, response to question 12 of questionnaire Market test of commitments offered on 14 December 2011 – Competitors [...]*.

conditional on the valuation of the business in view of its final scope and execution risk.[1285]

(1433) On 11 January 2012, the Notifying Parties transmitted to the Commission a letter from [Competitor 5]*, whereby the latter expressed its non-binding interest in acquiring the Divestment business [...]*.

13.3.1.3.2. ITPA Commitment

(1434) Similarly to the first market test, the second market test did not reveal any interest from a competitor in applying for access to the merged entity's margin pool pursuant to the ITPA commitment.[1286]

(1435) This is because, according to competitors in general, the commercial attractiveness of the ITPA Commitment is hindered by the numerous conditions to which the access is subject. This makes its real value proposition uninteresting in particular in view of the fact that applying for access would require the applicant to clear its contracts at different clearing-houses which would amount to splitting the margin pools.

(1436) For example, BATS/Chi-X Europe specified that it would not apply for access as "*the products we would want to trade and clear through Eurex clearing would be ineligible under the current access criteria*,"[1287] whilst TOM indicated that "*Trading derivatives on several markets cleared by the same CCP would allow real competition. Access to the merged entity's margin pool is only interesting if this implies access to their open interest too. Secondly, costs for using these services are unclear which will determine trading venues' general interest*."[1288]In addition, ICE pointed out that the ITPA Commitment was of no practical use for full-service exchanges (such as itself) that operate a fully integrated model as the main aspect of their value proposition. Indeed, these providers would not be in a position to deliver *"optimal customer solution (including innovating and launching of new products)"* while ensuring that *"they are capable of effectively discharging their clearing risk management and market regulation responsabilities"* in application of this commitment.[1289]

(1437) As concerns the market participants that currently own and operate their own clearing-house, namely CME and Nasdaq OMX, they would not be interested in such access [...]* pursuant to the ITPA commitment [...]*.

13.3.1.3.3. Licence commitment

(1438) In light of its limited commercial value no market participant expressed an interest in purchasing the licence to Eurex interest rate derivatives trading software as specified in

---

1285 Agreed minutes of a teleconference with [...]*.

1286 See replies to question 32 of questionnaire Market test of commitments offered on 14 December 2011 - Competitors.

1287 BATS/Chi-X Europe, response to question 32 of questionnaire Market test of commitments offered on 14 December 2011 – Competitors [...]*

1288 TOM, response to question 32 of questionnaire Market test of commitments offered on 14 December 2011 – Competitors [...]*.

1289 ICE, response to the Market test of commitments offered on 14 December 2011 – Competitors [...]*.

the commitments of 14 December 2014.[1290] Indeed, the majority of competitors indicated that they already had their own software or a licence to third-party software.[1291]

13.3.2. Commission's assessment of the Commitments of 14 December 2011

(1439) The Commission analysed the suitability of the Commitments of 14 December 2011 to remedy the entirety of the competition concerns identified in the SO and this Decision. To this end the Commission assessed, on the basis of all available evidence, including the results of the market test, whether the scope of the proposed commitments is sufficient in view of the competition concerns identified (Section 13.3.2.1), whether the proposed commitments are workable in practice and are suitable to remedy competition concerns in this case (Section 13.3.2.2), whether they can be effectively implemented and monitored (Section 13.3.3.4) and whether the proposed commitments would likely lead to a viable entry restoring the competition currently existing between Eurex and Liffe in the area of European financial derivatives, namely European single stock equity and equity index derivatives and European interest rate derivatives (short-term and long-term) (Section 13.3.3.3).

(1440) From the outset, it should be noted that although the Commitments of 14 December 2011 brought about certain improvements to the initial package, in particular in the area of the Divestment business, these improvements are not of a nature to render the notified transaction compatible with the internal market as they are not sufficient to eliminate completely all the competition concerns identified in the SO and this Decision.

13.3.2.1. THE COMMITMENTS OF 14 DECEMBER 2011 ARE INSUFFICIENT IN SCOPE

(1441) According to the Remedies Notice, *"The commitments have to eliminate the competition concerns entirely and have to be comprehensive and effective from all points of view."*[1292]

(1442) To recall, in the SO and this Decision, the Commission identified a significant impediment of effective competition stemming from the proposed merger as a result of the elimination of actual and potential competition in the area of existing and new European single stock equity derivatives and European interest rate derivatives (short-term and long-term) products,[1293] the elimination of competition in the area of new equity index derivatives,[1294] and the elimination of actual and potential competition in the markets for off-order book services for block size European ETD contracts (irrespective of how this market might be further divided), and for trade registration, confirmation and CCP clearing services for flexible versions of European equity futures and options traded OTC.

1290 See replies to question 44 of questionnaire Market test of commitments offered on 14 December 2011 – Competitors.

1291 See replies to question 39 of Market test of commitments offered on 14 December 2011 – Competitors.

1292 Remedies Notice, paragraph 9.

1293 See Sections 11.2.1.4.2 and 11.2.1.5 of this Decision.

1294 See Section 11.2.1.6 of this Decision.

(1443) According to the Notifying Parties, the Commitments of 14 December 2011 aim at addressing these issues in the following manner:

- elimination of actual and potential competition in the area of existing and new European single stock equity derivatives is designed to be addressed by the Divestment commitment;

- elimination of competition in the area of new European interest rate derivatives and European equity index derivatives is designed to be addressed by the ITPA commitment;

- elimination of actual and potential competition in the area of exisitng European interest rate derivatives is designed to be addressed by the licence of Eurex' interest rate trading software; and

- and elimination of actual and potential competition in the markets for off-order book services for block size European ETD contracts (irrespective of how this market might be further divided), and for trade registration, confirmation and CCP clearing services for flexible versions of European equity futures and options traded OTC is designed to be addressed by Divestment Commitment whereby NYX' Bclear service would be divested.

(1444) The Notifying Parties argue that these substantially improved commitments *"completely and comprehensively resolve"* the concerns identified in the SO and address issues stemming form the first market test.[1295]

(1445) However, while at face value, the Commitments of 14 December 2011 aim at addressing all competition concerns, in reality the scope of the proposed commitments is insufficient to address all competition concerns identified in the SO and this Decision entirely. In reality, only the concerns relating to the elimination of competition in the area of new interest rate contracts and concerns related to the elimination of actual and potential competition in the markets for off order book trading and for trade registration, confirmation and CCP clearing services for flexible versions of European equity futures and options traded OTC could, subject to the issues outlined below, be potentially adequately addressed by the Commitments of 14 December 2011.[1296]

(1446) First, the Commitments of 14 December 2011 do not address the competition concern identified in the SO and this Decision relating to the elimination of actual and potential competition in the area of existing interest rate derivatives contracts. Indeed, the SO and this Decision conclude that Eurex and Liffe are each other's closest actual and potential competitors in the area of interest rate derivatives irrespective of whether the market for interest rate derivatives should be subdivided in short-term and long-term interest rate derivatives. [1297] However, the ITPA commitment addresses only one aspect of the competitive dynamics between the Notifying Parties in the area of interest

[1295] Notifying Parties, Briefing Paper on the Parties' Commitments, 20 December 2011.

[1296] See Section 11.2.3.1 for the analysis of markets for off-book trading and for trade registration for trade registration, confirmation and CCP clearing services for flexible versions of European equity futures and options traded OTC.

[1297] See Section 11.2.1.4 of this Decision.

rate derivatives, namely the concern related to the elimination of competition in new products.[1298] As concerns the competition between the Notifying Parties in existing interest rate contracts, the Commitments of 14 December 2011 aim at addressing it with the offer to license Eurex' interest rate trading software, which as highlighted during the market test, is not relevant in this case as most potential competitors already have such software or could obtain it without any difficulties. It follows that the proposed commitments fall short of covering one of the main identified competition concerns.[1299]

(1447) Second, while the Notifying Parties proposed to divest all single stock equity derivatives overlaps, the scope of the Divestment business remains uncertain given the regulatory issues associated with the divestment of NYX' contracts in its home markets. While the Commitments of 14 December 2011 propose to divest NYX contracts in all markets concerned (as compared to the mix and match approach adopted in the Commitments of 21 November 2011 whereby the combination of NYX and DB contracts would be divested, DB contracts being divested in NYX' home markets), such divestment is conditional upon the agreement of the relevant national regulatory authorities.[1300] As a result, the scope of the business to be ultimately divested depends on third parties, namely competent regulators. The second market test indicated that […]* obtaining such approvals could be problematic.[1301]It follows that the ultimate Divestment business would therefore most likely result in a combination of assets from both Notifying Parties. In this respect, the first market test clearly showed that an approach whereby a combination of contracts from NYX and DB would be divested would affect the viability of the Divestment business, a risk that is also recognised in the Remedies Notice.[1302] In addition, the second market test indicated that obtaining the necessary regulatory approvals could imply delays in the divestment process which in turn would result in a significant execution and valuation risk for the potential Purchaser.

(1448) Third, while the new proposal addresses, at least to a certain extent, the issue of the symbiotic relationship between single equity derivatives and equity index derivatives by offering cross-margining between the divested single equity contracts and equity index contracts in the merged entity's margin pool, the issues of symbiotic relationship between single equity derivatives and underlying cash equities remains unresolved.

1298 The Notifying Parties have claimed at several occasions that competition in new products is the only "genuine competition" in the area of derivatives, everything else being just "copycats". This is however at odds with Notifying Parties' claims that CME is their strongest competitor in the area of short term interest rate derivatives with its Euribor contract (which is substantially the same as Liffe's Euribor contract) and the claim that true innovations are extremely rare. See agreed minutes of technical meeting on informal remedies proposal of 14 November 2011 with the Notifying Parties of 17 November 2011, paragraph 15, and Notifying Parties' response to the SO of 5 October 2011, Interest rate derivatives, paragraph 85.

1299 In this context, it should be recalled that interest rate derivatives represent a substantial proportion of the Notifying Parties' derivatives revenues ([…]*% for Liffe and […]*% for Eurex - Form CO, Annexes D.18 and D.19). In their submission of 17 January 2012 (page 7), the Notifying Parties stated that "*the inclusion of existing products into the ITPA commitment would be disproportionate*."

1300 Regulatory approval is in particular problematic in NYX' home markets where NYX is the incumbent regulated exchange.

1301 See replies to question 4 of Market test of commitments offered on 17 November 2011 – Regulators.

1302 Remedies Notice, paragraph 37: *"A divestiture of a combination of certain assets which did not form a uniform and viable business in the past creates risks as to the viability and competitiveness of the resulting business."*

Therefore, as indicated during both market tests, it is possible, that for viability purposes, the Divestment business would have to include some additional assets.

(1449) Finally, even the scope of the ITPA Commitment for equity index derivatives appears insufficient in view of the fact that most new equity index derivatives contracts that are currently in the pipeline of Notifying Parties' competitors would not meet the restrictive correlation thresholds specified in the Commitments of 14 December 2011. Indeed, as indicated during the market test, even a correlation coefficient of 99% would not be sufficient to include some of the BATS' CHERI indices as these have at times correlation higher than 99% with other Notifying Parties' equity index derivatives contracts, in particular those based on Eurostoxx. As a result, the ITPA Commitment would not be effective in practice to address this concern.

(1450) On the basis of the above, and the results of the market test, the Commission considers that the scope of the Commitments of 14 December 2011 is insufficient, first, because it fails to fully address all competition concerns. Second, even the scope of the commitments that aim at addressing the identified competition concerns is insufficient due to viability, workability and effectiveness reasons.

13.3.2.2. THE COMMITMENTS OF 14 DECEMBER 2011 ARE NOT SUITABLE TO REMEDY COMPETITION CONCERNS IN THIS CASE

(1451) The Commission analysed the suitability of the Commitments of 14 December 2011 to remedy the entirety of competition concerns identified in this Decision. In addition to the fact that the Commitments of 14 December 2011 are insufficient in scope as explained in Recitals (1441)-(1450) above, the offered commitments are not suitable to remedy competition concerns in this case as they are unlikely to generate an operator that would exert a competitive constraint on the merged entity similar to the one that exists between the Notifying Parties today.

(1452) As concerns the area of single equity derivatives, provided that all NYX single equity business (including Bclear) would indeed be divested, the Divestment business would represent […]* of NYX today's derivatives revenues. Provided that all divested open interest were to remain with the Purchaser, which appears to be a rather unlikely scenario in the light of the results of the market test indicating that most customers would prefer to close out their open positions before such divestment takes place,[1303] this would create a small scale operator that would have to compete head-to-head with the merged entity. In addition, it should also be noted that any such competition would not be on an equal footing as the Purchaser would not necessarily have the possibility of offering trading in the underlying cash equities and in the linked equity index derivatives.

[1303] 20 out of 40 customers indicated that their likely reaction in case of a divestment would be to close out their positions or to transfer their open interest to the merged entity; only 8 out of 40 customers indicated that they move their open interest to the Purchaser; the choice of the remaining customers would depend either on the Purchaser (8 customers), or on their client's choice (2 customers) or on other factors, such as liquidity (2 customers). See replies to question 3 of questionnaire Market test of commitments offered on 17 November 2011 – Customers. In addition, given the time necessary for the completion of the transfer of open interest, it is all the more possible that the merged entity would regain the open interest from the divestment business ahead of the divestment.

(1453) The ITPA commitment as designed in the Commitments of 14 December 2011 is also unsuitable in this case. First, in addition to the fact that the ITPA commitment is insufficient in scope, the very workability of the commitment is questionable. This is because *inter alia*, the commitment relies on correlation as a means to determine the scope of eligible contracts. However, as explained during the market test, correlation is not a tool that is best adapted in this case as, contrary to the Notifying Parties' claim, it does not allow establishing in advance of any request for access, with a sufficient degree of certainty, which contracts are eligible for access. This is because the correlation calculation depends heavily on data held by the Notifying Parties (on their existing contracts) and because the degree of correlation between two contracts can change significantly over time. Two contracts could have a limited positive correlation for some period of time, but then, due to an event that affects both contracts (for instance a financial crisis), the correlation coefficient may increase substantially for that period.

(1454) In addition, even assuming it were workable, it implies that the merged entity's competitors would have to rely on the merged entity for their clearing services. Pursuant to the Commitments of 14 December 2011, the merged entity, through the ITPA Committee, would have the ability to determine which new products its competitors bring to the market, and at what cost and speed. In addition, this exclusive clearing arrangement[1304] would further reinforce the merged entity's margin pool and its position as a dominant player in the area of derivatives trading and clearing in Europe. It follows that under these circumstances, the proposed commitments are unlikely to create an independent viable competitive force in the derivatives markets concerned in Europe and that would be in a position to effectively constrain the merged entity in a similar fashion as the Notifying Parties constrain each other pre-merger. In addition, the issue of inefficiencies associated with the splitting of the margin pools is not addressed by the new commitments. While the Purchaser of the Divestment business could in theory benefit from Eurex clearing for both its single equity derivatives business and the eligible interest rate and equity index derivatives contracts, there would still be a subset of contracts that the Purchaser would have to clear at another clearing-house. As a result, the Purchaser would be in a disadvantageous position compared to the merged entity as it could not offer its customers full cross-margining benefits. Obviously, other competitors, which would not benefit from the Divestment commitment, would be in an even worse position with an even wider pool of contracts that would not be eligible for clearing at the merged entity as they could not benefit from access for single equity derivatives.

(1455) Finally, it is unlikely that the proposed software licence commitment in the area of interest rate derivatives would make any significant contribution to resolving the competition issues in this Decision as such a licence was not identified by market participants as an actual barrier to entry into the market for trading and clearing of interest rate derivatives. Indeed, at no point in time did the market investigation or the market test of the proposed commitments provide any indications that entry into European interest rate derivatives markets would be hindered by a lack of appropriate trading software. Instead, as already explained in the Section of this Decision dealing

[1304] Pursuant to the Commitments, contracts subject to the ITPA cannot be cleared by another clearing-house.

with barriers to entry,[1305]the main obstacle new entrants face in their attempts to enter the derivatives markets in question is the access to a margin pool of correlated contracts.[1306]As has been explained in this Section of the Decision, the commitments designed to address this barrier fall significantly short of the required standard, *inter alia* because of the limitation in scope to new contracts and because of fundamental doubts about their workability and viability.

(1456) It follows that if anything, the Commitments of 14 December 2011 together could contribute to a creation of a small scale operator, active in certain niche markets, dependent on the merged entity for clearing of certain contracts and unable to offer the same cross-margining benefits as the merged entity. Such a competitor would therefore be in an inherently disadvantageous position vis-à-vis the merged entity which would have both the ability and incentives to undermine its capacity to effectively compete in the market. Indeed, the proposed commitments, if implemented, would have as their effect the preservation of the Notifying Parties' existing leading position in their benchmark product shielding them from competition, while it would give the opportunity to the merged entity to free-ride on third parties' innovations by immediately copying new contracts introduced in its margin pool by ITPs.[1307] As a result, the proposed commitments, if implemented, would not address effectively the competition concerns identified in this case because they would not create a player that could exert a similar competitive constraint to that which the Notifying Parties exert on each other pre-merger.

(1457) In this respect, the Notifying Parties claim that the proposed commitments will *"more than replace any competitive constraint that the Parties exert on each other today"*.[1308]However, as explained in the preceding Recital, the commitments taken together would at best create a small scale competitor which by definition would not be able to sufficiently constrain the two exchanges today. This is because, as explained in the competitive assessment Section of this Decision, what makes the competitive relationship between Liffe and Eurex unique is, *inter alia*, their comparable scale, margin pools and membership base.

(1458) On the basis of the above, the Commission considers that the Commitments of 14 December 2011 taken together are not suitable to effectively remedy the competition concerns identified in this Decision.

13.3.2.3. THE COMMITMENTS OF 14 DECEMBER 2011 ARE UNLIKELY TO LEAD TO SUFFICIENT AND TIMELY ENTRY

(1459) According to the Remedies Notice, *"the commitments must be capable of being implemented effectively within a short period of time"*[1309]. In case of structural commitments, this means that a suitable Purchaser can be found in a reasonable time frame. As concerns access commitments, *"they may be acceptable to the Commission in*

1305 See Section 11.2.1.7. of this Decision.

1306 See Section 11.2.1.7.1.2. of this Decision.

1307 The initial one-year innovation period allows the merged entity and other ITPs to copy the products newly introduced by an ITP during one year from the product's launch date.

1308 Notifying Parties, Briefing Paper on the Parties' Commitments, 20 December 2011.

1309 Remedies Notice, paragraph 9.

circumstances where it is sufficiently clear that there will be actual entry of new competitors that would eliminate any significant impediment to effective competition"[1310].

(1460) First, as regards the Divestment Business in its form and scope as specified in the Commitments of 14 December 2011, it is unclear whether a suitable Purchaser could be found in a timely manner. This is in particular in view of the questionable viability of the business and the likely regulatory hurdles leading to a substantial valuation and execution risk for a potential Purchaser[1311].

(1461) While the Notifying Parties claimed that they were in discussions with several potential Purchasers for the Divestment Business, namely [Competitor 1]*, [Competitor 2]*, [Competitor 3]*and [Competitor 6]*, only one third party, [Competitor 2]*, indicated that it would be potentially interested depending on the valuation of the business.

(1462) However, even if [Competitor 2]* were to acquire the Divestment business, in view of the limited scale of the business, it is unlikely that it would be in a position to constrain the merged entity in a similar fashion as the merging parties constrain each other pre-merger in the area of European single equity derivatives.

(1463) Similarly, as concerns the interest expressed by [Competitor 5]* in its letter of 11 January 2012 transmitted to the Commission by the Notifying Parties, it should first be noted that [Competitor 5]* received questionnaires market testing both packages to which [Competitor 5]* did not reply, despite reminders.[1312] While the credibility of[Competitor 5]*'s non-binding offer to acquire the Divestment business has not been verified, the Commission notes that even if [Competitor 5]* were to be genuinely interested in acquiring the Divestment business, there would still remain issues as to the viability and the workability of the commitment as explained in Section 13.3.2.1 above.

(1464) As regards the access remedies, as already explained, these can only be considered as sufficient and be accepted if they are equivalent to a divestiture in their effect. This is only the case when it can be established with a sufficient degree of likelihood that a timely entry will occur and will be able to exert sufficient competitive constraint to discipline the merged entity to the extent that the anti-competitive effects of the merger are counteracted. In this Decision, not only did the market test provide strong indications that it is unlikely that the proposed access remedy in the area of interest rate and equity index derivatives would have an effect equivalent to a divestiture,[1313] it also did not reveal any interest from a third party to apply for such access pursuant to the Commitments.[1314] This is because the proposed access commitments defined by

---

1310 Remedies Notice, paragraph 63.

1311 According to paragraph 24 of the Remedies Notice *"in proposing a viable business for divestiture, it is necessary to take into account the uncertainties and risks related to the transfer of a business to a new owner. These risks may limit the competitive impact of the divested business, and, therefore, may lead to a market situation where the competition concerns at stake will not necessarily be eliminated."*

1312 Similarly, [Competitor 5]* received a market investigation questionnaire sent in the first phase to which it replied. However, [Competitor 5]* did not reply to the questionnaire it received within the framework of the second phase market investigation.

1313 See replies to question 21 of Market test of commitments offered on 14 December 2011 – Competitors.

1314 See replies to question 32 of Market test of commitments offered on 14 December 2011 – Competitors.

correlation coefficient thresholds are too restrictive to generate entry. In addition, in view of the fact that the proposed commitments would lead to the splitting of margin pools, as contracts that are not eligible for access would have to be cleared at another clearing-house, and the fact that the merged entity would have the ability to copy third parties' innovations, the incentives of third parties to apply for access are very low. Indeed, under the designed access commitment, there is little to gain and potentially much to lose for a new entrant. It follows that the proposed access commitment would not have an effect equivalent to a divestiture.

(1465) Finally, given that the proposed software Licence commitment in the area of interest rate derivatives does not address an actual barrier to entry in these markets, and the fact that no competitors showed any interest to purchase such a licence, it is unlikely that any effective entry would arise on the basis of this commitment.

(1466) On the basis of the above, and in light of the results of the market test, the Commission considers that the Commitments of 14 December 2011 are unlikely to lead to a timely and sufficient entry so as to counteract the anti-competitive effects which are likely to occur in the derivatives markets where this Decision identified a significant impediment of effective competition. As a result, the Commission considers that the Commitments of 14 December 2011 are unlikely to be effective in practice.

13.3.2.4. THE COMMITMENTS OF 14 DECEMBER 2011 WOULD BE DIFFICULT TO IMPLEMENT AND MONITOR

(1467) According to the Remedies Notice, where *"the parties submit remedies proposals that are so extensive and complex that it is not possible for the Commission to determine with the requisite degree of certainty, at the time of its decision, that they will be fully implemented and that they are likely to maintain effective competition in the market, an authorisation decision cannot be granted. The Commission may reject such remedies in particular on the grounds that the implementation of the remedies cannot be effectively monitored and that the lack of effective monitoring diminishes, or even eliminates, the effect of the commitments proposed.*"[1315] In addition, as concerns access commitments, the Remedies Notice recognises that they are often complex in nature and therefore that "*the Commission will only be able to accept such commitments where the complexity does not lead to a risk of their effectiveness from the outset and where the monitoring devices proposed ensure that those commitments will be effectively implemented and the enforcement mechanism will lead to timely results."*[1316]

(1468) The commitments submitted by the Notifying Parties in this case are at the same time complex and novel. As concerns the Divestment commitment as specified in the Commitments of 14 December 2011, first, there are doubts about its precise scope which makes its implementation not straightforward. The fact that there is uncertainty as to whether the necessary regulatory approvals for divestment of NYX' "home markets" will be granted exacerbates the complexity of the divestment process, therefore undermining the effectiveness of the proposed commitment. Second, there are

[1315] Remedies Notice, paragraph 14.
[1316] Remedies Notice, paragraph 66.

some question marks about the very feasibility of the transfer of open interest in particular in view of its possible erosion during a divestment process that is likely to be lengthy and complex. Third, the role of the ITPA Committee (chaired by a Eurex representative having a tie-breaking vote) in the application process and the determination of eligible ITPs could give rise to discriminatory practices which would be difficult to monitor in view of the vague criteria on the basis of which the ITPA Committee is meant to take decisions pursuant to the commitments.

(1469) Similarly, the proposed ITPA Commitment raises a range of issues casting significant doubts on its effectiveness. Indeed the complexity of the proposed arrangement and the fact that there are currently no similar arrangements that could serve as a model raise significant issues about the possibility to implement such a commitment such that it is effective in practice. Given the very nature of derivatives markets, where positions are outstanding during long periods of time during which risk needs to be adequately managed, designing a workable access solution in the absence of an appropriate regulatory framework is likely to be extremely difficult and complex.

(1470) Indeed, the market tests in the case at hand revealed a number of technical issues that would make the effective implementation of the proposed access commitments very problematic and challenging. Amongst the issues that highlighted the greatest concern, three examples in particular need to be mentionned: first, the criteria for determination of eligible ITPs are unclear to the extent that it does not appear possible to determine *ex ante* the pool of potential eligible applicants. Second, the determination of eligible contracts on the basis of a complex correlation formula appears problematic especially in light of the fact that correlation is not stable over time. Many market participants pointed to the fact that the correlation, irrespective of its level,[1317] may not be an appropriate criterion to determine eligible contracts as it may lead to perverse results such as *de facto* excluding all indices based on baskets of European securities from the scope of the eligible contracts. Third, in the absence of an unambiguous reference point, the setting of the access fees, and clearing fees in particular, is not clear-cut either. This is because Eurex today operates, and once the transaction would be implemented, the merged entity, will operate a vertical silo model whereby clearing and trading fees are bundled in one fee.- Therefore, it would be impossible to determine in a definite and transparent manner the level of applicable clearing costs. While the Notifying Parties suggested that the appropriate reference point could be the applicable market fees,[1318]given that the market is generally characterised by vertical integration, there is no such market reference available. In practice, only the unbundling of trading and clearing would allow teh determination of the cost of clearing in a definite manner.

(1471) In addition, the ITPA commitment is complex in nature and would require monitoring that would be difficult to put in place using the tools provided for by the applicable merger control rules, such as the appointment of a monitoring trustee. Given the nature of the industry and the complexity of the ITPA commitment, a regulatory framework would be necessary to ensure that access is granted in a non-discriminatory manner, based on transparent rules and a clear and predictable fee structure.

1317 Except for a level that would be set to 100% in which case this criterion would become irrelevant.

1318 Notifying Parties, Briefing paper on the parties' commitments, 20 December 2011, p. 7: [To address the Case Team's concerns, the Parties would set their fees on the basis of an industry reference benchmark]*.

(1472) It follows that the complexity of the Commitments of 14 December 2011 and the inherent difficulties associated with their implementation under the current market and regulatory set-up casts fundamental doubts over the workability and effectiveness of the proposed remedy package.

(1473) On the basis of the above, the Commission considers that the complexity of the Commitments of 14 December 2011 , and the ITPA Commitment in particular, renders their implementation and monitoring difficult in practice. As a result, it is not possible to determine with a sufficient degree of certainty that the commitments offered in this case would be effectively implemented such that effective competition would be maintained in the markets where there would be a significant impediment of competition.

13.3.3. Commission's assessment of the informal pledge to freeze trading and clearing fees for three years

(1474) As concerns the Notifying Parties' publicised informal pledge not to increase derivatives trading and clearing fees for a period of three years, it should first be recalled that this pledge was at no time part of the formal commitments package officially submitted to the Commission and therefore its suitability to solve competition concerns was not subject to any market test run in this Decision. It is established case law that the Commission is not obliged to assess commitments that are not submitted in due form as specified in Article 20 of the Commission Regulation (EC) No 802/2004 of 7 April 2004 implementing Council Regulation (EC) No 139/2004 of 20 January 2004 on the control of concentrations between undertakings.[1319]

(1475) In any event, the price freeze pledge, even if it were to be formally submitted as a commitment, would be unlikely to address the competition concerns identified in this case. According to the Remedies Notice, *"commitments relating to the future behaviour of the merged entity may be acceptable only exceptionally in very specific circumstances. In particular, commitments in the form of undertakings not to raise prices, […] will generally not eliminate competition concerns resulting from horizontal overlaps. In any case, those types of remedies can only exceptionally be accepted if their workability is fully ensured by effective implementation and monitoring […], and if they do not risk leading to distorting effects on competition. "*[1320]

(1476) In this respect, the Commission notes that given the nature of the industry at stake, and in particular the fact that actual trading and clearing fees are based on a number of complex and non-transparent rebate schemes rather than on published list prices[1321], the relevance of this informal pledge appears limited. This also means that any such pledge would be too complex to implement and monitor in practice. In addition, the caveat whereby the fees could be changed "*due to market developments, legal or regulatory constraints or other circumstances"*[1322] would further increase the difficulties associated with the monitoring of such a commitment. Last but not least, as already explained in the competitive assessment Section of this Decision, the example of cash

1319 OJ L 133, 30.04.2004, p.1.
1320 Remedies notice, paragraph 17.
1321 See paragraphs (503), (505) and (672) of this Decision dealing with the analysis of fees.
1322 Deutsche Boerse, NYSE Euronext, Letter to Vice-President Almunia, 15 December 2011.

markets shows that, historically, competition rather than price regulation generates the most efficient fee reduction benefits for customers. As such, only commitments fostering genuine competition should be expected to lead to fee reductions.

(1477) On the basis of the above, the Commission considers that, even if it were to be submitted as a formal commitment in this Decision, it is unlikely that the suggested fee freeze would be suitable to resolve the competition concerns in the case at hand.

13.4. CONCLUSION

(1478) The Commission analysed the suitability of the Commitments of 14 December 2011 to remedy the entirety of competition concerns identified in this Decision taking also into consideration the efficiencies. To this end, the Commission analysed the scope of the proposed commitments, the likelihood of a timely and sufficient entry on the basis of the proposed commitments as well as their ability to be implemented and monitored and the likelihood to be effective in practice.

(1479) First, the Commission concludes that the scope of the Commitments of 14 December 2011 is insufficient as it does not entirely address all competition concerns identified in this Decision. This is without prejudice to the fact that some competition concerns identified in this Decision, in particular those relating to off order book services and for trade registration, confirmation and CCP clearing services for flexible versions of European equity futures and options traded OTC, may be, on an isolated basis, addressed to an adequate extent.[1323] Given that there are doubts about the viability of the Divestment Business itself, it is concluded that the competition concerns even in these areas are not addressed to a sufficient extent[1324].

(1480) Second, the Commission concludes that the Commitments of 14 December 2011 taken together are unlikely to be effective in practice as there are significant doubts about their very workability and ability to be implemented and monitored.

(1481) Third, the Commission concludes that the Commitments of 14 December 2011 are not likely to lead to a timely entry that would constrain the merged entity to a sufficient extent in all markets where competition concerns are identified in this Decision. Indeed, while it is possible that under certain circumstances the Divestment Business could find a Purchaser, the possibility of a sufficient and timely entry in the area of interest rate derivatives is remote.

(1482) Therefore, on the basis of the analysis of the Commitments of 14 December 2011 and the results of the market test, the Commission concludes that overall, the Commitments of 14 December 2011 are not suitable to remedy the competition

---

[1323] However, the Commission notes that while the divestment of Bclear would address the competition concerns in the areas of off-order book trading and trade registration, confirmation and CCP clearing services for flexible versions of European equity futures and options traded OTC, such divestment would be viable only if divested together with the underlying contracts traded on-order book and included in the Divestment Business.

[1324] It is also recalled that the Divestment Commitment would affect the recognised efficiencies in Section 12 as the collateral savings from additional cross-margining opportunities between single stock derivatives traded on Eurex and Liffe would no longer materialise to the same extent.

concerns identified in this case. It follows that these commitments are not capable of remedying the significant impediment of effective competition in the markets identified in this Decision, and of rendering the notified transaction compatible with the internal market.

14. CONCLUSION

(1483) In view of all that precedes, the Commission concludes that the notified transaction would significantly impede effective competition in the internal market or a substantial part thereof within the meaning of Article 2(3) of the Merger Regulation. This is because the notified transaction would result in the creation of a dominant or near-monopoly position and the elimination of the closest actual and potential competitor in the area of existing and new European exchange-traded single stock equity derivatives and European exchange-traded interest rate derivatives products. In addition, the notified transaction would eliminate the closest competitor in the area of new European exchange-traded equity index derivatives. Finally, the notified transaction would significantly impede effective competition by creating a dominant or near-monopoly position and eliminating the closest actual and potential competitor in the markets for off-order book services for block size European ETD contracts (irrespective of how this market might be further divided), and for trade registration, confirmation and CCP clearing services for flexible versions of European equity futures and options traded OTC.

(1484) The notified transaction must, therefore, be declared incompatible with the internal market and the EEA Agreement pursuant to Article 8(3) of the Merger Regulation and Article 57 of the EEA Agreement.

HAS ADOPTED THIS DECISION:

Article 1

The notified concentration whereby NYSE Euronext and Deutsche Börse enter into a full merger within the meaning of Article 3(1)(a) of the Merger Regulation is hereby declared incompatible with the internal market and the functioning of the EEA Agreement.

Article 2

This Decision is addressed to

DEUTSCHE BÖRSE AG
Mergenthalerallee 6
65760 Eschborn
Germany

NYSE EURONEXT
11 Wall Street
10005 New York
United States of America

Done at Brussels, 1.2.2012

(Signed)
For the Commission
Joaquín ALMUNIA
Vice-President

Annex

1. OUTPUT FOR THE DIFFERENT LIQUIDITY MEASURES PROPOSED BY THE NOTIFYING PARTIES

(1) The Annex sets out additional output for the different liquidity measures proposed by the Notifying Parties. This output complements the analysis presented in Section 12.3.3of the Decision and forms an integral part of it.

(2) The analysis in this Annex is solely based on data employed by the Notifying Parties in their analysis. As described in Section 12.3.3 of the Decision, this analysis is simply a generalisation of the methodology proposed by the Notifying Parties. The analysis confirms the concerns set out by the Commission in the SO[1] and responds to the claims made by the Notifying Parties in their submissions[2].

(3) The Notifying Parties have put forward an array of liquidity measures to sustain their claim that the creation of Euronext led to an increase in liquidity. Subsequently they argue that such improvement in liquidity would equally result from this notified transaction. The identification problems described for the analysis of bid-ask spreads presented in Section 12.3.3 of the Decision similarly occur for these additional set of liquidity measures. In addition to the results on bid-ask spread (Figures 1-10 below), and for completeness, this Annex simply reports results on the alternative liquidity measures proposed by the Notifying Parties. As set out in the Decision for bid-ask spreads, Figures 11-61 below on the alternative liquidity measures, show no systematically identified impact of the Euronext mergers on those alternative liquidity measures. In any case, it is not clear how the alleged effects on volatility, turnover, the value of traded volume and volume would translate into efficiency gains. As explained in Recital (1142), the burden of proof to verify the efficiencies is on the Notifying Parties. They do not clarify in which way the alternative liquidity measures can be mapped into efficiency gains[3].

(4) As described in the Decision, the regression output set out below employs the specification suggested by the Notifying Parties, but replaces their dummy integration variables with exchange dummy variables that interact with the quarters of each year for each exchange. Regression 2 below sets out the Notifying Parties' preferred

---

1 In particular paragraphs 590, 593-594 and 598 of the SO

2 The Notifying Parties submitted two papers dealing with efficiencies in their response to the SO "Response to Statement of Objections-Transaction related Efficiencies" of 24 October 2011 and Compass Lexecon "Efficiencies from the proposed transaction" of 24 October 2011. Furthermore, the Notifying Parties submitted a memorandum Compass Lexecon "Response to comments at oral hearing" of 16 November 2011. On 5 and 13 December 2011 the Notifying Parties submitted additional reports by Compass Lexecon "The relevance of Euronext integration to the Transaction" and "Response to Commission services economic experts' econometric analysis" 13 December 2011".

3 The Notifying Parties faced the same problem in their attempt to quantify the alleged liquidity benefits for derivatives where they solely looked at effect on volume, see Section 12.3.4 of the Decision.

specification in terms of regressor choice while regression 1 uses the log of the annual GDP per capita in addition[4].

(5) For illustrative purposes, the regression equation for the normalised bid-ask spread is set out as follows[5]:

$$Log(Bid - AskSpread)_{i,t} = \alpha + \sum_{k=2000Q4}^{2010Q4} \beta_{jk} \times [Quarter - index] dummy_{jk} + X_{i,t}\delta + Y_{i,t}\varphi + \theta_i + \varepsilon_{i,t}$$

(a) Where subscript *i* denotes each of the securities, *t* denotes the time period, *k* stands for the quarter-year periods and *j* denotes each of the indexes.

(b) $[Quarter - index] dummy_{jk}$ is a dummy variable interacting the quarter-year *k* with each index *j*.

(c) $X_{i,t}$ is a vector of dummy variables that controls for some relevant economic and political events. There are one day events.

(d) $Y_{i,t}$ is a vector of variables for other determinants of liquidity of the market. These include the (20-day) historical volatility of the DAX index; the traded volume on the Frankfurt exchange; a tick size dummy, which takes the value of 1 after 2007 and is equal to 0 before then; the per capita GDP for each of the countries with Euronext exchanges; the volume traded at MTFs; the market capitalisation; and the last price of security.

(e) θ_i is a vector of security specific effects.

(f) $\varepsilon_{i,t}$ denotes the standard statistical error.

(6) The dataset employed by the Notifying Parties is a panel including data for 158 large caps comprising the four main indices over the period 1/01/2000 and 31/12/2010 (AEX includes 45 securities, BEL includes 28 securities, CAC includes 51 securities and PSI includes 34 securities).

(7) This Annex first sets out the output for bid-ask spread for the pooled exchange and individual exchange regressions.[6] The output for the pooled regression is presented for the full sample (1/01/2000-31/12/2010) and for a pre-MiFID subsample (1/01/2000-31/12/2006). In addition, the average monthly residuals from the Notifying Parties' specification without including their integration dummies are presented. Second, this Annex reports output for the pooled and individual exchange regressions with the

---

4 For some figures plotting the regression coefficients, a non smooth pattern is observed at the beginning of 2007. This follows from the interaction between the log of MTF and the tick size dummy. The corresponding graphs plotting the coefficients for a regression omitting the tick size dummy are reported at the end of the document. However, the main qualitative conclusions for this Decision do not change.

5 Similar specifications are employed for each additional liquidity measures.

6 The pooled regression runs the model for the complete data sample, including data for each of the 158 large caps of each of the securities. The individual exchange regression runs the model respectively for a dataset restricted to each of the individual exchanges.

corresponding residuals for volumes, volatility, turnover, value of traded volume and average weighted-spread for the CAC-40 securities.

1.1. BID ASK SPREAD

1.1.1. Pooled regression for the period 1/01/2000-31/12/2010

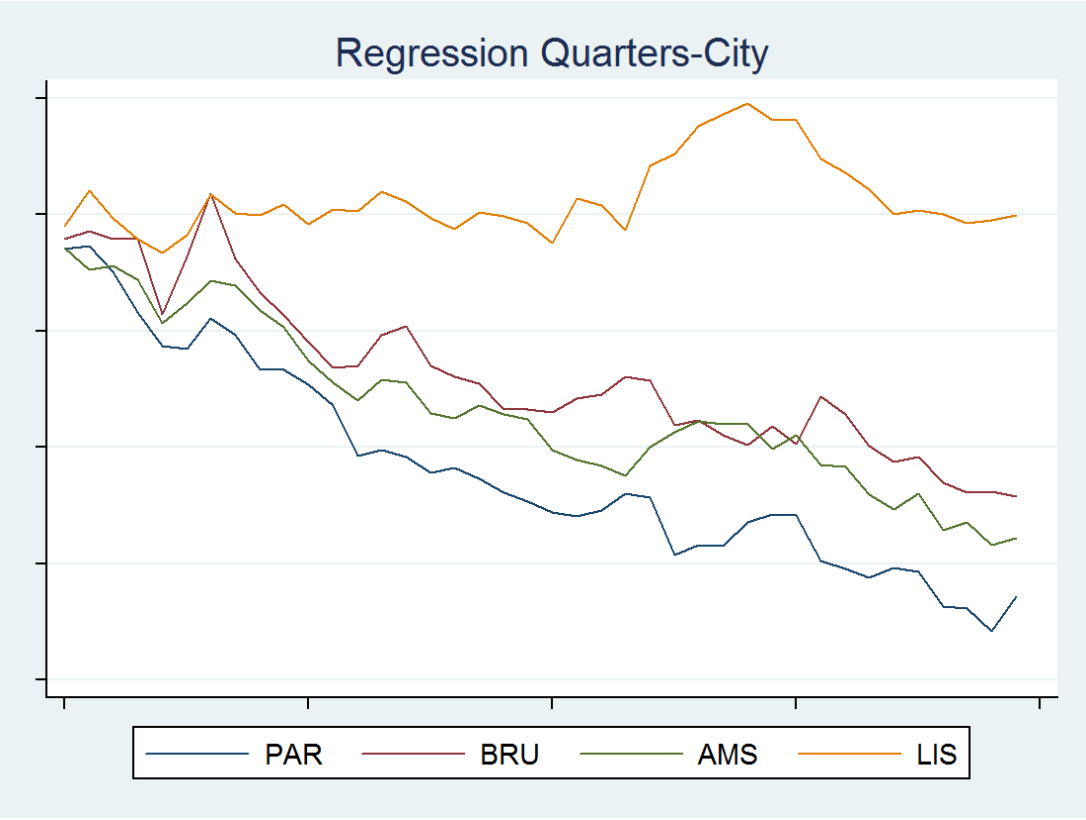
Table 1: Regressions on normalised bid-ask spread of large caps in Paris, Amsterdam, Brussels and Lisbon - pooled regression including quarter-year-index fixed effects, 1/12/2000-31/12/2010

Ln (bid-ask spread)	Reg.1	Reg.2
DAX Volatility (log of)	[...]*	[...]*
	[...]*	[...]*
Volume traded on the Frankfurt exchange (log of)	[...]*	[...]*
	[...]*	[...]*
Tick change dummy	[...]*	[...]*
	[...]*	[...]*
MTF Volume (log of)	[...]*	[...]*
	[...]*	[...]*
Last Price of security (log of)	[...]*	[...]*
	[...]*	[...]*
Market capitalisation (log of)	[...]*	[...]*
	[...]*	[...]*
Annual GDP per capita (log of)	[...]*	[...]*
	[...]*	[...]*
Constant	[...]*	[...]*
	[...]*	[...]*
Quarter-year-index fixed effects	[...]*	[...]*
Security fixed effects	[...]*	[...]*
Observations	[...]*	[...]*
R-squared	[...]*	[...]*

Note: (a) Robust p-values in brackets; (b) *** p<0.01, ** p<0.05, * p<0.1; (c) the sample is composed of 158 large caps. These are securities that together make up the main stock indices of Paris, Brussels, Amsterdam and Lisbon (CAC 40, BEL20, AEX and the PSI) at any point throughout the period; (d) all regressions include a set of single-day event dummies

(not reported); (e) bid-ask spreads calculated using price data provided by Bloomberg. Regression 1 and regression 2 differ because only regression 1 includes the log of annual GDP per capita. The coefficient estimates for the exchange-quarter dummies are separately represented in the below Figures.

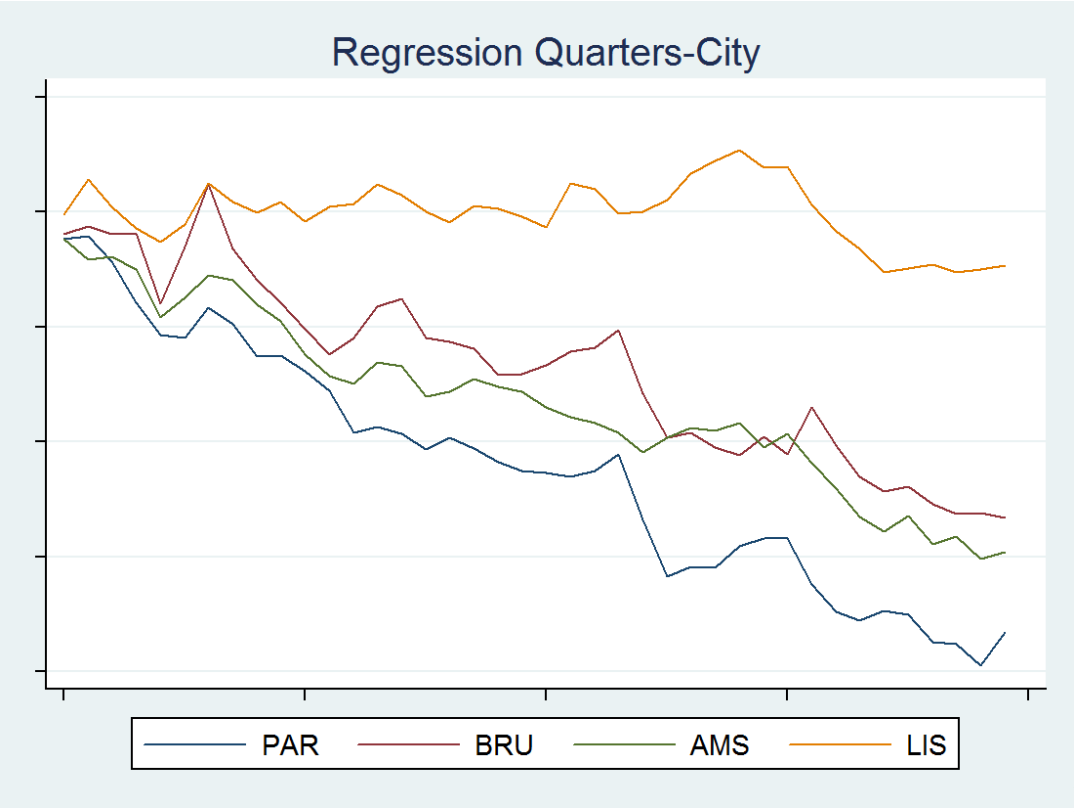
Figure 1: Quarter-year- index coefficients from Regression 1 on normalised bid-ask spread (see Table 1)



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, a dummy variable to control for the change in tick size, the MTF volume for Chi-X Europe and BATS, per capita annual GDP, market capitalisation and the security price. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of normalised bid-ask spread. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

Figure 2: Quarter-year-index coefficients from Regression 2 on normalised bid-ask spread (see Table 1)



[ ]*

Note: See Figure 1 note above.

1.1.2. Pooled regression for the period 1/01/2000-31/12/2006 (pre-MiFID)

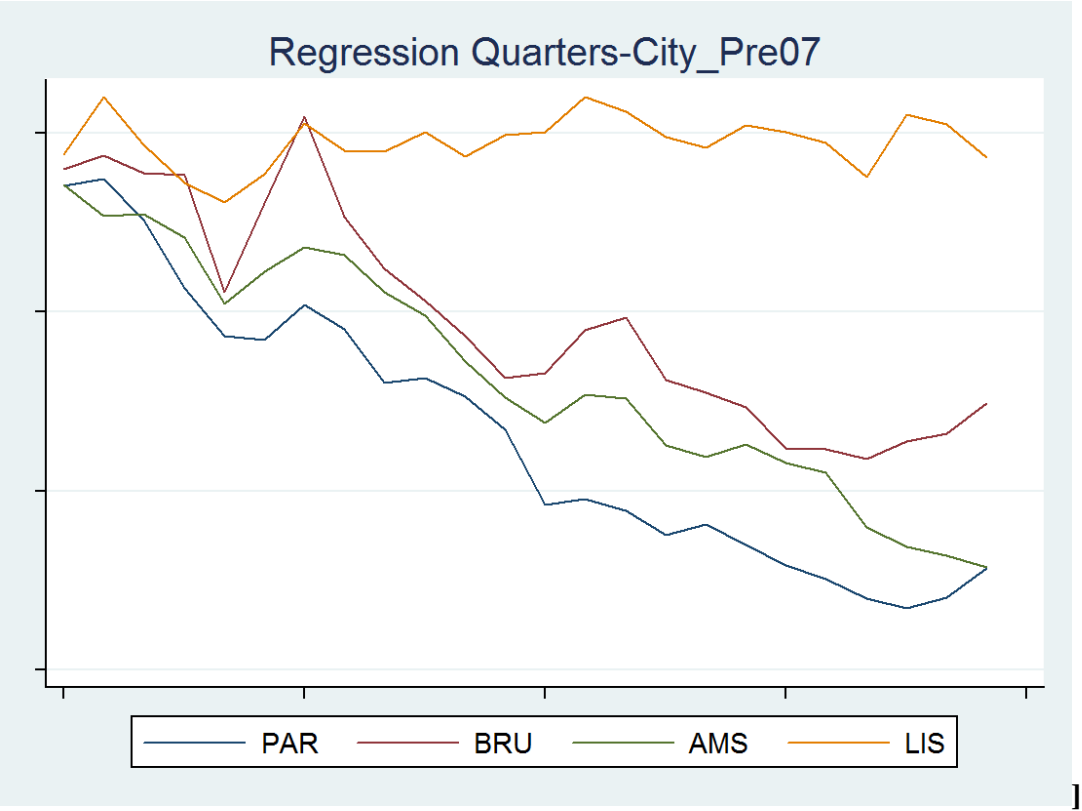
Table 2: Regressions on normalised bid-ask spread of large caps in Paris, Amsterdam, Brussels and Lisbon - pooled regression including quarter-year-index fixed effects, 1/12/2000-31/12/2006

Ln (bid-ask spread)	Reg.1	Reg.2
DAX Volatility (log of)	[...]*	[...]*
	[...]*	[...]*
Volume traded on the Frankfurt exchange (log of)	[...]*	[...]*
	[...]*	[...]*
Annual GDP per capita (log of)	[...]*	[...]*
	[...]*	[...]*
Last Price of security (log of)	[...]*	[...]*
	[...]*	[...]*

Market capitalisation (log of)	[...]*	[...]*
	[...]*	[...]*
Constant	[...]*	[...]*
	[...]*	[...]*
Quarter-year-index fixed effects	[...]*	[...]*
Security fixed effects	[...]*	[...]*
Observations	[...]*	[...]*
R-squared	[...]*	[...]*

Note: see Table 1 note above.

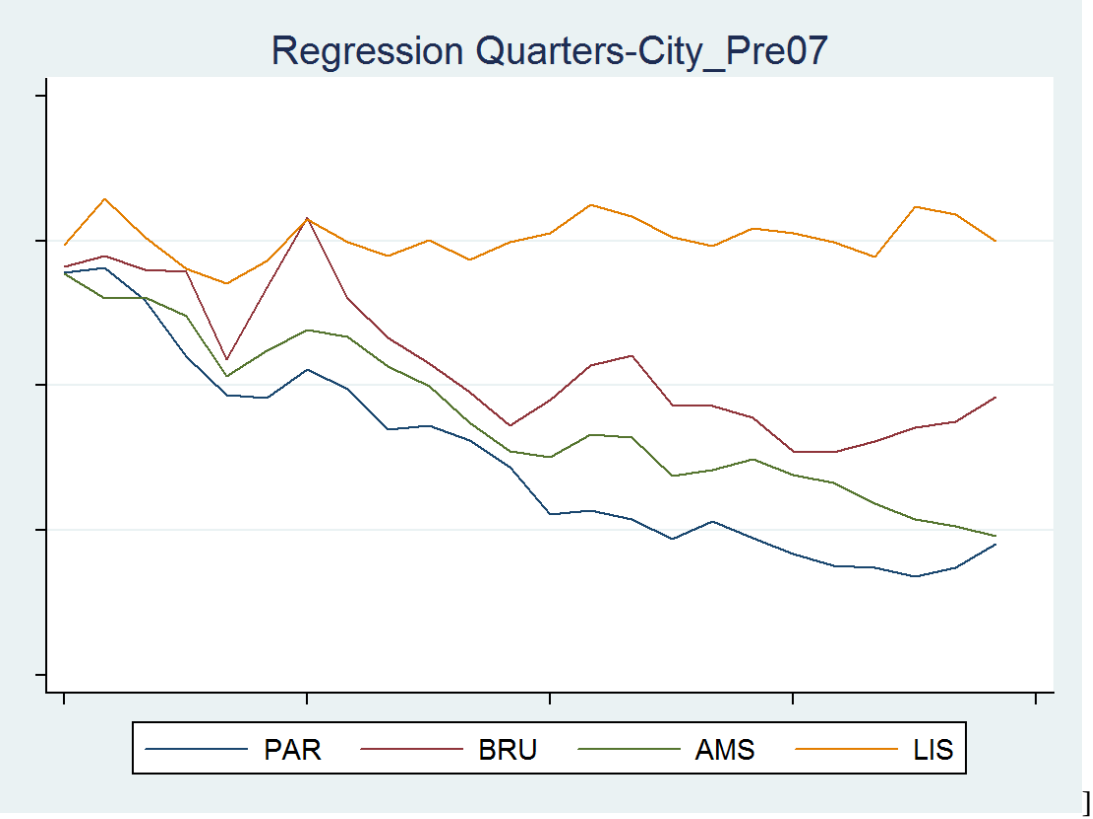
Figure 3: Quarter-year-index coefficients from Regression 1 on normalised bid-ask spread 1/1/2000-31/12/2006 (see Table 2).



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, per capita annual GDP, market capitalisation and the security price. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of normalised bid-ask spread. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

Figure 4: Quarter-year-index coefficients from Regression 2 on normalised bid-ask spread 1/1/2000-31/12/2006 (see Table 2)



[ ]*

Note: See Figure 3 note above.

1.1.3. Individuals exchange regressions for the period 1/01/2000-31/12/2010

1.1.3.1. PARIS

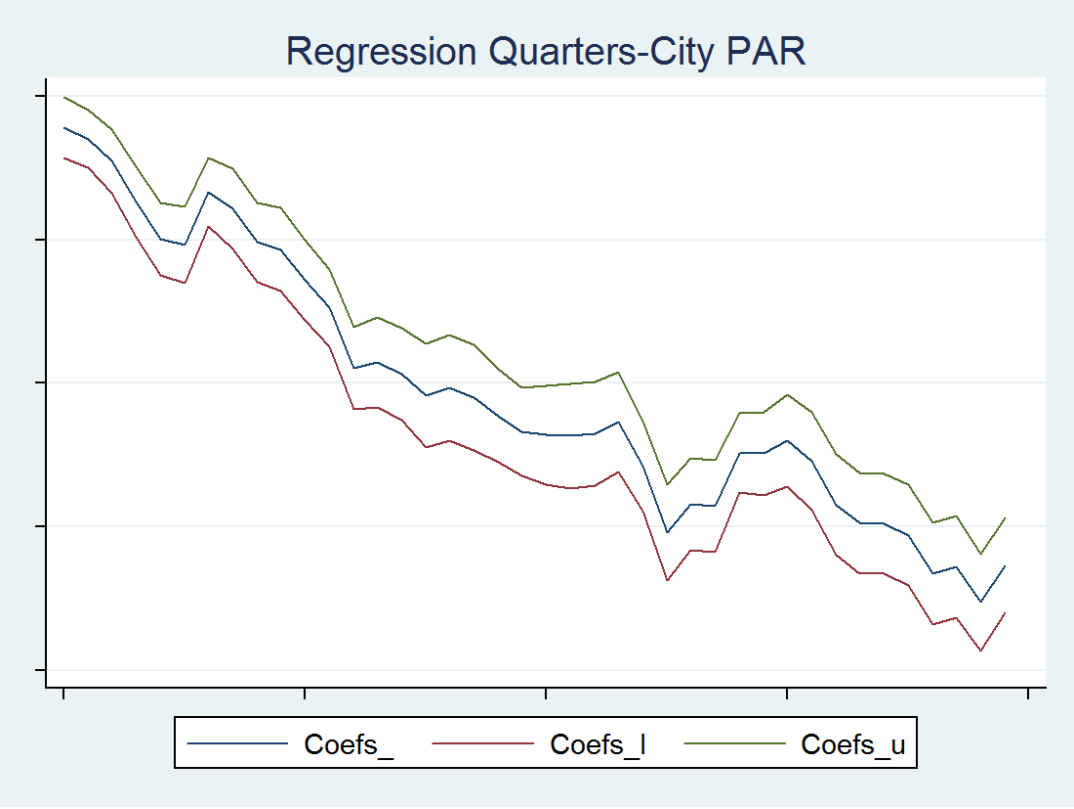
Table 3: Regressions on normalised bid-ask spread of large caps in Paris - individual regression including quarter-year-index fixed effects, 1/12/2000-31/12/2010

Ln (bid-ask spread)	Reg.1
DAX Volatility (log of)	[...]*
	[...]*
Volume traded on the Frankfurt exchange (log of)	[...]*
	[...]*
MTF Volume (log of)	[...]*
	[...]*
Last Price of security (log of)	[...]*

	[...]*
Market capitalisation (log of)	[...]*
	[...]*
Constant	[...]*
	[...]*
Quarter-year-index fixed effects	[...]*
Security fixed effects	[...]*
Observations	[...]*
R-squared	[...]*

Note: (a) Robust p-values in brackets; (b) *** p<0.01, ** p<0.05, * p<0.1; (c) the sample is composed by 51 large caps. These are securities that have composed the main index of Paris (CAC 40) at any point throughout the period; (d) all regressions include a set of single-day event dummies; (e) the log of GDP per capita and the tick size dummy is omitted because of collinearity. The results for a regression including the log of the annual GDP per capita are equivalent. These results are therefore not reported. .

Figure 5: Quarter-year-index coefficients from Regression 1 on normalised bid-ask spread 1/1/2000-31/12/2010 (see Table 3)



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, a dummy variable to control for the change in tick size, the MTF volume for Chi-X Europe and BATS, per capita

annual GDP, market capitalisation and the security price. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of normalised bid-ask spread. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

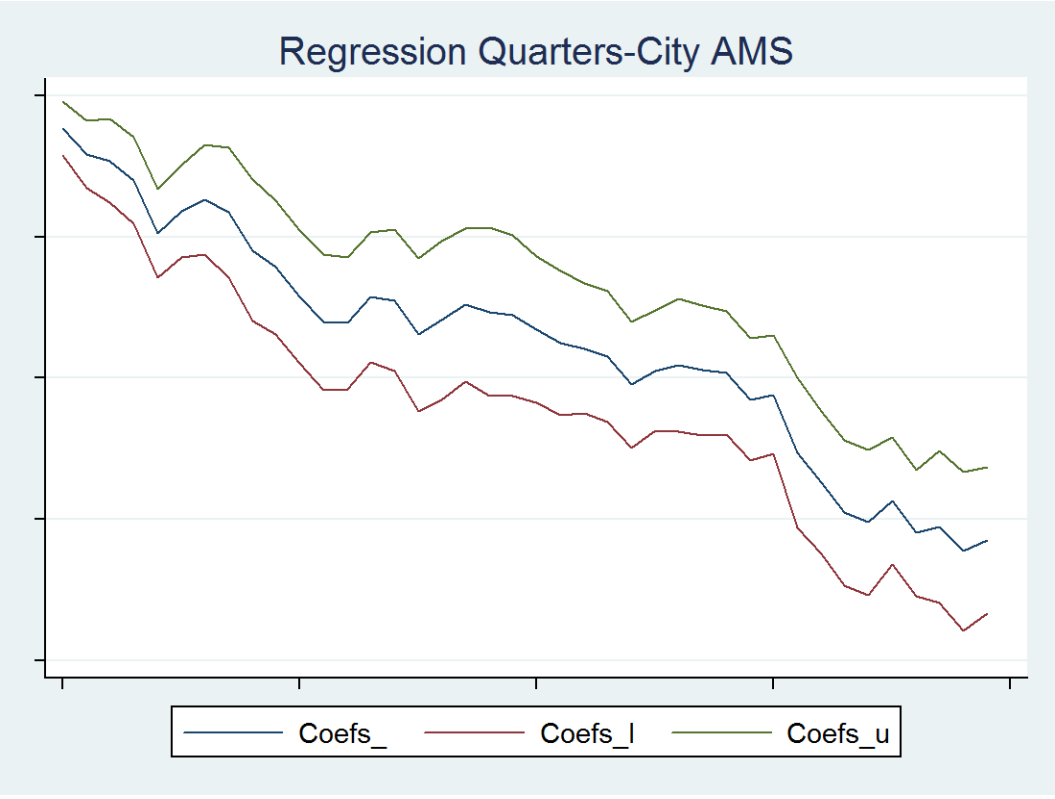
1.1.3.2. AMSTERDAM

Table 4: Regressions on normalised bid-ask spread of large caps in Amsterdam - individual regression including quarter-year-index fixed effects, 1/12/2000-31/12/2010

Ln (bid-ask spread)	Reg.1
DAX Volatility (log of)	[...]*
	[...]*
Volume traded on the Frankfurt exchange (log of)	[...]*
	[...]*
MTF Volume (log of)	[...]*
	[...]*
Last Price of security (log of)	[...]*
	[...]*
Market capitalisation (log of)	[...]*
	[...]*
Constant	[...]*
	[...]*
Quarter-year-index fixed effects	[...]*
Security fixed effects	[...]*
Observations	[...]*
R-squared	[...]*

Note: (a) Robust p-values in brackets; (b) *** p<0.01, ** p<0.05, * p<0.1; (c) the sample is composed by 45 large caps. These are securities that have composed the main index of Amsterdam (AEX) at any point throughout the period; (d) all regressions include a set of single-day event dummies; (e) the log of GDP per capita and the tick size dummy is omitted because of collinearity. The results for a regression including the log of the annual GDP per capita are equivalent. These results are therefore not reported.

Figure 6: Quarter-year-index coefficients from Regression 1 on normalised bid-ask spread 1/1/2000-31/12/2010 (see Table 4)



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, a dummy variable to control for the change in tick size, the MTF volume for Chi-X Europe and BATS, per capita annual GDP, market capitalisation and the security price. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of normalised bid-ask spread. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

1.1.3.3. BRUSSELS

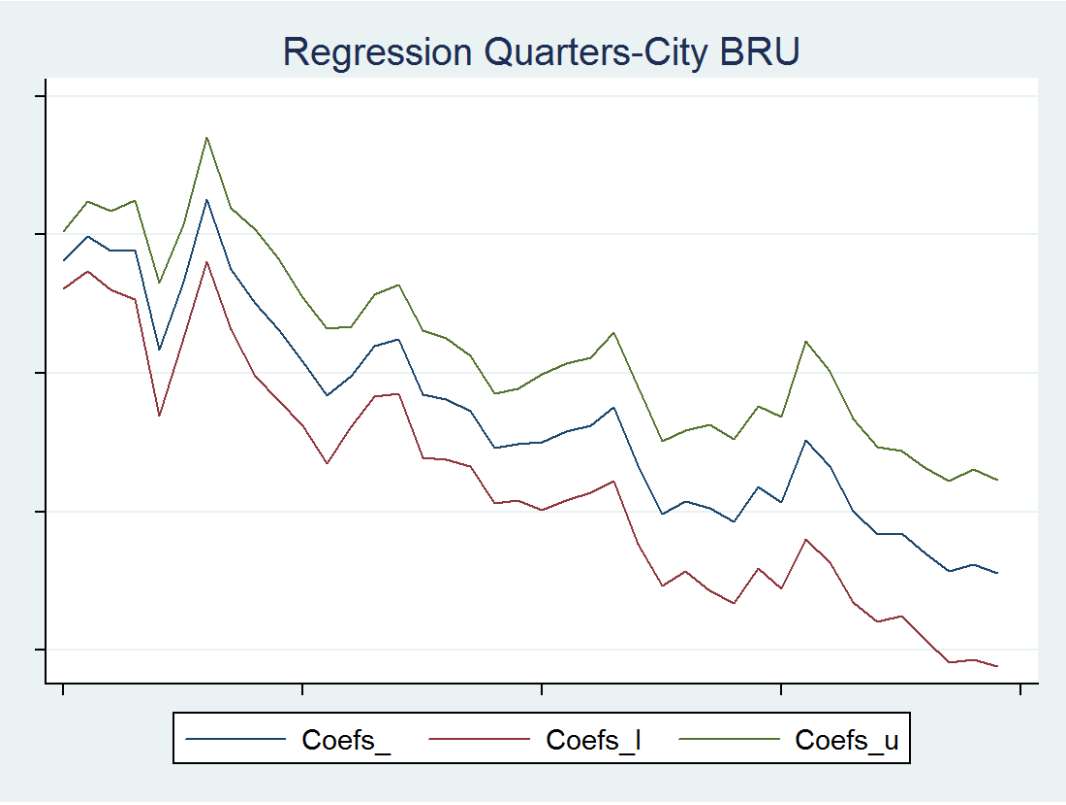
Table 5: Regressions on normalised bid-ask spread of large caps in Brussels - individual regression including quarter-year-index fixed effects, 1/12/2000-31/12/2010

Ln (bid-ask spread)	Reg.1
DAX Volatility (log of)	[...]*
	[...]*
Volume traded on the Frankfurt exchange (log of)	[...]*
	[...]*
MTF Volume (log of)	[...]*

	[...]*
Last Price of security (log of)	[...]*
	[...]*
Market capitalisation (log of)	[...]*
	[...]*
Constant	[...]*
	[...]*
Quarter-year-index fixed effects	[...]*
Security fixed effects	[...]*
Observations	[...]*
R-squared	[...]*

Note: (a) Robust p-values in brackets; (b) *** p<0.01, ** p<0.05, * p<0.1; (c) the sample is composed by 28 large caps. These are securities that have composed the main index of Brussels (BEL 20) at any point throughout the period; (d) all regressions include a set of single-day event dummies; (e) the log of GDP per capita and the tick size dummy is omitted because of collinearity. The results for a regression including the log of the annual GDP per capita are equivalent. These results are therefore not reported.

Figure 7: Quarter-year-index coefficients from Regression 1 on normalised bid-ask spread 1/1/2000-31/12/2010 (see Table 5)



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, a dummy variable to control for the change in tick size, the MTF volume for Chi-X Europe and BATS, per capita annual GDP, market capitalisation and the security price. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of normalised bid-ask spread. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

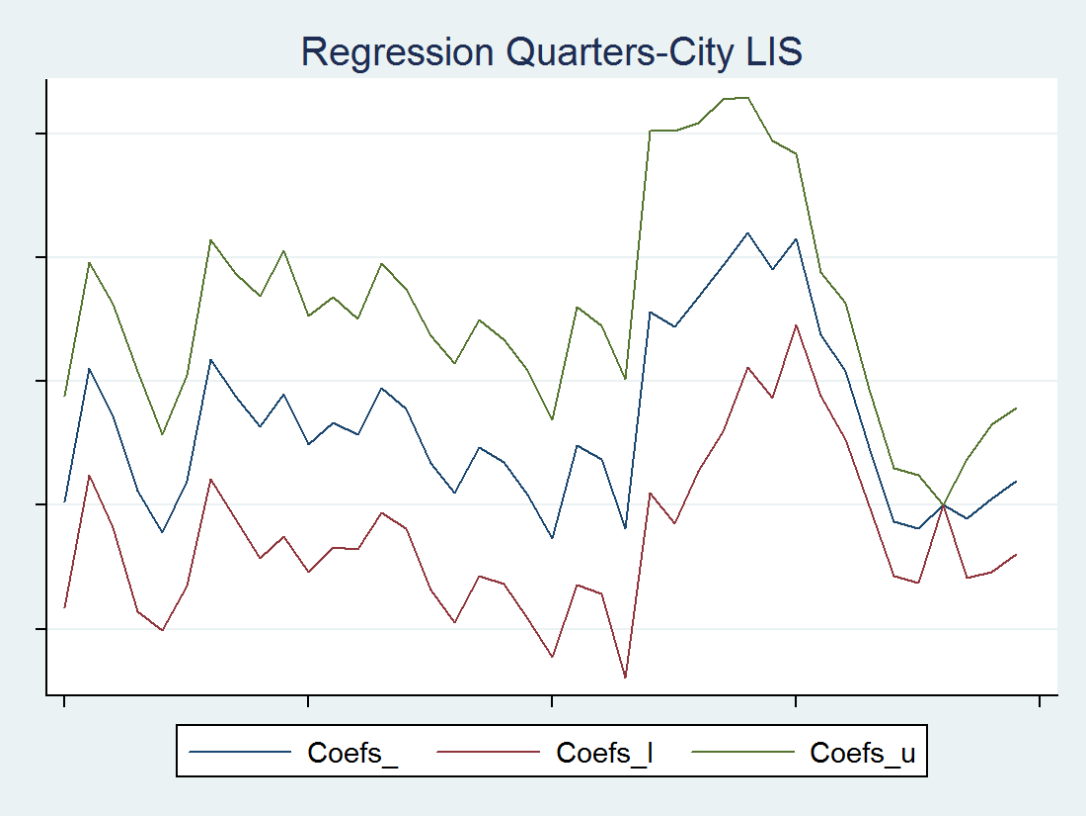
1.1.3.4. LISBON

Table 6: Regressions on normalised bid-ask spread of large caps in Lisbon - individual regression including quarter-year-index fixed effects, 1/12/2000-31/12/2010

Ln (bid-ask spread)	Reg.1
DAX Volatility (log of)	[...]*
	[...]*
Volume traded on the Frankfurt exchange (log of)	[...]*
	[...]*
Tick size dummy	[...]*
	[...]*
MTF Volume (log of)	[...]*
	[...]*
Last Price of security (log of)	[...]*
	[...]*
Market capitalisation (log of)	[...]*
	[...]*
Constant	[...]*
	[...]*
Quarter-year-index fixed effects	[...]*
Security fixed effects	[...]*
Observations	[...]*
R-squared	[...]*

Note: (a) Robust p-values in brackets; (b) *** p<0.01, ** p<0.05, * p<0.1; (c) the sample is composed by 34 large caps. These are securities that have composed the main index of Lisbon (PSI) at any point throughout the period; (d) all regressions include a set of single-day event dummies; (e) the log of GDP per capita is omitted because of collinearity from the first regression.. The results for a regression not including the log of the annual GDP per capita are equivalent. These results are therefore not reported.

Figure 8: Quarter-year-index coefficients from Regression 1 on normalised bid-ask spread 1/1/2000-31/12/2010 (see Table 6)



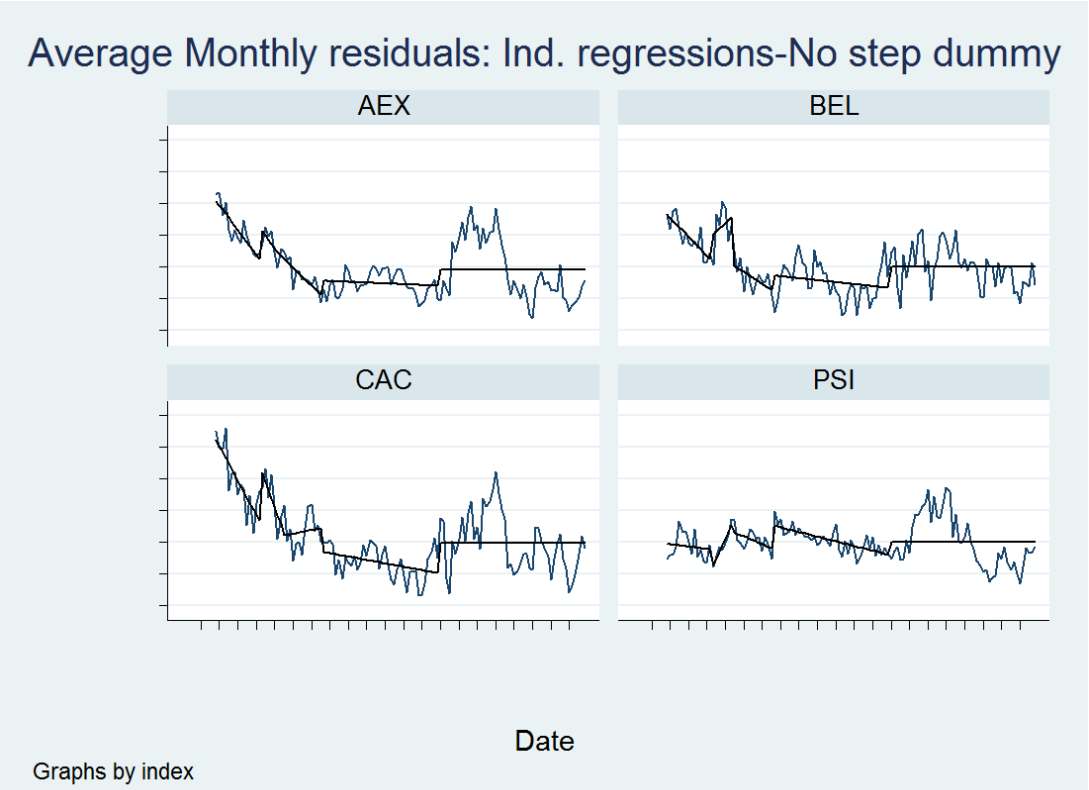
[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, a dummy variable to control for the change in tick size, the MTF volume for Chi-X Europe and BATS, per capita annual GDP, market capitalisation and the security price. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of normalised bid-ask spread. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange. Residuals from the Notifying Parties' specifications on bid-ask spread for individuals stock exchanges for the period 1/01/2000-31/12/2010

(8) As described in the Decision, the following graphs plot the average monthly residuals resulting from the Notifying Parties' preferred specification and a second specification including in addition the log of the annual GDP per capita.[7] Five different trends are then fitted to the residuals. These trends are fitted by regressing the average monthly residuals on these five trends, including an intercept for each phase. Each of these regressions is index specific. The five trends refer to the period prior to the merger, the two periods between mergers, a fourth trend until 31/12/2006 (pre-MiFID) and a fifth covering the remaining period.

[7] The control variables are the logs of DAX volatility, volume traded on the Frankfurt exchange, the last price of the security, market capitalisation, a list of daily event dummies, month-and security fixed effects. The same methodology is employed for the remaining liquidity measures.

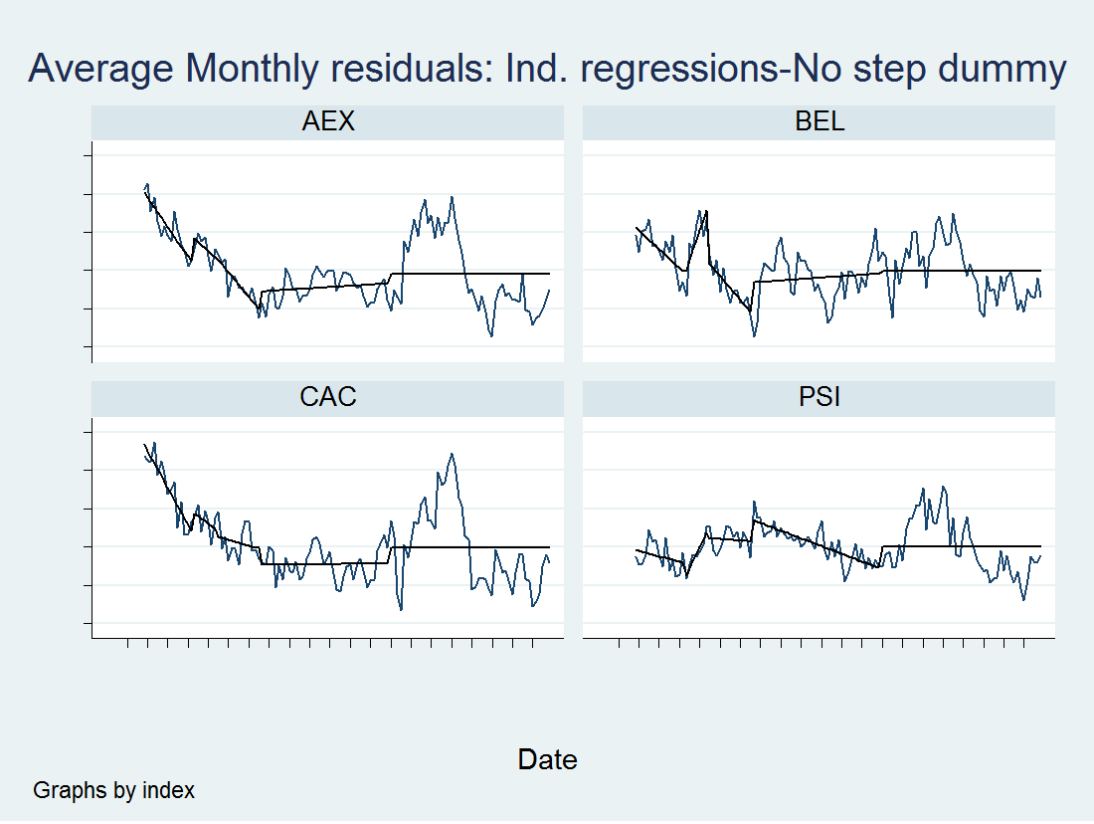
Figure 9: Monthly average residuals from the Notifying Parties' specification by stock exchange for the period 1/01/2000-31/12/2010



[ ]*

Note: The residuals plotted are monthly averages. The control variables are the logs of DAX volatility, volume traded on the Frankfurt exchange, MTF volume, the last price of the security, market capitalisation, tick size dummy, a list of daily event dummies, month-and security fixed effects. The regressions are run separately for the four exchanges. The black lines are trends fitted to the residuals with different slopes allowed for the different merger periods, and also for a different slope after 2007. The first trend slopes, that for the period before the Paris-Brussels integration are always statistically significantly different from zero and negative, except for PSI. For these three a Wald test reports that the trend pre-merger and the first trend post merger are statistically different. For the first trend post merger the slope is negative and statistically significant for CAC and PSI. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

Figure 10: Monthly average residuals from the Notifying Parties' specification by stock exchange for the period 1/01/2000-31/12/2010 (Including log GDP per capita)



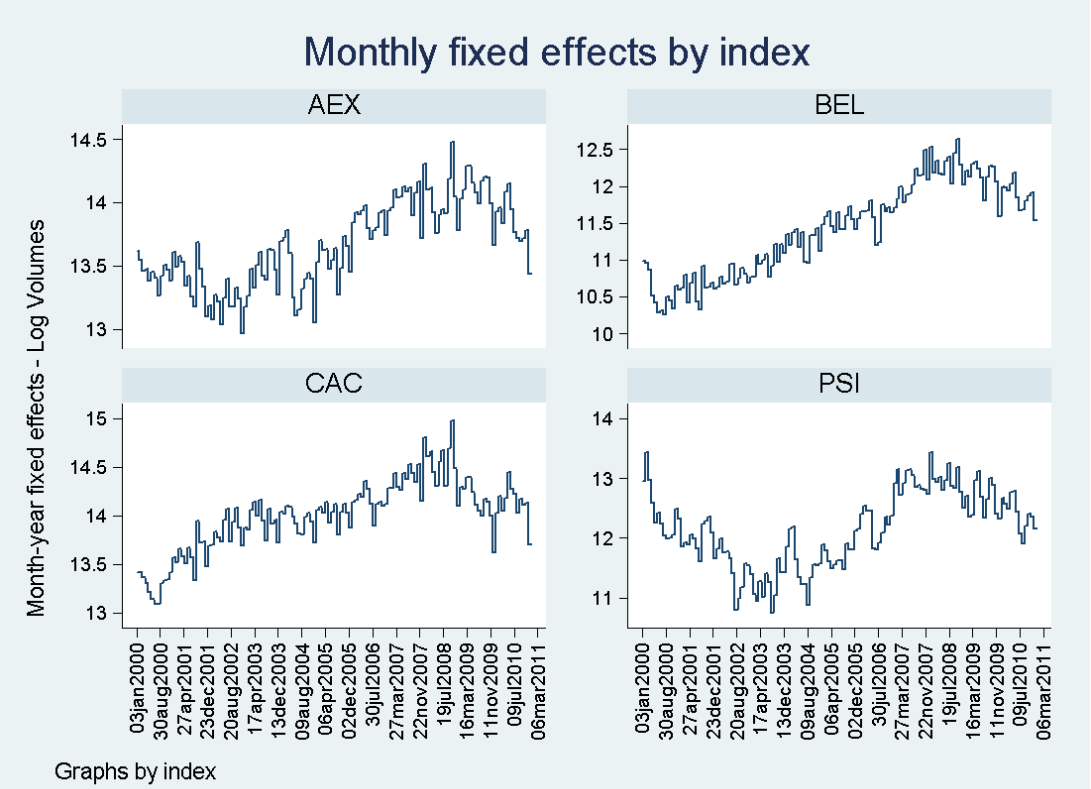
[ ]*

Note: The residuals plotted are monthly averages. The control variables are the logs of DAX volatility, volume traded on the Frankfurt exchange, MTF volume, tick size dummy, the last price of the security, market capitalisation, log of GDP per Capita, month-and security fixed effects. The regressions are run separately for the four exchanges. The black lines are trends fitted to the residuals with different slopes allowed for the different merger periods, and also for a different slope after 2007. The first trend slopes, that for the period before the Paris-Brussels integration are always statistically significantly different from zero and negative, except for PSI. For these three a Wald test reports that the trend pre-merger and the first trend post merger are statistically different. For the first trend post merger the slope is negative and statistically significant in the case of PSI. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

1.2. VOLUMES

1.2.1. Year-month fixed effects on volumes for the period 1/01/2000-31/12/2010

Figure 11: Year-month fixed effects on volumes respectively for CAC-40, BEL-20, PSI and AEX securities for the period 1/1/2000-31/12/2010



[ ]*

Note: The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

1.2.2. Pooled regression for the period 1/01/2000-31/12/2010

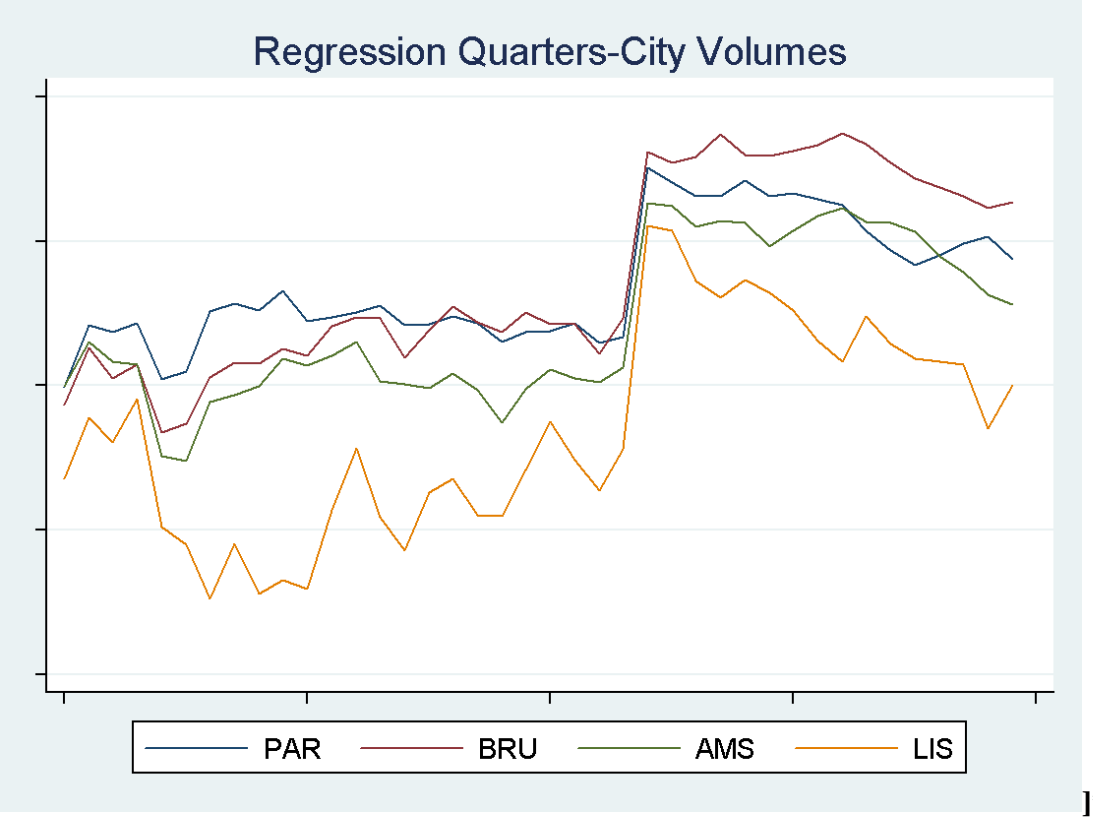
Table 7: Regressions on volumes of trades of large caps in Paris, Amsterdam, Brussels and Lisbon - pooled regression including quarter-year-index fixed effects, 1/12/2000-31/12/2010

Ln (volumes)	Reg.1
DAX Volatility (log of)	[...]*
	[...]*
Volume traded on the Frankfurt exchange (log of)	[...]*
	[...]*
Tick change dummy	[...]*
	[...]*

MTF Volume (log of)	[...]*
	[...]*
Last Price of security (log of)	[...]*
	[...]*
Market capitalisation (log of)	[...]*
	[...]*
Constant	[...]*
	[...]*
Quarter-year-index fixed effects	[...]*
Security fixed effects	[...]*
Observations	[...]*
R-squared	[...]*

Note: (a) Robust p-values in brackets; (b) *** p<0.01, ** p<0.05, * p<0.1; (c) the sample is composed by 158 large caps. These are securities that have composed the main index of Paris, Brussels, Amsterdam and Lisbon (CAC 40, BEL20, AEX and the PSI) at any point throughout the period; (d) all regressions include a set of single-day event dummies; (e) The log of annual GDP per capita is omitted because of collinearity. Therefore, a regression without the log of annual GDP per capita is not reported as it would yield the same results.

Figure 12: Quarter-year-index coefficients from Regression 1 on volumes 1/1/2000-31/12/2010 (see Table 7)



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, a dummy variable to control for the change in tick size, the MTF volume for Chi-X Europe and BATS, per capita annual GDP, market capitalisation and the security price. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of volumes. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

1.2.3. Individual regression for the period 1/01/2000-31/12/2010

1.2.3.1. PARIS

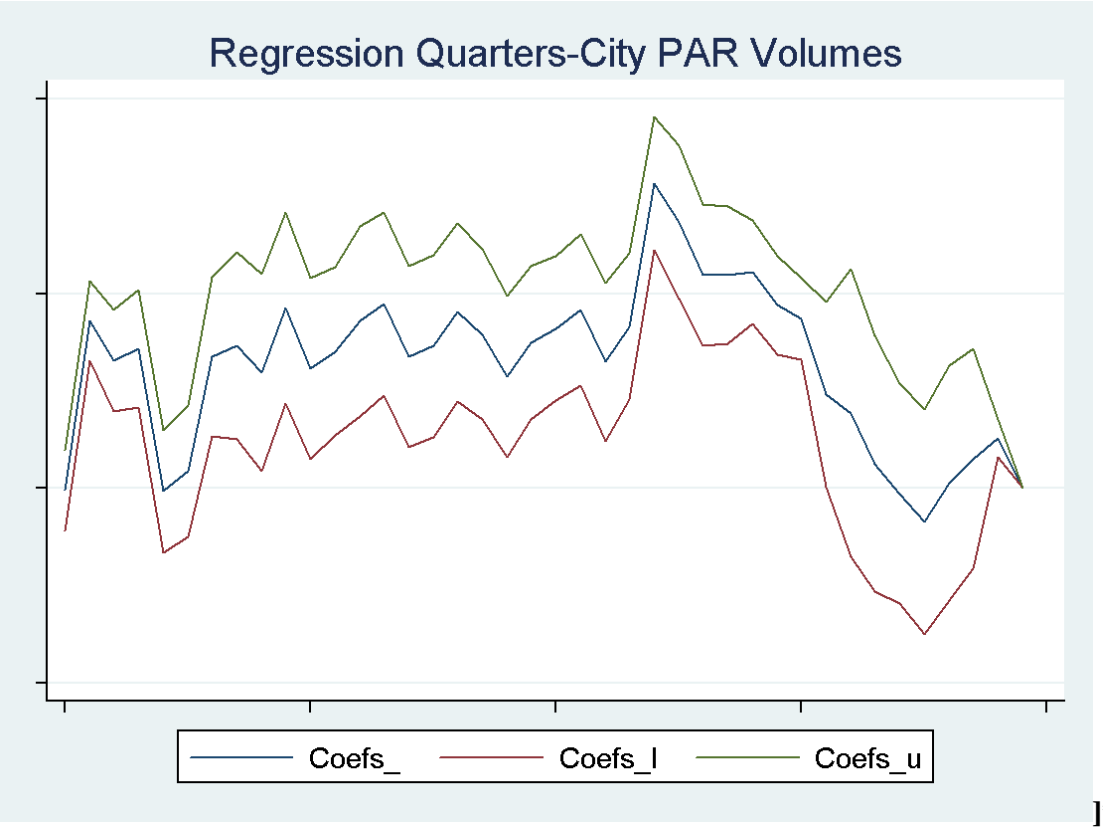
Table 8: Regressions on volumes of large caps in Paris - individual regression including quarter-year-index fixed effects, 1/12/2000-31/12/2010

Ln (volumes)	Reg.1
DAX Volatility (log of)	[...]*
	[...]*
Volume traded on the Frankfurt exchange (log of)	[...]*
	[...]*
Tick change dummy	[...]*

	[...]*
MTF Volume (log of)	[...]*
	[...]*
Last Price of security (log of)	[...]*
	[...]*
Market capitalisation (log of)	[...]*
	[...]*
Constant	[...]*
	[...]*
Quarter-year-index fixed effects	[...]*
Security fixed effects	[...]*
Observations	[...]*
R-squared	[...]*

Note: (a) Robust p-values in brackets; (b) *** p<0.01, ** p<0.05, * p<0.1; (c) the sample is composed by 51 large caps. These are securities that have composed the main index of Paris (CAC 40) at any point throughout the period; (d) all regressions include a set of single-day event dummies; (e) the log of GDP per capita is omitted because of collinearity. Therefore, a regression without the log of annual GDP per capita is not reported as it would yield the same results.

Figure 13: Quarter-year-index coefficients from Regression 1 on volumes 1/1/2000-31/12/2010 (see Table 8)



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, a dummy variable to control for the change in tick size, the MTF volume for Chi-X Europe and BATS, per capita annual GDP, market capitalisation and the security price. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of volumes. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

1.2.3.2. AMSTERDAM

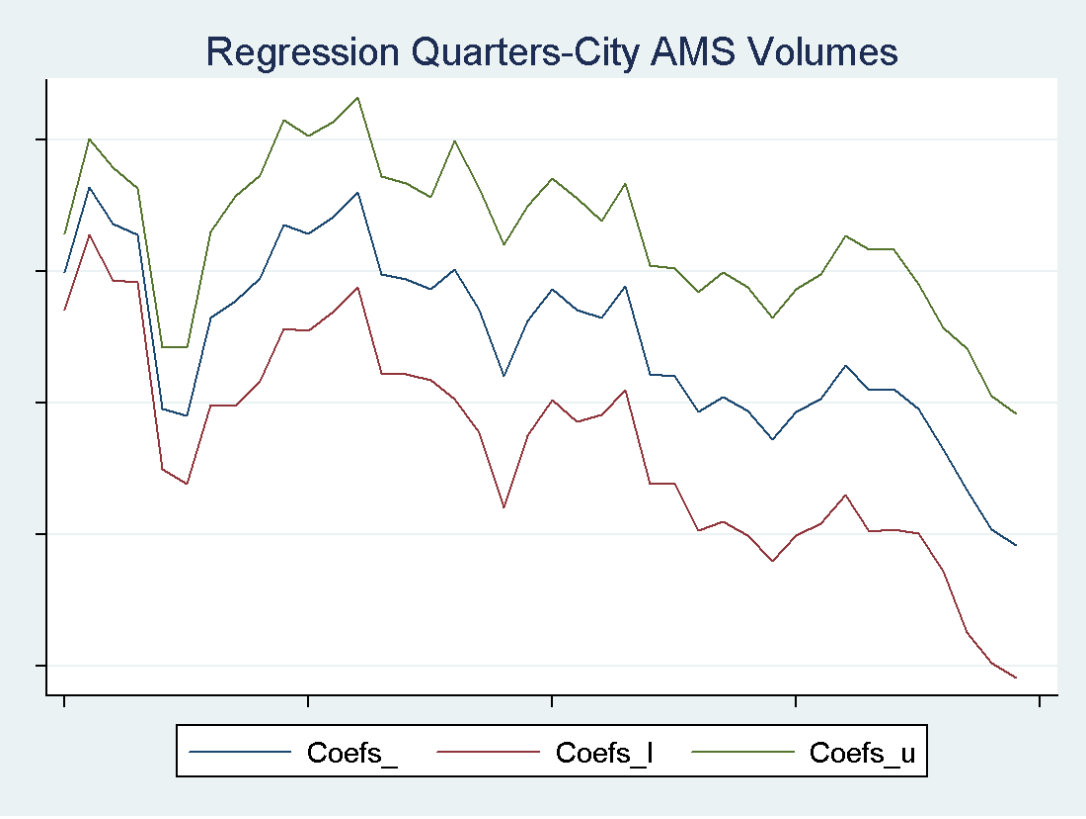
Table 9: Regressions on volumes of large caps in Amsterdam - individual regression including quarter-year-index fixed effects, 1/12/2000-31/12/2010

Ln (volumes)	Reg.1
DAX Volatility (log of)	[...]*
	[...]*
Volume traded on the Frankfurt exchange (log of)	[...]*
	[...]*

MTF Volume (log of)	[...]*
	[...]*
Last Price of security (log of)	[...]*
	[...]*
Market capitalisation (log of)	[...]*
	[...]*
Constant	[...]*
	[...]*
Quarter-year-index fixed effects	[...]*
Security fixed effects	[...]*
Observations	[...]*
R-squared	[...]*

Note: (a) Robust p-values in brackets; (b) *** p<0.01, ** p<0.05, * p<0.1; (c) the sample is composed by 45 large caps. These are securities that have composed the main index of Amsterdam (AEX) at any point throughout the period; (d) all regressions include a set of single-day event dummies; (e) the tick size dummy and the log of GDP per capita are omitted from the first regression because of collinearity and the tick size dummy is omitted from the second regression because of collinearity.

Figure 14: Quarter-year-index coefficients from Regression 1 on volumes 1/1/2000-31/12/2010 (see Table 9 above)



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, a dummy variable to control for the change in tick size, the MTF volume for Chi-X Europe and BATS, per capita annual GDP, market capitalisation and the security price. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of volumes. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

1.2.3.3. BRUSSELS

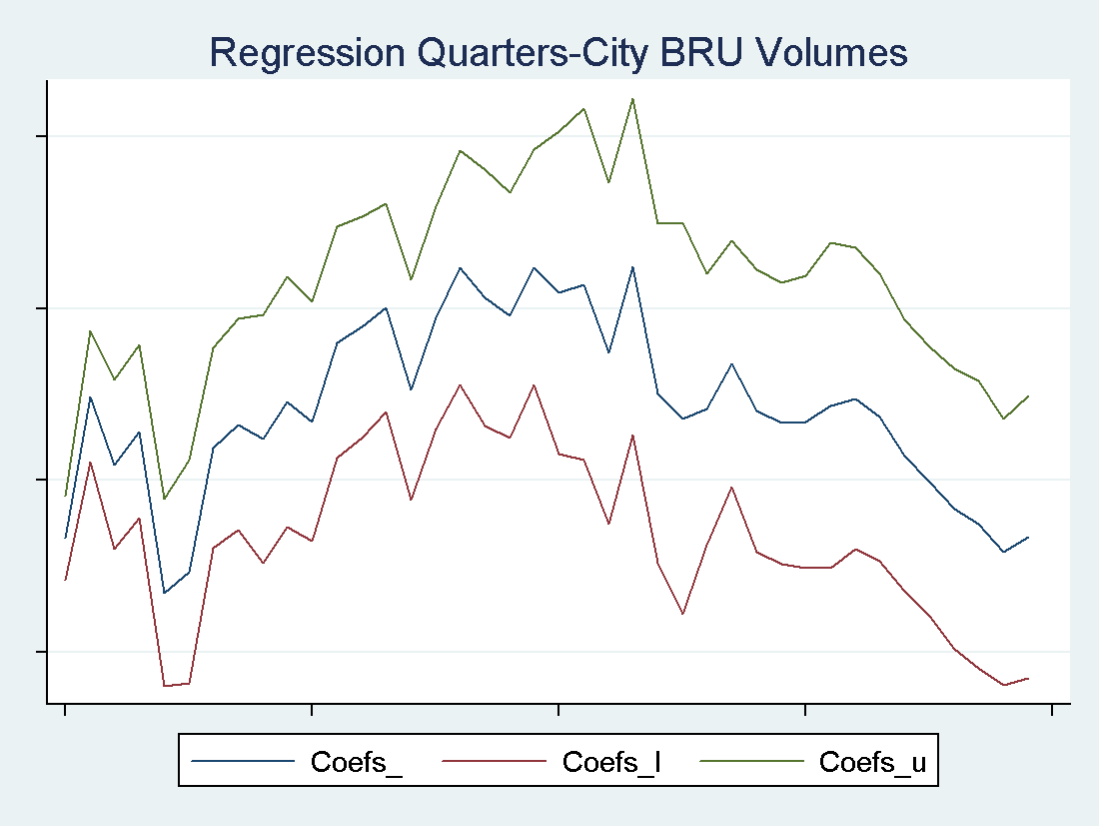
Table 10: Regressions on volumes of large caps in Brussels - individual regression including quarter-year-index fixed effects, 1/12/2000-31/12/2010

Ln (volumes)	Reg.1
DAX Volatility (log of)	[...]*
	[...]*
Volume traded on the Frankfurt exchange (log of)	[...]*
	[...]*
MTF Volume (log of)	[...]*

	[...]*
Last Price of security (log of)	[...]*
	[...]*
Market capitalisation (log of)	[...]*
	[...]*
Constant	[...]*
	[...]*
Quarter-year-index fixed effects	[...]*
Security fixed effects	[...]*
Observations	[...]*
R-squared	[...]*

Note: (a) Robust p-values in brackets; (b) *** p<0.01, ** p<0.05, * p<0.1; (c) the sample is composed by 28 large caps. These are securities that have composed the main index of Brussels (BEL 20) at any point throughout the period; (d) all regressions include a set of single-day event dummies; (e) the log of GDP per capita and the tick size dummy is omitted because of collinearity. Therefore a regression without log of annual GDP per capita is not reported.

Figure 15: Quarter-year-index coefficients from Regression 1 on volumes 1/1/2000-31/12/2010 (see Table 10)



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, a dummy variable to control for the change in tick size, the MTF volume for Chi-X Europe and BATS, per capita annual GDP, market capitalisation and the security price. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of volumes. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

1.2.3.4. LISBON

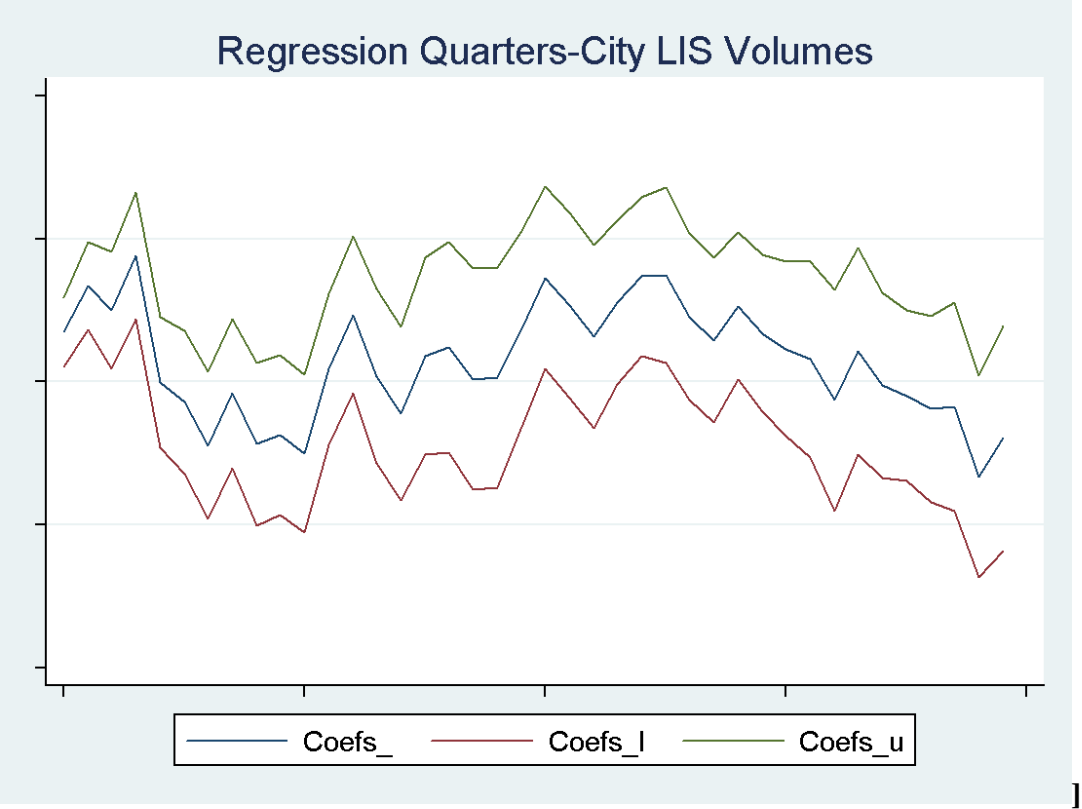
Table 11: Regressions on volumes of large caps in Lisbon - individual regression including quarter-year-index fixed effects, 1/12/2000-31/12/2010

Ln (volumes)	Reg.1
DAX Volatility (log of)	[...]*
	[...]*
Volume traded on the Frankfurt exchange (log of)	[...]*
	[...]*
MTF Volume (log of)	[...]*

	[...]*
Last Price of security (log of)	[...]*
	[...]*
Market capitalisation (log of)	[...]*
	[...]*
Constant	[...]*
	[...]*
Quarter-year-index fixed effects	[...]*
Security fixed effects	[...]*
Observations	[...]*
R-squared	[...]*

Note: (a) Robust p-values in brackets; (b) *** p<0.01, ** p<0.05, * p<0.1; (c) the sample is composed by 34 large caps. These are securities that have composed the main index of Lisbon (PSI) at any point throughout the period; (d) all regressions include a set of single-day event dummies; (e) the log of GDP per capita and the tick size dummy is omitted because of collinearity. A regression without log of annual GDP per capita yields the same results and it is therefore not reported.

Figure 16: Quarter-year-index coefficients from Regression 1 on volumes 1/1/2000-31/12/2010 (see Table 11)

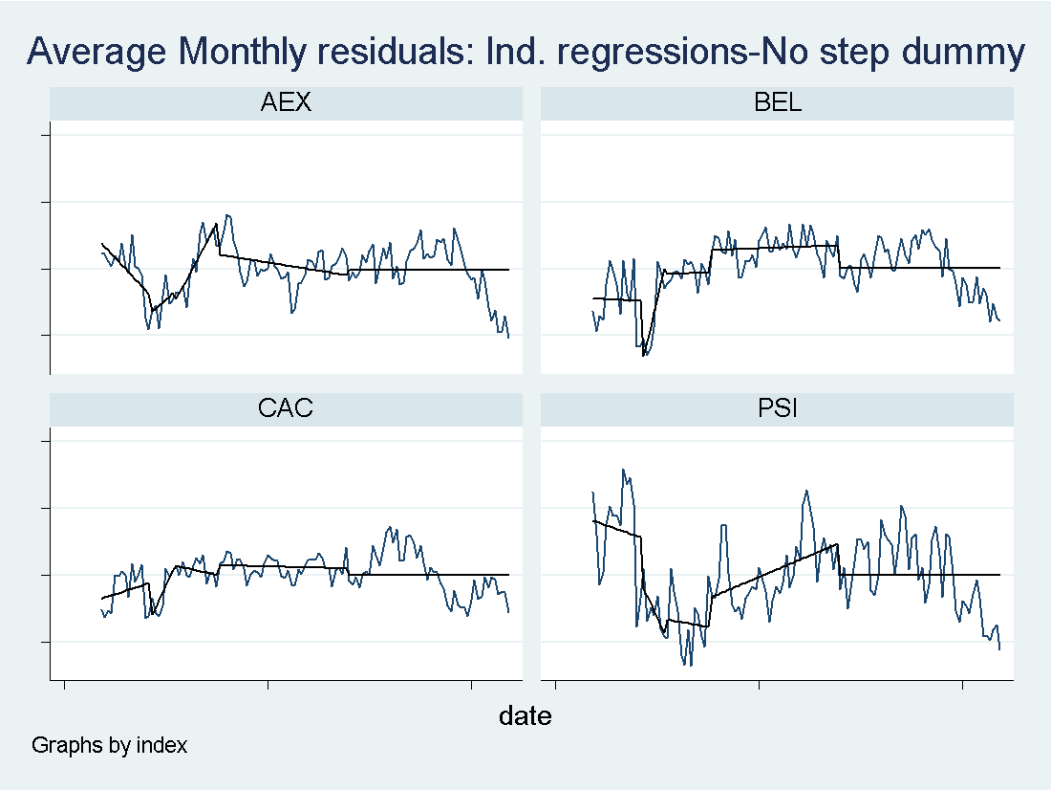


[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, a dummy variable to control for the change in tick size, the MTF volume for Chi-X Europe and BATS, per capita annual GDP, market capitalisation and the security price. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of volumes. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

1.2.4. Residuals from the Notifying Parties' specifications on volumes for individuals stock exchanges for the period 1/01/2000-31/12/2010

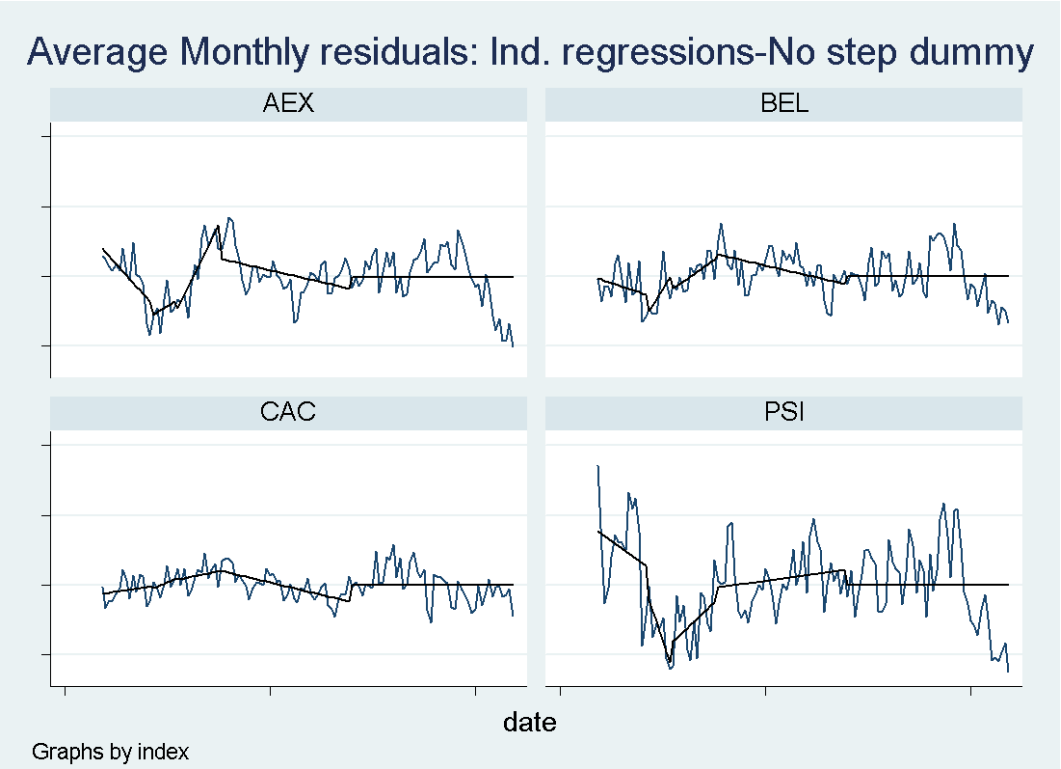
Figure 17: Monthly average residuals from the Notifying Parties' specification on volumes by stock exchange for the period 1/01/2000-31/12/2010



[ ]*

Note: The residuals plotted are monthly averages. The control variables are the logs of DAX volatility, volume traded on the Frankfurt exchange, MTF volume, tick size dummy, the last price of the security, market capitalisation, a list of daily event dummies, month-and security fixed effects. The regressions are run separately for the four exchanges. The black lines are trends fitted to the residuals with different slopes allowed for the different merger periods, and also for a different slope after 2007. The first trend slopes, that for the period before the Paris-Brussels integration, is statistically significantly different from zero and negative in the case of AEX. The trend slopes after the last merger is statistically significant different from zero and positive in the case of PSI. A Wald test reports that in the case of AEX the trend pre-merger and the first trend post merger are statistically different. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

Figure 18: Monthly average residuals from the Notifying Parties' specification on volumes by stock exchange for the period 1/01/2000-31/12/2010 (Including log GDP per capita)



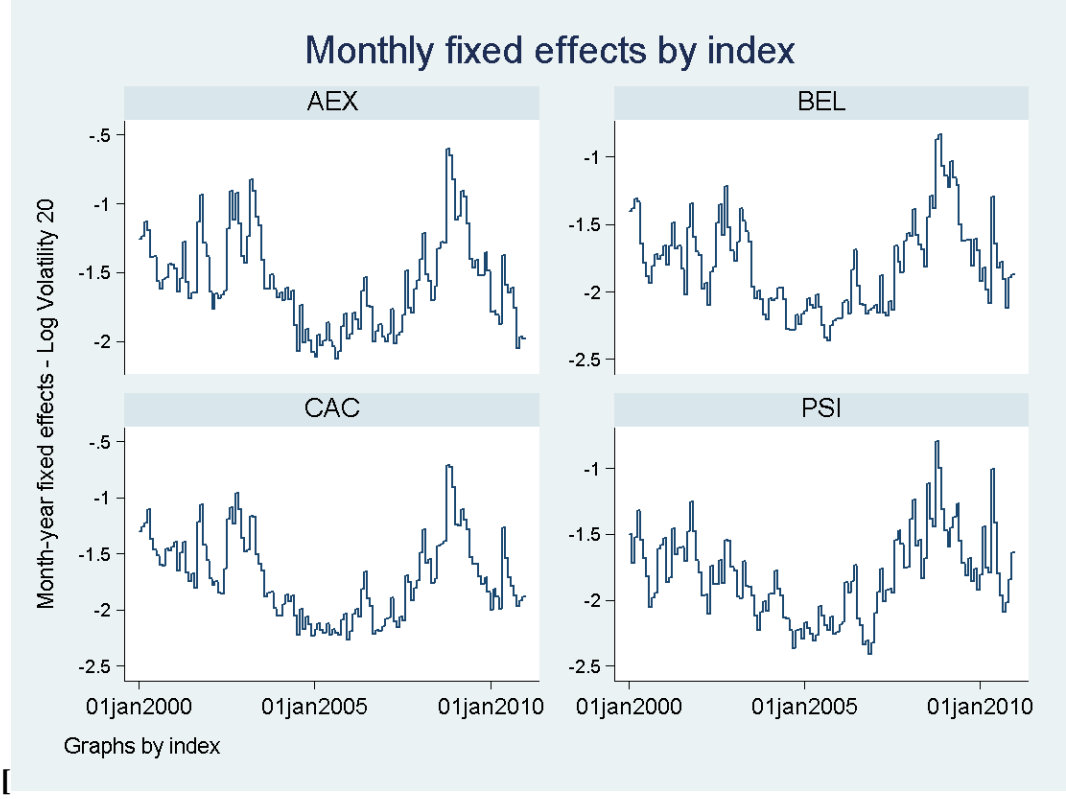
[ ]*

Note: The residuals plotted are monthly averages. The control variables are the logs of DAX volatility, volume traded on the Frankfurt exchange, MTF volume, tick size dummy, the last price of the security, market capitalisation, log of GDP per Capita, month-and security fixed effects. The regressions are run separately for the four exchanges. The black lines are trends fitted to the residuals with different slopes allowed for the different merger periods, and also for a different slope after 2007. The first trend slopes, that for the period before the Paris-Brussels integration, are statistically significantly different from zero in the case of AEX, while the slope of the trends post merger are statistically significant different from zero and negative always except for PSI. A Wald test reports that in the case of AEX the trend pre-merger and the first trend post merger are statistically different. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

1.3. VOLATILITY

1.3.1. Year-month fixed effects for the period 1/01/2000-31/12/2010

Figure 19: Year-month fixed effects on 20 day-historical volatility respectively for CAC-40, BEL-20, AEX and PSI securities for the period 1/1/2000-31/12/2010



[ ]*

Note: The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

1.3.2. Pooled regression for the period 1/01/2000-31/12/2010

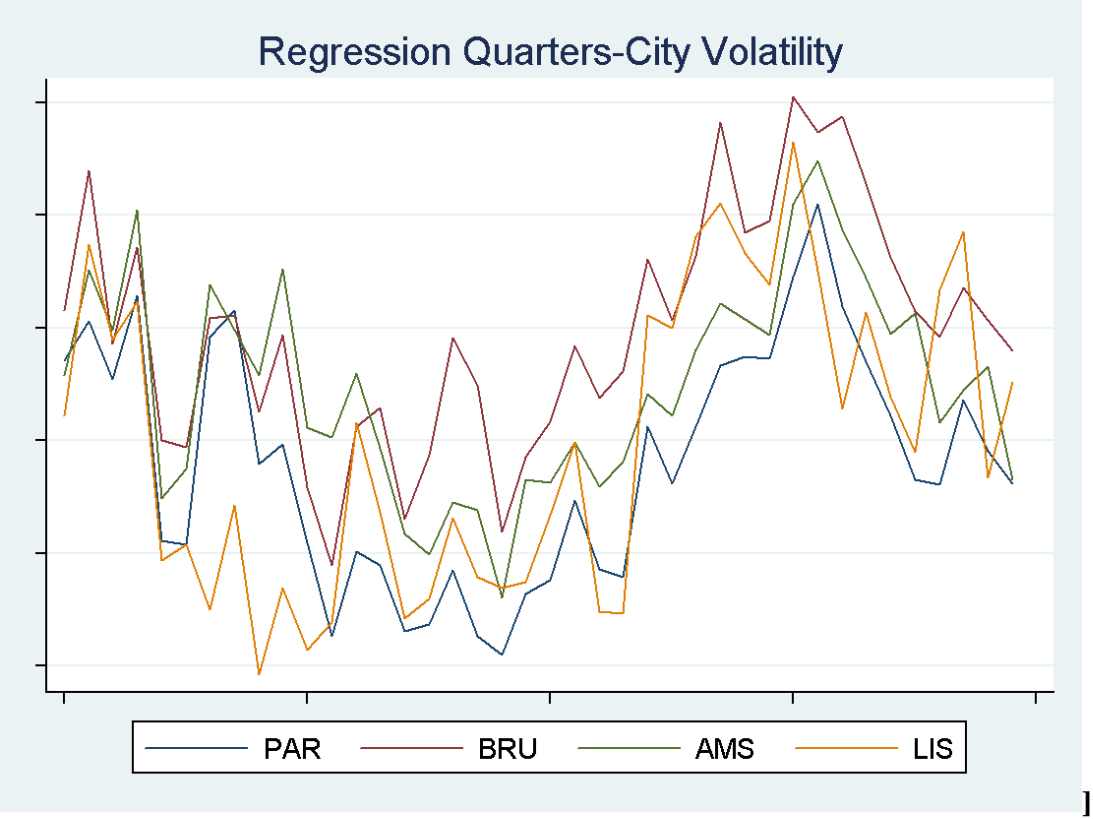
Table 12: Regressions on 20 day historical volatility of large caps in Paris, Amsterdam, Brussels and Lisbon- pooled regression including quarter-year-index fixed effects, 1/12/2000-31/12/2010

Ln(Volatility)	**Reg.1**
DAX Volatility (log of)	[...]*
	[...]*
Volume traded on the Frankfurt exchange (log of)	[...]*
	[...]*
Tick change dummy	[...]*
	[...]*

MTF Volume (log of)	[...]*
	[...]*
Last Price of security (log of)	[...]*
	[...]*
Market capitalisation (log of)	[...]*
	[...]*
Constant	[...]*
	[...]*
Quarter-year-index fixed effects	[...]*
Security fixed effects	[...]*
Observations	[...]*
R-squared	[...]*

Note: (a) Robust p-values in brackets; (b) *** p<0.01, ** p<0.05, * p<0.1; (c) the sample is composed by 158 large caps. These are securities that have composed the main index of Paris, Brussels, Amsterdam and Lisbon (CAC 40, BEL20, AEX and the PSI) at any point throughout the period; (d) all regressions include a set of single-day event dummies; (e) the log of GDP per capita is omitted because of collinearity. The regression without log of annual GDP per capita yields the same results and therefore is not reported.

Figure 20: Quarter-year-index coefficients from Regression 1 on 20 day historical volatility 1/1/2000-31/12/2010 (see Table 12)



[ ]*

Note: The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, a dummy variable to control for the change in tick size, the MTF volume for Chi-X Europe and BATS, per capita annual GDP, market capitalisation and the security price. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of 20 day historical volatility.

1.3.3. Individual regression for the period 1/01/2000-31/12/2010

1.3.3.1. PARIS

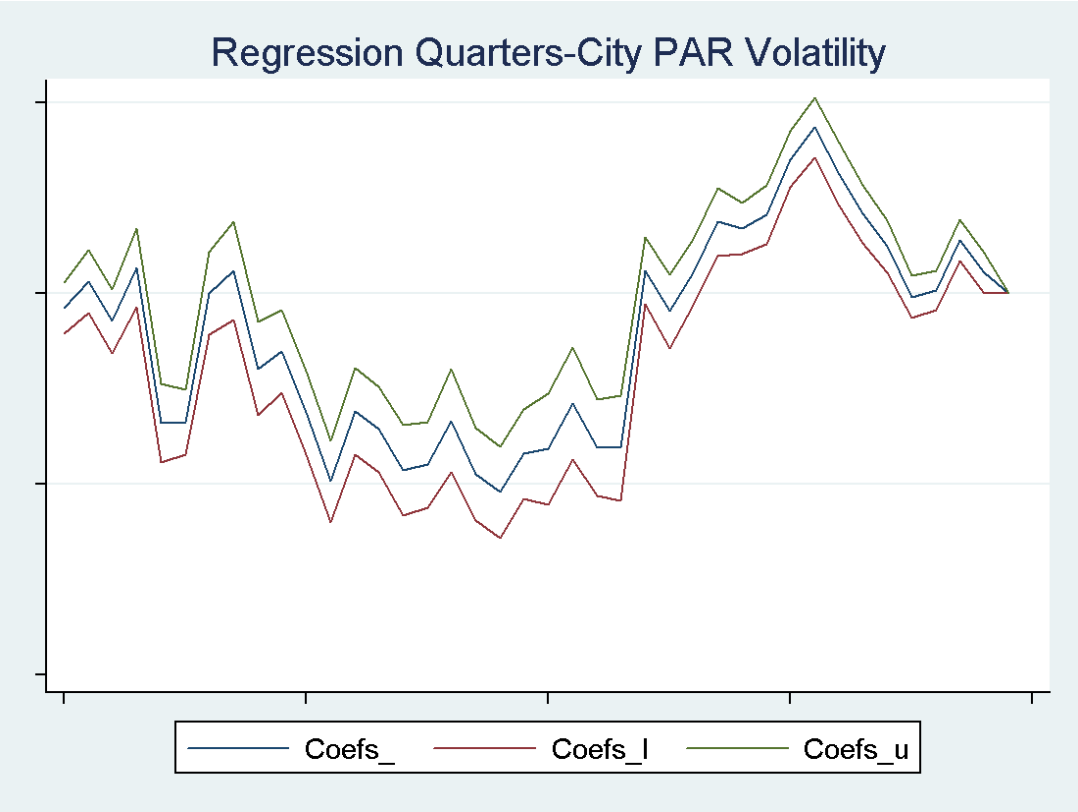
Table 13: Regressions on volatility of large caps in Paris - individual regression including quarter-year-index fixed effects, 1/12/2000-31/12/2010

Ln(volatility)	**Reg.1**
DAX Volatility (log of)	[...]*
	[...]*
Volume traded on the Frankfurt exchange (log of)	[...]*
	[...]*
Tick change dummy	[...]*
	[...]*

MTF Volume (log of)	[...]*
	[...]*
Last Price of security (log of)	[...]*
	[...]*
Market capitalisation (log of)	[...]*
	[...]*
Constant	[...]*
	[...]*
Quarter-year-index fixed effects	[...]*
Security fixed effects	[...]*
Observations	[...]*
R-squared	[...]*

Note: (a) Robust p-values in brackets; (b) *** p<0.01, ** p<0.05, * p<0.1; (c) the sample is composed by 51 large caps. These are securities that have composed the main index of Paris (CAC 40) at any point throughout the period; (d) all regressions include a set of single-day event dummies; (e) the log of GDP per capita is omitted from the second regression because of collinearity.

Figure 21: Quarter-year-index coefficients from Regression 1 on volatility 1/1/2000-31/12/2010



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, a dummy variable to control for the change in tick size, the MTF volume for Chi-X Europe and BATS, per capita annual GDP, market capitalisation and the security price. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of 20 day historical volatility. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

1.3.3.2. AMSTERDAM

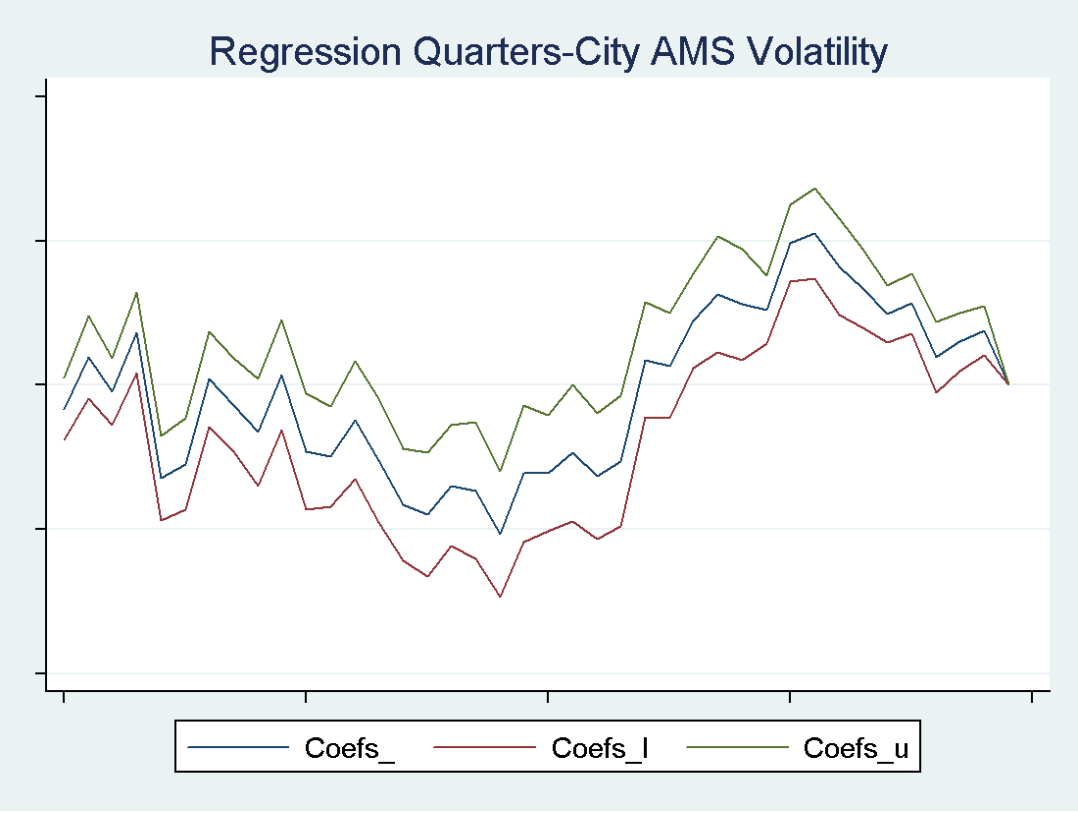
Table 14: Regressions on volatility of large caps in Amsterdam - individual regression including quarter-year-index fixed effects, 1/12/2000-31/12/2010

Ln(volatility)	Reg.1
DAX Volatility (log of)	[...]*
	[...]*
Volume traded on the Frankfurt exchange (log of)	[...]*
	[...]*
Tick change dummy	[...]*

	[...]*
MTF Volume (log of)	[...]*
	[...]*
Last Price of security (log of)	[...]*
	[...]*
Market capitalisation (log of)	[...]*
	[...]*
Constant	[...]*
	[...]*
Quarter-year-index fixed effects	[...]*
Security fixed effects	[...]*
Observations	[...]*
R-squared	[...]*

Note: (a) Robust p-values in brackets; (b) *** p<0.01, ** p<0.05, * p<0.1; (c) the sample is composed by 45 large caps. These are securities that have composed the main index of Amsterdam (AEX) at any point throughout the period; (d) all regressions include a set of single-day event dummies; (e) the log of GDP per capita is omitted because of collinearity from the first regression.

Figure 22: Quarter-year-index coefficients from Regression 1 on volatility 1/1/2000-31/12/2010 (see Table 14)



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, a dummy variable to control for the change in tick size, the MTF volume for Chi-X Europe and BATS, per capita annual GDP, market capitalisation and the security price. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of 20 day historical volatility. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

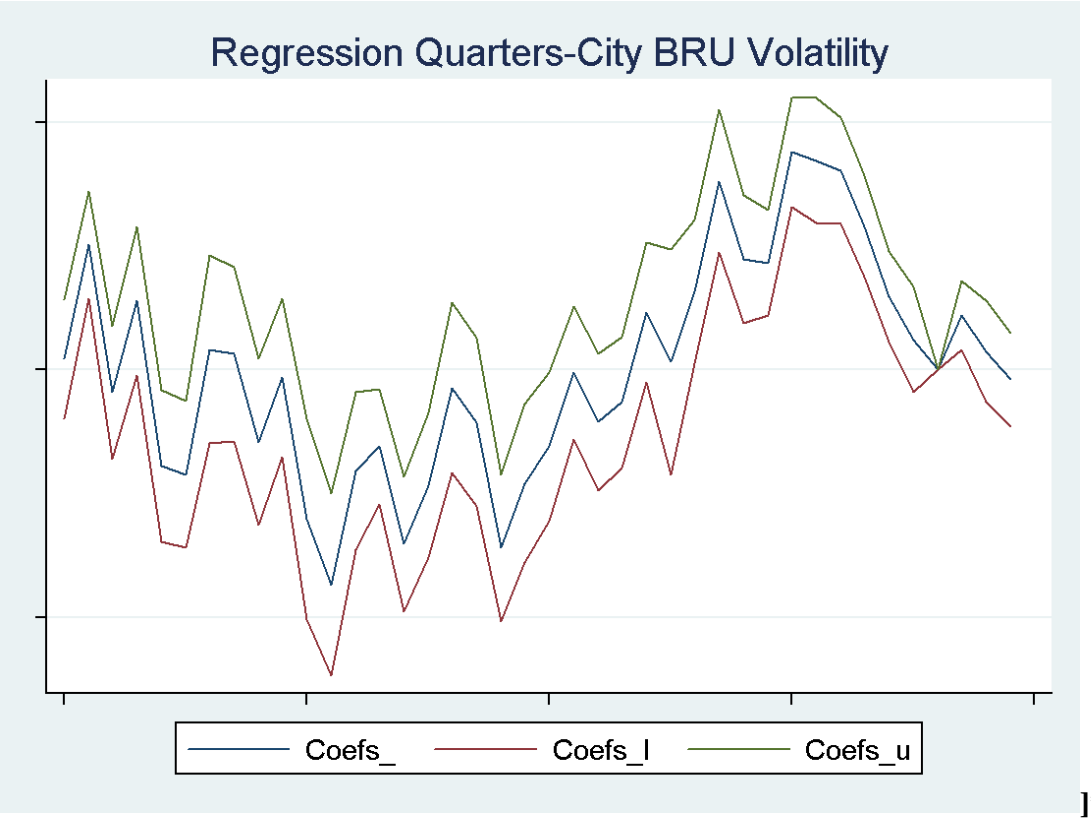
1.3.3.3. BRUSSELS

Table 15: Regressions on volatility of large caps in Brussels - individual regression including quarter-year-index fixed effects, 1/12/2000-31/12/2010

Ln(volatility)	Reg.1
DAX Volatility (log of)	[...]*
	[...]*
Volume traded on the Frankfurt exchange (log of)	[...]*
	[...]*
Tick change dummy	[...]*
	[...]*
MTF Volume (log of)	[...]*
	[...]*
Last Price of security (log of)	[...]*
	[...]*
Market capitalisation (log of)	[...]*
	[...]*
Constant	[...]*
	[...]*
Quarter-year-index fixed effects	[...]*
Security fixed effects	[...]*
Observations	[...]*
R-squared	[...]*

Note: (a) Robust p-values in brackets; (b) *** p<0.01, ** p<0.05, * p<0.1; (c) the sample is composed by 28 large caps. These are securities that have composed the main index of Brussels (BEL 20) at any point throughout the period; (d) all regressions include a set of single-day event dummies; (e) the log of GDP per capita is omitted because of collinearity from the first regression.

Figure 23: Quarter-year-index coefficients from Regression 1 on volatility 1/1/2000-31/12/2010 (see Table 15)



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, a dummy variable to control for the change in tick size, the MTF volume for Chi-X Europe and BATS, per capita annual GDP, market capitalisation and the security price. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of 20 day historical volatility. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

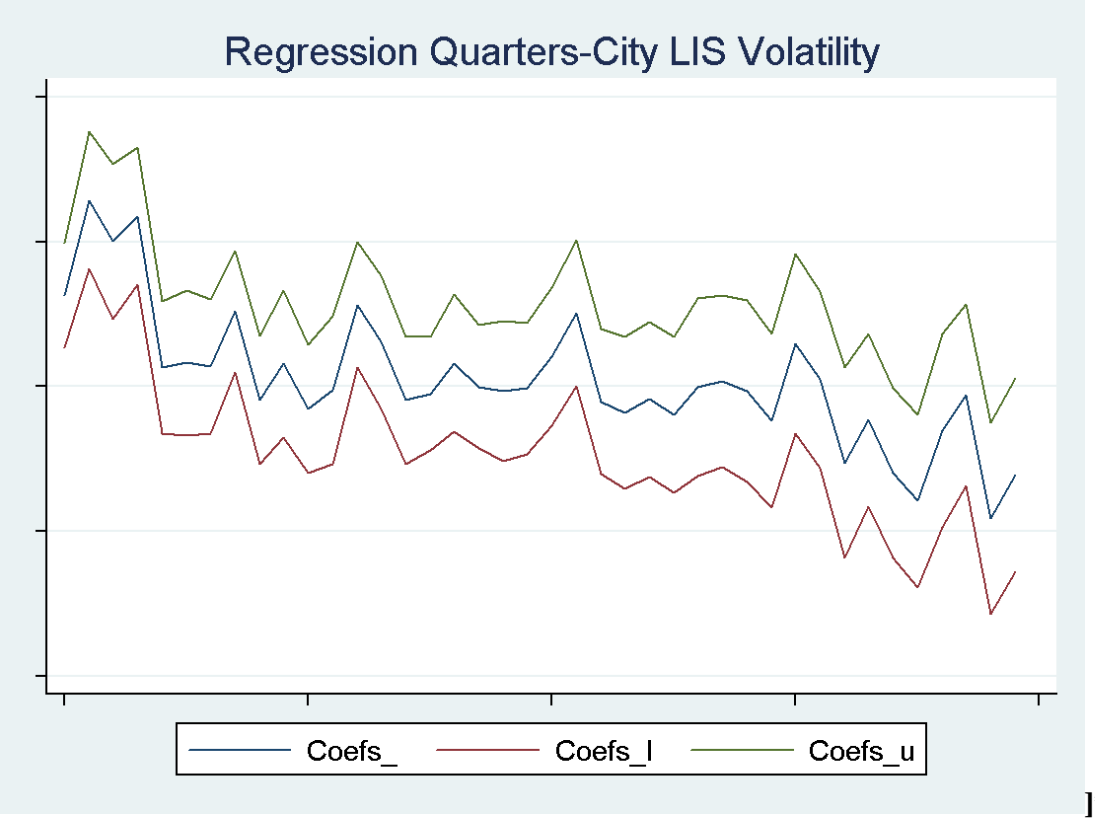
1.3.3.4. LISBON

Table 16: Regressions on volatility of large caps in Lisbon - individual regression including quarter-year-index fixed effects, 1/12/2000-31/12/2010

Ln(volatility)	Reg.1
DAX Volatility (log of)	[...]*
	[...]*
Volume traded on the Frankfurt exchange (log of)	[...]*
	[...]*
MTF Volume (log of)	[...]*
	[...]*
Last Price of security (log of)	[...]*
	[...]*
Market capitalisation (log of)	[...]*
	[...]*
Constant	[...]*
	[...]*
Quarter-year-index fixed effects	[...]*
Security fixed effects	[...]*
Observations	[...]*
R-squared	[...]*

Note: (a) Robust p-values in brackets; (b) *** p<0.01, ** p<0.05, * p<0.1; (c) the sample is composed by 34 large caps. These are securities that have composed the main index of Lisbon (PSI) at any point throughout the period; (d) all regressions include a set of single-day event dummies; (e) the log of GDP per capita and the tick size dummy is omitted because of collinearity from the first regression and the tick size dummy is omitted respectively from the second regression.

Figure 24: Quarter-year-index coefficients from Regression 1 on volatility 1/1/2000-31/12/2010 (see Table 16)

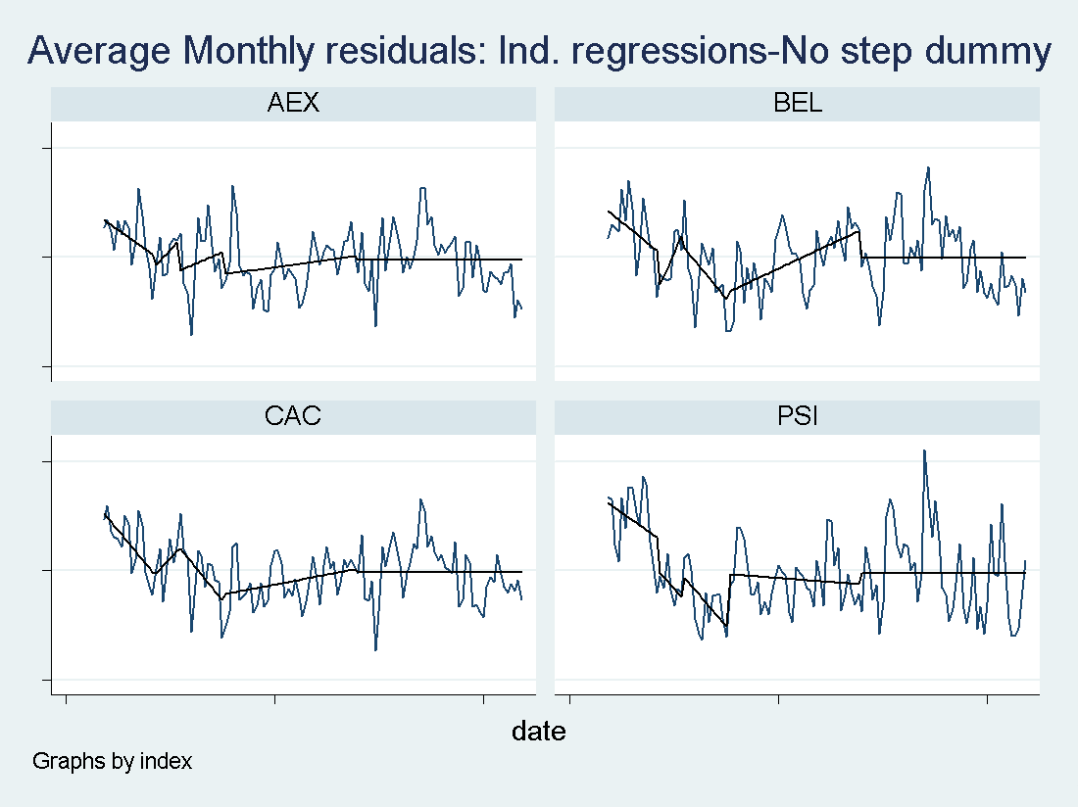


[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, a dummy variable to control for the change in tick size, the MTF volume for Chi-X Europe and BATS, per capita annual GDP, market capitalisation and the security price. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of 20 day historical volatility. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

1.3.4. Residuals from the Notifying Parties' specifications 20 day historical volatility for individuals stock exchanges for the period 1/01/2000-31/12/2010

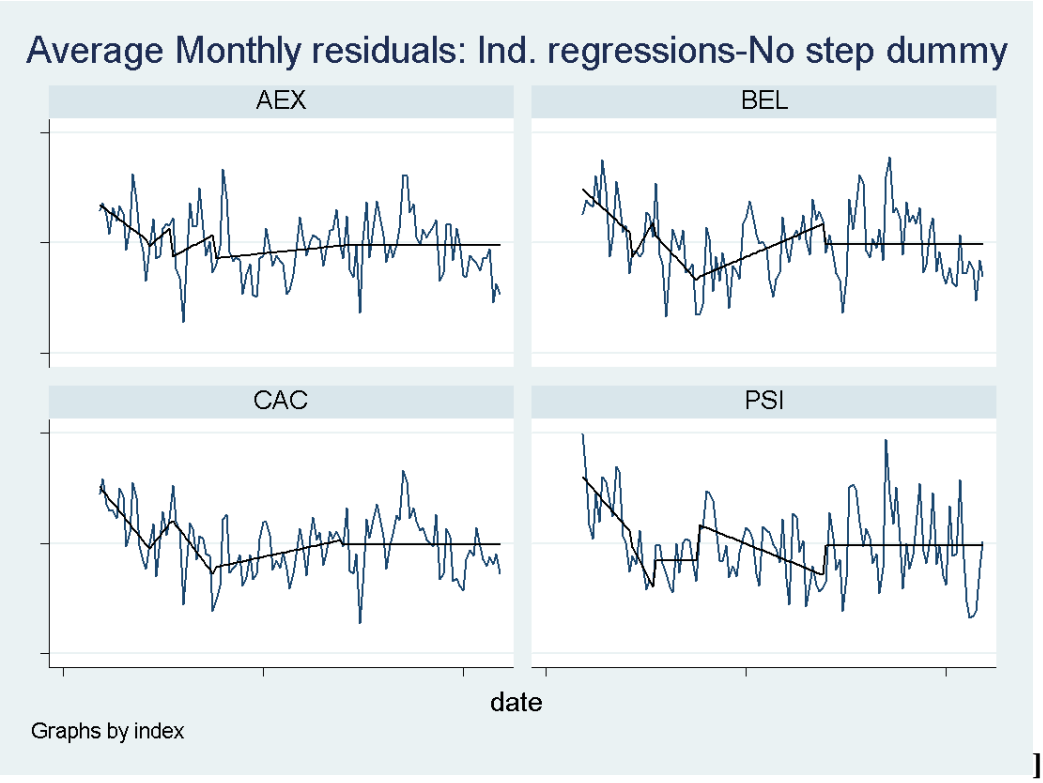
Figure 25: Monthly average residuals from the Notifying Parties' specification on 20 day historical volatility by stock exchange for the period 1/01/2000-31/12/2010



[ ]*

Note: The residuals plotted are monthly averages. The control variables are the logs of DAX volatility, volume traded on the Frankfurt exchange, MTF volume, tick size dummy, the last price of the security, market capitalisation, a dummy for the change in tick size, a list of daily event dummies, month-and security fixed effects. The regressions are run separately for the four exchanges. The black lines are trends fitted to the residuals with different slopes allowed for the different merger periods, and also for a different slope after 2007. The first trend slopes, that for the period before the Paris-Brussels integration are statistically significantly different from zero and negative for CAC. The slope of the post-merger trend is statistically different from zero and positive in the case of BEL and CAC. A Wald test reports that in the case of BEL and CAC the trend pre-merger and the first trend post merger are statistically different. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

Figure 26: Monthly average residuals from the Notifying Parties' specification on 20 day historical volatility by stock exchange for the period 1/01/2000-31/12/2010 (Including log GDP per capita)



[ ]*

Note: The residuals plotted are monthly averages. The control variables are the logs of DAX volatility, volume traded on the Frankfurt exchange, MTF volume, tick size dummy, the last price of the security, market capitalisation, a dummy for the change in tick size, log of GDP per Capita, month-and security fixed effects. The regressions are run separately for the four exchanges. The black lines are trends fitted to the residuals with different slopes allowed for the different merger periods, and also for a different slope after 2007. The first trend slopes, that for the period before the Paris-Brussels integration are statistically significantly different from zero and negative in the case of BEL, CAC and PSI. The slope of the post-merger trend is statistically different from zero and positive in the case of AEX, BEL, and CAC and negative in the case of PSI. A Wald test reports that in the case of BEL and CAC the trend pre-merger and the first trend post merger are statistically different. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

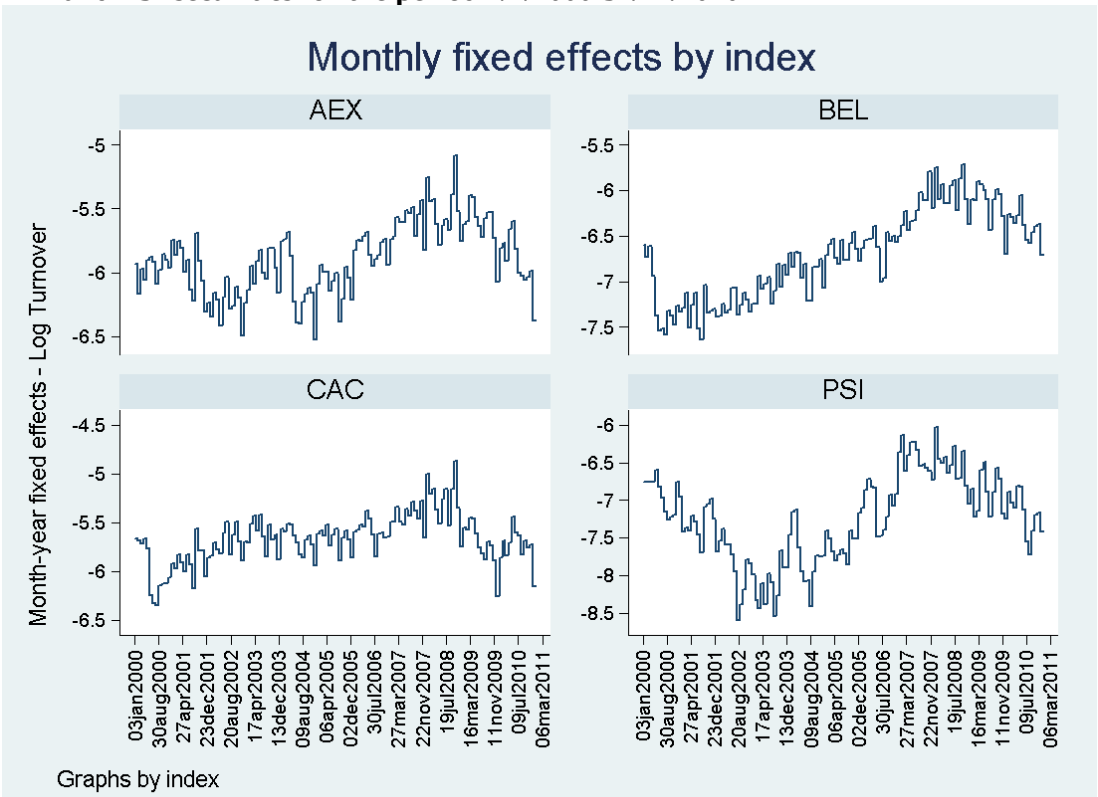
1.4. TURNOVER

(9) Daily turnover for each security *i* is computed using data provided by Bloomberg as

$$\text{Turnover}_i = \frac{\text{Number of traded shares}_i}{\text{Market capitalization}_i \big/ \text{Closing prices}_i}$$

1.4.1. Year-month fixed effects for the period 1/01/2000-31/12/2010

Figure 27: Year-month fixed effects on Turnover respectively for CAC-40, BEL-20, AEX and PSI securities for the period 1/1/2000-31/12/2010



[ ]*

Note: The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

1.4.2. Pooled regression for the period 1/01/2000-31/12/2010

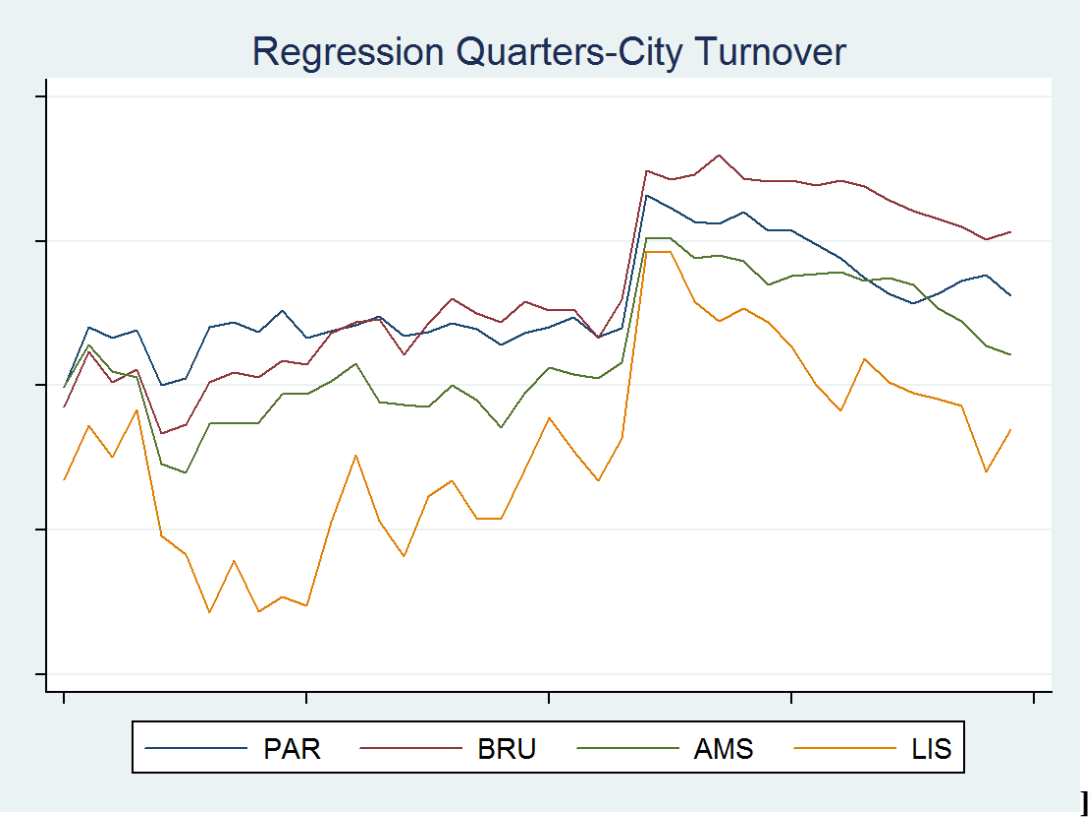
Table 17: Regressions on Turnover of large caps in Paris, Amsterdam, Brussels and Lisbon- pooled regression including quarter-year-index fixed effects, 1/12/2000-31/12/2010

Ln(turnover)	Reg1
DAX Volatility (log of)	[...]*
	[...]*
Volume traded on the Frankfurt exchange (log of)	[...]*
	[...]*
Tick change dummy	[...]*
	[...]*

MTF Volume (log of)	[...]*
	[...]*
Constant	[...]*
	[...]*
Quarter-year-index fixed effects	[...]*
Security fixed effects	[...]*
Observations	[...]*
R-squared	[...]*

Note: (a) Robust p-values in brackets; (b) *** p<0.01, ** p<0.05, * p<0.1; (c) the sample is composed by 158 large caps. These are securities that have composed the main index of Paris, Brussels, Amsterdam and Lisbon (CAC 40, BEL20, AEX and the PSI) at any point throughout the period; (d) all regressions include a set of single-day event dummies; (e) the log of GDP per capita is omitted from the regression because of collinearity.

Figure 28: Quarter-year-index coefficients from Regression 1 on Turnover 1/1/2000-31/12/2010 (see Table 17)



[ ]*

Note: The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, a dummy variable to control for the change in tick size and the MTF volume for Chi-X Europe and BATS. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of turnover.

1.4.3. Individual regression for the period 1/01/2000-31/12/2010

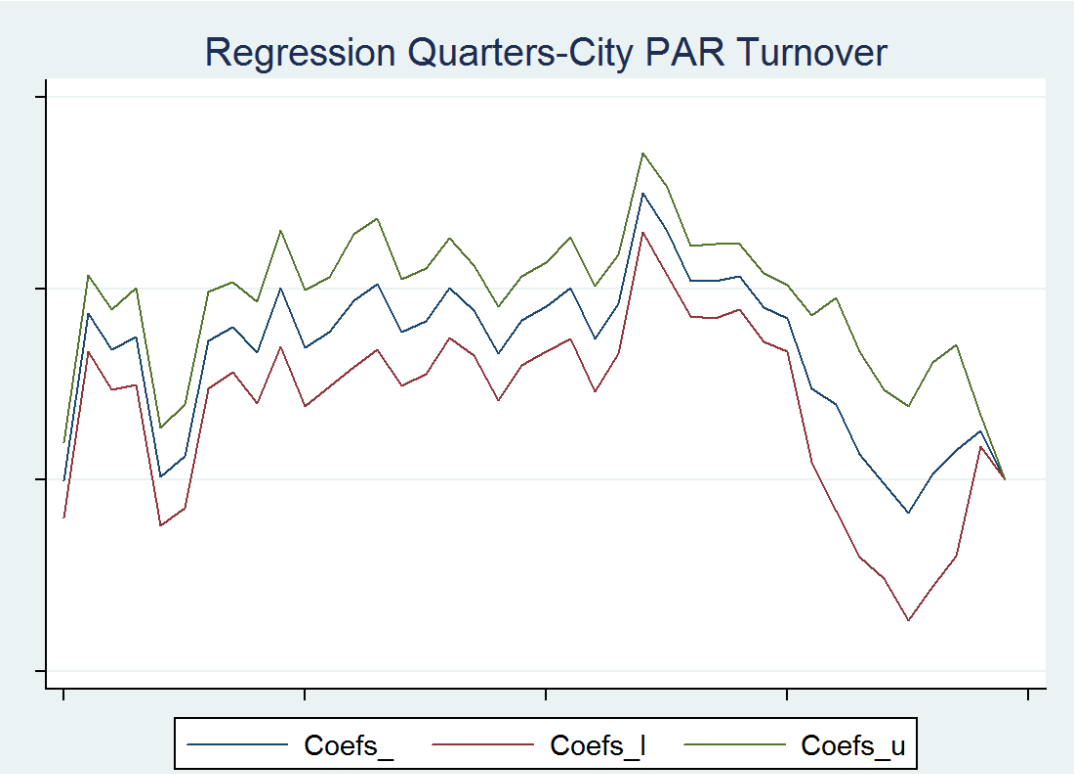
1.4.3.1. PARIS

Table 18: Regressions on Turnover of large caps in Paris - individual regression including quarter-year-index fixed effects, 1/12/2000-31/12/2010

Ln(turnover)	Reg.1
DAX Volatility (log of)	[...]*
	[...]*
Volume traded on the Frankfurt exchange (log of)	[...]*
	[...]*
Tick change dummy	[...]*
	[...]*
MTF Volume (log of)	[...]*
	[...]*
Constant	[...]*
	[...]*
Quarter-year-index fixed effects	[...]*
Security fixed effects	[...]*
Observations	[...]*
R-squared	[...]*

Note: (a) Robust p-values in brackets; (b) *** p<0.01, ** p<0.05, * p<0.1; (c) the sample is composed by 51 large caps. These are securities that have composed the main index of Paris (CAC 40) at any point throughout the period; (d) all regressions include a set of single-day event dummies; (e) the log of GDP per capita is omitted from the regression because of collinearity.

Figure 29: Quarter-year-index coefficients from Regression 1 on Turnover 1/1/2000-31/12/2010 (see Table 18)



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, a dummy variable to control for the change in tick size, the MTF volume for Chi-X Europe and BATS. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of the turnover. Turnover is computed as the ratio of the number of traded shares and the ratio of market capitalisation and closing price. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

1.4.3.2. AMSTERDAM

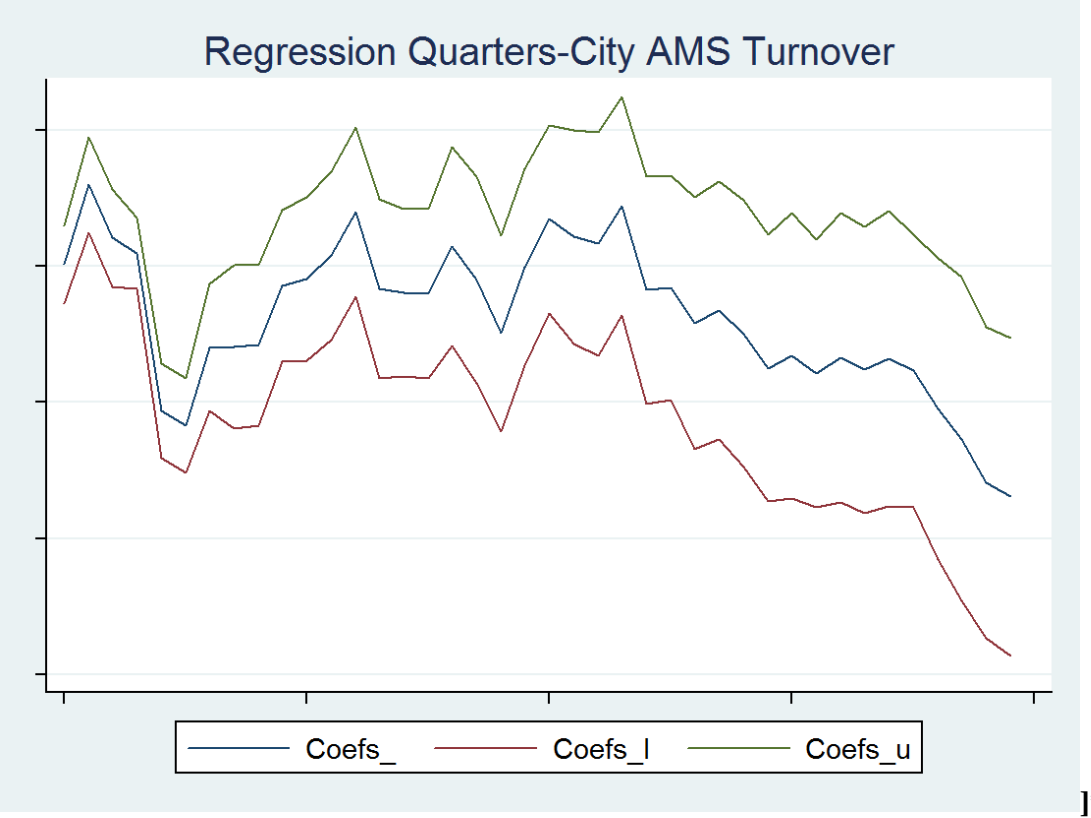
Table 19: Regressions on Turnover of large caps in Amsterdam - individual regression including quarter-year-index fixed effects, 1/12/2000-31/12/2010

Ln(turnover)	Reg.1
DAX Volatility (log of)	[...]*
	[...]*
Volume traded on the Frankfurt exchange (log of)	[...]*
	[...]*
MTF Volume (log of)	[...]*

	[...]*
Constant	[...]*
	[...]*
Quarter-year-index fixed effects	[...]*
Security fixed effects	[...]*
Observations	[...]*
R-squared	[...]*

Note: (a) Robust p-values in brackets; (b) *** p<0.01, ** p<0.05, * p<0.1; (c) the sample is composed by 45 large caps. These are securities that have composed the main index of Amsterdam (AEX) at any point throughout the period; (d) all regressions include a set of single-day event dummies; (e) the log of GDP per capita and the tick size dummy are omitted because of collinearity.

Figure 30: Quarter-year-index coefficients from Regression 5 on Turnover 1/1/2000-31/12/2010 (see Table 19)



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, a dummy variable to control for the change in tick size, the MTF volume for Chi-X Europe and BATS. The dependent variable is the log of the turnover. Turnover is computed as the ratio of the number of traded shares and the ratio of market capitalisation and closing price. The tick size dummy is omitted because of collinearity. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

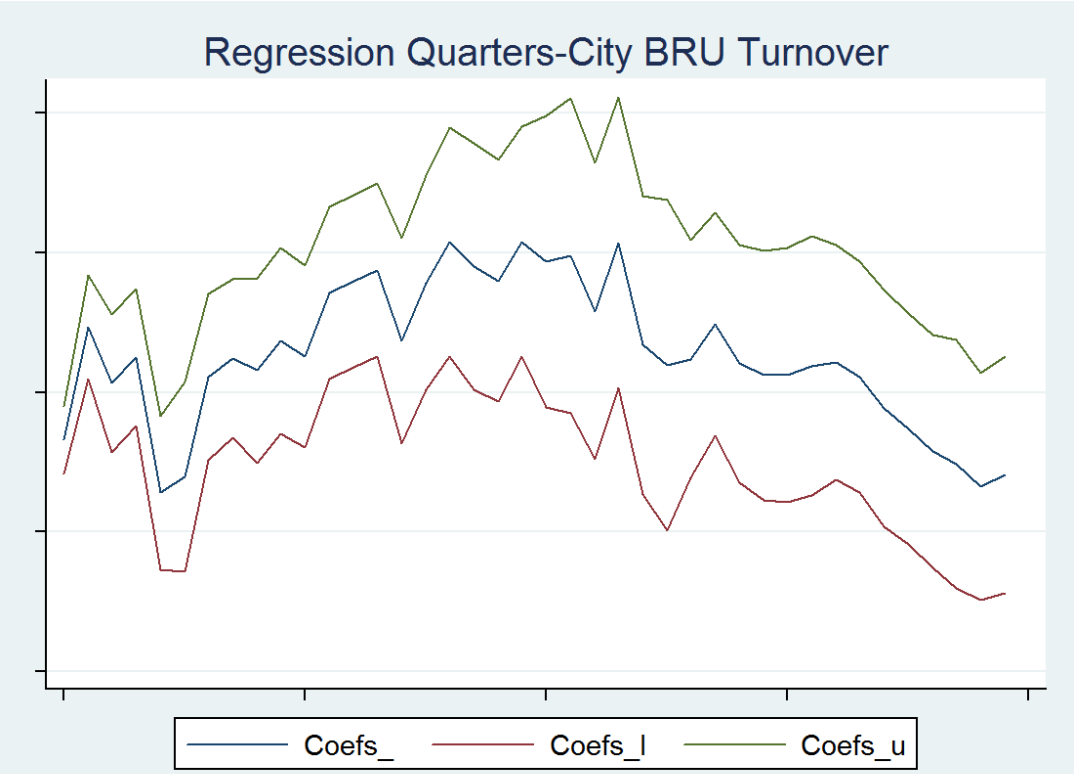
1.4.3.3. BRUSSELS

Table 20: Regressions on Turnover of large caps in Brussels - individual regression including quarter-year-index fixed effects, 1/12/2000-31/12/2010

Ln(turnover)	Reg.1
DAX Volatility (log of)	[...]*
	[...]*
Volume traded on the Frankfurt exchange (log of)	[...]*
	[...]*
MTF Volume (log of)	[...]*
	[...]*
Constant	[...]*
	[...]*
Quarter-year-index fixed effects	[...]*
Security fixed effects	[...]*
Observations	[...]*
R-squared	[...]*

Note: (a) Robust p-values in brackets; (b) *** p<0.01, ** p<0.05, * p<0.1; (c) the sample is composed by 28 large caps. These are securities that have composed the main index of Brussels (BEL 20) at any point throughout the period; (d) all regressions include a set of single-day event dummies; (e) the log of GDP per capita and the tick size dummy are omitted because of collinearity.

Figure 31: Quarter-year-index coefficients from Regression 1 on Turnover 1/1/2000-31/12/2010 (see Table 20)



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, a dummy variable to control for the change in tick size and the MTF volume for Chi-X Europe and BATS. The dependent variable is the log of the turnover. Turnover is computed as the ratio of the number of traded shares and the ratio of market capitalisation and closing price. The tick size dummy is omitted because of collinearity. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

1.4.3.4. LISBON

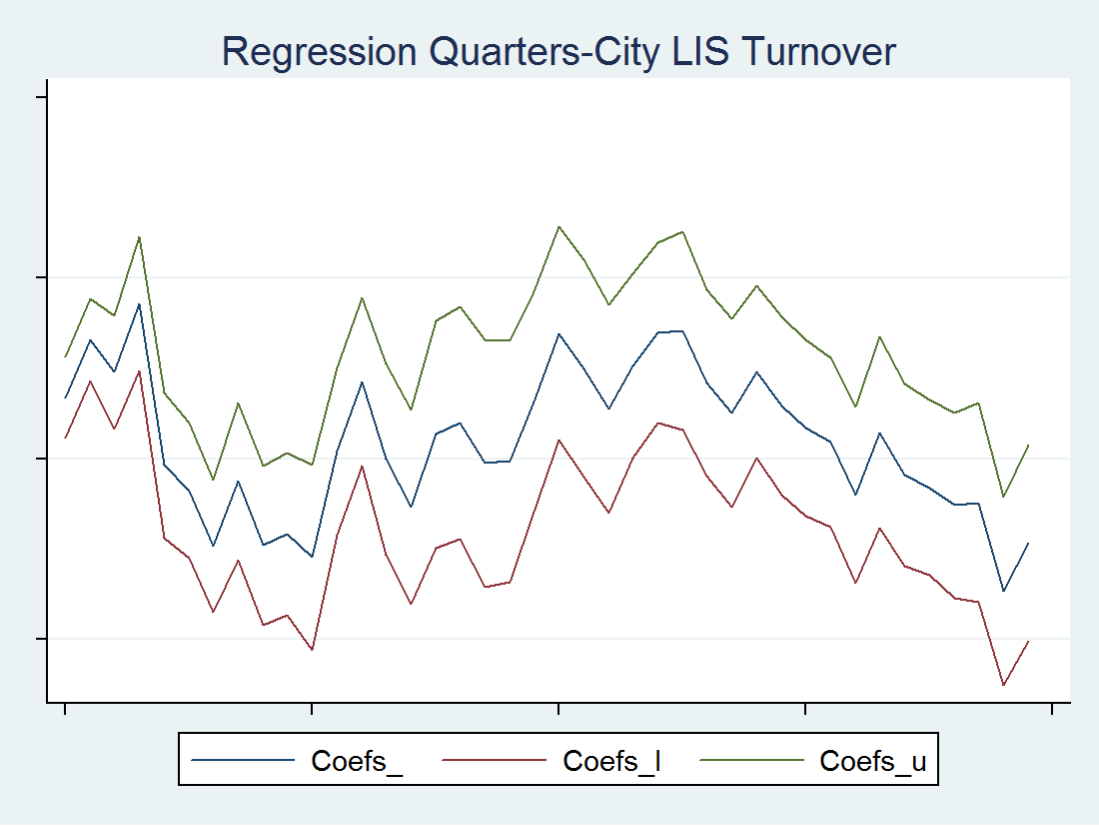
Table 21: Regressions on Turnover of large caps in Lisbon - individual regression including quarter-year-index fixed effects, 1/12/2000-31/12/2010

Ln(turnover)	Reg.1
DAX Volatility (log of)	[...]*
	[...]*
Volume traded on the Frankfurt exchange (log of)	[...]*
	[...]*
MTF Volume (log of)	[...]*

	[...]*
Tick change dummy	[...]*
	[...]*
Constant	[...]*
	[...]*
Quarter-year-index fixed effects	[...]*
Security fixed effects	[...]*
Observations	[...]*
R-squared	[...]*

Note: (a) Robust p-values in brackets; (b) *** p<0.01, ** p<0.05, * p<0.1; (c) the sample is composed by 34 large caps. These are securities that have composed the main index of Lisbon (PSI) at any point throughout the period; (d) all regressions include a set of single-day event dummies; (e) the log of GDP per capita and the tick size dummy are omitted because of collinearity.

Figure 32: Quarter-year-index coefficients from Regression 5 on Turnover 1/1/2000-31/12/2010 (see Table 21)



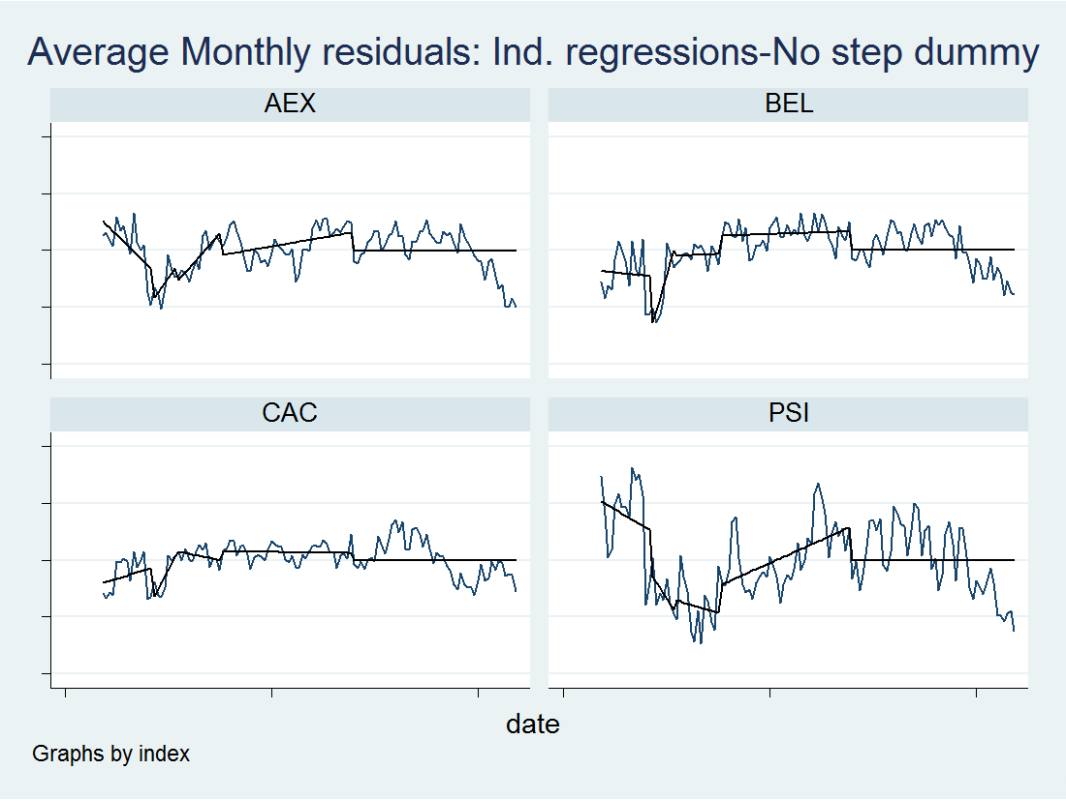
[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, a dummy variable to control for the change in tick size and the MTF volume for Chi-X Europe and BATS. The dependent variable is the log of the turnover. Turnover is computed as the ratio of the number of traded shares and the ratio

of market capitalisation and closing price. The tick size dummy is omitted because of collinearity. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

1.4.4. Residuals from the Notifying Parties' specifications on turnover for individuals stock exchanges for the period 1/01/2000-31/12/2010

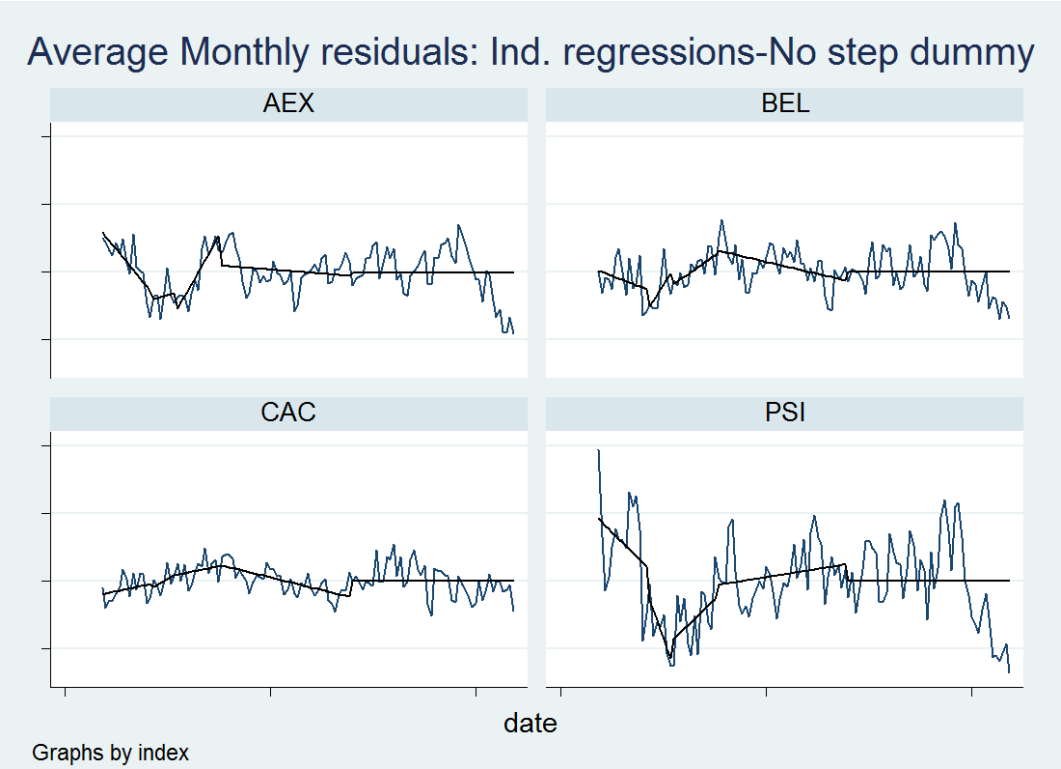
Figure 33: Monthly average residuals from the Notifying Parties' specification on turnover by stock exchange for the period 1/01/2000-31/12/2010



[ ]*

Note: The residuals plotted are monthly averages. The control variables are the logs of DAX volatility, volume traded on the Frankfurt exchange, a dummy for the change in tick size, MTF volume, a list of daily event dummies, month-and security fixed effects. The regressions are run separately for the four exchanges. The black lines are trends fitted to the residuals with different slopes allowed for the different merger periods, and also for a different slope after 2007. The first trend slopes, that for the period before the Paris-Brussels integration are statistically significantly different from zero and negative in the case of AEX. The slope of the post-merger trend is statistically different from zero and positive in the case of AEX, and PSI. A Wald test reports that in the case of AEX and PSI the trend pre-merger and the first trend post merger are statistically different. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

Figure 34: Monthly average residuals from the Notifying Parties' specification on turnover by stock exchange for the period 1/01/2000-31/12/2010 (Including log GDP per capita)



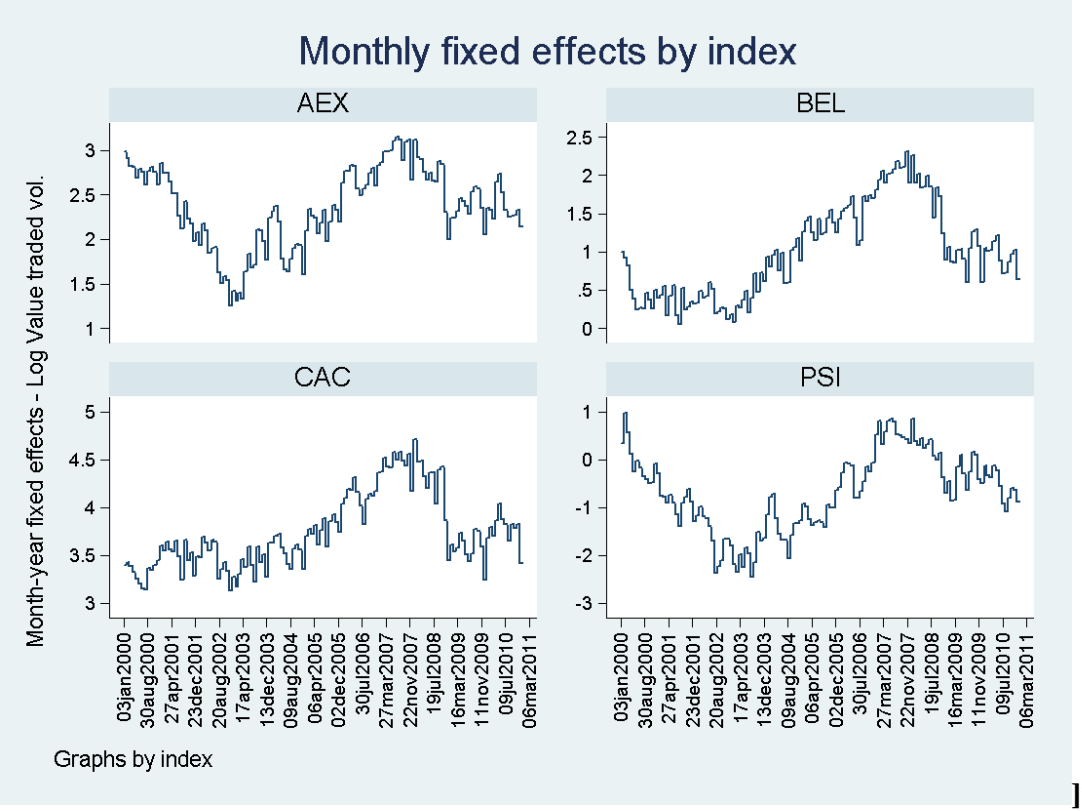
[ ]*

Note: The residuals plotted are monthly averages. The control variables are the logs of DAX volatility, volume traded on the Frankfurt exchange, a dummy for the change in tick size, MTF volume, log of GDP per Capita, month-and security fixed effects. The regressions are run separately for the four exchanges. The black lines are trends fitted to the residuals with different slopes allowed for the different merger periods, and also for a different slope after 2007. The first trend slopes, that for the period before the Paris-Brussels integration are statistically significantly different from zero and negative in the case of AEX. The slope of the post-merger trend is statistically different from zero and negative in the case of BEL and CAC. A Wald test reports that in the case of AEX, CAC and PSI the trend pre-merger and the first trend post merger are statistically different. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

1.5. VALUE OF TRADED VOLUME

1.5.1. Year-month fixed effects for the period 1/01/2000-31/12/2010

Figure 35: Year-month fixed effects on value of traded volume for CAC securities for the period 1/1/2000-31/12/2010



[ ]*

Note: The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

1.5.2. Pooled regression for the period 1/01/2000-31/12/2010

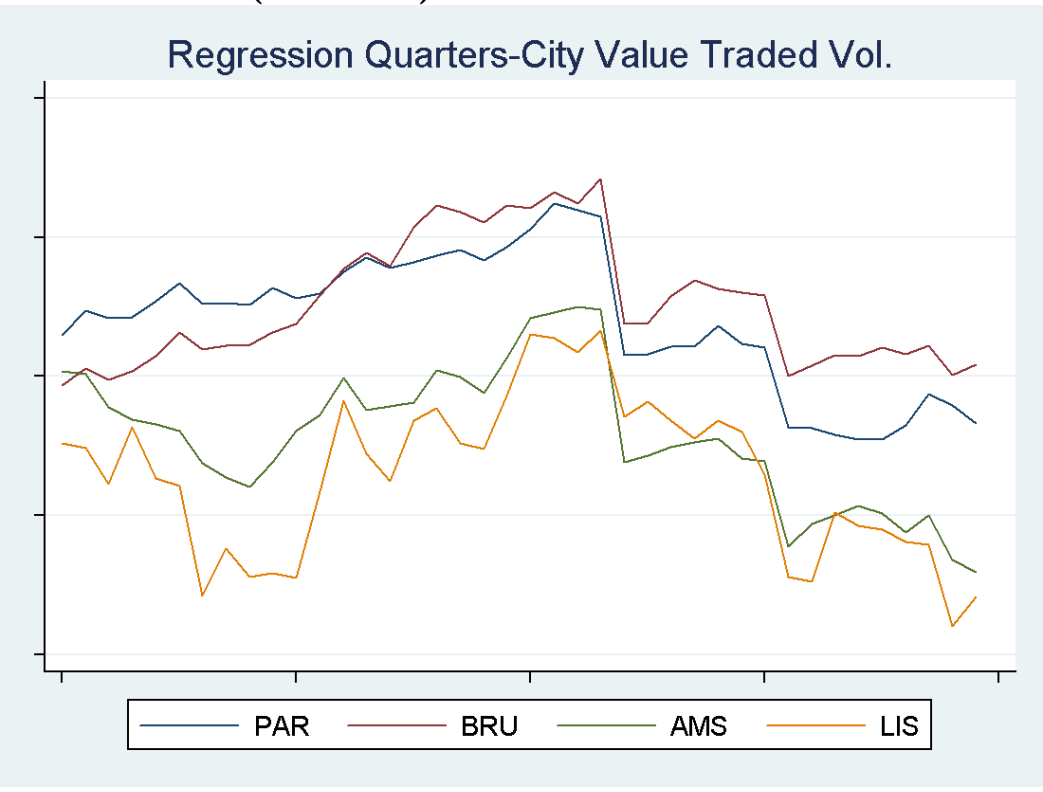
Table 22: Regressions on value of traded volume of large caps in Paris, Amsterdam, Brussels and Lisbon- pooled regression including quarter-year-index fixed effects, 1/12/2000-31/12/2010

Ln(value traded vol.)	Reg.1	Reg.2
DAX Volatility (log of)	[...]*	[...]*
	[...]*	[...]*
Traded value on the Frankfurt exchange (log of)	[...]*	[...]*
	[...]*	[...]*
Tick change dummy	[...]*	[...]*

	[...]*	[...]*
MTF value (log of)	[...]*	[...]*
	[...]*	[...]*
Closing price of the security (log of)	[...]*	[...]*
	[...]*	[...]*
Constant	[...]*	[...]*
	[...]*	[...]*
Quarter-year-index fixed effects	[...]*	[...]*
Security fixed effects	[...]*	[...]*
Observations	[...]*	[...]*
R-squared	[...]*	[...]*

Note: (a) Robust p-values in brackets; (b) *** p<0.01, ** p<0.05, * p<0.1; (c) the sample is composed by 158 large caps. These are securities that have composed the main index of Paris, Brussels, Amsterdam and Lisbon (CAC 40, BEL20, AEX and the PSI) at any point throughout the period; (d) all regressions include a set of single-day event dummies; (e) value of volume trade on MTFs (includes volumes for Chi-X Europe and BATS) and on the Frankfurt exchange calculated using the daily closing price of each security; (f) the log of GDP per capita is omitted because of collinearity. Therefore a regression excluding log of GDP per capita is not reported.

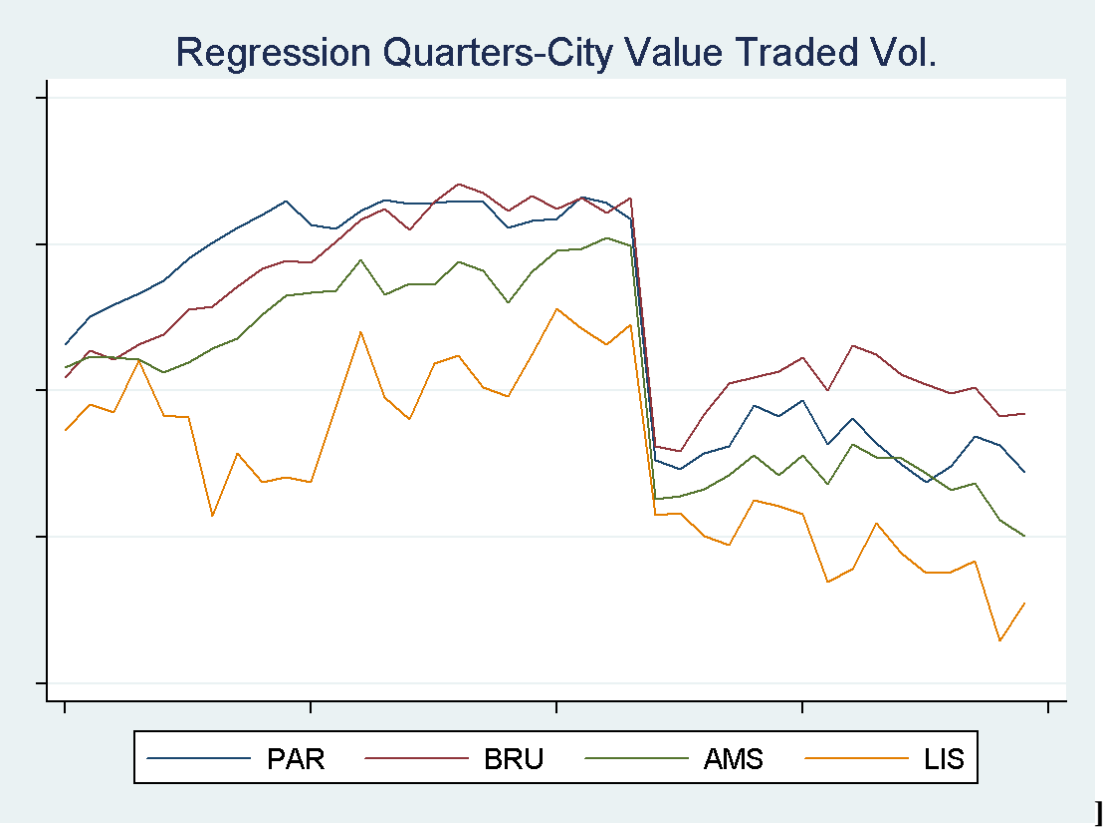
Figure 36: Quarter-year-index coefficients from Regression 1 on value of traded volume 1/1/2000-31/12/2010 (see Table 22)



[ ]*

Note: The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded value on the Frankfurt exchange, a dummy variable to control for the change in tick size and the MTF value for Chi-X Europe and BATS and the annual GDP per capita. The dependent variable is the log of the value of traded volume. The dependent variable is the log of the value of traded volume. The annual GDP per capita is omitted because of collinearity. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of value of traded volume.

Figure 37: Quarter-year-index coefficients from Regression 2 on value of traded volume 1/1/2000-31/12/2010



[ ]*

Note: The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded value on the Frankfurt exchange, a dummy variable to control for the change in tick size, the MTF value for Chi-X Europe and BATS, the annual GDP per capita and the security price. The dependent variable is the log of the value of traded volume. The annual GDP per capita is omitted because of collinearity. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of value of traded volume.

1.5.3. Individual regression for the period 1/01/2000-31/12/2010

1.5.3.1. PARIS

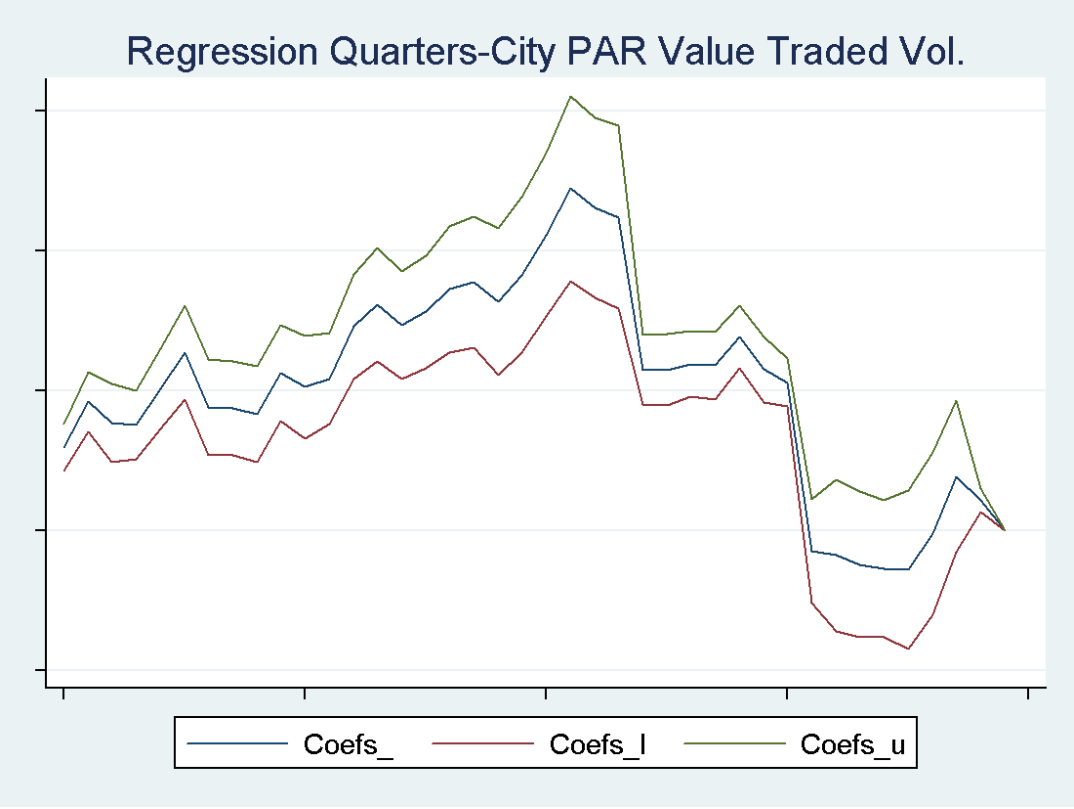
Table 23: Regressions on value of traded volume of large caps in Paris - individual regression including quarter-year-index fixed effects, 1/12/2000-31/12/2010

Ln(value traded vol.)	Reg.1	Reg.2
DAX Volatility (log of)	[...]*	[...]*
	[...]*	[...]*
Tick change dummy	[...]*	[...]*

	[...]*	[...]*
Closing price of the	[...]*	[...]*
security (log of)		
	[...]*	[...]*
Traded value on the	[...]*	[...]*
Frankfurt exchange		
(log of)		
	[...]*	[...]*
MTF value (log of)	[...]*	[...]*
	[...]*	[...]*
Constant	[...]*	[...]*
	[...]*	[...]*
Quarter-year-index fixed effects	[...]*	[...]*
Security fixed effects	[...]*	[...]*
Observations	[...]*	[...]*
R-squared	[...]*	[...]*

Note: (a) Robust p-values in brackets; (b) *** p<0.01, ** p<0.05, * p<0.1; (c) the sample is composed by 51 large caps. These are securities that have composed the main index of Paris (CAC 40) at any point throughout the period; (d) all regressions include a set of single-day event dummies; (e) value of volume trade on MTFs (includes volumes for Chi-X Europe and BATS) and on the Frankfurt exchange calculated using the daily closing price of each security; (f) the log of GDP per capita is omitted from the sixth and seventh regression.

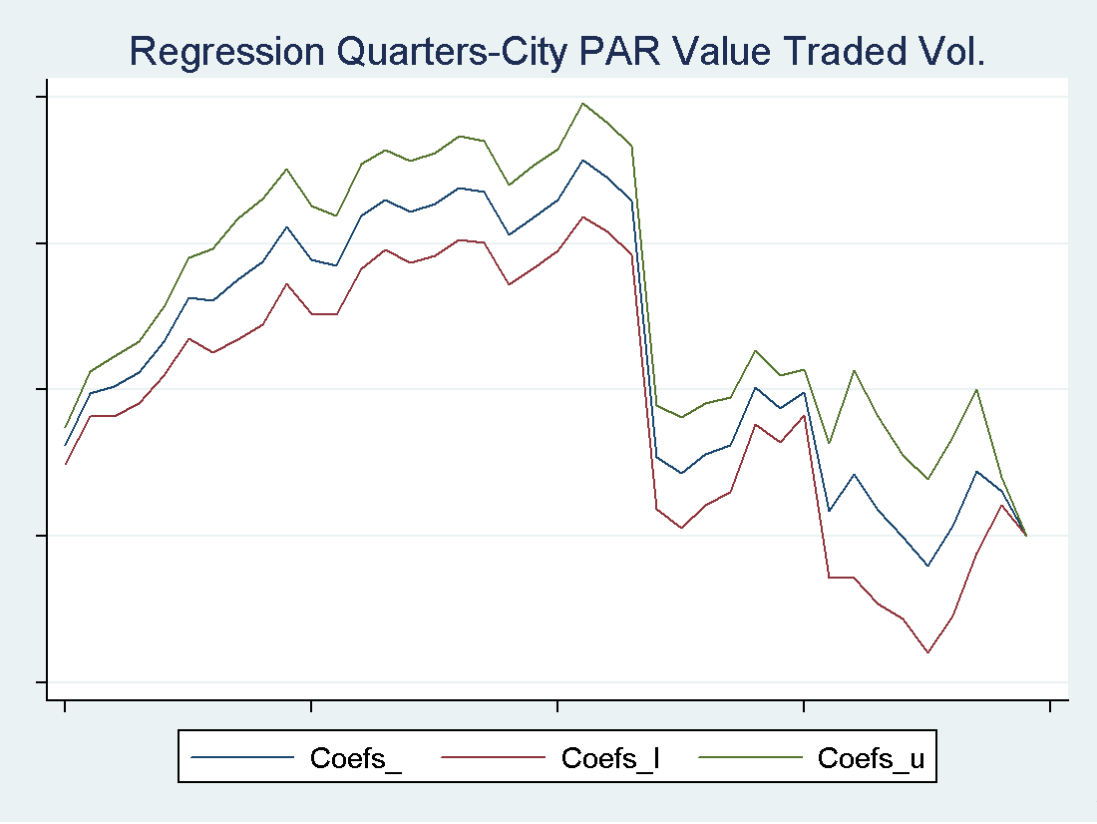
Figure 38: Quarter-year-index coefficients from Regression 1 on value of traded volume 1/1/2000-31/12/2010 (see Table 23)



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded value on the Frankfurt exchange, a dummy variable to control for the change in tick size, the MTF value for Chi-X Europe and BATS and the per capita annual GDP. The dependent variable is the log of the value of traded volume. The annual GDP per capita is omitted because of collinearity. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

Figure 39: Quarter-year-index coefficients from Regression 2 on value of traded volume 1/1/2000-31/12/2010 (see Table 23)



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded value on the Frankfurt exchange, a dummy variable to control for the change in tick size, the MTF value for Chi-X Europe and BATS, per capita annual GDP and the security price. The dependent variable is the log of the value of traded volume. The annual GDP per capita is omitted because of collinearity. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

1.5.3.2. AMSTERDAM

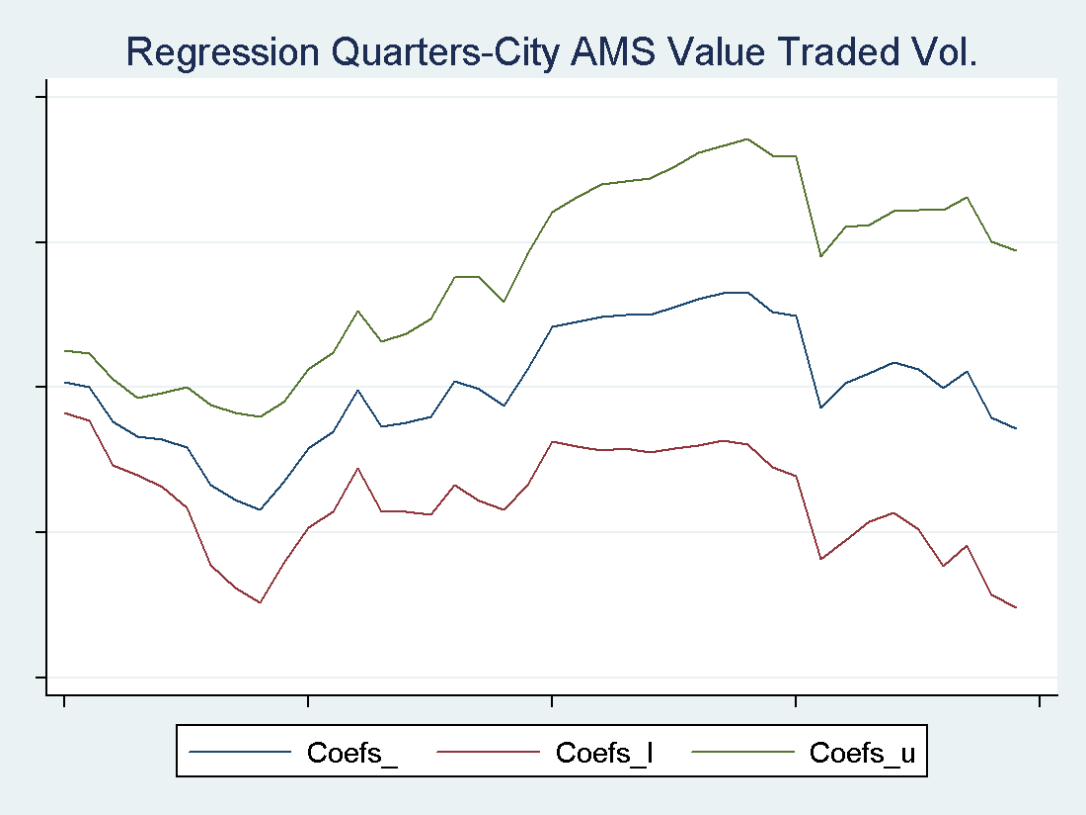
Table 24: Regressions on value of traded volume of large caps in Amsterdam - individual regression including quarter-year-index fixed effects, 1/12/2000-31/12/2010

Ln(value traded vol.)	Reg.1	Reg.2
DAX Volatility (log of)	[...]*	[...]*
	[...]*	[...]*
Closing price of the	[...]*	[...]*
security (log of)		
	[...]*	[...]*

Traded value on the Frankfurt exchange (log of)	[...]*	[...]*
	[...]*	[...]*
MTF value (log of)	[...]*	[...]*
	[...]*	[...]*
Constant	[...]*	[...]*
	[...]*	[...]*
Quarter-year-index fixed effects	[...]*	[...]*
Security fixed effects	[...]*	[...]*
Observations	[...]*	[...]*
R-squared	[...]*	[...]*

Note: (a) Robust p-values in brackets; (b) *** p<0.01, ** p<0.05, * p<0.1; (c) the sample is composed by 45 large caps. These are securities that have composed the main index of Amsterdam (AEX) at any point throughout the period; (d) all regressions include a set of single-day event dummies; (e) value of volume trade on MTFs (includes volumes for Chi-X Europe and BATS) and on the Frankfurt exchange calculated using the daily closing price of each security; (f) the log of GDP per capita and the tick size dummy are omitted because of collinearity.

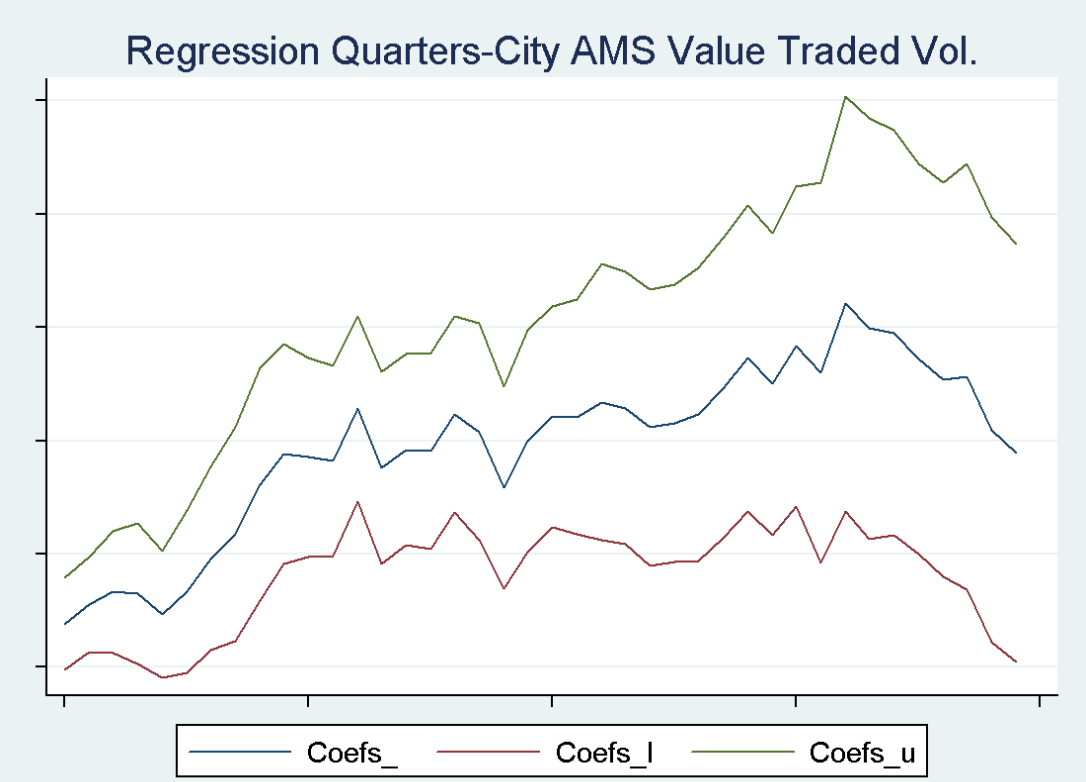
Figure 40: Quarter-year-index coefficients from Regression 1 on value of traded volume 1/1/2000-31/12/2010 (see Table 24)



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded value on the Frankfurt exchange, a dummy variable to control for the change in tick size, the MTF value for Chi-X Europe and BATS and the per capita annual GDP. The dependent variable is the log of the value of traded volume. The annual GDP per capita and the tick size dummy are omitted because of collinearity. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

Figure 41: Quarter-year-index coefficients from Regression 2 on value of traded volume 1/1/2000-31/12/2010 (see Table 24)



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded value on the Frankfurt exchange, a dummy variable to control for the change in tick size, the MTF value for Chi-X Europe and BATS, the per capita annual GDP and the price of security. The dependent variable is the log of the value of traded volume. The annual GDP per capita and the tick size dummy are omitted because of collinearity. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

1.5.3.3. BRUSSELS

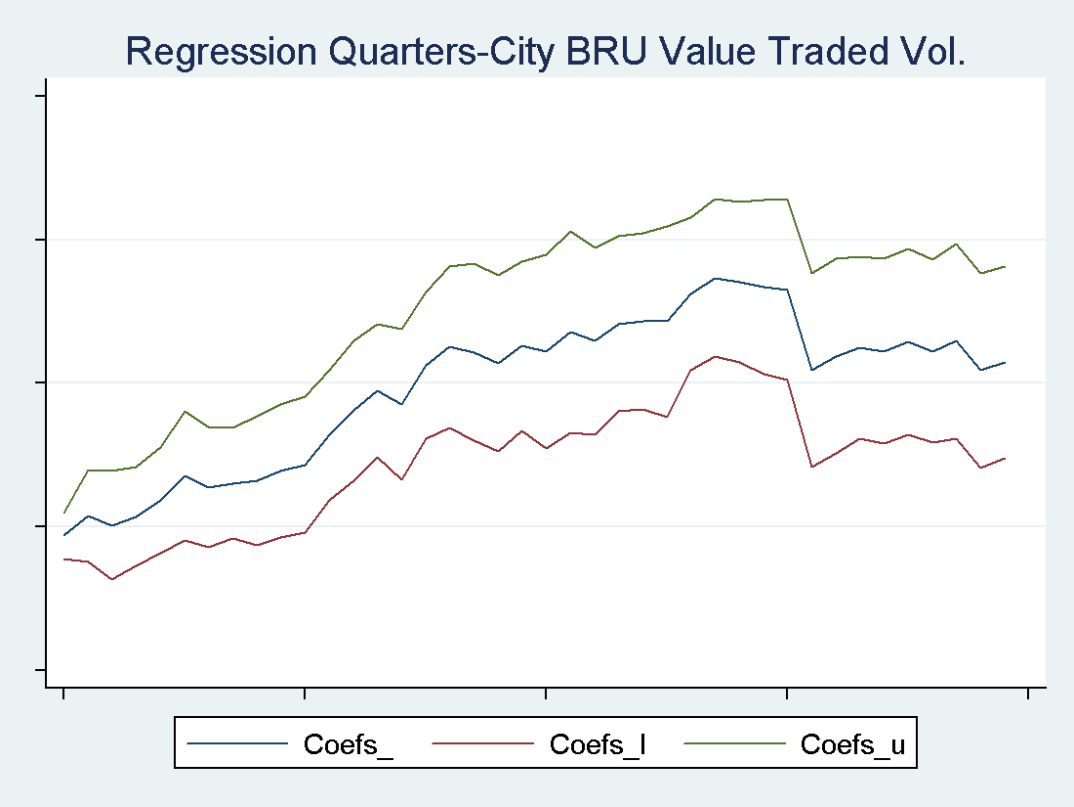
Table 25: Regressions on value of traded volume of large caps in Brussels - individual regression including quarter-year-index fixed effects, 1/12/2000-31/12/2010

Ln(value traded vol.)	Reg.1	Reg.2
DAX Volatility (log of)	[...]*	[...]*
	[...]*	[...]*
Closing price of the	[...]*	[...]*
security (log of)		
	[...]*	[...]*
Traded value on the	[...]*	[...]*

Frankfurt exchange (log of)		
	[...]*	[...]*
Tick change dummy	[...]*	[...]*
	[...]*	[...]*
MTF value (log of)	[...]*	[...]*
	[...]*	[...]*
Constant	[...]*	[...]*
	[...]*	[...]*
Quarter-year-index fixed effects	[...]*	[...]*
Security fixed effects	[...]*	[...]*
Observations	[...]*	[...]*
R-squared	[...]*	[...]*

Note: (a) Robust p-values in brackets; (b) *** p<0.01, ** p<0.05, * p<0.1; (c) the sample is composed by 28 large caps. These are securities that have composed the main index of Brussels (BEL 20) at any point throughout the period; (d) all regressions include a set of single-day event dummies; (e) value of volume trade on MTFs (includes volumes for Chi-X Europe and BATS) and on the Frankfurt exchange calculated using the daily closing price of each security; (f) the log of GDP per capita and tick change dummy are omitted because of collinearity.

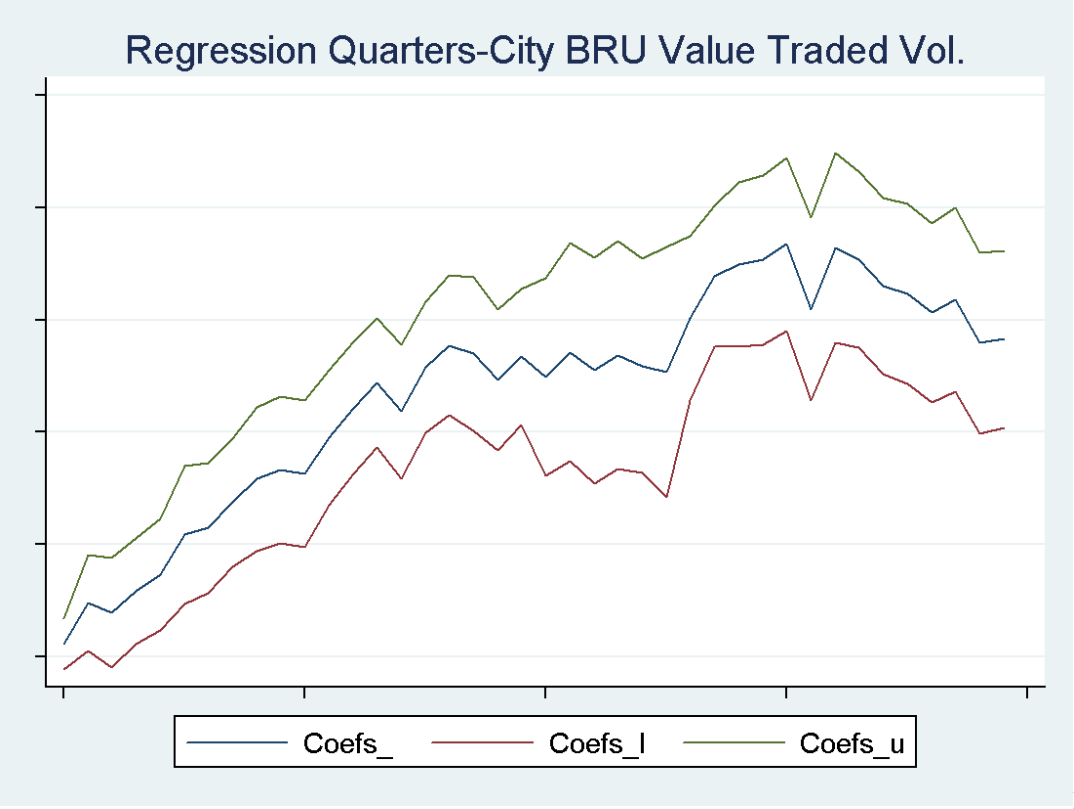
Figure 42: Quarter-year-index coefficients from Regression 1 on value of traded volume 1/1/2000-31/12/2010 (see Table 25)



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded value on the Frankfurt exchange, a dummy variable to control for the change in tick size, the MTF value for Chi-X Europe and BATS and the per capita annual GDP. The dependent variable is the log of the value of traded volume. The annual GDP per capita is omitted because of collinearity. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

Figure 43: Quarter-year-index coefficients from Regression 2 on value of traded volume 1/1/2000-31/12/2010 (see Table 25)



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded value on the Frankfurt exchange, a dummy variable to control for the change in tick size, the MTF value for Chi-X Europe and BATS, the per capita annual GDP and the price of security. The dependent variable is the log of the value of traded volume. The annual GDP per capita and the tick size dummy are omitted because of collinearity. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

1.5.3.4. LISBON

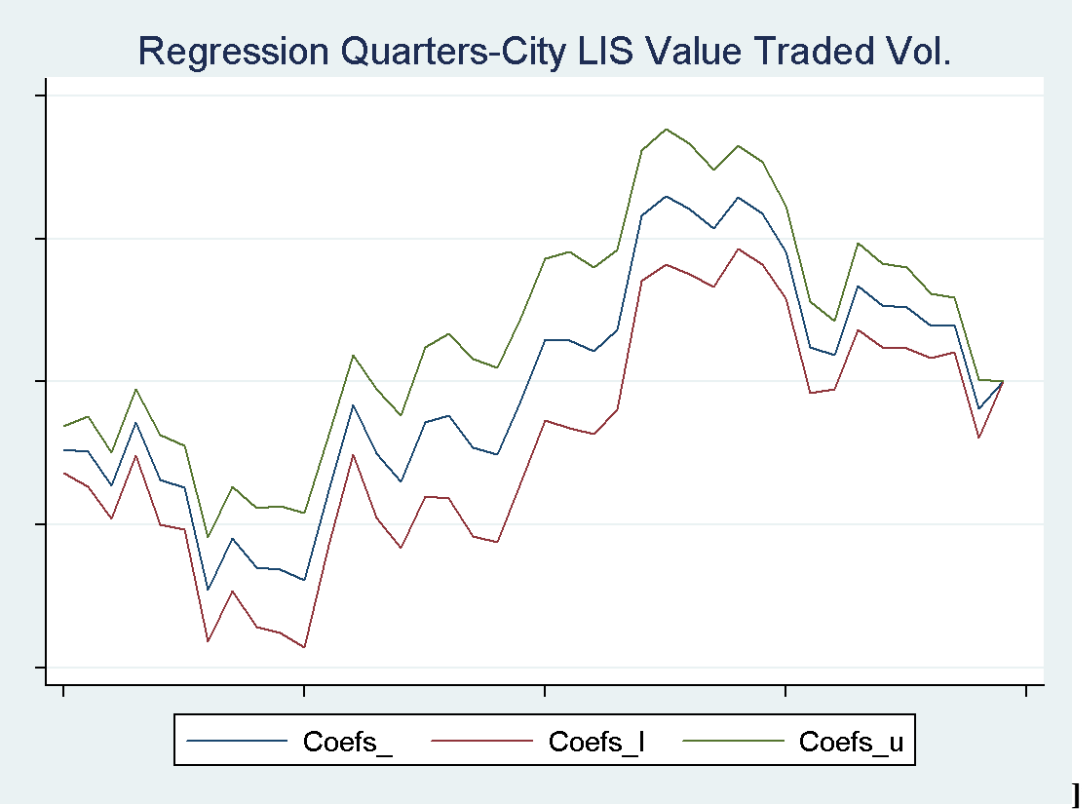
Table 26: Regressions on value of traded volume of large caps in Lisbon - individual regression including quarter-year-index fixed effects, 1/12/2000-31/12/2010

Ln(value traded vol.)	Reg.1	Reg.2
DAX Volatility (log of)	[...]*	[...]*
	[...]*	[...]*
Closing price of the	[...]*	[...]*
security (log of)		
	[...]*	[...]*

Traded value on the Frankfurt exchange (log of)	[...]*	[...]*
	[...]*	[...]*
Tick change dummy	[...]*	[...]*
	[...]*	[...]*
MTF value (log of)	[...]*	[...]*
	[...]*	[...]*
Constant	[...]*	[...]*
	[...]*	[...]*
Quarter-year-index fixed effects	[...]*	[...]*
Security fixed effects	[...]*	[...]*
Observations	[...]*	[...]*
R-squared	[...]*	[...]*

Note: (a) Robust p-values in brackets; (b) *** p<0.01, ** p<0.05, * p<0.1; (c) the sample is composed by 34 large caps. These are securities that have composed the main index of Lisbon (PSI) at any point throughout the period; (d) all regressions include a set of single-day event dummies; (e) value of volume trade on MTFs (includes volumes for Chi-X Europe and BATS) and on the Frankfurt exchange calculated using the daily closing price of each security; (f) the log of GDP per capita and the tick size dummy is omitted because of collinearity from the first and second regression.

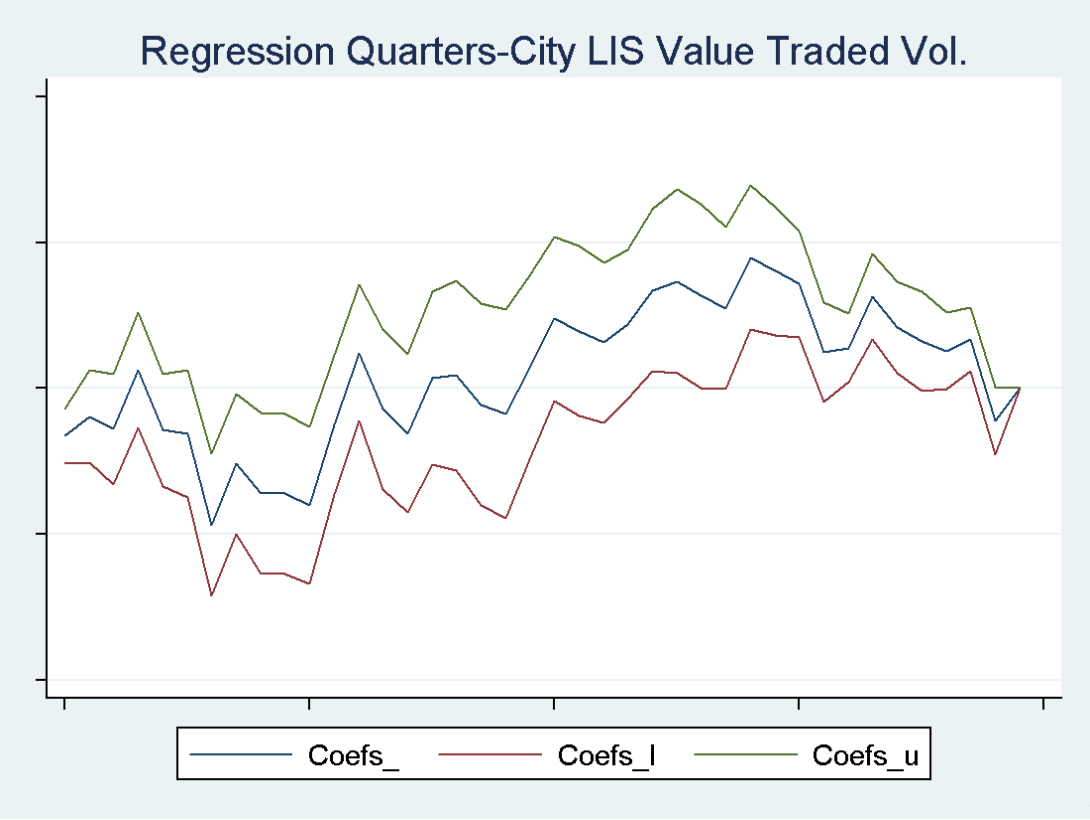
Figure 44: Quarter-year-index coefficients from Regression 1 on value of traded volume 1/1/2000-31/12/2010 (see Table 26)



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded value on the Frankfurt exchange, a dummy variable to control for the change in tick size, the MTF value for Chi-X Europe and BATS and the per capita annual GDP. The dependent variable is the log of the value of traded volume. The annual GDP per capita is omitted because of collinearity. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

Figure 45: Quarter-year-index coefficients from Regression 2 on value of traded volume 1/1/2000-31/12/2010 (see Table 26)

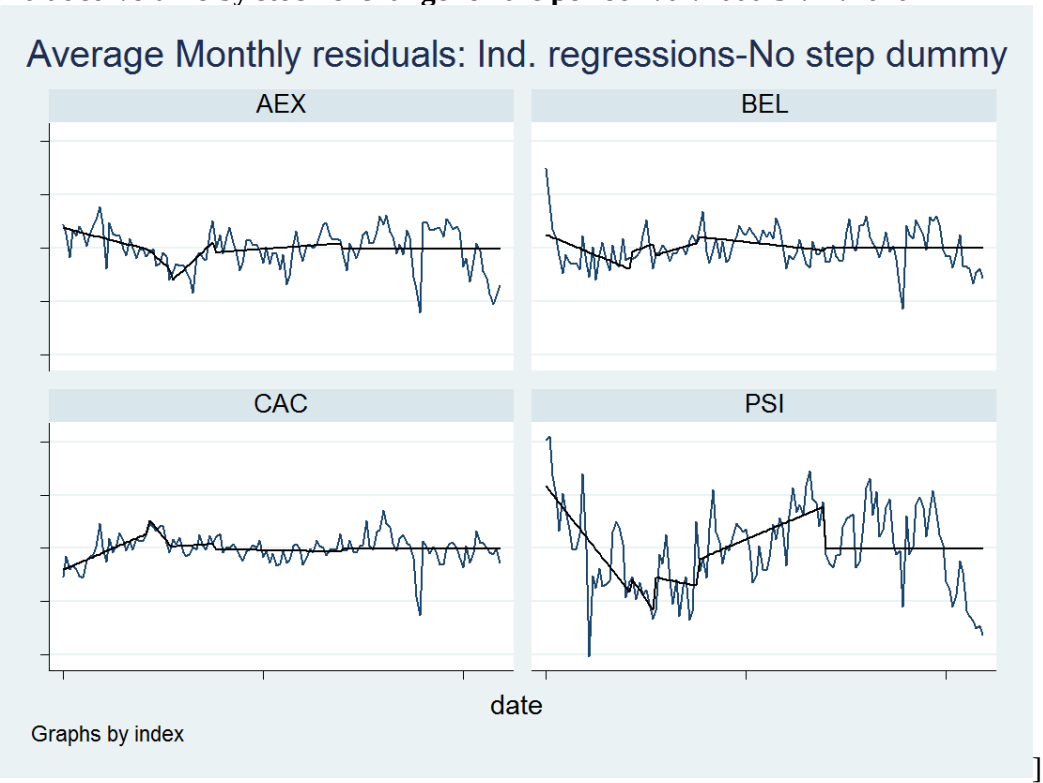


[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded value on the Frankfurt exchange, a dummy variable to control for the change in tick size, the MTF value for Chi-X Europe and BATS, the per capita annual GDP and the price of security. The dependent variable is the log of the value of traded volume. The annual GDP per capita is omitted because of collinearity. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

1.5.4. Residuals from the Notifying Parties' specifications value of traded volume for individuals stock exchanges for the period 1/01/2000-31/12/2010

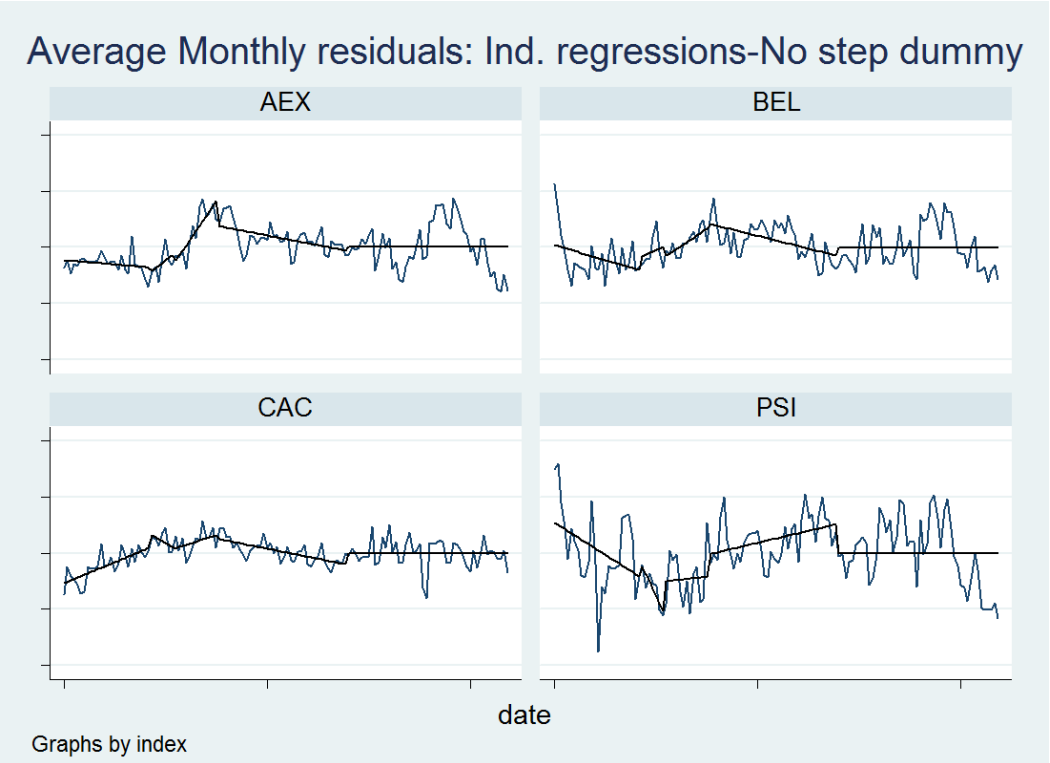
Figure 46: Monthly average residuals from the Notifying Parties' specification on value of traded volume by stock exchange for the period 1/01/2000-31/12/2010



[ ]*

Note: The residuals plotted are monthly averages. The control variables are the logs of DAX volatility, traded value on the Frankfurt exchange, MTF value, a dummy for the change in tick size, the log of the annual GDP per capita, a list of daily event dummies, month-and security fixed effects. The regressions are run separately for the four exchanges. The black lines are trends fitted to the residuals with different slopes allowed for the different merger periods, and also for a different slope after 2007. The first trend slopes, that for the period before the Paris-Brussels integration are statistically significantly different from zero and negative in the case of AEX, BEL and PSI and positive in the case of CAC. The slope of the post-merger trend is statistically different from zero and positive in the case of PSI. A Wald test reports that in the case of AEX, BEL, CAC and PSI the trend pre-merger and the first trend post merger are statistically different. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

Figure 47: Monthly average residuals from the Notifying Parties' specification on value of traded volume by stock exchange for the period 1/01/2000-31/12/2010 (Including log of closing price of security)



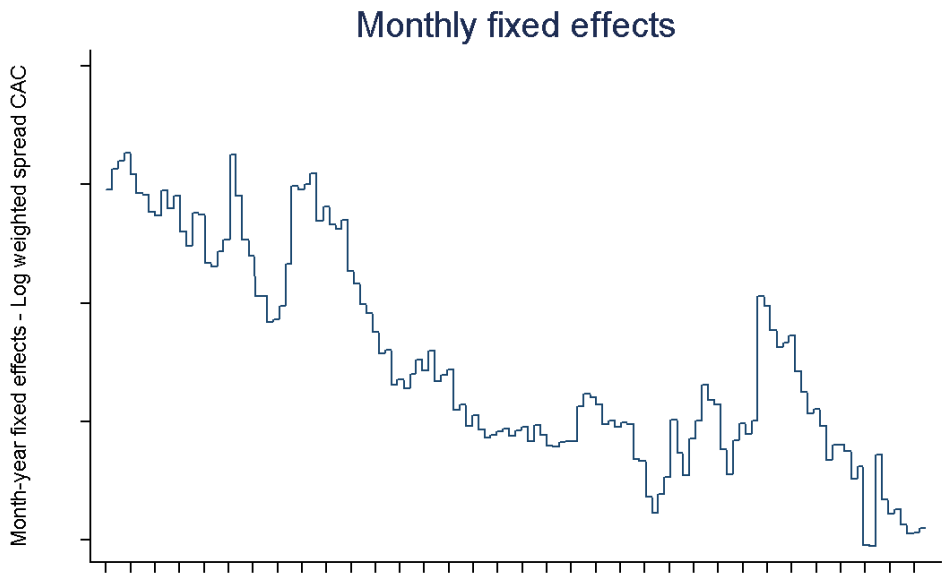
[ ]*

Note: The residuals plotted are monthly averages. The control variables are the logs of DAX volatility, traded value on the Frankfurt exchange, the last price of the security, the value of MTF, a dummy for the change in tick size, log of GDP per Capita, month-and security fixed effects. The regressions are run separately for the four exchanges. The black lines are trends fitted to the residuals with different slopes allowed for the different merger periods, and also for a different slope after 2007. The first trend slopes, that for the period before the Paris-Brussels integration are statistically significantly different from zero and negative in the case of BEL and PSI and positive for CAC. The slope of the post-merger trend is statistically different from zero and negative in the case of AEX, BEL and CAC and positive in the case of PSI. A Wald test reports that in the case of CAC and PSI the trend pre-merger and the first trend post merger are statistically different. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

1.6. WEIGHTED AVERAGE BID-ASK SPREAD OF THE CAC 40

1.6.1. Year-month fixed effects for the period 1/01/2000-31/12/2010

Figure 48: Year-month fixed effects on the weighted average bid-ask spread of the CAC-40 securities for the period 1/1/2000-31/12/2010



[ ]*

Note: The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

1.6.2. Pooled regression for the period 1/01/2000-31/12/2010[8]

Table 27: Regressions on the weighted average bid-ask spread of the CAC-40 securities pooled regression including quarter-year-index fixed effects, 1/12/2000-31/12/2010

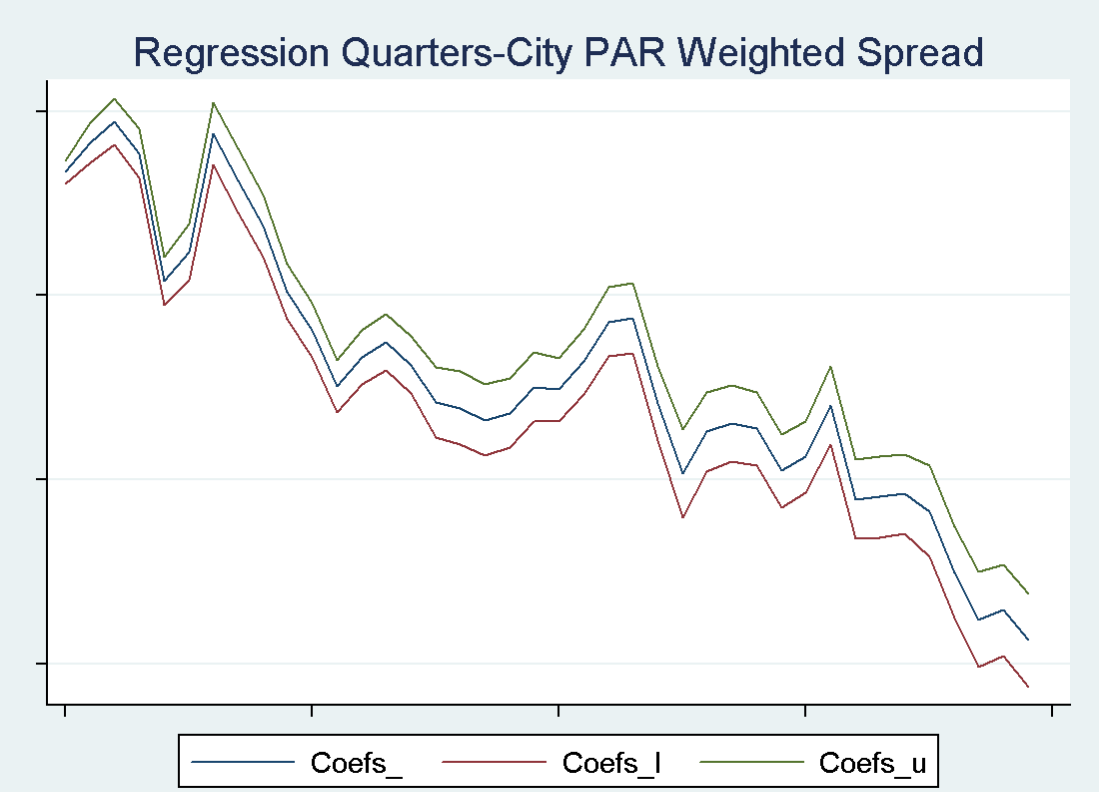
Ln(weighted-average spread)	Reg. 1
DAX Volatility (log of)	[...]*
	[...]*
Traded volume on the Frankfurt exchange (log of)	[...]*
	[...]*
Closing price of the security (log of)	[...]*

8 As the regression refers to weighted-average spread of the CAC-40 securities, the pooled and the individual exchange regressions yield equivalent results. Accordingly only the results of the pooled regressions are reported.

	[...]*
Market capitalisation	[...]*
	[...]*
MTF volume (log of)	[...]*
	[...]*
Constant	[...]*
	[...]*
Quarter-year-index fixed effects	[...]*
Security fixed effects	[...]*
Observations	[...]*
R-squared	[...]*

Note: (a) Robust p-values in brackets; (b) *** p<0.01, ** p<0.05, * p<0.1; (b) the sample is composed by the securities composing the CAC-40; (c) all regressions include a set of single-day event dummies; (d) the log of GDP per capita and the tick size dummy are omitted because of collinearity. Therefore a regression excluding log of GDP per capita is not reported.

Figure 49: Quarter-year-index coefficients from Regression 1 on the weighted average bid-ask spread of the CAC-401/1/2000-31/12/2010 (see Table 27)



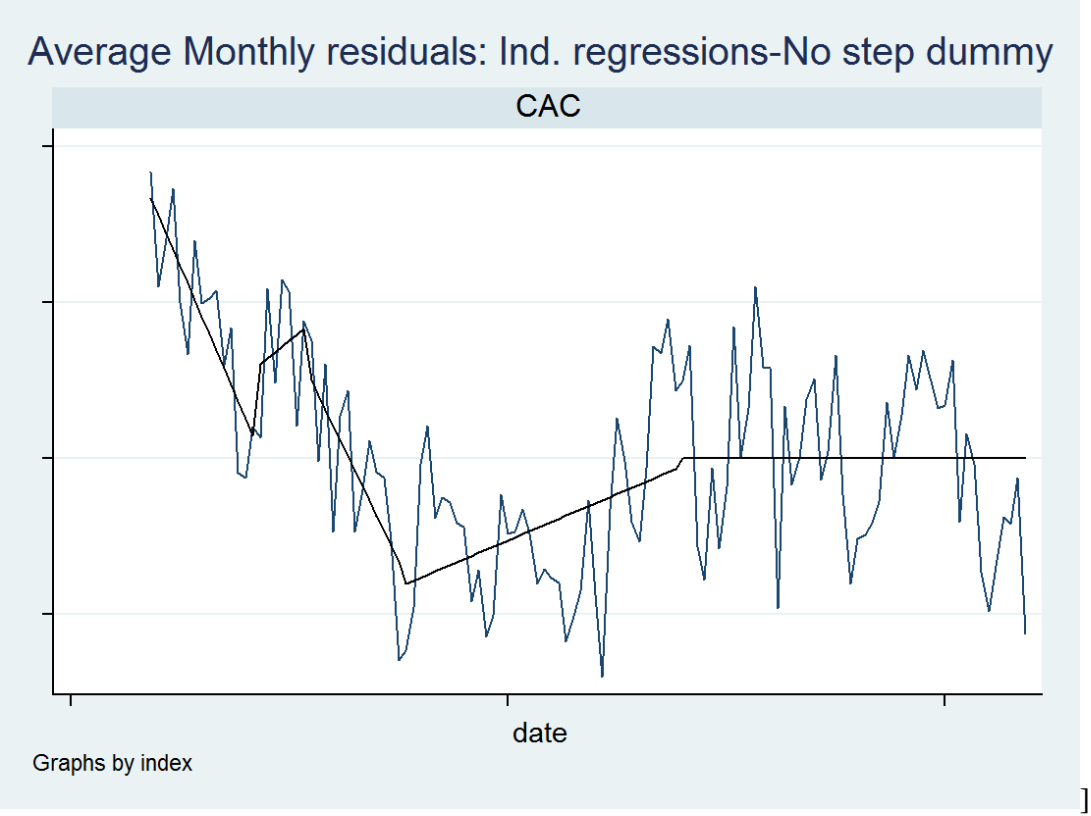
[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from the regression. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The

explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, market capitalisation, the last price of security, the log of annual GDP per capita, the tick size dummy and the MTF volume for Chi-X Europe and BATS. The dependent variable is the log of the weighted average spread of CAC 40 securities. The annual GDP per capita and the tick size dummy are omitted because of collinearity. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

1.6.3. Residuals from the Notifying Parties' specifications on weighted-average spread of CAC-40 securities for individuals stock exchanges for the period 1/01/2000-31/12/2010

Figure 50: Monthly average residuals from the Notifying Parties' specification on weighted-average spread of CAC-40 securities by stock exchange for the period 1/01/2000-31/12/2010



[ ]*

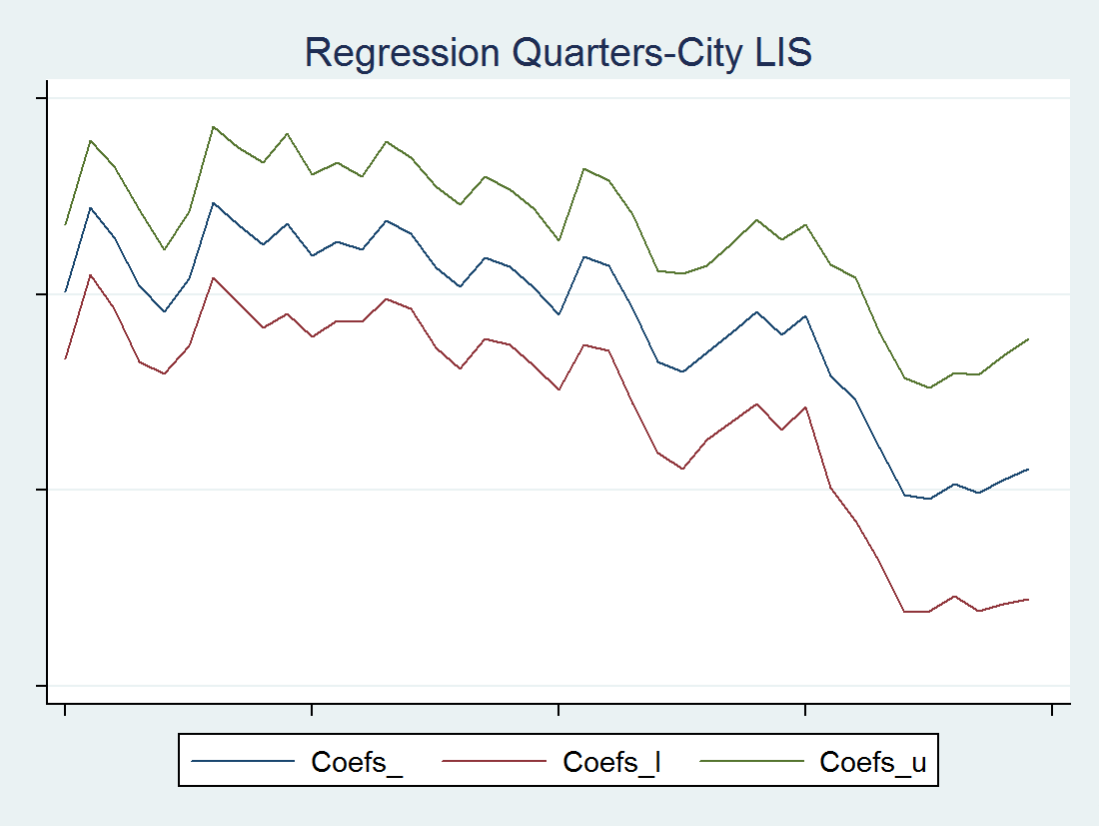
Note: The residuals plotted are monthly averages. The control variables are the logs of DAX volatility, traded volume on the Frankfurt exchange, MTF volumes, a dummy for the change in tick size, a list of daily event dummies, month-and security fixed effects. The black lines are trends fitted to the residuals with different slopes allowed for the different merger periods, and also for a different slope after 2007. The first trend slopes for the period before the Paris-Brussels integration is statistically significantly different from zero and negative. The slope of the post-merger trend is statistically different from zero and positive. A Wald test reports that the trend pre-merger and the first trend post merger are statistically different. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

1.7. ADDITIONAL GRAPHS ON LIQUIDITY MEASURES

(10) Some of the graphs set out above present a particular change during the beginning of 2007, while still providing insight concerning the identification problem described in the Decision[9]. The regressions used to produce these graphs employs the Notifying Parties preferred specification, as described in Recital (4) of the Annex. This pattern seems to result from the interaction between the tick size dummy and the log of MTF volume variable. The dummy takes value one starting from January 2007 and zero before. At the same time the log of the MTF volumes only takes positive values during the first quarter of 2007.

(11) This Section therefore sets out the graphs plotting the regression coefficients including the same explanatory variables as the regressions above except for the tick size dummy. It is observed that the pattern observed for the beginning of 2007 no longer shows up. However, none of the main qualitative conclusions relevant for this Decision are changed.

Figure 51: Quarter-year-index coefficients using the specification on Figure 8 on normalised bid-ask spread without tick size dummy as explanatory variable- Individual exchange regression for PSI securities for the period 1/1/2000-31/12/2010.

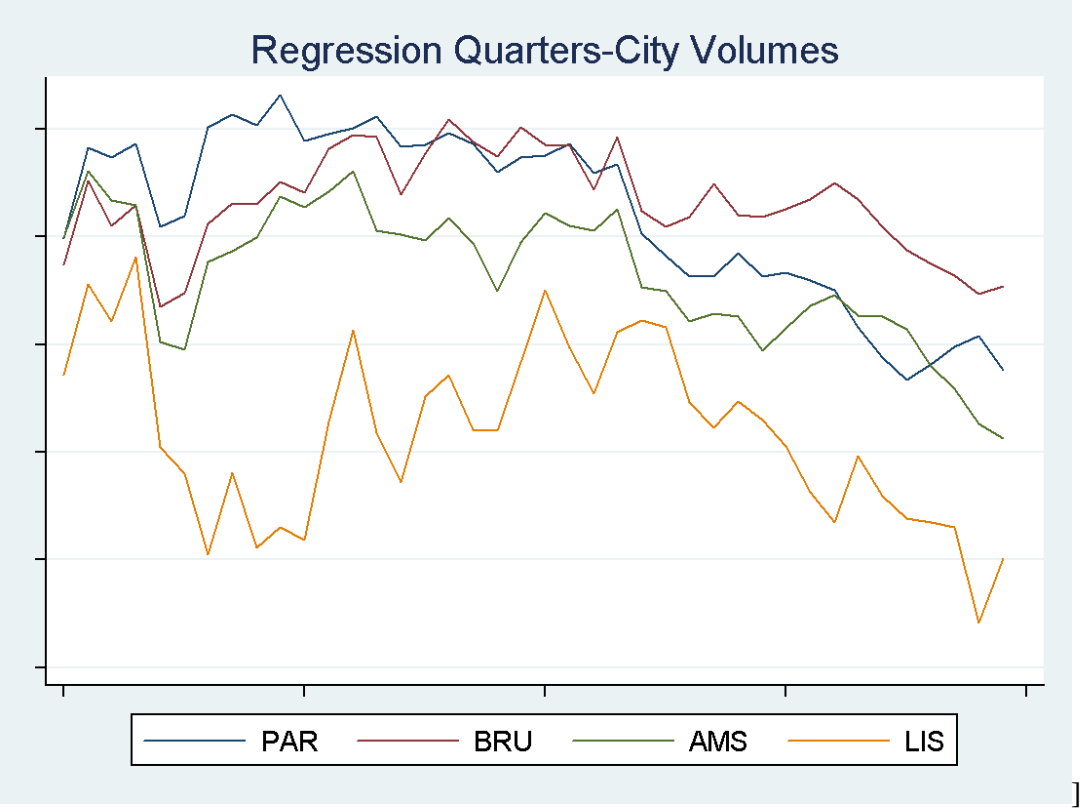


[ ]*

[9] See Figure 8, Figure 12, Figure 13, Figure 20, Figure 21, Figure 22, Figure 23, Figure 28, Figure 29, Figure 37 and Figure 39.

Note: The graph plots the coefficients from the quarter-year index dummies from a regression with the specification used to produce Figure 8. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, the MTF volume for Chi-X Europe and BATS, market capitalisation and the security price. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of normalised bid-ask spread. A regression including the log of annual GDP per capita produces the same results. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

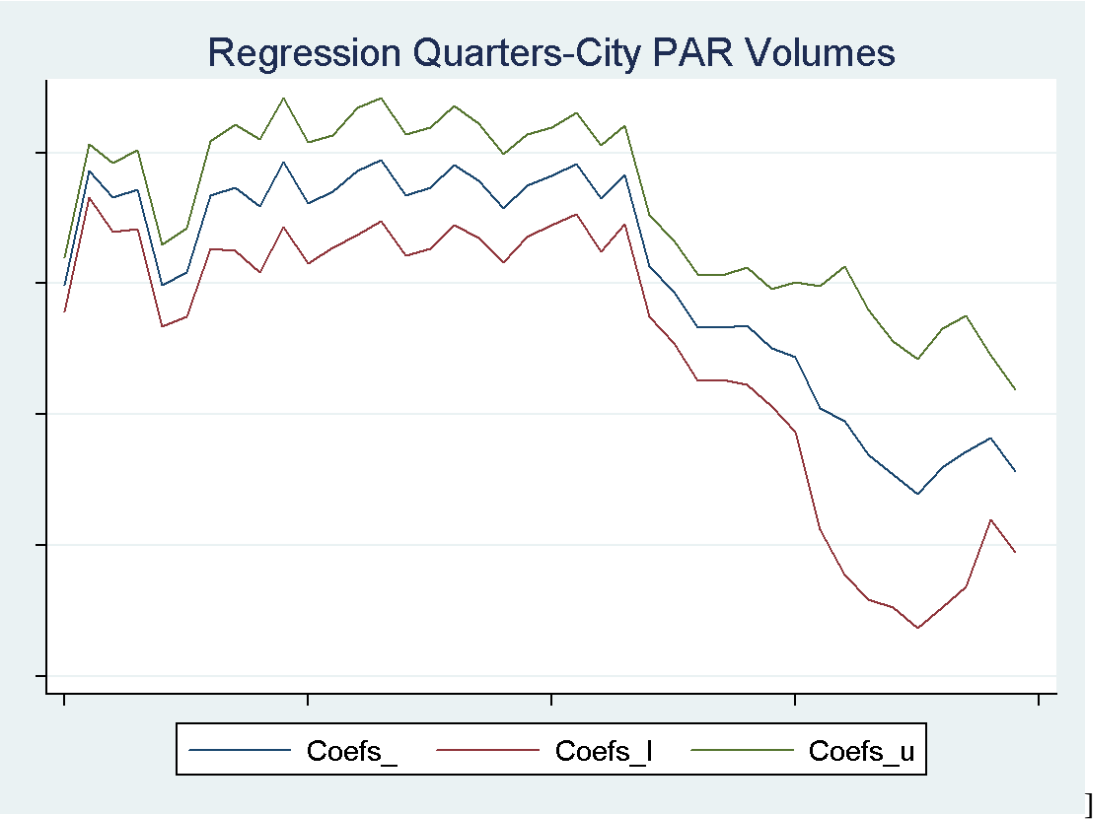
Figure 52: Quarter-year-index coefficients using the specification on Figure 12 on volumes without tick size dummy as explanatory variable- Pooled regression for the period 1/1/2000-31/12/2010.



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from a regression with the specification used to produce Figure 12. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, the MTF volume for Chi-X Europe and BATS, market capitalisation and the security price. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of volumes. A regression including the log of annual GDP per capita produces the same results. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

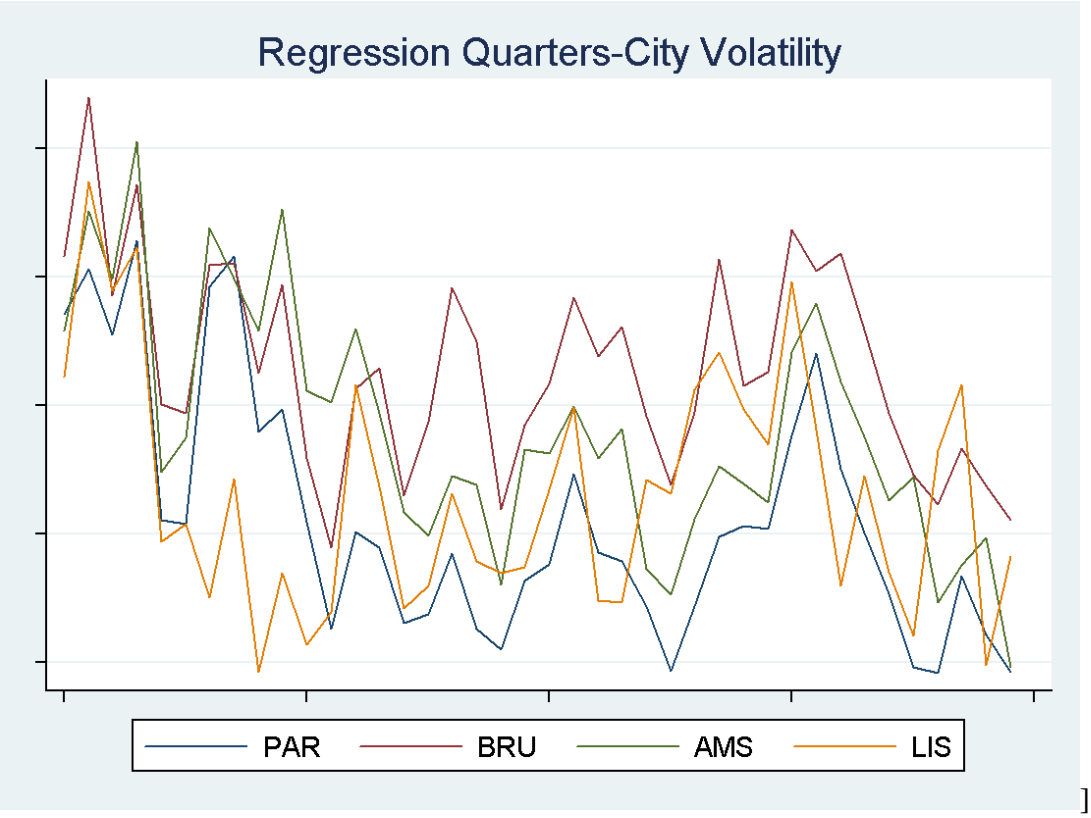
Figure 53: Quarter-year-index coefficients using the specification on Figure 13 on volumes without tick size dummy as explanatory variable- Individual exchange regression for CAC-40 securities for the period 1/1/2000-31/12/2010.



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from a regression with the specification used to produce Figure 13. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, the MTF volume for Chi-X Europe and BATS, market capitalisation and the security price. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of volumes. A regression including the log of annual GDP per capita produces the same results. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

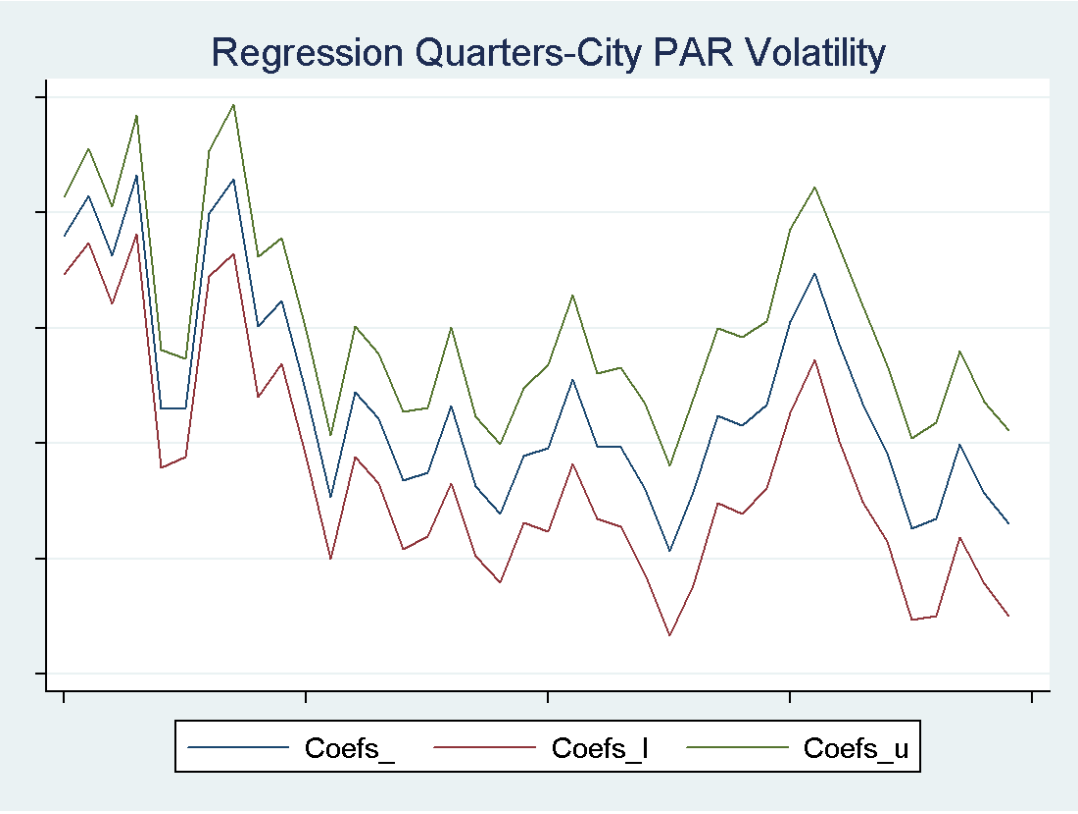
Figure 54: Quarter-year-index coefficients using the specification on Figure 20 on 20 day historical volatility without tick size dummy as explanatory variable- Pooled regression for the period 1/1/2000-31/12/2010.



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from a regression with the specification used to produce Figure 20. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, the MTF volume for Chi-X Europe and BATS, market capitalisation and the security price. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of 20 day historical volatility. A regression including the log of annual GDP per capita produces the same results. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

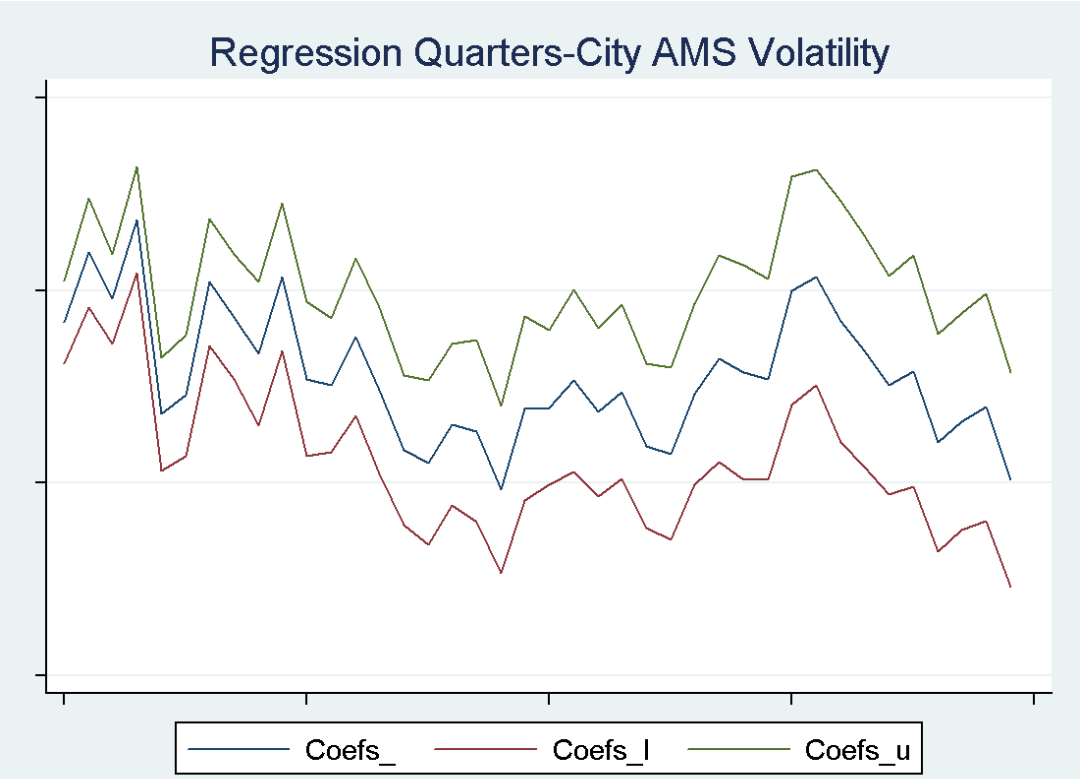
Figure 55: Quarter-year-index coefficients using the specification on Figure 21 on 20 day historical volatility without tick size dummy as explanatory variable- Individual exchange regression for CAC-40 securities for the period 1/1/2000-31/12/2010.



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from a regression with the specification used to produce Figure 21. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, the MTF volume for Chi-X Europe and BATS, market capitalisation and the security price. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of 20 day historical volatility. A regression including the log of annual GDP per capita produces the same results. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

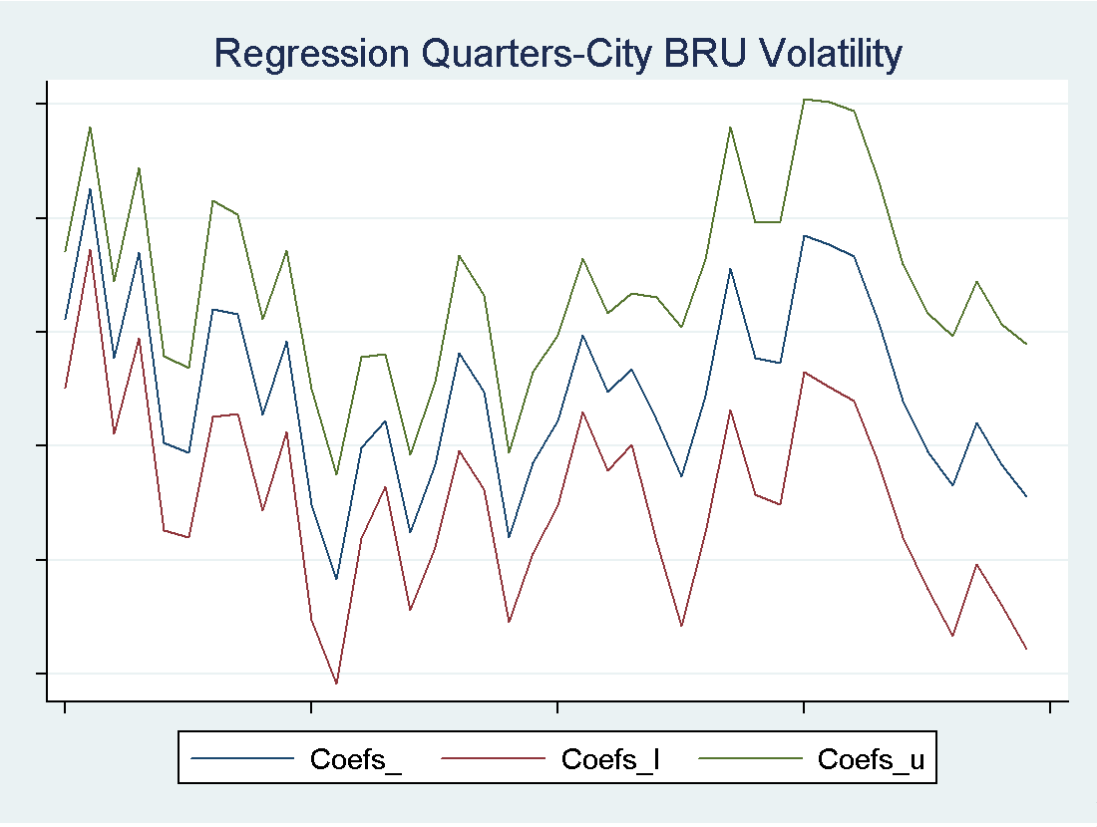
Figure 56: Quarter-year-index coefficients using the specification on Figure 22 on 20 day historical volatility without tick size dummy as explanatory variable- Individual exchange regression for AEX securities for the period 1/1/2000-31/12/2010.



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from a regression with the specification used to produce Figure 22. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, the MTF volume for Chi-X Europe and BATS, market capitalisation and the security price. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of 20 day historical volatility. A regression including the log of annual GDP per capita produces the same results. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

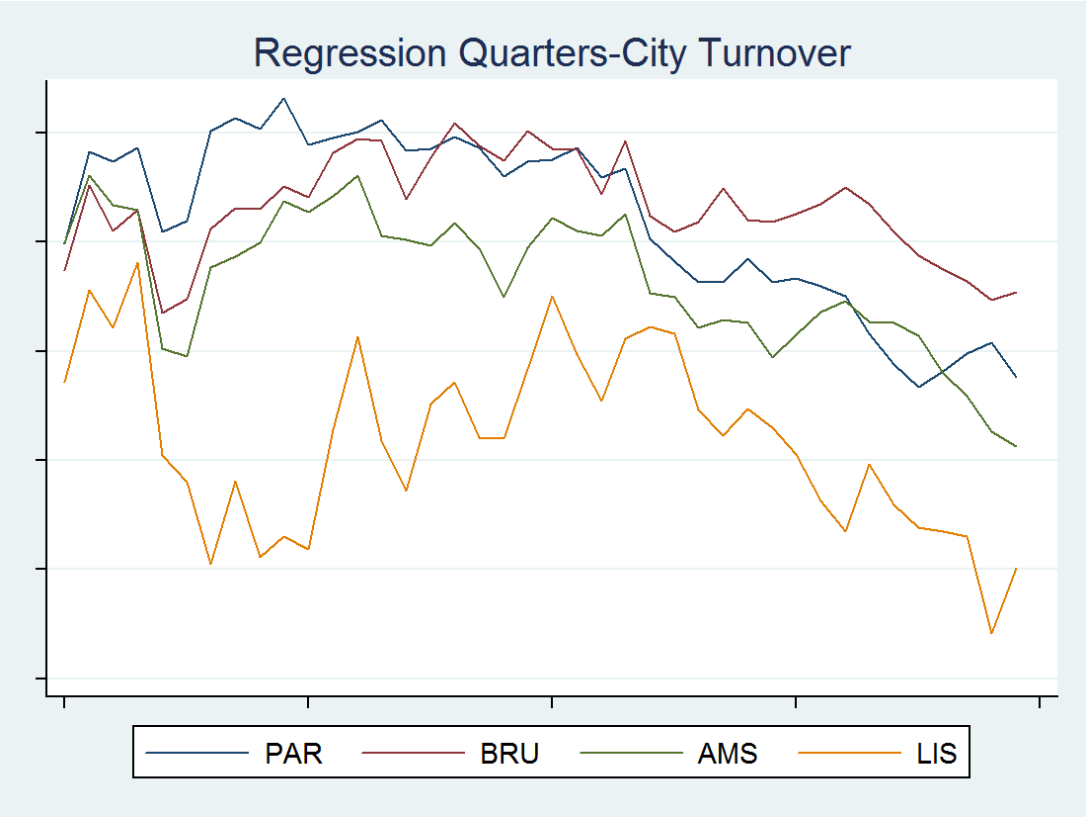
Figure 57: Quarter-year-index coefficients using the specification on Figure 23 on 20 day historical volatility without tick size dummy as explanatory variable- Individual exchange regression for BEL-20 securities for the period 1/1/2000-31/12/2010.



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from a regression with the specification used to produce **Fugure 23**. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange, the MTF volume for Chi-X Europe and BATS, market capitalisation and the security price. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of 20 day historical volatility. A regression including the log of annual GDP per capita produces the same results. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

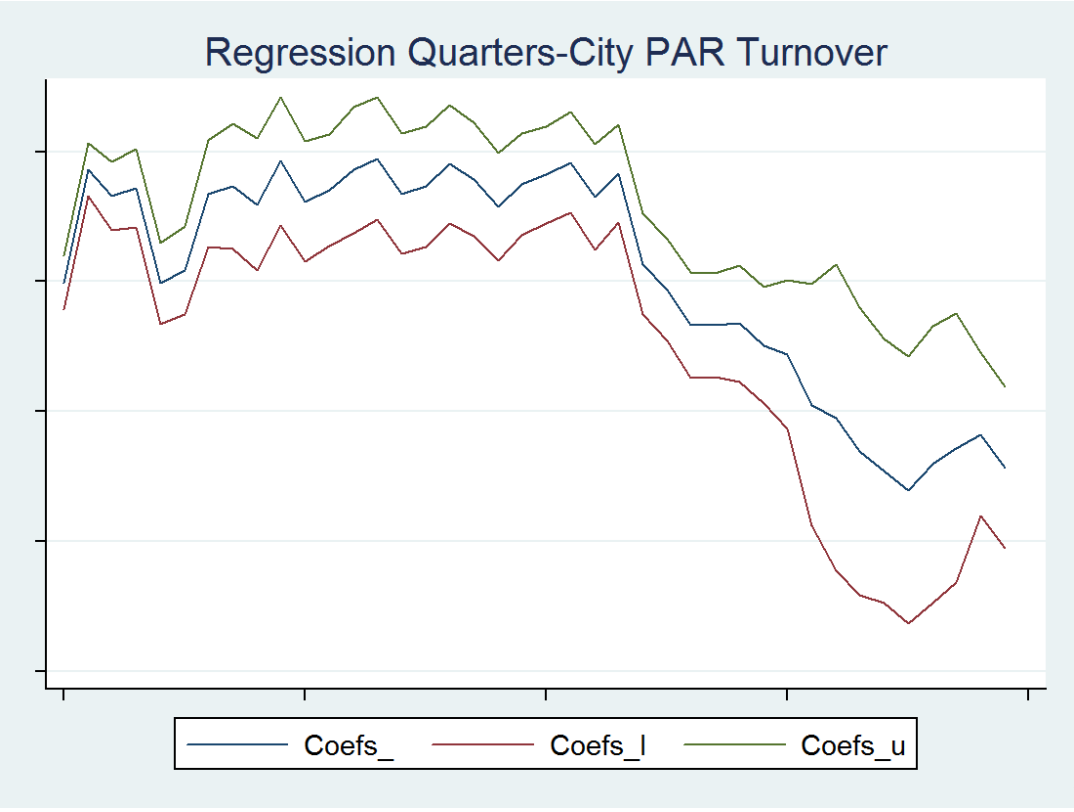
Figure 58: Quarter-year-index coefficients using the specification on Figure 28 on turnover without tick size dummy as explanatory variable- Pooled regression for the period 1/1/2000-31/12/2010.



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from a regression with the specification used to produce Figure 28. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange and the MTF volume for Chi-X Europe and BATS. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of turnover. A regression including the log of annual GDP per capita produces the same results. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

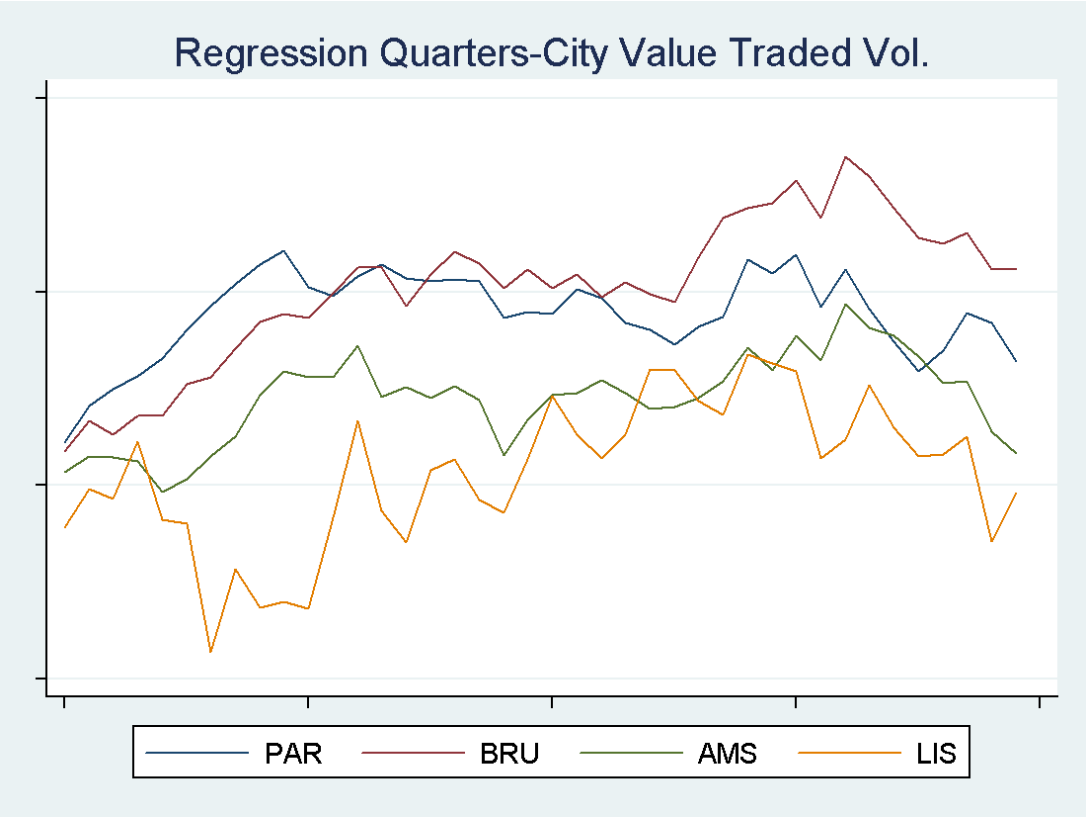
Figure 59: Quarter-year-index coefficients using the specification on Figure 29 on turnover without tick size dummy as explanatory variable- Individual exchange regression for CAC-40 securities for the period 1/1/2000-31/12/2010.



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from a regression with the specification used to produce Figure 29. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded volume on the Frankfurt exchange and the MTF volume for Chi-X Europe and BATS. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of turnover. A regression including the log of annual GDP per capita produces the same results. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

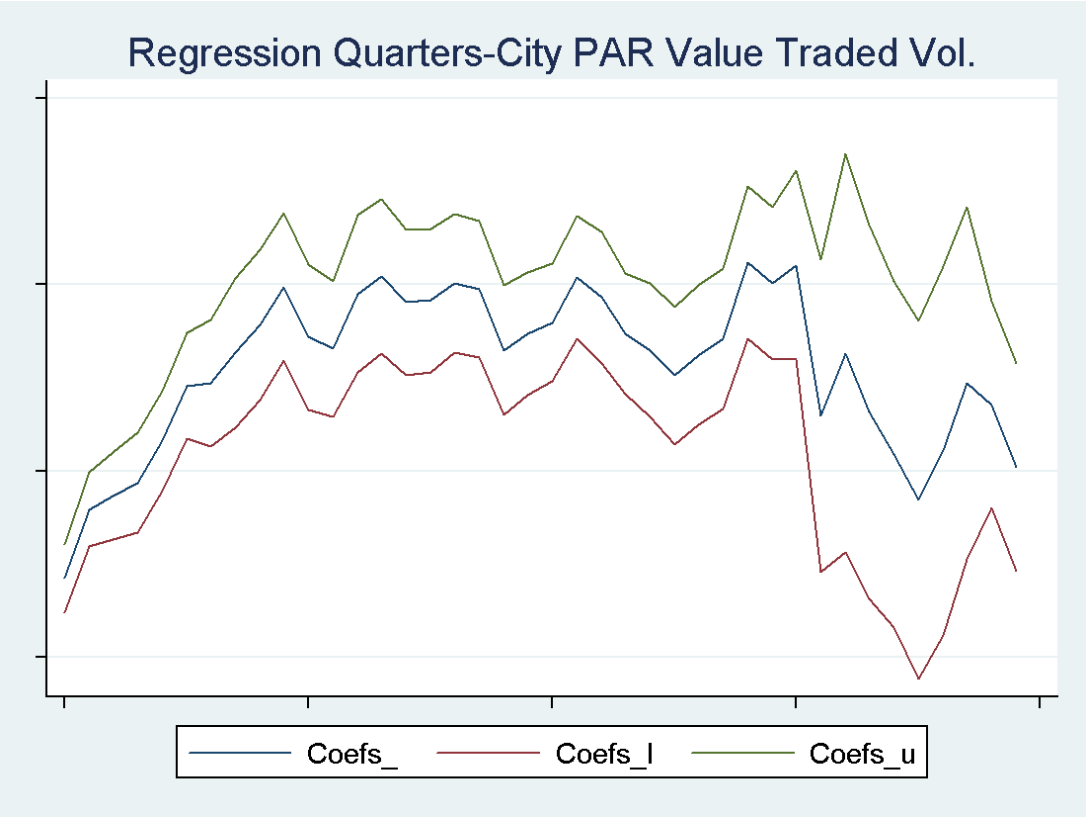
Figure 60: Quarter-year-index coefficients using the specification on Figure 37 on value of traded volume turnover without tick size dummy as explanatory variable- Pooled regression for the period 1/1/2000-31/12/2010.



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from a regression with the specification used to produce Figure 37. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded value on the Frankfurt exchange, the MTF value for Chi-X Europe and BATS and the security price. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of value of traded volume. A regression including the log of annual GDP per capita produces the same results. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

Figure 61: Quarter-year-index coefficients using the specification on Figure 39 on value of traded volume without tick size dummy as explanatory variable- Individual exchange regression for CAC-40 securities for the period 1/1/2000-31/12/2010.



[ ]*

Note: The graph plots the coefficients from the quarter-year index dummies from a regression with the specification used to produce **Figure 39**. Furthermore, the Coefs_l and Coefs_u identify the parameters determining the lower and upper bound respectively of the 95% confidence interval. The explanatory variables (all in logs) included in this regression are the DAX volatility, the traded value on the Frankfurt exchange, the MTF value for Chi-X Europe and BATS and the security price. Furthermore, it includes a number of daily dummy variables to control for a list of events which occurred over the period. The dependent variable is the log of value of traded volume. A regression including the log of annual GDP per capita produces the same results. The vertical lines indicate the different consolidation dates of Paris, Brussels and Amsterdam exchanges into Euronext. The first line shows the integration of the Paris and Brussels exchanges, the second one the integration with Amsterdam and the third the integration of the Lisbon exchange.

Table of Content

1. INTRODUCTION AND PROCEDURE 2

2. THE PARTIES 3

3. THE TRANSACTION AND THE CONCENTRATION 4

4. UNION DIMENSION 4

5. INTRODUCTION 5

6. INVESTIGATION OF THE CASE 6

7. CASH INSTRUMENTS 8

7.1. CASH LISTING SERVICES 8
7.1.1. Market definition 8
7.1.1.1. The implications of MiFID and the Prospectus Directive and the distinction between listing and admission to trading in the EEA 8
7.1.1.2. Equities and/or Bond Listing services 9
7.1.1.3. Conclusion on market definition 11
7.1.2. Competitive assessment 11
7.1.2.1. Horizontal overlaps 11
7.1.2.2. Vertical relationship 13
7.2. CASH TRADING SERVICES 13
7.2.1. Market definition 14
7.2.1.1. Trading 14
7.2.1.1.1. Equity trading 15
7.2.1.1.1.1. Product market definition 15
7.2.1.1.1.1.1. Trading on Regulated Markets and MTFs vs OTC trading 15
7.2.1.1.1.1.2. The different types of equity 15
7.2.1.1.1.1.3. The "home bias" of equity trading 16
7.2.1.1.1.2. Geographic market definition 18
7.2.1.1.2. Bonds trading 18
7.2.1.1.2.1. Product market definition 18
7.2.1.1.2.2. Geographic market definition 19
7.2.1.2. Post-trading 19
7.2.1.2.1. Clearing of cash instruments 19
7.2.1.2.1.1. Product market definition 19
7.2.1.2.1.2. Geographic market definition 20
7.2.1.2.2. Settlement of cash instruments 20
7.2.1.2.2.1. Product market definition 20
7.2.1.2.2.2. Geographic definition 21
7.2.2. Competitive assessment 22
7.2.2.1. Equity trading 22
7.2.2.1.1. Company-issued equities (stocks) 22
7.2.2.1.2. Structured products 23
7.2.2.1.3. ETFs 23
7.2.2.1.4. Conclusion 24
7.2.2.2. Bond Trading 24
7.2.2.3. Post-trading: Clearing 25
7.2.2.4. Post-trading: Settlement 25

8. MARKET DATA AND INDEX LICENSING 28

8.1. MARKET DEFINITION 28

8.1.1. Market data ... *28*
8.1.2. Index Licensing ... *29*
8.2. COMPETITIVE ASSESSMENT ... 31
8.2.1. Market data ... *31*
8.2.2. Index licensing ... *32*

9. INFORMATION TECHNOLOGY PRODUCTS AND SERVICES ... 33

9.1. MARKET DEFINITION ... 34
9.1.1. IT services ... *34*
9.1.2. Software ... *35*
9.1.3. Conclusion on market definition ... *35*
9.2. COMPETITIVE ASSESSMENT ... 36
9.2.1. Exchange solutions ... *36*
9.2.2. Global connectivity services ... *36*

10. COLLATERAL MANAGEMENT ... 38

10.1. MARKET DEFINITION ... 38
10.1.1. Product Market Definition ... *38*
10.1.2. Geographic market definition ... *40*
10.2. COMPETITIVE ASSESSMENT ... 40

11. DERIVATIVES ... 42

11.1. MARKET DEFINITION ... 42
11.1.1. Trading and clearing of exchange traded derivatives ... *42*
11.1.1.1. Introduction ... 42
11.1.1.1.1. Trading of derivatives ... 43
11.1.1.1.2. Clearing of derivatives ... 44
11.1.1.1.3. Link between trading and clearing in the area of derivatives ... 46
11.1.1.2. Product and Geographic Market ... 48
11.1.1.2.1. Commission's approach to market definition ... 48
11.1.1.2.2. Product market ... 50
11.1.1.2.2.1. Classification of derivatives according to the execution mode: ETDs vs OTC ... 52
11.1.1.2.2.1.1. Introduction ... 53
11.1.1.2.2.1.2. There is a range of derivatives contracts from fully standardised ETDs on one side to customised OTC contracts on the other side ... 56
11.1.1.2.2.1.3. Substitution between ETDs and OTC derivatives is at best limited ... 60
11.1.1.2.2.1.4. Customers that can only trade ETDs ... 60
11.1.1.2.2.1.5. Customers that trade both ETDs and OTC derivatives ... 66
a. Introduction ... 66
b. Only ETD lookalikes could in some circumstances be considered as directly substitutable to listed products ... 67
c. The majority of ETDs could not be substituted by OTC contracts as OTC contracts generally have different characteristics and fulfil different needs ... 72
d. Critical loss analysis performed by the Notifying Parties does not evidence substitutability between ETDs and OTC derivatives ... 80
e. ETDs and OTC respond to complementary trading strategies ... 81
f. The Notifying Parties' internal documents do not sustain the claim that substitution between ETDs and OTC derivatives occurs regularly ... 84
g. Conclusion ... 86
11.1.1.2.2.1.6. Existence of OTC trading platforms, broker-dealers and inter-dealer brokers does not imply a competitive constraint from OTC derivatives on ETDs ... 86
a. OTC trading platforms make it possible to find a counterparty in the OTC market ... 86
b. Broker-dealers and inter-dealer brokers focus on the OTC market and do not play a gatekeeper role ... 88
c. Cscreen is a price discovery mechanism for trades agreed away from exchange ... 91

d. Conclusion ... 92
11.1.1.2.2.1.7. Broker-dealers cannot be included in the relevant market via supply-side substitution ... 92
11.1.1.2.2.2. Classification of derivatives according to the underlying asset class ... 93
11.1.1.2.2.2.1. European interest rate derivatives ... 95
a. Exchange-traded interest rate derivatives are intrinsically linked to a specific currency ... 96
b. STIR derivatives v LTIR derivatives ... 97
11.1.1.2.2.2.2. European single equity derivatives ... 102
11.1.1.2.2.2.3. European equity index derivatives ... 104
11.1.1.2.2.3. Classification of derivatives according to their relationship with the underlying ... 106
11.1.1.2.2.4. Conclusion ... 108
11.1.1.2.3. Geographic market definition ... 109
11.1.1.2.3.1. General considerations ... 109
11.1.1.2.3.2. Exchange traded European interest rate options and futures ... 111
11.1.1.2.3.3. Exchange traded European single stock equity options and futures ... 112
11.1.1.2.3.4. Exchange traded European equity index options and futures ... 112
11.1.2. Off-order book services – registration, confirmation and CCP clearing of block size ETD contracts ... 112
11.1.2.1. Product market definition ... 113
11.1.2.2. Geographic market definition ... 115
11.1.3. Trade registration, confirmation and central counterparty clearing services for flexible versions of European equity futures and options traded OTC ... 115
11.1.3.1. Product market definition ... 115
11.1.3.2. Geographic market definition ... 118
11.2. COMPETITIVE ASSESSMENT ... 118
11.2.1. Trading and clearing of exchange traded derivatives ... 118
11.2.1.1. Introduction ... 118
11.2.1.1.1. The Commission's analytical framework ... 118
11.2.1.1.2. The overall market position of the Notifying Parties ... 120
11.2.1.2. General parameters of competition in derivatives trading and clearing ... 120
11.2.1.2.1. Introduction ... 120
11.2.1.2.2. Pricing and cost of trading of ETDs ... 121
11.2.1.2.3. Competition to attract liquidity and tendency of liquidity to aggregate on a single platform ... 123
11.2.1.2.4. Technology ... 124
11.2.1.2.5. Product innovation ... 126
11.2.1.2.6. Process and market design ... 127
11.2.1.3. Pre-merger competition between the Notifying Parties ... 127
11.2.1.3.1. Introduction ... 127
11.2.1.3.2. The Notifying Parties compete head-to-head and are each other's closest actual and potential competitors ... 129
11.2.1.3.3. Competition between the Notifying Parties to introduce new products ... 135
11.2.1.3.3.1. Competition to introduce new products ... 135
11.2.1.3.3.2. Pricing behaviour in relation to new product launches ... 137
11.2.1.3.3.3. Response of the Notifying Parties to the SO ... 138
11.2.1.3.3.4. Analysis of the Notifying Parties' claims in response to the SO ... 139
11.2.1.3.3.5. General conclusions on competition in new products ... 141
11.2.1.3.4. Competition between the Notifying Parties in technology, process and market design ... 142
11.2.1.3.4.1. Introduction ... 142
11.2.1.3.4.2. Competition in technology ... 142
11.2.1.3.4.3. Competition in process and market design ... 145
11.2.1.3.4.4. Response of the Notifying Parties to the SO ... 146
11.2.1.3.4.5. Analysis of the Notifying Parties' arguments in the response to the SO ... 146
11.2.1.3.4.6. Conclusions on competition in technology, process and market design ... 148
11.2.1.4. Competition between the Notifying Parties - European interest rate futures and options ... 148
11.2.1.4.1. Introduction ... 148
11.2.1.4.2. Actual competition in existing interest rate derivatives ... 149
11.2.1.4.2.1. Introduction ... 149
11.2.1.4.2.2. STIR Derivatives based on euro interest rates ... 151

11.2.1.4.2.2.1. Initial competition to establish the Euribor benchmark 152
11.2.1.4.2.2.2. Ongoing competition in Euribor futures 153
11.2.1.4.2.2.3. Options on Euribor futures 154
11.2.1.4.2.2.4. Commission analysis of the Notifying Parties' response to the SO 156
11.2.1.4.2.3. European interest rate derivatives providing longer term exposure 158
11.2.1.4.2.3.1. Competition in mid-term euro interest rates 158
11.2.1.4.2.3.2. Response of the Notifying Parties to the SO 160
11.2.1.4.2.3.3. Analysis of the Notifying Parties' response to the SO 160
11.2.1.4.2.4. Conclusion 162
11.2.1.4.3. Potential competition in European interest rate derivatives where one party has the bulk of the liquidity 163
11.2.1.4.3.1. Introduction 163
11.2.1.4.3.2. Bund-Bobl-Schatz 164
11.2.1.4.3.2.1. Battle of the Bund 164
11.2.1.4.3.2.2. EuroMTS Bond Index Futures 165
11.2.1.4.3.2.3. Recent attempts by Liffe to challenge Eurex 166
11.2.1.4.3.2.4. Response of the Notifying Parties to the SO 167
11.2.1.4.3.2.5. Analysis of the Notifying Parties' response to the SO 167
11.2.1.4.3.3. Euro-BTP Futures 168
11.2.1.4.3.3.1. Competitive interaction 168
11.2.1.4.3.3.2. Points made by the Notifying Parties in response to the SO 168
11.2.1.4.3.3.3. Analysis of the Notifying Parties' response to the SO 169
11.2.1.4.3.4. Gilts 170
11.2.1.4.3.4.1. Competitive interaction 170
11.2.1.4.3.4.2. Points made by the Notifying Parties in response to the SO 170
11.2.1.4.3.4.3. Analysis of the Notifying Parties' response to the SO 171
11.2.1.4.3.5. No other player could maintain sufficient competitive constraint on the merged entity post-merger 171
11.2.1.4.3.5.1. CME 172
11.2.1.4.3.5.2. Nasdaq OMX 178
11.2.1.4.3.5.3. ELX 180
11.2.1.4.3.5.4. Other attempts at entry 181
11.2.1.4.3.5.5. Conclusions 182
11.2.1.4.3.6. Conclusion on potential competition in European interest rate derivatives 182
11.2.1.4.4. Competition to introduce new products in the area of European interest rate derivatives 182
11.2.1.4.4.1. Introduction 182
11.2.1.4.4.2. Competition between the Notifying Parties 183
11.2.1.4.4.3. Arguments made by the Notifying Parties in response to the SO 184
11.2.1.4.4.4. Conclusion 185
11.2.1.4.5. Conclusion on European interest rate derivatives 185
11.2.1.5. Competition between the Notifying Parties - single stock equity options and futures 185
11.2.1.5.1. Introduction 185
11.2.1.5.2. Actual competition in existing products 185
11.2.1.5.2.1. "Home" markets 185
11.2.1.5.2.2. Other EEA markets 197
11.2.1.5.2.3. Response of the Notifying Parties to the SO 200
11.2.1.5.2.4. Analysis of the Notifying Parties' response to the SO 200
11.2.1.5.2.5. Conclusions 202
11.2.1.5.3. Potential competition 203
11.2.1.5.3.1. Introduction 203
11.2.1.5.3.2. No other player could maintain sufficient competitive pressure on the merged entity post-merger 204
11.2.1.5.3.2.1. Entry by cash MTFs: Turquoise and BATS/Chi-X Europe 204
11.2.1.5.3.3. TOM 205
11.2.1.5.3.4. Conclusion on potential competition in the area of European single stock derivatives 206
11.2.1.5.4. Competition to introduce new products in the area of European single stock derivatives 206
11.2.1.5.5. Conclusion on single stock equity options and futures 207
11.2.1.6. Competition between the Notifying Parties: equity indices 208

11.2.1.6.1. Actual and potential competition in existing products 208
11.2.1.6.2. Competition in product innovation 209
11.2.1.6.2.1. Eurostoxx vs Eurofirst 209
11.2.1.6.2.2. Volatility index futures 210
11.2.1.6.2.3. Index dividend futures 210
11.2.1.6.3. Response of the Notifying Parties to the SO 211
11.2.1.6.4. Analysis of the Notifying Parties' response to the SO 211
11.2.1.6.5. Conclusion on European equity index futures and options 213
11.2.1.7. Barriers to entry and expansion 213
11.2.1.7.1. High barriers to entry and expansion into European equity and interest rate derivatives 214
11.2.1.7.1.1. Introduction 214
11.2.1.7.1.2. General barrier: Open interest in fungible or correlated contracts and cross-margining 215
11.2.1.7.1.3. Certain popular derivatives contracts are protected by IP rights: case of equity index derivatives 221
11.2.1.7.1.4. Membership base 223
11.2.1.7.2. Historical attempts at entry into European exchange traded equity and interest rate futures and options 224
11.2.1.7.2.1. Customer-sponsored entry – project Rainbow 224
11.2.1.7.2.2. Entry by cash MTFs (example of Turquoise Derivatives) 226
11.2.1.7.3. The prospect of sufficient and timely post-merger entry is unlikely 228
11.2.1.7.4. Conclusion 229
11.2.1.8. The Merging Parties' Customers have no countervailing buyer power and no possibilities of switching suppliers 229
11.2.1.9. Conclusions on competition between the Notifying Parties in trading and clearing of exchange traded derivatives 232
11.2.2. Off-order book services – registration, confirmation and CCP clearing of block size ETD contracts 233
11.2.2.1. Introduction 233
11.2.2.2. Demand for off-order book services 233
11.2.2.3. Competition between the Notifying Parties 235
11.2.2.3.1. Introduction 235
11.2.2.3.2. Interest rate derivatives 236
11.2.2.3.3. Single stock options and futures 236
11.2.2.3.3.1. Competition in products listed by both of the Notifying Parties 237
11.2.2.3.3.2. Universal stock futures 238
11.2.2.3.3.3. Potential competition in off-book services for European single stock futures and options 239
11.2.2.3.3.4. Additional off-book constraint from Liffe with regard to contracts listed on Eurex only 239
11.2.2.3.4. Conclusion 241
11.2.3. Trade registration, confirmation and central counterparty clearing services for flexible versions of European equity futures and options traded OTC 241
11.2.3.1. Introduction 241
11.2.3.2. Competition between the Notifying Parties 244
11.2.3.2.1. Extent of competitive interaction 244
11.2.3.2.2. Competitive parameters 247
11.2.3.2.3. Competitors 248
11.2.3.2.4. Impact of anticipated regulatory developments 249
11.2.3.3. Meaningful entry is unlikely 250
11.2.3.4. Points made by the Notifying Parties in their response to the SO 251
11.2.3.5. Conclusion 252
11.2.4. Conclusion on derivatives 253

12. EFFICIENCIES 254

12.1. INTRODUCTION 254
12.2. THE NOTIFYING PARTIES' EFFICIENCY CLAIMS 257
12.3. ASSESSMENT 260
12.3.1. IT and user access cost savings 260

12.3.1.1. The Notifying Parties' efficiency claims 260
12.3.1.2. Analysis 261
12.3.1.2.1. Verifiability 261
12.3.1.2.2. Merger specificity 264
12.3.1.2.3. Consumer benefits 265
12.3.1.3. Conclusion on IT and user access cost savings 266
12.3.2. Collateral Savings 267
12.3.2.1. The Notifying Parties' claims 267
12.3.2.2. Analysis 267
12.3.2.2.1. Verifiability 267
12.3.2.2.2. Merger specificity 271
12.3.2.2.2.1. The Notifying Parties' claims 272
a. Interoperability 272
b. Outsourcing 272
c. Margin offset agreements 273
12.3.2.2.2.2. Commission's assessment 275
12.3.2.2.3. Consumer benefits 277
12.3.2.3. Conclusion on collateral savings 278
12.3.3. Liquidity impact on integrated cash exchanges 279
12.3.3.1. The Notifying Parties' claims 279
12.3.3.2. Analysis 280
12.3.3.2.1. Verifiability 281
12.3.3.2.1.1. Inference from historical data 281
12.3.3.2.1.2. Identification of the impact of the mergers at the time 289
12.3.3.2.1.3. Criticism on the calculation of Euro […]* million 298
12.3.3.2.1.4. Results from the market investigation 300
12.3.3.2.2. Merger specificity 301
12.3.3.2.3. Consumer benefits 301
12.3.3.3. Conclusion on liquidity impact on integrated cash exchanges 302
12.3.4. Liquidity impact of integrated derivatives trading platforms 302
12.3.4.1. The Notifying Parties' claims 302
12.3.4.2. Analysis 302
12.3.4.2.1. Verifiability 303
12.3.4.2.1.1. Identification – inference from historical data 303
12.3.4.2.1.2. Criticism of the estimation approach and the calculation of actual cost savings 303
12.3.4.2.1.3. Liquidity measure 305
12.3.4.2.1.4. Identification of the impact of the mergers at the time 306
12.3.4.2.1.5. Results from the market investigation 309
12.3.4.2.2. Merger specificity 310
12.3.4.2.3. Consumer benefits 310
12.3.4.3. Conclusion 311
12.3.5. Economy-wide efficiencies 311
12.3.6. Cost synergies 312
12.4. CONCLUSION ON EFFICIENCIES 312

13. COMMITMENTS 315

13.1. ANALYTICAL FRAMEWORK 315
13.2. DESCRIPTION OF THE PROPOSED COMMITMENTS 317
13.2.1. The Commitments of 21 November 2011 317
13.2.1.1. Substance of the proposal 318
13.2.1.1.1. Divestment Commitment 318
13.2.1.1.2. ITPA Commitment 318
13.2.1.2. Results of the first market test 320
13.2.1.2.1. Divestment Commitment 320
13.2.1.2.2. ITPA Commitment 322
13.2.1.2.3. Overall package 325

13.2.2. Commitments of 14 December 2011 ... *327*
13.2.2.1. Amended Divestment Commitment ... 327
13.2.2.2. Amended ITPA Commitment ... 328
13.2.2.3. New interest rate software licence ... 329
13.2.3. Notifying Parties' informal pledge to freeze trading and clearing fees for 3 years ... *330*
13.3. OVERALL ASSESSMENT OF THE COMMITMENTS OF 14 DECEMBER 2011 ... 330
13.3.1. Results of the second market test ... *331*
13.3.1.1. Scope of the Commitments of 14 December 2011 ... 332
13.3.1.1.1. Divestment Commitment ... 332
13.3.1.1.2. ITPA Commitment ... 334
13.3.1.1.3. Licence commitment ... 336
13.3.1.2. Viability and effectiveness of the commitments of 14 December 2011 ... 337
13.3.1.2.1. Divestment Commitment ... 337
13.3.1.2.2. ITPA Commitment ... 339
13.3.1.2.3. Licence commitment ... 341
13.3.1.3. Attractiveness of the commitments of 14 December 2011 for new entrants ... 342
13.3.1.3.1. Divestment Commitment ... 342
13.3.1.3.2. ITPA Commitment ... 343
13.3.1.3.3. Licence commitment ... 343
13.3.2. Commission's assessment of the Commitments of 14 December 2011 ... *344*
13.3.2.1. The commitments of 14 December 2011 are insufficient in scope ... 344
13.3.2.2. The Commitments of 14 December 2011 are not suitable to remedy competition concerns in this case ... 347
13.3.2.3. The Commitments of 14 December 2011 are unlikely to lead to sufficient and timely entry ... 349
13.3.2.4. The Commitments of 14 December 2011 would be difficult to implement and monitor ... 351
13.3.3. Commission's assessment of the informal pledge to freeze trading and clearing fees for three years ... *353*
13.4. CONCLUSION ... 354

14. CONCLUSION ... 355

1. OUTPUT FOR THE DIFFERENT LIQUIDITY MEASURES PROPOSED BY THE NOTIFYING PARTIES ... 357

1.1. BID ASK SPREAD ... 359
1.1.1. Pooled regression for the period 1/01/2000-31/12/2010 ... *359*
1.1.2. Pooled regression for the period 1/01/2000-31/12/2006 (pre-MiFID) ... *361*
1.1.3. Individuals exchange regressions for the period 1/01/2000-31/12/2010 ... *363*
1.1.3.1. Paris ... 363
1.1.3.2. Amsterdam ... 365
1.1.3.3. Brussels ... 366
1.1.3.4. Lisbon ... 368
1.2. VOLUMES ... 372
1.2.1. Year-month fixed effects on volumes for the period 1/01/2000-31/12/2010 ... *372*
1.2.2. Pooled regression for the period 1/01/2000-31/12/2010 ... *372*
1.2.3. Individual regression for the period 1/01/2000-31/12/2010 ... *374*
1.2.3.1. Paris ... 374
1.2.3.2. Amsterdam ... 376
1.2.3.3. Brussels ... 378
1.2.3.4. Lisbon ... 380
1.2.4. Residuals from the Notifying Parties' specifications on volumes for individuals stock exchanges for the period 1/01/2000-31/12/2010 ... *382*
1.3. VOLATILITY ... 384
1.3.1. Year-month fixed effects for the period 1/01/2000-31/12/2010 ... *384*
1.3.2. Pooled regression for the period 1/01/2000-31/12/2010 ... *384*
1.3.3. Individual regression for the period 1/01/2000-31/12/2010 ... *386*

1.3.3.1. Paris 386
1.3.3.2. Amsterdam 388
1.3.3.3. Brussels 391
1.3.3.4. Lisbon 393
1.3.4. Residuals from the Notifying Parties' specifications 20 day historical volatility for individuals stock exchanges for the period 1/01/2000-31/12/2010 395
1.4. TURNOVER 396
1.4.1. Year-month fixed effects for the period 1/01/2000-31/12/2010 397
1.4.2. Pooled regression for the period 1/01/2000-31/12/2010 397
1.4.3. Individual regression for the period 1/01/2000-31/12/2010 399
1.4.3.1. Paris 399
1.4.3.2. Amsterdam 400
1.4.3.3. Brussels 402
1.4.3.4. Lisbon 403
1.4.4. Residuals from the Notifying Parties' specifications on turnover for individuals stock exchanges for the period 1/01/2000-31/12/2010 405
1.5. VALUE OF TRADED VOLUME 407
1.5.1. Year-month fixed effects for the period 1/01/2000-31/12/2010 407
1.5.2. Pooled regression for the period 1/01/2000-31/12/2010 407
1.5.3. Individual regression for the period 1/01/2000-31/12/2010 409
1.5.3.1. Paris 409
1.5.3.2. Amsterdam 412
1.5.3.3. Brussels 415
1.5.3.4. Lisbon 418
1.5.4. Residuals from the Notifying Parties' specifications value of traded volume for individuals stock exchanges for the period 1/01/2000-31/12/2010 422
1.6. WEIGHTED AVERAGE BID-ASK SPREAD OF THE CAC 40 424
1.6.1. Year-month fixed effects for the period 1/01/2000-31/12/2010 424
1.6.2. Pooled regression for the period 1/01/2000-31/12/2010 424
1.6.3. Residuals from the Notifying Parties' specifications on weighted-average spread of CAC-40 securities for individuals stock exchanges for the period 1/01/2000-31/12/2010 426
1.7. ADDITIONAL GRAPHS ON LIQUIDITY MEASURES 427