



Working Paper on exchanges and post-trade services

An overview

June 2005



Introduction

This document gives an overview of the exchanges and post-trade services sector.

The first section describes the value chain, the different segments and their customers; it also introduces the relevant regulatory frameworks.

The second section gives an indication of the value of the global sector for securities listing and trading presenting data on countries' market capitalization to GDP ratio and level of securities trading.

The third section describes the business activities of exchanges and their competitive drivers.

The fourth section provides a high level summary of the alternative business models for post-trade services and describes the provision of post-trade services in the EU.



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Explaining exchanges and post-trade services



Description of an exchange

Exchanges are centralized marketplaces where issuers raise capital (listing of securities) and participants buy and sell securities. Exchanges provide the primary mechanism for securities price formation which results from the interplay of supply and demand fed by new information.

Issuers list their securities on a public market, and therefore on one of the national exchanges, to have access to a wide pool of capital.

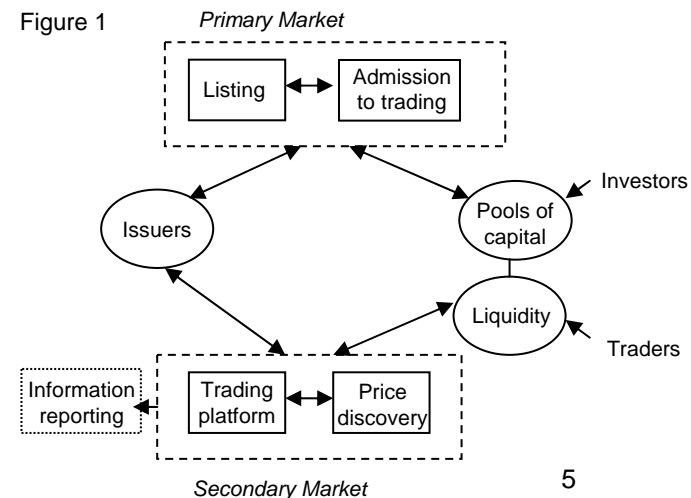
In addition to the provision of a primary market for securities (ie listing), exchanges offer investors the facilities to trade securities among themselves, either directly or through intermediaries (secondary market). As a result of, and to support, these main activities exchanges also collect and distribute listing and trading information (see Figure 1).

The attractiveness of an exchange to issuers and traders increases as the number of securities listed and the number of traders trading on the exchange increase.

Issuers seek to list at the exchange which offers them access to the greatest pool of capital and pools of capital will be attracted to those exchanges where most companies are listed, as they offer a wider choice for the allocation of capital. Also, the more a security is traded on a given exchange, the more attractive the exchange is to the issuers.

On the secondary market, the greater the number of traders using an exchange as a trading platform for particular securities, the more attractive the exchange is to any trader wishing to trade in those securities, since the greater the number of buyers and sellers the easier it is to trade (liquidity).

(Source: Oxera, Competing Ideas, Trading punches: competition between exchanges, February 2004.)





The value chain for exchanges: primary market

The main services offered by exchanges in the primary market are:

- listing of issuers; and
- admission to trading for securities (see Figure 2).

The listing of the issuer is a necessary condition for the admission of securities to trading on an exchange. In some cases the two activities are performed by different organizations; for example, in the UK issuers are listed by the FSA (the competent UK Listing Authority) and securities are admitted to trading on the main exchange by the London Stock Exchange.

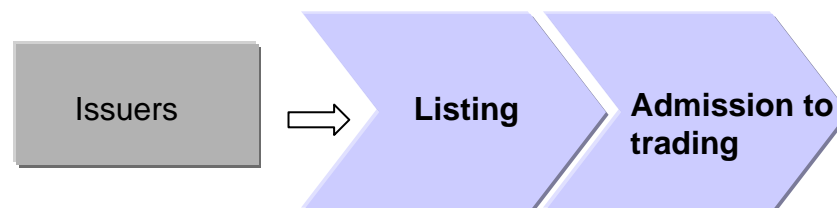
Different types of securities can be admitted to trading, including:

- Shares and equity related securities.
- Debt and debt-related securities.
- Unit certificates (issued by collective investment funds).

The processes of listing of the issuer and admission to trading of the securities do not apply to derivatives (instruments whose value depends on the performance of an underlying asset or security, which may be a commodity or a financial instrument). Derivatives traded on exchanges are created by the exchanges themselves rather than being offered by issuers.

Figure 2

Primary market



Key legend: Customers
 Activities/services



Explaining exchanges and post-trade services

The value chain for exchanges: secondary market

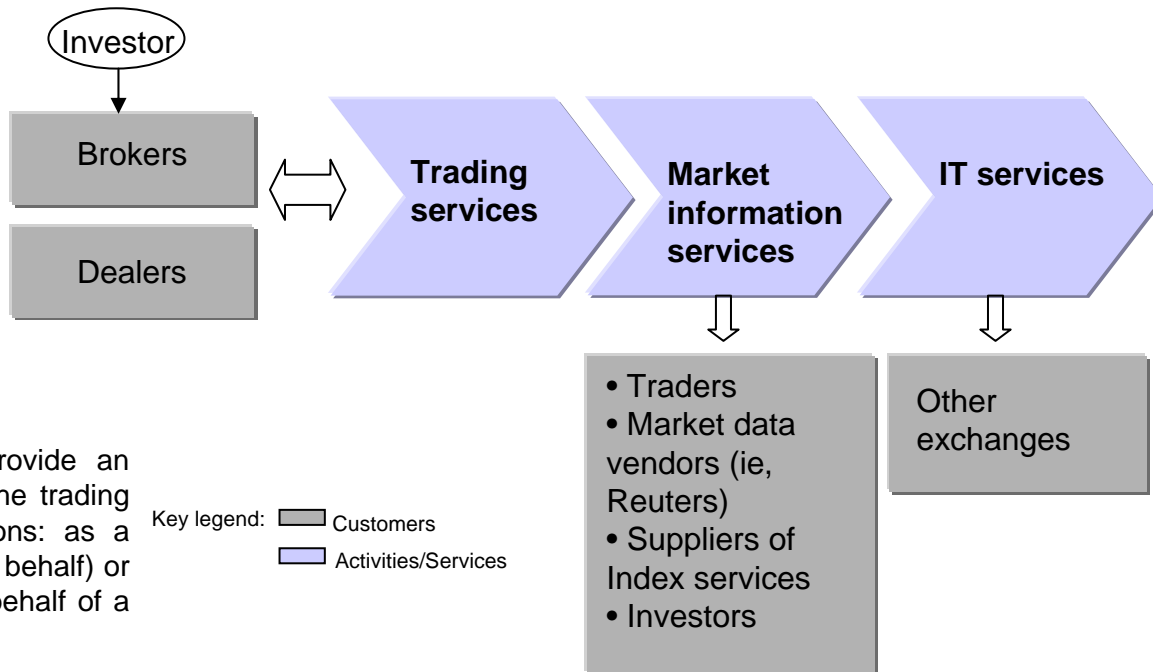
Figure 3 Secondary market

In the secondary market the services traditionally offered by Exchanges are:

- trading services; and
- market information services.

Over the last few years, as exchanges have developed their expertise in the operation and development of electronic trading platforms, the provision of exchange-related IT software and services has become an additional business for some of them. (See Figure 3).

In relation to trading services, exchanges provide an infrastructure to match the offers and bids of the trading participants. Traders can trade in two functions: as a dealer (trader buys or sells securities on its own behalf) or as a broker (trader buys or sells securities on behalf of a client).



Different types of securities can be traded on exchanges (eg equities, bonds, derivatives). For any exchange to operate successfully/efficiently, it must be liquid, ie it must attract a sufficient number of counterparties so that trading participants wanting to buy and sell securities are able to do so easily without triggering large changes in price.

The trading business depends on the provision of information and one of the activities performed by exchanges in the secondary market is the collection, processing and dissemination of market information ranging from data on individual trades and share price movements to company announcements.



Explaining exchanges and post-trade services

The value chain for post-trade services in equity markets

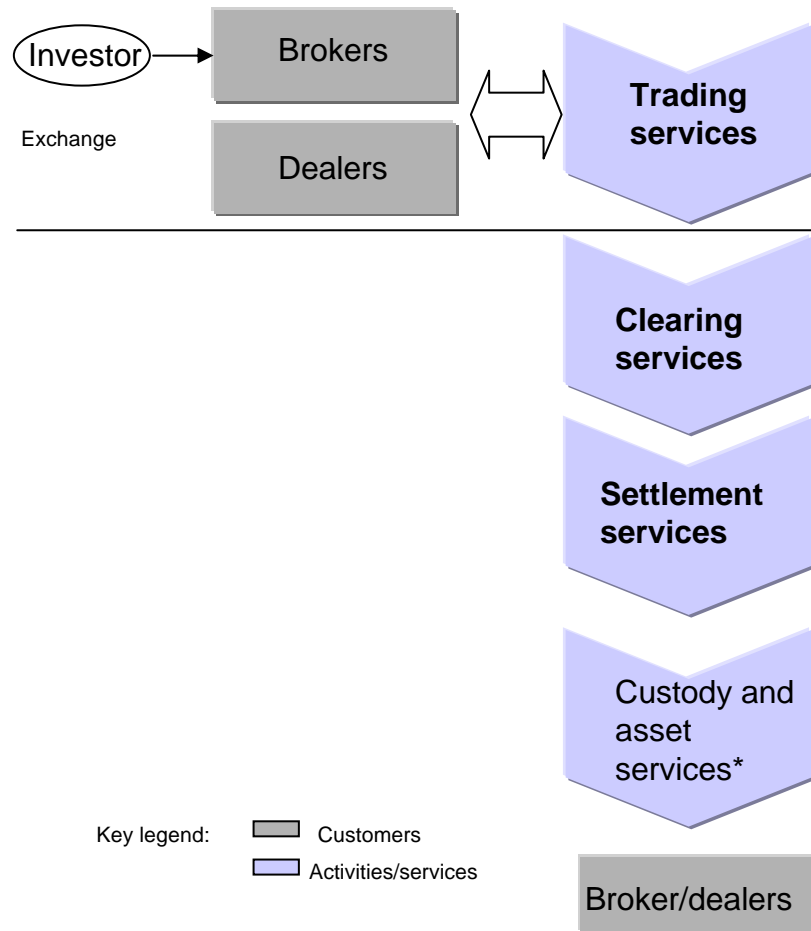
Once trades in cash equities are executed on and reported to the exchange (where trading participants are required to trade report to the exchange) the processes of clearing and settlement begin. (See Figure 4.)

The clearing of trades takes place between trading and settlement; the process begins after the terms of the securities transaction have been confirmed and involves the determination of exactly what each counterparty to the trade will be receiving.

At the end of the clearing process the instructions to transfer the securities and funds necessary to discharge the obligations must be transmitted to the settlement organization.

The settlement of trades involves the delivery of the securities and the payment of funds between the buyer and the seller. In Europe, the vast majority of securities are immobilized or dematerialized (physical certificates are eliminated and securities exist only through account records on the book of the issuer or appropriate intermediary). They can, therefore, be transferred by means of electronic book-entries and the payment of funds is usually effected via a banking or payment system.

Figure 4 Post-trade services



*Custody and Asset servicing involves safekeeping of the securities and exercise of corporate actions, such as dividends; these services will not be covered in this document.



Central counterparty clearing—(CCP)

Over the past few years, central counterparty clearing (CCP) has been established in a number of markets.

A central counterparty is an entity that interposes itself legally between the buyers and the sellers of securities, either directly or by a process of 'novation'.

When clearing is done through a CCP the buyers and sellers of securities interact directly with the CCP and remain anonymous to each other.

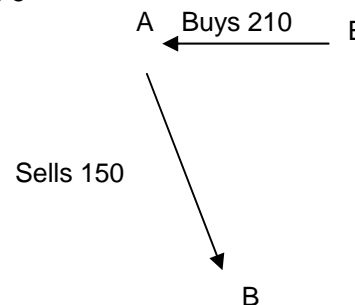
Some CCP also offer a 'netting' facility* whereby the CCP offsets all obligations (ie, the amounts owed by and to participants in the market). In other words, there is a single debit/credit between the CCP and each member rather than a multiplicity of bilateral exposures between the members (see Figure 5).

Central counterparty brings many benefits to market participants. It simplifies the management of counterparty risks by providing a single counterparty instead of several, increases liquidity through netting and reduces the number and value of transactions that have to be settled, thus reducing settlement costs.

(Source: Overview of EU25 securities trading, clearing, central counterparties, and securities settlement, European Commission Competition DG, Final Report by London Economics, February 2004).

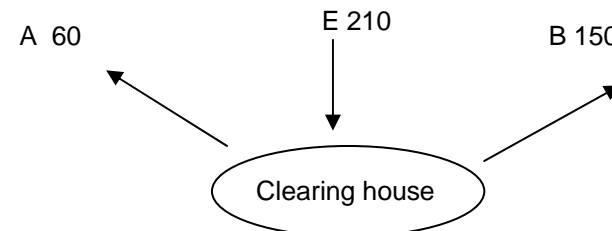
Example of trades in equities cleared through a CCP

Figure 5



- A buys 210 from E and sells 150 to B
- Number of trades for A: 2

Clearing and netting



- A settlement obligation: 1 for 60 units

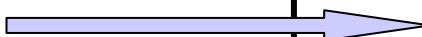
*Netting can also be available without a CCP service.



Customers of exchanges and post-trade services

Direct customers of exchanges and post-trade services can be grouped into: issuers, traders, institutional investors, clearing and settlement members, market data vendors, suppliers of independent indices and other exchanges. The table below presents an overview of the first four groups of customers.*

Segment of the value chain	Group of customers	Types of customer
Primary market		
Listing and admission to trading	Issuers	<ul style="list-style-type: none"> • Companies • Governments • Government agencies • Unit Trusts
Secondary market		
Trading services	Traders <ul style="list-style-type: none"> • Brokers • Dealers 	Brokers <ul style="list-style-type: none"> • Brokerage firms Dealers <ul style="list-style-type: none"> • Investment banks • Asset management firms (eg, pension funds, mutual funds) • Hedge funds
Post-trade services		
Clearing services	Clearing members	As for trading
Settlement services	Settlement members	As for trading



- Final clients
- Proprietary traders
 - Retail investors
 - Institutional investors
 - Traditional funds
 - Hedge funds

*Suppliers of market data, suppliers of independent indices and other exchanges as shown in Figure 3.



Ownership structures of exchanges

The traditional corporate ownership structure of a trading facility was a mutually held corporation where risk was shared among participants.

Over the years the legal structure of exchanges has evolved and the major exchanges can be grouped into the following five broad categories which relate to the ownership structure that they have adopted (source: World Federation of Exchanges).

Member-owned, limited companies. These are exchanges registered as private companies, generally with a paid-up share capital. Intermediaries are almost always the sole owners of the exchange and their intermediation rights and activities are strongly linked (eg, NYSE *).

Demutualized (but not listed), are exchanges that are registered as private limited companies which have been demutualized, ie, have been transformed from a non-profit member-owned organization into a for-profit shareholder corporation in which ownership is somewhat more open (eg, NASDAQ, Tokyo Stock Exchange).

Publicly listed Exchanges or Exchanges Operating Companies (eg, London Stock Exchange, Deutsche Börse, Euronext).

Associations or Mutuels; exchanges which are cooperatives of members, generally without share capital and where access to membership is restricted (eg, SWX Swiss Exchange).

Exchanges with **Other legal status**; include those which still have a government or semi-government agency structure and belong to the state.

The demutualization of exchanges, or their transformation from a non-profit to a for profit organization, has been one of the most significant trends in the evolution of exchanges in recent years.

*The NYSE has plans to change its ownership structure



The regulatory framework in Europe and in the UK

Exchanges and providers of post-trade services must comply with a set of laws and regulations which have the objective to support the development of liquid and deep markets and to facilitate capital raising from issuers while maintaining investors confidence.

In Europe, EU directives provide the framework for the regulation of all the activities of an exchange. These directives (eg, the Investment Securities Directive, the Market Abuse Directive) set the core standards that are then implemented in each member state through a combination of national laws and regulations; in implementing some EU directives member states can waive conditions or impose additional ones, as long as these conditions apply equally to all equivalent issuers.

In the UK, the Financial Services and Markets Act 2000 (FSMA) governs the UK financial market regulations and implements the requirements set out by the EU directives and the additional national standards and requirements.

Under the Act, the Financial Services Authority (FSA) is the single regulator for the whole financial services industry; in this role the FSA has also the capacity of competent authority for listing in the UK (the UK Listing Authority). In such capacity the FSA regulates the listing of securities on the main exchanges operating in the UK.* The FSA also supervises Clearing Houses operating in the UK, which are recognized bodies under the FSMA 2000.

*The London Stock Exchange acts as the Listing Authority in relation to the listing of securities on the Alternative Investment Market (AIM).





The exchange industry

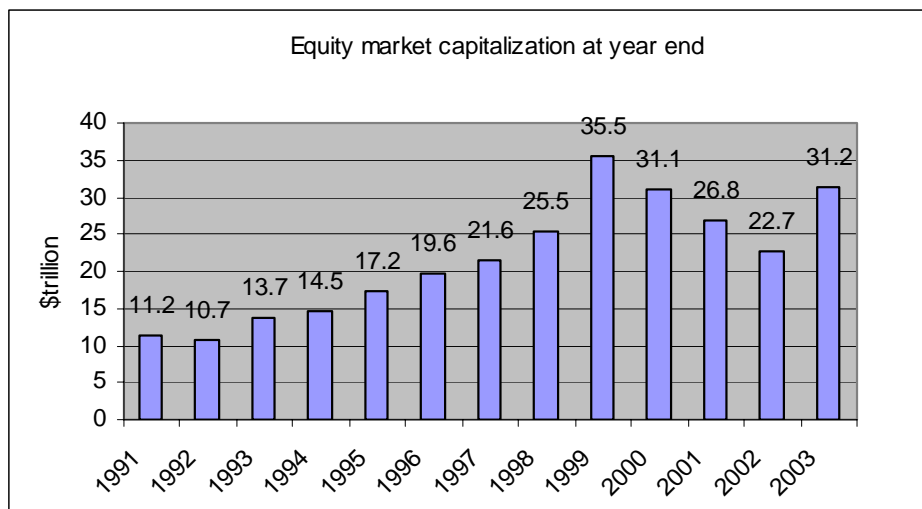
The performance of the global securities exchange industry is driven by the underlying performance of capital markets, including the number of issuers listed on exchanges, their market capitalization and the trading activities on their securities.

According to the World Federation of Exchanges (WFE), at the end of December 2003, 54 regulated exchanges operated throughout the world with a total market capitalization of listed equity securities of over \$31trillion and a value of share trading of over \$33 trillion. (See Figure 6.)

The ten largest members of the WFE by market capitalization of listed securities were (in decreasing order):

- New York Stock Exchange
- Tokyo Stock Exchange
- NASDAQ
- London Stock Exchange
- Euronext
- Deutsche Börse AG
- TSX Toronto Stock Exchange
- SWX Swiss Exchange
- Italian Exchange
- Hong Kong Exchanges and Clearing

Figure 6



Source: WFE, the Significance of the Exchange industry, July 2004, 5th edition.



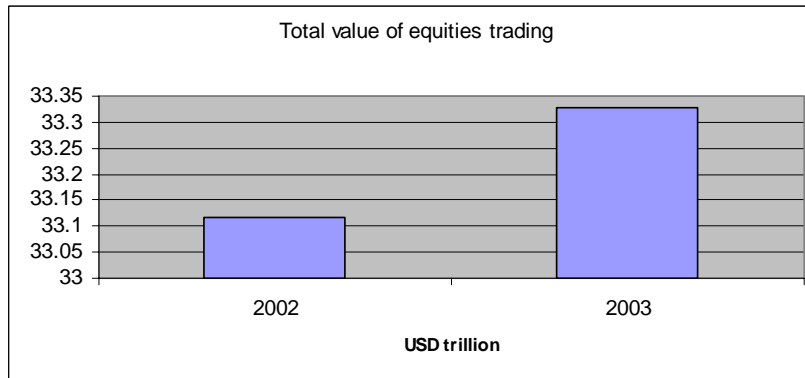
The exchange industry: equities

At the end of 2003 the total value of trading in equities amounted to over \$33 trillion (see Figure 7) and global average market capitalization for equities on the WFE members' exchanges amounted to 54 per cent of GDP.

Historically, the USA has shown the highest level of stock market capitalization as a percentage of GDP compared with Japan and the Euro-zone (excludes UK and Sweden) (see Figure 8).

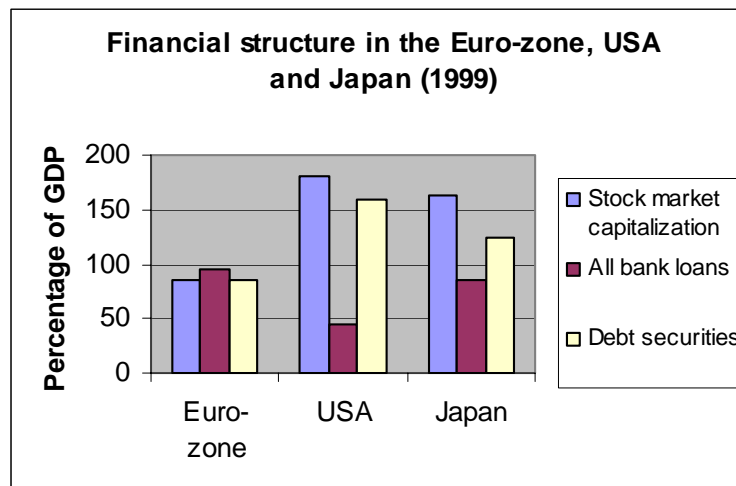
In contrast with other European countries the UK has a high ratio of market capitalization to GDP. In 2002, this was 115 per cent, second only to the USA, with 136 per cent, and several times that of Germany (35 per cent) and France (67 per cent).

Figure 7



Source: FWE and CC's analysis.

Figure 8



Source: OECD.

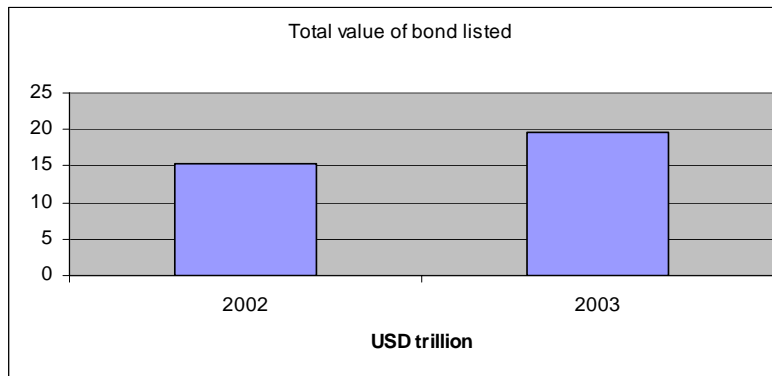


The exchange industry: other securities and derivatives

World exchanges offer trading services not only for equities but also for the listed government and corporate bond market (see Figure 9); exchanges also operate warrant segments, convertible bond markets and exchange traded fund businesses.

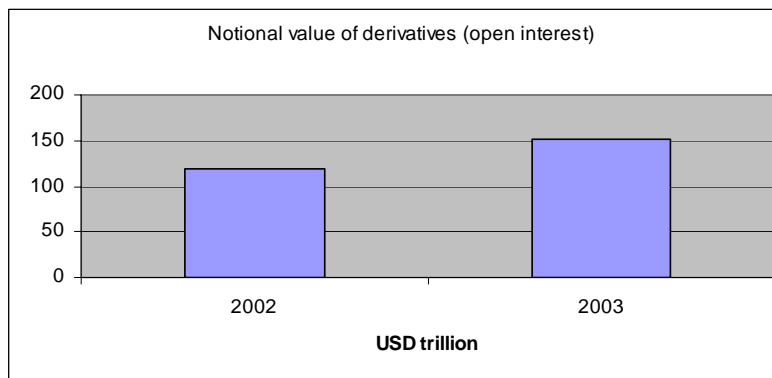
In recent years a significant development has been the growth of on-exchange financial futures and options (see Figure 10). According to the WFE the annual growth rate for on-exchange derivatives has been over 30 per cent each year since 2000.

Figure 9



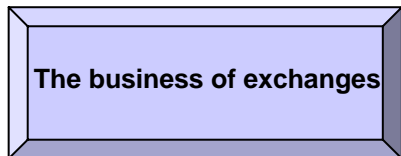
Source: WFE.

Figure 10



Source: WFE.





The primary market for equities: listing and admission to trading

The main objective of the listing process and associated regulatory requirements is to facilitate access to capital markets by a broad range of businesses while maintaining market confidence and protecting investors. Listing requirements for equities, therefore, cover areas such as: corporate communications, shareholders' rights and obligations, financial information required from issuers (both at the time of listing and on a continuous basis, afterwards), the role of advisors/sponsors and their responsibility in the due diligence process.

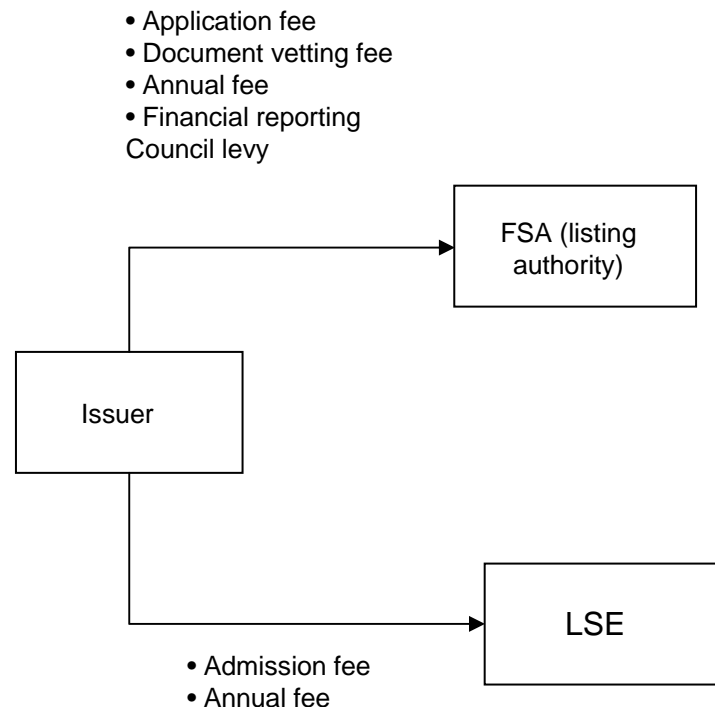
The more sophisticated the listing regime and requirements imposed on issuers in terms of standards of disclosure, or transparency, and consistency of information, the more attractive an exchange can be expected to become for investors as they can enjoy a higher level of protection.

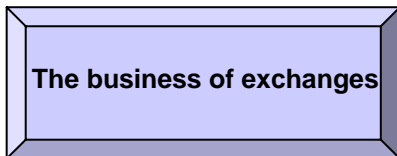
Because of the network effects existing in the primary market (between issuers and investors), the more investors are attracted to an exchange and the wider the pool of capital, the more attractive the exchange becomes for issuers.

To have access to the pool of capital available through exchanges issuers are typically charged listing and admission fees. (See Figure 11.)

Figure 11

Flow of funds for listing and admission to trading on the London Stock Exchange



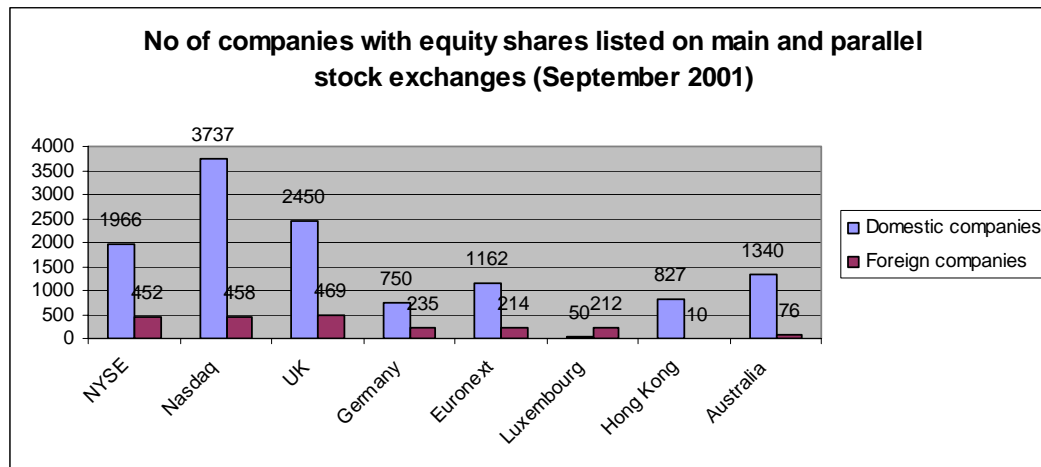


The primary market for equities: listing and admission to trading (continued)

Issuers tend to have a preference to have their primary listing (ie, initial public offer) in their domestic market, unless this is particularly underdeveloped (phenomenon known as home bias). For example, in 2001, of the total number of companies with equity listed on the main global markets only 15 per cent had a primary or secondary listing on foreign exchanges. (See Figure 12.)

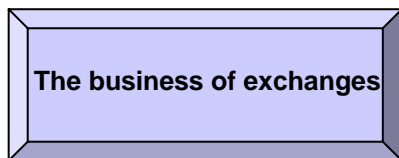
The 'home bias' in listing could be due to investors' better knowledge of the issuer. There will be a better flow of formal and informal information from the issuer because of physical proximity, shared language and culture.

Figure 12



Source: The World Federation of Exchanges.

Some issuers, typically those with significant international business or presence, choose to have an additional listing (secondary listing) on a market different from the one where the primary listing took place in order to access new pools of capital.



The secondary market for equities: trading services

Once securities have been admitted to trading on the main exchange or on secondary exchanges (eg, AIM in the UK, Alternext in France) they can be bought or sold by traders.

Trading on exchanges is mostly electronic (ie, orders are submitted and executed electronically); few exchanges still maintain a 'floor' where market participants meet to trade (eg, NYSE). In many exchanges, the most liquid securities are traded by order book while exchanges have a quote system for the less liquid securities by which certain traders (ie market makers on the LSE) are required to provide two-way quotes on the relevant securities (refer to Annexes 1 and 2 for flow chart of the trading of securities on the LSE).

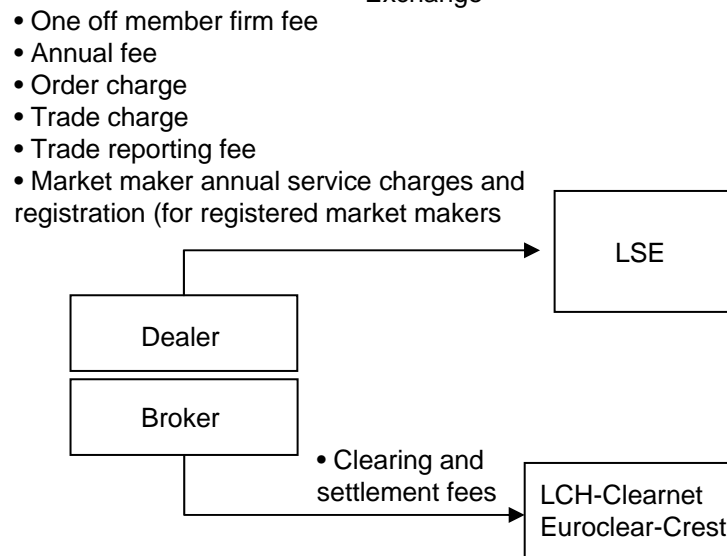
In order to trade on an exchange traders, which can be firms or individuals, have to become members of the exchange. Exchanges normally charge traders an annual fee, order and trade charges whose level depends on the size of the trade and fees for trade reporting.

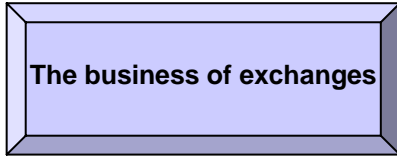
These fees and charges, together with the clearing and settlement fees and charges, are the explicit costs of executing trades. (See Figure 13.) Trading also has implicit costs. These are the costs related to:

- the level of liquidity, as reflected in the difference between the bid and ask price,
- market impact, which defines the difference between the midpoint of the bid and ask spread and the volume-weighted average price of the stock during execution, and
- opportunity costs (ie the costs incurred if the execution of an order is delayed or if a trade is missed altogether).

The more liquid and 'deeper' the exchange, the lower the market impact and the implicit costs of trading.

Figure 13 Flow of funds for trading on the London Stock Exchange



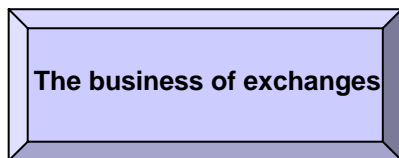


The secondary market for equities: trading services (continued)

In recent years, the development of technology and a generally benign regulatory regime have allowed the emergence of alternatives to existing exchanges, in trading services, from new entrants and from intermediaries. Compared to a few years ago, investors now have a wider choice of trading venues.

Securities can be traded:

- on regulated exchanges, such as the LSE;
- on alternative trading systems (ATS) (eg, Instinet, Posit, CATS-OS), which are fully automated systems that route, match or cross orders and are subject to less stringent regulatory requirements than exchanges;
- bilateral trading (broker-to-broker) whereby traders buy and sell securities between themselves without going through an exchange or an alternative trading platform;
- internalization, whereby trades are executed 'in-house' by crossing clients' orders against one another or by executing the trade against a proprietary position.



Market information services

In addition to the two core business activities of listing and trading, exchanges have traditionally disseminated, to interested brokers, institutional and retail investors market and trading data created from the trading activity and company information that the exchanges themselves are required to receive by law or regulations.

Part of this information is provided for free by exchanges as it is integral to the provision of listing and trading services. Additional, more specialized (eg, index creation) information created and elaborated by the exchange is sold to investors and other interested customers.

The channeling of knowledge on the securities on its market can potentially be an important source of revenues for exchanges (see Figure 14). Technological changes supporting the free access to and distribution of information increase the risk of part of these services being commoditized, and the new Market in Financial Instruments Directive is likely to increase competition in this area, as Multilateral Trading Facilities would also be able to offer trade reporting services.

Figure 14 Service revenues as % of total revenues—WEF members

	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>
Total revenues	100%	100%	100%	100%	100%	100%	100%
Listing Revenues	19%	17%	18%	16%	12%	11%	11%
Trading Revenues	37%	41%	39%	42%	43%	42%	45%
Services Revenues	31%	30%	29%	28%	30%	31%	29%
Other revenues	13%	12%	14%	15%	16%	15%	16%

Source: WEF, Exchanges' Cost and revenue Survey, 2003; CC analysis.



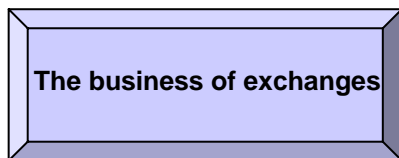
IT services

Over the last few years, the business of exchanges has become more and more automated and many exchanges have moved their trading business onto an electronic platform.

The development of electronic trading has created substantial IT expertise within exchanges. This expertise has created the basis for the development of a new business for some exchanges, including Deutsche Börse, generating revenues from the sales of exchange-related IT services and software to other exchanges or trading platforms.

Competition for the offer of IT systems and software by exchanges comes mainly from:

- other exchanges offering similar services,
- software houses specialising in the financial services sector, and
- the major consulting and system development and implementation firms such as Accenture and IBM.



The business of derivatives exchanges

Figure 15 Largest Derivatives Exchanges by value of turnover 2003

In recent years many exchanges specializing on securities trading have developed a derivatives business either through organic growth or acquisitions. The exchanges for which derivatives trading is a business segment (eg, Euronext-LIFFE or LSE-EDX) have joined the 'pure' derivatives exchanges such as the Chicago Mercantile in offering derivatives trading. (see Figure 15.)

Derivatives can be traded to achieve different objectives but primarily serve hedging, arbitrage or speculative purposes (source: Deutsche Börse). Derivatives traded on exchanges are usually created by the exchanges themselves which also provide a market place by matching supply and demand.

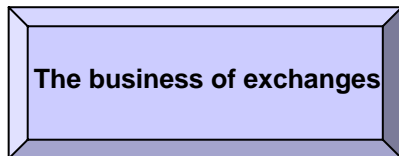
Derivatives can be divided into two broad categories of futures and options and can be classified further into the following groups, according to the underlying instruments to which they relate:

- Derivatives relating to locally listed equities.
- Derivatives based on equity indices.
- 'Capital market' or medium to long-term interest rate derivatives.
- 'Money market' or short-term interest rate derivatives.
- Commodity derivatives.
- Currency derivatives.

(Source: Euronext's submission to OFT)

Exchange	Nominal value of contracts traded (\$tn)	Nominal value of contracts traded (%share)
Chicago Mercantile Exchange (CME)	333.5	38.1
Euronext.LIFFE	283.4	32.4
Chicago Board of trade (CBOT)	86.4	9.9
Eurex	72.5	8.3
Korea Exchange	23.2	2.6
Singapore Exchange	21.4	2.4
Chicago Board Options Exchange (CBOE)	14.2	1.6
Sydney Futures Exchange	9.8	1.1
Tokyo Stock Exchange	7.2	0.8
Montreal Exchange	5.5	0.6
Others	17	2.0
Total	874.1	100

Source: Bank for International Settlements.



The business of derivatives exchanges (continued)

Traditionally derivatives have been traded Over the Counter (OTC) and this is still the way in which most derivatives are traded. At the end of 2003 the notional value of OTC derivatives contract outstanding was circa \$198 trillion, over five times the notional value of exchange-traded derivatives contracts (\$37 trillion). However, on-exchange trading of derivatives in the last few years has grown at a higher rate than OTC trading; in fact, in the period 1999–2003 on-exchange trading of derivatives grew at a compound annual growth rate of 38 per cent while OTC trading showed a compound annual growth rate of 28 per cent.

Growth in derivatives trading in general is set to continue driven by the following trends:

- A greater need for risk management and hedging tools in an increasingly uncertain environment.
- Growing investors sophistication concerning derivatives.
- Shift in asset management strategy away from passive equity market exposure to active investment strategies involving alternative investments and asset class.
- Continued growth in assets invested in non-equity concentrated alternative investment vehicles such as hedge funds and managed futures.

(Source: Craig S. Donohue, CEO, CME, Derivatives Exchanges: leading growth and innovation in today's global financial markets, Oct 2004.)

Against this backdrop of trends favourable to the growth of derivatives trading, the share of on-exchange derivatives trading is also likely to grow as derivatives exchanges continue to innovate to grow their market share and take advantage of favourable changes in banking rules (eg, banks under Basle II will continue to receive a more favourable capital treatment for exchange-traded derivatives vis-à-vis derivatives traded over the counter), accounting standards and tax policy (mostly in the USA).



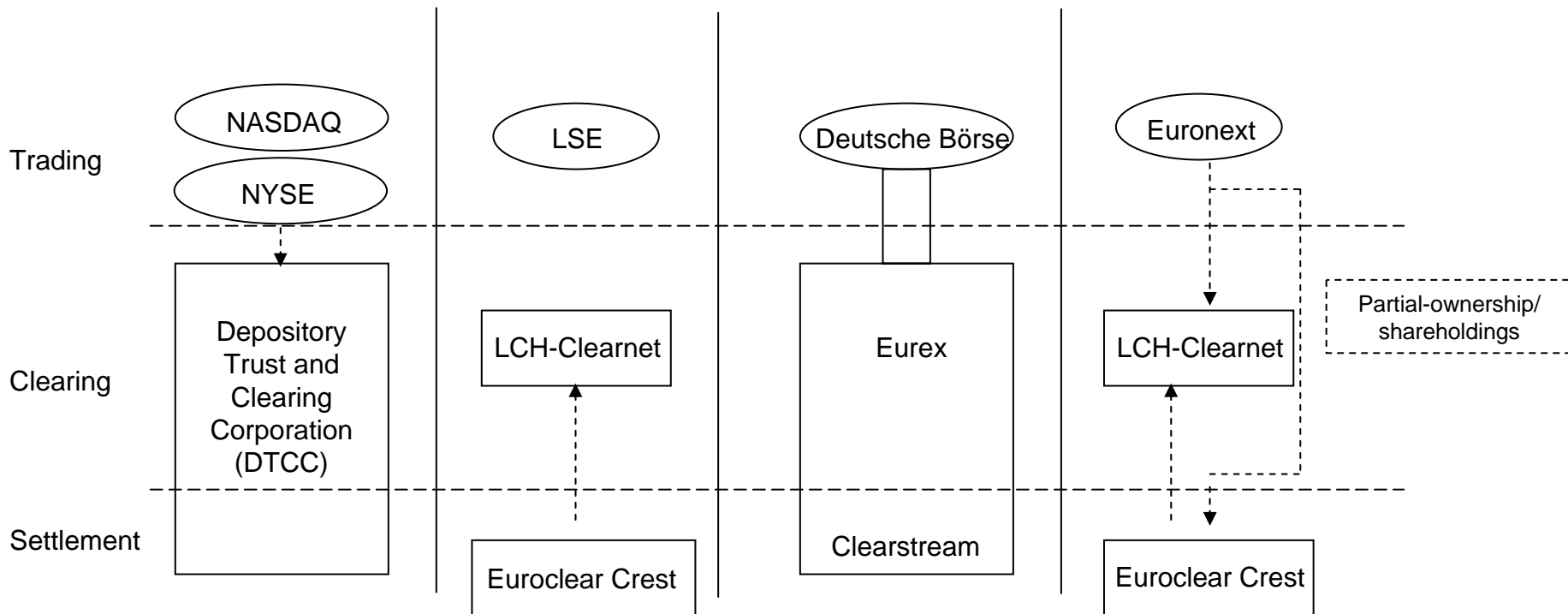
Post-trade services in equity markets



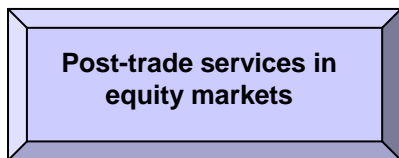
Business models for post-trade services

Efficient and reliable clearing and settlement of trades are crucial to a well-functioning financial market as they reduce the risks of trade failures and delays in settlement. There are three main business models for post-trade services which reflect different level of vertical integration between trading, clearing and settlement services . On one side of the spectrum there is the model of the ‘vertical silo’ which sees the integration of all three activities under one organisation (eg, Deutsche Börse), while at the other side of the spectrum there is the model in which all three activities are separately performed by different organizations (eg, LSE). In between these two models, there is the US model in which clearing and settlement are performed by a single organization.* (See Figure 16.)

Figure 16 Business models for post-trade services



Source: The OFT. *NYSE owns 28.73 per cent of DTCC's ordinary shares and 50 per cent preference shares, the National Association of Securities Dealers (NASD) owns 50per cent preference shares, other shareholders include banks and brokers



Providers of clearing and settlement services in the EU

Across the EU post-trade clearing and settlement of trades in equities between domestic counterparties have developed along national lines. The organizations involved in clearing and settlement vary from country to country but can be summarized as follows.

Clearing organizations; these are normally clearinghouses which operate on a for profit basis. Some of them also act as a CCP (eg Eurex Clearing and LCH-Clearnet). While there is only one organization providing clearing services nationally, this is not the case in all European countries.

Settlement organizations; there are three types of providers of settlement services:

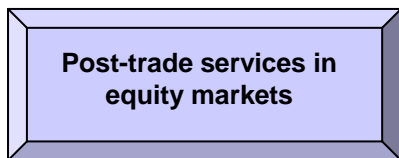
- Central Securities Depository (CSD).
- International Central Securities Depository (ICSD).
- Intermediaries.

CSDs are the 'public notaries' for securities as the entries in the names of the account holders on a CSD's electronic system are the definitive record of title. Settlement of domestic securities have traditionally been organized on a national basis, with companies listing on a national exchange placing their shares on the national CSD. As each national CSD has different legal requirements, for example for the exercise of corporate action, it can be difficult and expensive for a company to move its shares out of a CSD.

Where the owners of a security are not members of a CSD they interact with a CSD through an intermediary which can be an ICSD or another type of organization.

ICSDs, such as Euroclear Bank and Clearstream Banking Luxembourg, are commercial organizations which have two roles; a traditional CSD role for the settlement of trades in fixed income instruments and an intermediary role for the settlement of trades in equities, whereby they link investors and CSDs acting as a custodian.

Other commercial organizations such as custodian banks can also act as intermediaries giving their customers access to the settlement infrastructure of CSDs.



Clearing and settlement services in the EU

In the EU the historical development of settlement services on a national basis has created a fragmented system and has shaped the competitive dynamics of the sector.

While the differences in law and customs and government ownership of national CSDs have insulated these organizations from direct competition, recent years have seen the formation of two major European CCPs, Eurex and LCH-Clearnet, and a series of alliances and mergers have taken place between clearinghouses and CSDs to achieve economies of scale and reduce settlement and depository costs (eg merger between Euroclear and Crest).

Overall, however, cross-border processing of equity trades in the EU is still fragmented. Since a fragmented system hinders the development of a single financial service market in Europe, as envisaged under the EU Financial Services Action Plan, various EU initiatives have been developed to address changes in the current system which would support its integration.

Although there seems to be ‘...evidence that a single clearing and settlement system is more cost-efficient than multiple systems’ (source: *Competition in Clearing and Settlement, Competing Ideas*, April 2003, Oxera) (see Figure 17) , two different views currently exist on the most competitive outcome for the clearing and settlement sector in the EU. While some see the creation of a direct link between all national CSDs as the most effective solution, others advocate the creation of a single clearing and settlement system resembling the DTCC in the USA.

Figure 17

Comparison of European systems (15) and the DTCC - 2001		
	European Systems	DTCC
Number of transactions processed daily ('000)	1,944	6,950
Operating income (Euro m)	2,176	717
Income per transaction (Euro)	4.43	0.41
Implied inefficiency in Europe (Euro m)	1,976	

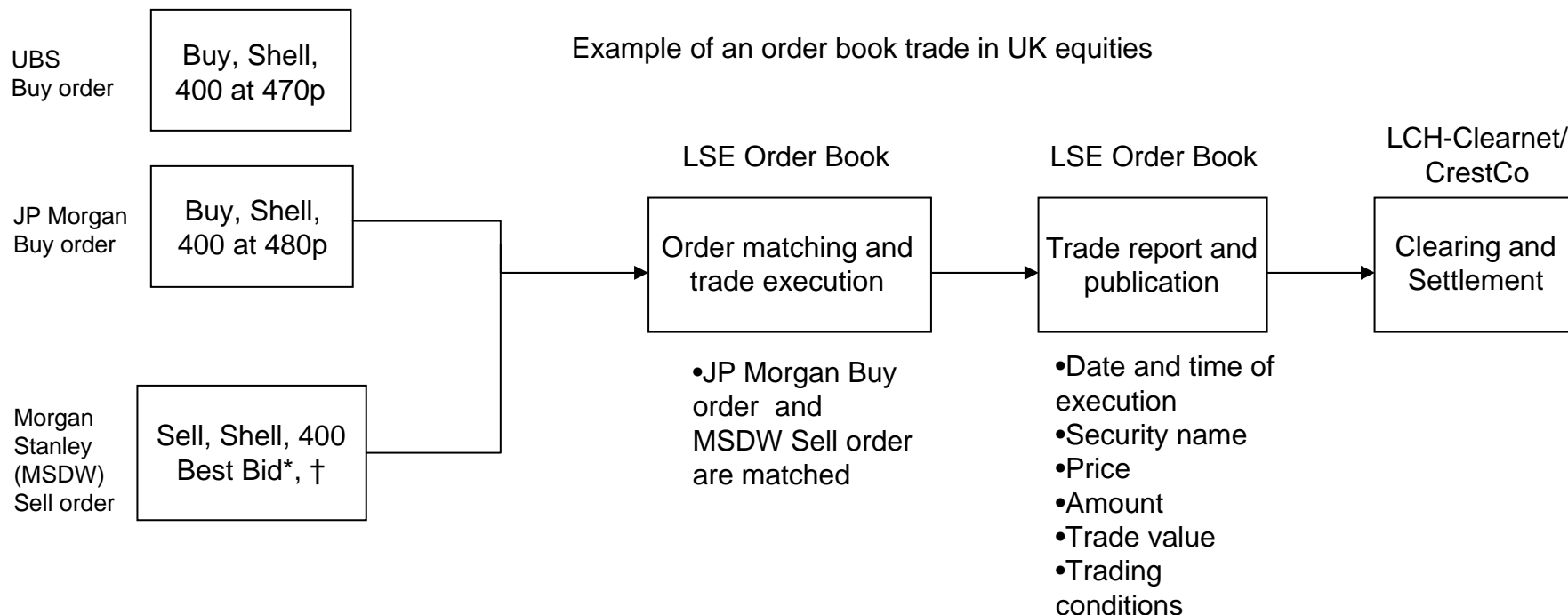
Source: *Competition in Clearing and Settlement, Competing Ideas*, April 2003, Oxera.





Appendix 1—Trading shares on the LSE: Order Book

The LSE offers **Order Driven** services for the trading of the most liquid securities. Order driven services are trading services based on the **Order Book**, an automatic trade execution facility operated by the Exchange on which trading is done by electronic auction (source: LSE’s web site). Market participants (LSE members) enter trade orders (name of shares, amount, execution conditions (ie, price at which order must be executed and other conditions of execution)) into the LSE order book electronic system. The LSE system matches the orders (buy and sell), thus executing the trade.



*Bid Price: The price at which a market participant is bidding to buy shares.

Ask Price: The price at which a market participant is bidding to sell shares.

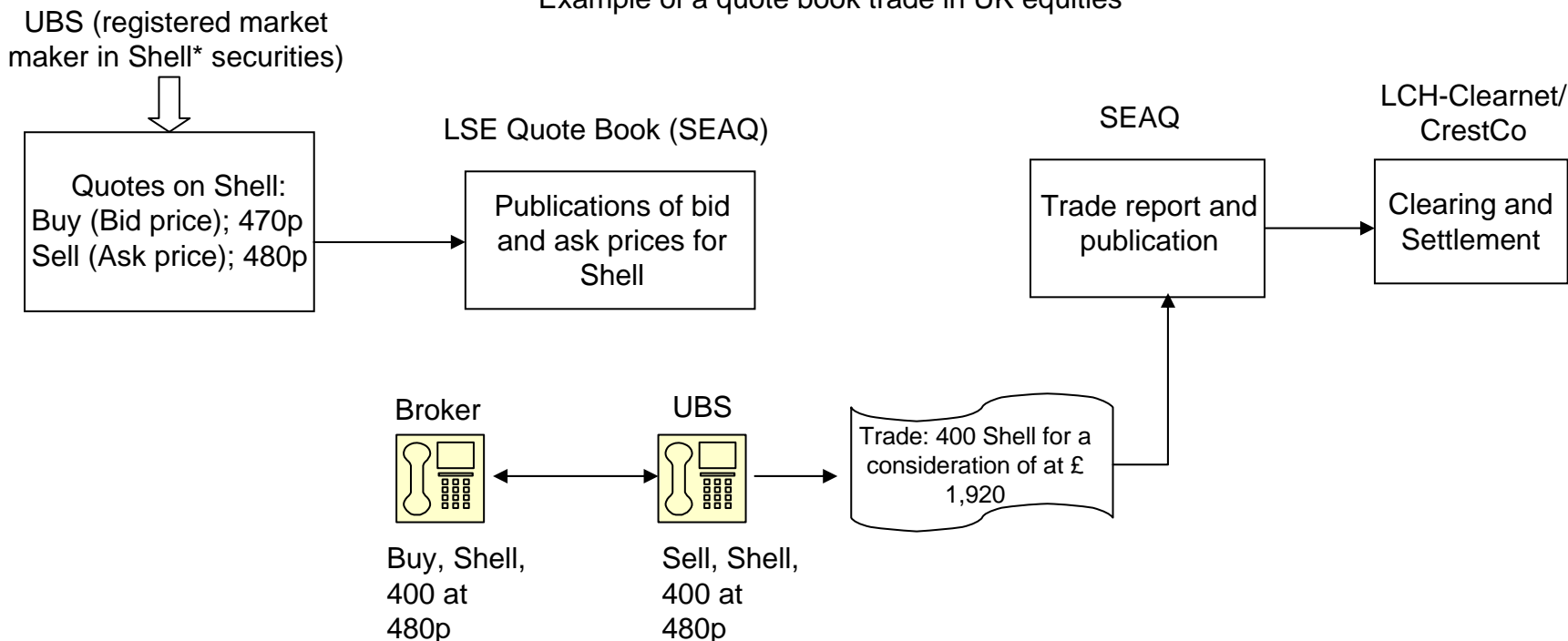
†Best Bid: is a condition of execution; it indicates that the seller wants to sell the security at the highest bid price for that tradable instrument (ie the highest price any buyer has declared that they are willing to pay for a specific security at a given time). Determined by the current quotes and orders in the trading system.



Appendix 2—Trading shares on the LSE: Quote Book (Market making)

The LSE also offers a **Quote driven** service for the trading of less liquid securities. Quote driven services are trading services based on the **Quote Book**—an electronic facility operated by the Exchange which facilitates the display of buy and sell quotes made by market makers (ie, Securities firms which are obliged to offer to buy and sell securities in which they are registered throughout the mandatory quote period). The quote book does not allow automatic execution of trades. Trading of quote-driven securities is conducted via telephone dealing (source: LSE web site). Small and mid-cap securities are traded in this way and the obligation of market makers to give quotes guarantees that there is enough liquidity in these securities.

Example of a quote book trade in UK equities



* Shell securities are used for convenience to make the comparison between the quote book and the order book examples easier. Quotation services are in reality usually used for small to mid-cap securities.