



EUROPEAN CENTRAL BANK



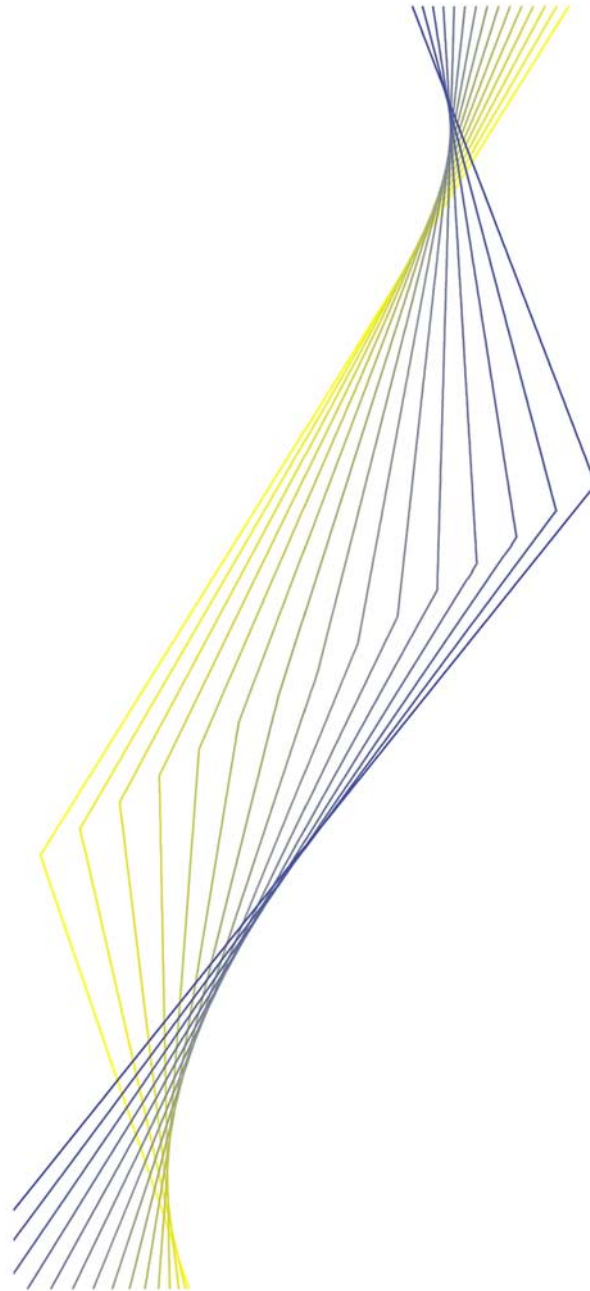
THE EURO EQUITY MARKETS

August 2001





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The following country abbreviations are used in the report:

BE	Belgium
DK	Denmark
DE	Germany
GR	Greece
ES	Spain
FR	France
IE	Ireland
IT	Italy
LU	Luxembourg
NL	Netherlands
AT	Austria
PT	Portugal
FI	Finland
SE	Sweden
UK	United Kingdom
US	United States

I. Introduction

In the second half of 2000, the European Central Bank (ECB) and the national central banks (NCBs) of the European Union carried out, under the auspices of the Market Operations Committee (MOC) of the European System of Central Banks (ESCB), an analysis of the functioning of the money, bond and equity markets in the euro area. This analysis followed up on similar studies that were performed for the money and bond markets in the second half of 1999. The 1999 studies aimed to assess the level of integration and efficiency of the euro area money and bond markets following the introduction of the euro. The results were published in the report “The impact of the euro on money and bond markets”, dated July 2000, in the Occasional Paper Series of the ECB. The analysis conducted in 2000, which is reported in this paper and in two companion papers (“The euro money market” and “The euro bond market”), aimed at elaborating on the findings of the 1999 studies and at extending them to the equity market. The report benefited from extensive comments from the Banking Supervision, the Payment and Settlement Systems and the Statistics Committees of the ESCB.

This report presents the results of the equity market study and examines the evolving structure and functioning of the euro equity markets.¹ As a first stocktaking exercise, it intends to shed some light on the basic features of the cash market (i.e. the market for outright transactions) and related derivative products. The focus is on the supply and demand for equities and on changes in market structure that have occurred since the start of Stage Three of Economic and Monetary Union (EMU), in particular with the aim to assess the level of equity market integration in the euro area. When it is deemed necessary, the analysis is extended to the entire European Union (EU). The findings presented here are based on internal research, as well as on interviews with a group of institutional investors, intermediaries and representatives of stock exchanges. The interviews with market participants of six European countries took place during the summer of 2000, while the quantitative data includes the whole year 2000. In the report, “euro area countries” refers to the 11 countries that were participating in Stage Three of EMU as at end-December 2000. “Other EU countries” refers to the four Member States that were not participating in Stage Three of EMU as at end-December 2000 (including Greece, which entered Stage Three on 1 January 2001).

¹ Private equity (i.e. shares that are not listed on a stock exchange) is not examined here, as the focus is on markets for traded securities.

2. Executive summary

By most measures, euro stock markets have registered record growth in recent years. While their size is still substantially smaller than that of the US stock market, both in absolute terms and as a ratio of gross domestic product (GDP), new issuance activity was higher in relative terms. Privatisations and M&A activity have had an important bearing on the supply of euro area equity products, and more generally, European equity products. The pace of financial innovation has been set by investor demand for equity exposure as well as by a high degree of corporate restructuring. The euro equity derivatives market has also grown rapidly, roughly in line with the capitalisation of the underlying markets.

Available statistics and views expressed by interviewees point towards a number of key market stimuli:

Globalisation and corporate restructuring

The globalisation of markets is leading large European companies to expand their international presence through M&A activity. The single market and deregulation (which has affected in particular telecommunications and utilities) have contributed to a more competitive environment in which companies are restructuring to maintain pricing power and achieve greater levels of productivity.

Private asset accumulation

Privatisations and the fiscal discipline imposed by the Stability and Growth Pact have contributed, in recent years, to private asset accumulation. Lower long-term interest rates, associated with lower inflation expectations and the decline in public debt, are lowering the cost of capital. This in turn supports elevated levels of private investment and a deepening of euro capital markets.

Changing attitude of investors towards equity investments and population ageing

The low yield environment and the higher expected return from equities have led to a changing attitude of euro area investors towards equity investments. This trend is evident for both institutional and retail investors. Population ageing is increasing the demand for equities as the euro area moves towards privately funded pension schemes.

EMU

The impact of Stage Three of EMU is of a mostly indirect nature and is therefore difficult to disentangle from other structural factors. A direct impact stems from the elimination of currency risk. This has led euro area investors to shift from a domestic orientation to a more international, sectorial orientation, favouring, in particular, pan-European investments. This is highlighted by the following developments:

- The home bias of euro area institutional investors has decreased since the introduction of the euro. This is illustrated by the fact that, in 1999 and 2000, investment funds with a domestic orientation lost market share while those with a pan-European or euro area orientation gained market share. A similar trend towards a reduced home bias is noticeable in the equity portfolios of pension funds in the euro area.

- Euro area institutional investors have tended to shift from country to pan-European sector benchmarks. The adoption of a sectorial perspective has meant that they have not limited themselves to a euro area investment universe because it has proved necessary to include companies located in the United Kingdom, Sweden and Switzerland in certain sector benchmarks (such as pharmaceuticals, food, banking and telecommunications equipment). Another reason for investors to extend their benchmark to the whole of Europe was the anticipation of further European integration (including expansion of EMU).
- As a side effect, the introduction of the euro has had an influence on other aspects of the euro equity markets because investors have looked for the easiest and most efficient ways to diversify their portfolio across borders. Notably, the demand for well researched large capitalisation stocks has increased in relation to that for small capitalisation stocks, and passive investment strategies (i.e. investment in indexed funds which replicate the performance of an index) have become more popular among fund managers.
- With regard to international equity flows, balance of payments data show that euro area corporations are focusing on the US markets for acquisitions and portfolio investments. Several reasons were put forward by the interviewees to explain this orientation, such as the need for euro area companies to globalise (partly as a result of the introduction of the euro) and the fact that acquisitions are viewed as less cumbersome in the United States than in the euro area. The large net outflows since the start of Stage Three of EMU are generally viewed by market participants to have weighed on the exchange rate of the euro.

As regards market structure and infrastructure, the growing demand for cross-border trading has triggered a consolidation process between various stock exchanges and between the securities clearing and settlement systems. The dominance of electronic, order-driven markets in continental Europe has limited the competitive threat of alternative trading systems. The potential fragmentation of centralised markets as a result of competing pan-European trading platforms was not generally viewed by market participants as a major concern. The amalgamation among stock exchanges is expected to limit the scope for market fragmentation in the long term, while new technology is already enabling market participants to access liquidity more readily wherever it is located.

The increasing size of institutional investors and the globalisation of companies have given rise to a greater degree of concentration in wholesale markets for equity brokerage and advisory work. This has worked to the advantage of “big players”, who are able to provide pan-European and global coverage in terms of execution and research. Interviewees expressed the opinion that the trend towards centralisation in the wholesale markets had not yet fully run its course.

At the retail level, the euro area market for discount stockbrokers is expanding at a rapid pace. As in the United States, growth prospects are affected by demographics (a new generation of affluent investors) and positive attitudes towards equity investments and online financial services. This market has seen a large number of new entrants, the largest of which are now expanding outside their home market. Looking forward, substantial consolidation is to be expected along the lines of the US experience.

3. Overview

In order to assess the relevance of the structural developments and the peculiarities of the euro area equity market, the basic features of its cash and derivative components are presented and compared with the stock markets of the other EU countries as well as with those of Japan and the United States.

3.1 Size and growth of the cash market

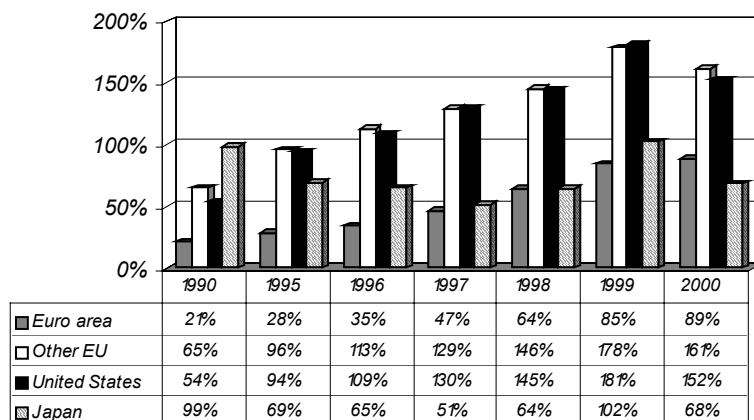
A common indicator of the importance and size of an equity market – also with respect to real economic activity – is the market capitalisation of stocks traded in a country or region divided by that region's GDP. While the ratio has no scientific meaning, it gives an indication of the relevance of the stock market for each country.

3.1.1 Euro area versus United States and Japan

Chart I clearly shows that the euro area equity market has gained significance over time. While from 1990 to 1995 the ratio of market capitalisation to GDP hovered around 25% and was thus considerably lower than in Japan or the United States, the overall growth of the stock market in the euro area led to an increase in the ratio to nearly 90% by the end of 2000.

Chart I

Market capitalisation of domestic shares as a ratio of GDP



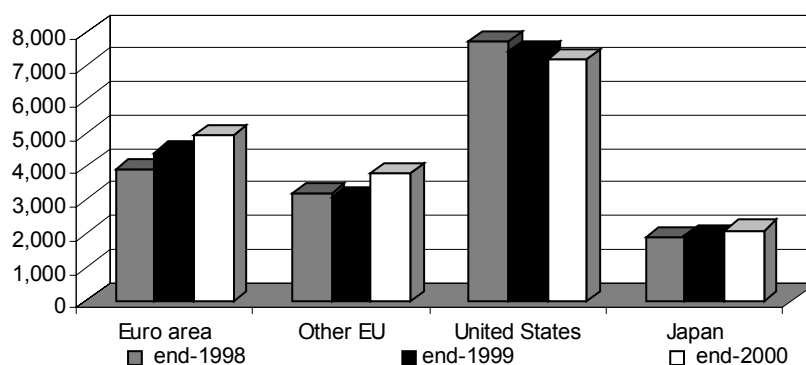
Sources: FIBV and ECB calculations. Market capitalisation in the United States: NYSE and Nasdaq; Japan: Tokyo; euro area and other EU countries: sum of market capitalisation in the respective countries as reported by FIBV.

Thus, the euro area's ratio (89%) is now higher than that of Japan (68%). However, the international comparison also clearly demonstrates the still larger size of the US equity market (ratio of 152% in 2000). A slightly different picture emerges when the focus changes to the development of the absolute market size. In the second half of the 1990s, the value of euro area companies listed on the national exchanges of the euro area grew faster (1995-2000: +276%) than the value of US corporations listed in the United States (1995-1999: +206%). Another element pointing to the dynamism of the euro area stock market is the ratio of new issuance² to market capitalisation. On average, this figure was above 4% in the euro area over the past three years while it stood at around 2% in the United States and Japan (see Chapter 4).

² Primary and secondary offerings.

A further indication of the increasing importance of the euro area equity market is provided by the statistics on the number of listed companies. While between the end of 1998 and the end of 2000 the number of companies listed on euro area stock exchanges increased at a steady pace of more than 10% per annum, reaching 4,914 at the end of 2000, the figures for Japan show only a moderate increase (+5% per annum on average). The number of companies listed in the United States even recorded a decline of around 4% per annum. This decrease can be attributed to management and leveraged buy-outs (see also Chapter 4), while M&A activity has also played a role.

Chart 2
Number of listed companies



	End-1998	End-1999	Change 1998-99	End-2000	Change 1999-2000
Euro area	3,895	4,416	13%	4,914	11%
Other EU	3,182	3,078	-3%	3,785	23%
United States	7,738	7,421	-4%	7,194	-3%
Japan	1,890	1,935	2%	2,096	8%

Sources: FIBV and ECB calculations. United States: NYSE and Nasdaq. Japan: Tokyo. Euro area and other EU countries: sum of the number of companies in the respective countries as reported by FIBV. Germany: companies admitted to trading, excluding the German market segment "Freiverkehr" (unofficial regulated market). Spain: Madrid only to avoid double counting.

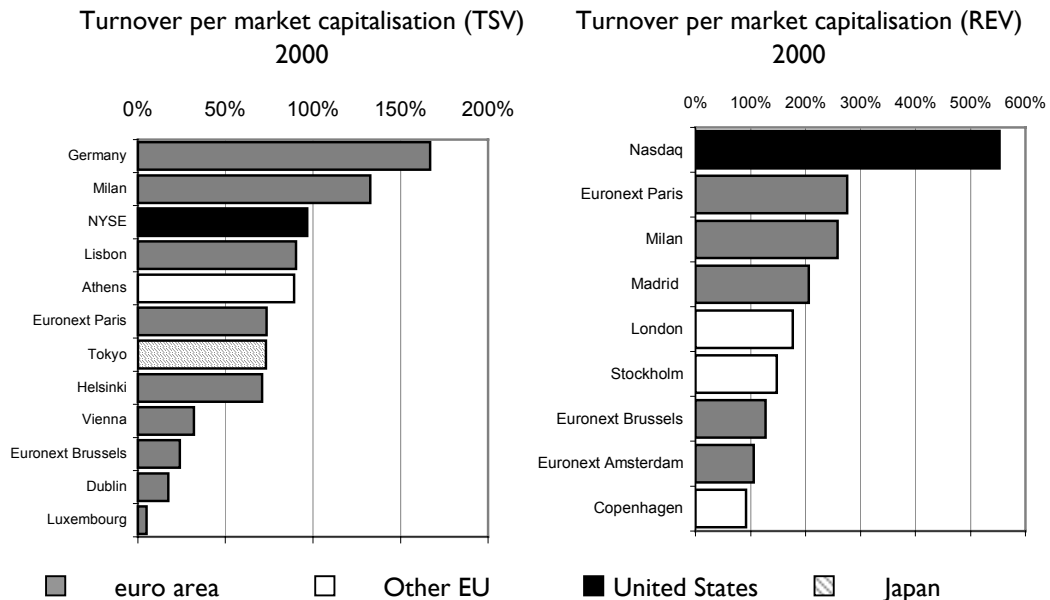
Concerning turnover, there is a significant organisational difference between the euro equity markets and the equity markets in Japan and the United States: in the latter countries, trading is de facto concentrated on one or two exchanges respectively. In the euro area – prior to the creation of Euronext³ – every country was endowed with at least one stock exchange. While the consequences of this fragmentation for the structure and the integration of the euro area equity market, as well as the prospective developments in this field, are described in some depth in Chapter 6, a comparison of the turnover recorded on international stock exchanges highlights that, despite the large number of stock exchanges, turnover seems to be comparably high in the euro area. In 2000 turnover ranged mainly from 30-100% of market capitalisation for exchanges that record only transactions that pass through their trading systems (Trading System View (TSV) methodology), to 100-300% for those exchanges that also include off-market transactions in their turnover data (Regulated Environment View (REV) methodology).⁴

³ A company created by the merger of the exchanges of Amsterdam, Brussels and Paris on 22 September 2000.

⁴ Following the classification adopted by the FIBV and the FESE, exchanges reporting to these entities can be split into two main groups, those adopting the Trading System View (TSV) and those adopting the Regulated Environment View (REV). TSV exchanges count as turnover only those transactions which pass through their trading systems or which take place on the exchange's trading floor. REV exchanges include in their turnover figures all transactions subject to supervision by the market authority, including the transactions of members, and sometimes non-members, inside and outside trading systems, and even transactions into foreign markets. Obviously the turnover under the REV is higher than turnover under the TSV concept. Therefore, comparisons between stock exchanges belonging to different groups are not valid, not even the comparison of growth rates. Data reported from exchanges using both methodologies reveal that the percentage changes of annual turnover diverge significantly, at times even signalling a growth in turnover for one concept and a drop in the other.

Chart 3

Turnover as a ratio of market capitalisation for selected exchanges



Sources: FIBV and ECB calculations. Three exchanges (Euronext Paris, Euronext Brussels and Milan) report in both TSV and REV methodologies. Turnover figures include shares of domestic and foreign companies as well as investment funds.

It is worth noting that, in the TSV methodology, two euro area exchanges (Deutsche Börse and Milan) were ranked above the New York Stock Exchange (NYSE) in 2000, which was not the case in 1999 (when the NYSE had the highest turnover ratio after Athens). On the other hand, the Nasdaq has by far the highest turnover ratio in the REV methodology, which emphasises the very high turnover of new economy stocks.

3.1.2 Euro area versus other EU countries

The data contained in Chart 1 highlight the importance of the equity market in those EU countries that had not adopted the euro as at the end of 2000 (United Kingdom, Sweden, Denmark and Greece). The ratio of market capitalisation to GDP for this aggregate of countries roughly followed the steady increase in the US ratio during the 1990s. For 2000 the “other EU” countries even recorded the highest ratio of the four areas considered (161% compared with 152% in the United States, 89% in the euro area and 68% in Japan).

Nonetheless, the *pace of growth* of the “other EU” countries’ ratio has been lower than that of the euro area countries during the past five years (the ratio has tripled for the euro area while it has increased only 1.7 times for the aggregate of countries not participating in the euro area), suggesting a particularly dynamic growth of equity markets in those countries that have adopted the euro. The analysis of the situation in the individual countries tends to confirm this view.

Of the “other EU” countries, Greece has recorded the strongest growth of the stock market relative to GDP for the past five years. Its ratio has increased nearly sevenfold since 1995, reaching 95% at the end of 2000. This astonishing growth was mainly due to the

strong performance of the Athens stock exchange linked with the prospect of joining the euro area in January 2001, which has now come about.

The Danish, Swedish and UK ratios of market capitalisation to GDP have experienced comparably moderate rates of growth during the past five years (+198%, +217% and +151% respectively). Notably, the UK stock exchange, the largest in Europe (with 30% of European market capitalisation as at the end of 2000), had the slowest rate of growth relative to GDP among the “other EU” countries.

3.2 Size and growth of the derivatives markets

From a global perspective, the use of equity-related derivatives has significantly increased over the last few years, both for exchange-traded and over-the-counter (OTC) products. However, assessing the size and growth of the euro derivatives market is not straightforward, since statistics for exchange-traded and OTC markets are not comparable. For exchange-traded derivatives, turnover statistics (flows) give the most accurate and the most commonly used indication of the size and growth of the respective markets. For OTC derivatives, no turnover statistics are available, and one must rely on BIS statistics that give amounts outstanding (stocks).⁵ Despite these caveats, it is still possible to conclude from the data that exchange-traded derivatives are more frequently used in the United States, while OTC derivatives are more popular in Europe.

A new phenomenon, triggered by the introduction of the euro and reflecting a reduced home bias among European investors, is the introduction of derivatives on euro area or pan-European equity indices.

3.2.1 Exchange-traded contracts

The use of exchange-traded derivative instruments is more widespread in the United States than in the euro area.⁶ In both regions, the oldest market segment (options on single stocks) is also the smallest. For the other equity-linked contracts,⁷ options and futures on (domestic) indices, the relation between the exchange-traded derivative turnover in the United States, the euro area and other EU countries is roughly in line with the capitalisation of the respective underlying markets. This is not the case for Japanese equity-related derivatives, which play a comparably minor role.

⁵ Furthermore, the BIS statistics do not make it possible to distinguish the euro area from the rest of Europe.

⁶ The conclusions reached in this paragraph are based on statistics of turnover measured by notional amounts. Different conclusions could be reached by looking at the number of contracts traded since the size of contracts can vary significantly within exchanges, between them and over time. For more details, see the box entitled “Activity on the major exchanges in 2000” in the BIS Quarterly Review, March 2001.

⁷ For product innovations see also Chapter 4.

Table I**Turnover of exchange-traded equity derivatives***(notional amounts in EUR billions)*

	1997	1998	1999
Options on single stocks by location of stock			
Euro area	484	197	330
Other EU	82	37	31
United States	878	915	2,170
Japan	4	18	41
Options on equity index by type of index			
Domestic euro area index	1,722	1,598	2,049
Domestic other EU index	585	440	525
Pan-European (incl. euro area) index		7	150
Total Europe	2,307	2,045	2,724
United States	6,813	5,631	7,724
Japan	659	548	729
Futures on equity index by type of index			
Domestic euro area index	2,742	3,372	4,447
Domestic other EU index	695	1,532	1,098
Pan-European (incl. euro area) index		17	241
Total Europe	3,437	4,921	5,786
United States	8,586	8,475	13,830
Japan	1,342	292	1,611
Memo item: turnover of exchange-traded government bond debt derivatives market (Europe + United States + Japan)	EUR 52 trillion	EUR 53 trillion	EUR 52 trillion

*Notional amounts calculated as the number of contracts multiplied by the face value of the contract.**Sources: FIBV, Chicago Board Options Exchange (as reported by FIBV), LIFFE, ECB calculations.*

An effect clearly related to Stage Three of EMU is the introduction of derivatives related to pan-European and euro area indices that are traded on exchanges inside and outside the euro area. Given the fact that they were introduced only recently, the growth rate of their turnover has, of course, been large. Nonetheless, they have achieved a significant, if still low, level (around 5% of total European index derivatives, see Table I). Pan-European futures are more popular than options, and this is also the case for domestic derivatives. The DJ Euro Stoxx 50 plays a dominant role as an underlying index for pan-European futures and options. It accounts for more than 80% of the "pan-European" turnover reported in Table I.

3.2.2 OTC contracts and securities lending

Given the nature of the OTC market, the availability of data is more limited than for exchange-traded products, in particular as regards time series. The BIS publishes semi-annual statistics on the notional amounts and gross market values outstanding of the worldwide consolidated OTC derivatives exposure of major banks and dealers in the G10 countries.⁸

⁸ For more information about the availability of OTC derivatives statistics, see the box entitled "Comparing data sources on the OTC derivatives market" in the BIS Quarterly Review, June 2001.

Table 2**Global OTC derivatives markets***(outstanding amounts (positions at the end of the period); EUR billions)*

Instrument/Market	Notional amounts ¹⁾				Gross market values ²⁾			
	Dec. 1998	Dec. 1999	June 2000	Dec. 2000	Dec. 1998	Dec. 1999	June 2000	Dec. 2000
Equity-linked contracts	1,275	1,801	1,743	2,014	202	357	306	308
In the United States	268	514	397	487	45	107	74	69
In Europe	861	1,035	1,082	1,319	141	213	198	211
Of which								
Forwards and swaps	125	282	363	357	38	71	65	65
In the United States	48	103	117	134	17	36	22	26
In Europe	51	106	155	157	16	27	30	31
Options	1,150	1,520	1,380	1,656	165	287	241	244
In the United States	221	411	282	353	27	71	52	44
In Europe	811	930	926	1,162	124	186	168	180
Memo item: Total OTC derivatives market	68,838	87,797	98,099	101,396	2,769	2,800	2,692	3,387

Sources: BIS Quarterly Review, June 2001, and ECB calculations.

1) The notional amount, which is generally used as a reference to calculate cash flows under individual contracts, provides a comparison of market size between related cash and derivatives markets.

2) The gross market value is defined as the sum (in absolute terms) of the positive market value of all reporters' contracts and the negative market value of their contracts with non-reporters (as a proxy for the positive market value of non-reporters' positions). It measures the replacement cost of all outstanding contracts had they been settled in the reporting period.

The use of notional amounts and gross market values produces widely divergent estimates of the size of the overall market and of the various market segments.

All figures are adjusted for double-counting. Notional amounts have been adjusted by halving positions vis-à-vis other reporting dealers. Gross market values have been calculated as the sum of the total gross positive market value of contracts and the absolute value of the gross negative market value of contracts with non-reporting counterparties.

After adjustment for double-counting, resulting from positions between reporting institutions, the total estimated notional amount of worldwide equity-linked OTC contracts stood at €2.0 billion at end-December 2000, which represented less than 2% of the total OTC derivatives market.⁹ Of these, the bulk relates to OTC option contracts (€1.7 trillion), some 70% of which are reported by European dealers, suggesting relatively buoyant European activity. Some observers have partly attributed the growth of the European equity options market (both OTC and exchange-traded) to the launch of guaranteed products by investment funds (the price risk of which needs to be hedged) and the growth of options products (such as warrants) issued for retail investors. Other factors mentioned are the hedging demands of corporations related to company option schemes.¹⁰

It is difficult to produce quantitative information on the equity lending market.¹¹ In the interviews conducted for the purposes of this report, market participants remarked that stock loans were less developed in Europe than in the United States.¹² Within Europe, institutional investors in the

⁹ Foreign exchange, interest rate, equity-linked and commodity derivatives.

¹⁰ Companies may want to hedge some of their future demand for stock at a fixed price, while the owners of stock options may want to hedge some of the downside price risk (particularly if a large part of their net worth is in stock or options that cannot be sold outright).

¹¹ The type of transactions on the equity lending market include equity repos, equity loans and sell-buyback agreements. For a detailed description and typology of the equity lending market, see the CPSS report from the BIS entitled "Securities lending transactions: market development and implications", July 1999.

¹² The research organisation Robert Morris Associates estimates the value of European equities on loan as EUR 46 billion (USD 43 billion) at the end of 2000, compared with EUR 111 billion (USD 104 billion) for the United States. These figures were quoted in the Financial Times Mastering Investment series under the article entitled "Equity loans: how to sell what you do not own", 28 May 2001.

Netherlands and Scandinavia were reported to be the most active players in this field. Interviewees made reference to legal uncertainties in a number of markets to explain the slow growth of equity securities lending.¹³ The prospects for a growing market for securities lending were generally judged to be favourable. On the offer side (lenders), the increasing institutionalisation of savings and the focus on return relative to benchmarks are leading asset managers to focus on incremental sources of income, such as revenues from equity lending, which could be implemented with little additional cost and risk. On the demand side (borrowers), mention was made of the growing interest of the hedge fund community for implementing short-selling strategies¹⁴ in equity markets (i.e. selling stock borrowed on the equity lending market and buying the same stock later, so that returns improve as prices drop). Some institutional investors reported they had taken small stakes in these hedge funds. Large asset managers indicated that they planned to set up funds based on short-selling strategies for their retail client base.

¹³ In the United Kingdom, pension funds tend to limit this activity to specified agents only. During the interviews reference was made to the much-publicised Maxwell case of illicit stock loans, which led to the insolvency of several pension funds of the Maxwell Group (particularly the Mirror Group Newspapers pension fund). This case made UK trustees cautious to approve securities lending programmes, according to one interviewee.

¹⁴ Merger arbitrage and convertible bond arbitrage were also mentioned as strategies used by hedge funds. Merger arbitrage generally consists of buying the target's stock and short-selling the bidder's stock, which is rewarding if the bidding company's stock price is higher than the target company's stock price (in the case of a one-for-one merger) and if the merger goes through. Convertible bond arbitrage consists of buying a convertible bond "in the money" (for which market value is lower than the current value of the shares for which the bond can be exchanged), converting it immediately and, at the same time, short-selling the share to protect against a decline in stock prices.

4. Trends in the primary market

The new issuance of equities in the euro area has attracted a lot of attention in recent years. Structural factors, on the demand as well as on the supply side, supported the boost in primary market activity. Causes of a more temporary nature also stimulated new issuance. The advent of Stage Three of EMU was, generally speaking, thought to be a catalyst, speeding up a process already underway.

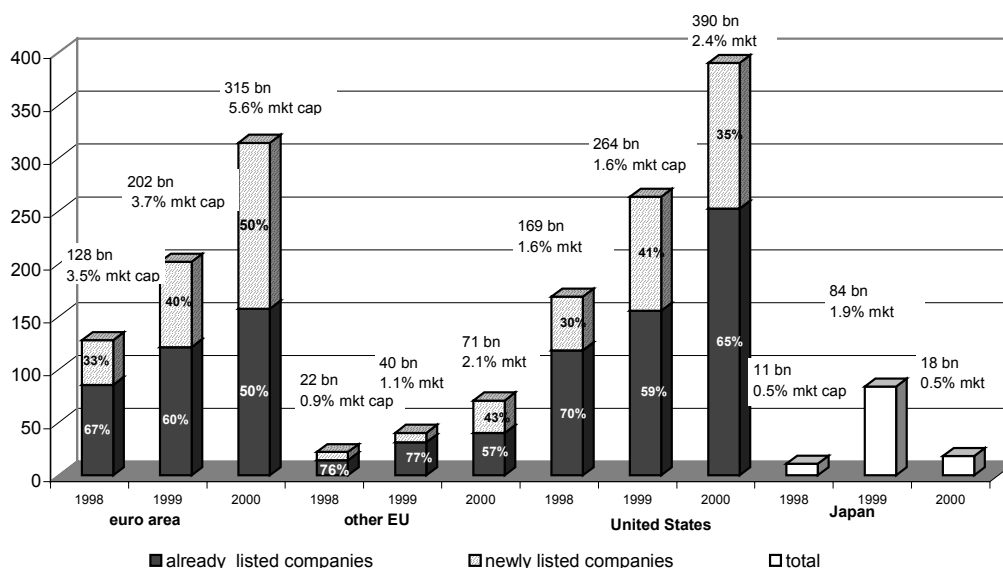
4.1 Size and growth

Equity issuance in the euro area in recent years reached high levels both by historical standards as well as by comparison with other developed markets. While over the last decade new issuance accounted for, on average, 2% of market capitalisation, this rose to nearly 4% in 1999 and more than 5% in 2000. In other markets, such as the United States, the United Kingdom and Japan, the ratio stayed below 2.5% during the same period.

Chart 4

Amount of new capital raised by region in absolute terms and as percentage of market capitalisation

(EUR billions)



Sources: FIBV and ECB calculations.

Breakdown of already listed and newly listed companies not available in Japan.

The number of listed companies in the euro area exchanges, which grew at an annual rate of more than 10% in 1999 and 2000, also points towards robust equity market developments. Part of the growth can be attributed to what are known as the New Markets ("NM markets")¹⁵, often seen as the euro area counterparts of Nasdaq. 189 companies were admitted to the NM markets in 1999 and 235 in 2000.

Interviewees, while pointing to a very dynamic primary market in 1999 and the first half of 2000, did not view the advent of Stage Three of EMU to be a major stimulus for developments in the primary market, but saw it merely as a catalyst, strengthening other factors. They also identified a

¹⁵ The six NM markets are Amsterdam NM, Brussels NM, Helsinki NM, Neuer Markt, Nouveau Marché and Nuovo Mercato.

number of factors which drove, and are expected to continue driving, the strong upward trend in new issuance. In addition to developments on the supply side, such as M&A activity and privatisation, which will be dealt with in greater depth later in the report, the changed attitude of the investor community towards equity exposure and (related) access to an enlarged capital market were mentioned as supporting factors. The foreseen implications of an ageing population and, on a shorter horizon, the bull market for equities, in combination with the convergence of interest rates to a low level, have stimulated euro area investors to increase their equity holdings (see also Chapter 5). The resulting increase in demand can be tapped more easily since borders between domestic equity markets have been levelled out in the euro area with the introduction of the single currency.

4.1.1 Trends in initial public offerings

The number of new listings at the exchanges in the euro area and the amounts involved have increased substantially in recent years, although activity was subdued in the second half of 2000. In 1999 and 2000, a total of around 20 initial public offering (IPO) deals were launched with an individual size exceeding €1 billion.¹⁶ Furthermore, in 2000 the euro area IPO market was the most dynamic market in absolute terms since the amount of capital raised by newly listed companies was higher in the euro area (€157 billion) than in the United States (€138 billion).

Privatisation of (partially) state-owned companies drew particular attention, especially because the size of the deals concluded was quite spectacular.¹⁷ Some interviewees thought that the privatisation wave had stimulated the interest of retailers in equity exposure, since the companies involved were seen as reliable investments and these IPOs had been heavily marketed through print advertisements and television commercials. Furthermore, it was suggested that a number of privatisations may have been linked to Stage Three of EMU. In such cases, the replacement of state ownership would have been motivated by the need to fulfil the Maastricht criteria and the rules laid down in the Stability and Growth Pact. However, in general, the restructuring of the utility and telecommunications sector, which forces companies to compete in an international arena, was indicated as the main driving force behind privatisation.

If we exclude privatisations, the euro area IPO market was dominated by new listings of companies in the technology, media and telecommunications (TMT) sector, owing to their considerable financing needs. This sector accounted for nearly 30% of capital raised in euro area IPOs in 1999 and for more than 50% in 2000. It also represented nearly 50% of the total number of new listings in 1999 and 2000. For “new economy” companies the equity market proved to be a relatively cheap source for financing quickly expanding activities, especially in the TMT sector. It was noted by the interviewees that a listing also made it possible to introduce option programmes for employees. After the burst of the TMT “bubble”, primary activity, especially on NM markets, was suddenly brought to a halt, owing to bad market conditions and the growing selectivity of investors.

4.1.2 Mergers and acquisitions

M&A activity has influenced primary market developments in the euro area quite dramatically in recent years. The number of delistings in the euro area during the period from 1998 to 2000 exceeded 200 per year on average; simultaneously, the amount of secondary offerings, reflecting the increased financial needs of the acquirers, almost doubled (from around €80 billion in 1998 to €160 billion in 2000).

¹⁶ Source: Thomson Financial Securities Data.

¹⁷ Enel: EUR 15.6 billion; Deutsche Telecom: in 1999 EUR 10 billion, in 2000 EUR 13.3 billion

These developments are linked with the level of M&A activity within the EU, which is estimated to have reached a level of over 10% of market capitalisation in 2000. When assessing the level of M&A activity in this paragraph, a pan-European perspective will be adopted rather than a euro area perspective. This reflects the fact that the consolidation process among businesses in Europe takes place not only within the euro area but within the entire EU (evidence of this phenomenon is provided by the amount of cross-border European deals, which in 2000 almost equalled that of European domestic deals, see Chart 5).

The situation of the European M&A market is different from developments in the United States where, in addition to M&A activity, management and leveraged buy-outs play a more prominent role. Market participants thought that the underdeveloped market for venture capital as well as the absence of a high yield market segment in Europe could serve as an explanation for the lower number of management buy-outs and leveraged buy-outs in Europe.

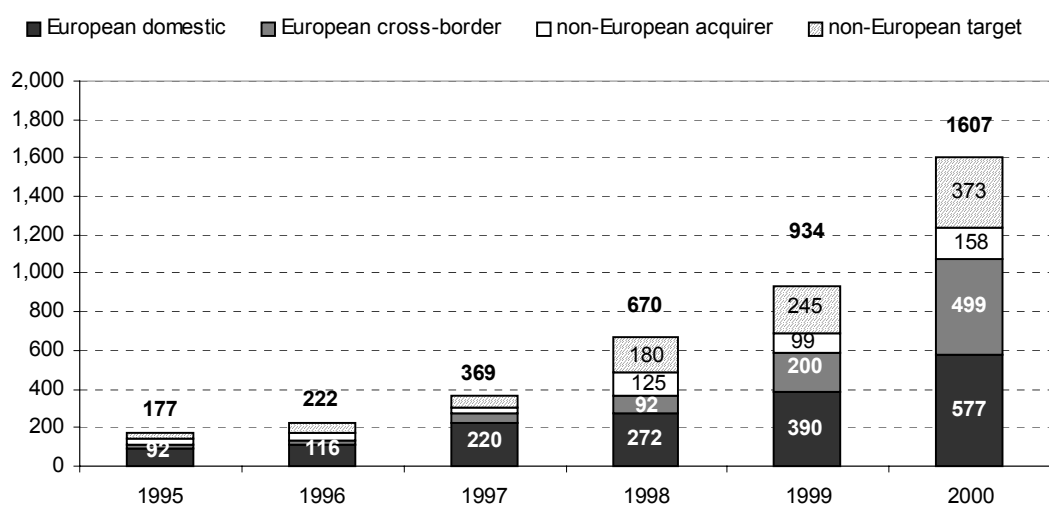
In the course of 2000 domestic European M&A activity amounted to €577 billion, cross-border European deals to €499 billion and acquisitions of non-European companies to €373 billion (see Chart 5). Cross-border European M&A activity enjoyed faster growth than all other operations since 1995, followed by the acquisition of non-European companies, which reveals a decreasing national bias in the M&A strategy of European companies.

The strong upswing in M&A activity in Europe during the past five years was attributed to several factors by the interviewees. First, the need to strengthen the competitive position in the domestic market was seen as an important factor. The tendency towards further deregulation in the EU has encouraged an amalgamation of companies in order to maintain pricing power. Developments in the banking and insurance sector since 1990, and more recently in the utility sector, are examples of this. The introduction of the euro has pushed back the barriers of what is considered to be the domestic market and promoted a second round of M&As in these sectors.

Chart 5

Total European merger and acquisition volume by region, 1995-2000

(EUR billions)



Sources: Thomson Financial Securities Data and ECB calculations. Reference date is the effective date of the M&A operation, reference value is the value based on the effective date (the common stock portion of the deal is valued using the closing price on the last full trading day prior to the closing date of the deal). Only closed operations are considered. Types of operations include mergers, acquisitions, acquisitions of partial interest and acquisitions of majority interest.

The need to globalise activities was put forward by interviewees as a second argument in support of high M&A activity in both the euro area and “other EU” countries. In sectors such as telecommunications and pharmaceuticals, borders have disappeared rapidly, and companies need a broad client base to generate new activities. European companies have often targeted US competitors as suitable takeover candidates (see also section 5.4).

A third argument mentioned was that a merger or an acquisition by a company in a certain sector stimulates a dynamic process of further M&A activity in that sector. Finally, interviewees pointed out that many euro area companies were in a position to acquire other companies, since they had a low gearing (i.e. a relatively low level of debt and leverage) and were cash-rich. In this context it is interesting to note that the relative importance of cash used to finance an acquisition has decreased from over 70% in 1995 to around 40% in 2000.¹⁸

Concerning the prospects of M&A activity, interviewees noted that the impulses coming from a need to consolidate and/or globalise had not diminished. The foreseen unwinding of cross holdings, on account of changes in tax legislation in some countries, would also encourage a further rationalisation in certain sectors.

4.1.3 Share buy-back programmes

Share buy-back programmes are seen as an important tool for promoting shareholder value. Often cited aims for implementing such a programme are: increased gearing, a higher return on equity and a reduction of excess capital. Since many euro area companies are relatively well capitalised and rich in cash, market participants expected that share buy-backs would develop into an important trend influencing the number of stocks outstanding. However, until now the amounts involved have been very modest, especially by comparison with the United States.¹⁹ Several reasons were put forward by the interviewees to explain why share buy-backs have been rather unpopular. First, it was noted that share buy-backs might be interpreted by the market as a sign of weakness in that the management of the company is incapable of finding profitable new activities. A second reason mentioned was that some euro area companies deliberately stick to their excess capital resources so that they are able to finance, where possible, the acquisition of another company. And, finally, attention was drawn to tax legislation, which in many euro area countries implies a major disincentive to implement a buy-back program. Tax reforms in France and Germany aim to remove the major obstacles in this respect. Market participants expect that these reforms will be followed shortly by reforms in other countries. They think, therefore, that the impact of buy-back programmes on outstanding stocks might increase rapidly.

4.2 Product innovation

The pace of financial innovation in the euro equity markets is currently influenced by the strong investor demand for equity exposure and the high degree of corporate restructuring. The heated competition between exchanges, investment banks and asset managers has contributed to the rollout of new derivative contracts, equity-linked securities and new types of investment funds. These developments are discussed in more detail below. It is important to note that most product structures (e.g. index futures and warrants) have been in existence for many years, but they are finding new applications as the euro capital markets become more integrated.

¹⁸ Source: Thomson Financial Securities Data.

¹⁹ The amount of announced share buy-back programmes in the euro area was EUR 62 billion in 1999 and EUR 53 billion in 2000 compared with EUR 147 billion and EUR 157 billion for the United States. Generally, less than 10% of announced programmes are completed. Source : Thomson Financial Securities Data.

4.2.1 Exchange-traded derivatives

Derivatives allow market participants to hedge price risks and to gain access to markets that would otherwise not always be available. Given the strong growth in pan-European and sectorial investment (see Chapter 5) it is no surprise that exchanges and index providers have rushed to launch new indices and contracts to meet this demand.²⁰ Of the new equity index futures which have been launched, the euro area-based contracts (in particular the DJ Euro Stoxx 50) have attracted the largest turnover. This segment of the equity futures market is still substantially smaller than the one related to country indices, but has been growing strongly since the introduction of the single currency. The predominance of euro area contracts was attributed by interviewees to the way in which these contracts were initially targeted at retail investors. It was emphasised that retail involvement had been a prerequisite in achieving the critical mass in these contracts. Institutional investors were subsequently attracted by the available liquidity. An interesting observation in this respect was that asset managers acknowledged that the euro-based contracts did not meet their hedging demand as well as the pan-European contracts since a pan-European focus now dominates the equity benchmarks in the cash market (see section 3.3.1). Still, the higher liquidity made these contracts the preferred instruments.

According to the brokers interviewed, the retail sector in Germany, France and Italy has been particularly receptive to new warrant products, issued on either individual shares, a group of companies or sector indices. Strong marketing through private banking networks, as well as branding, provided a strong impulse for this development. In countries such as the Netherlands, where retail investors are traditionally more involved in direct options trading on the exchange, there was also a marked increase in warrant issuance. An advantage for retail investors in warrants (as opposed to direct options trading) is that they do not have to post and maintain a variation margin for these securities.

New launches have happened in late-2000 and early-2001 in the field of single-stock futures (i.e. futures on individual stocks), which have triggered renewed interest for this kind of product. Euro area exchanges are currently ahead of US exchanges for trading of such instruments.²¹ The interdependence between futures and options trading has contributed to increased volumes in both segments. In some cases option turnover has migrated to the exchange also offering a liquid index futures market. In order to cater for the needs of both retail and wholesale market participants, some exchanges have introduced "mini" versions of the derivative contracts used at the institutional level.

For the OTC market, no specific product innovations were identified. Generally speaking, more complex structures emerge during bullish phases of the market. Examples of popular OTC

²⁰ Since 1998, the main European exchanges and index providers (Dow Jones, FTSE International, MSCI, S&P and Salomon Smith Barney) have introduced a broad range of pan-European equity indices, some of which have been used as the underlying index for the design of euro-denominated equity futures and option contracts. In May 1998 LIFFE launched five pan-European index contracts, two of which were related to the euro area (Euroblock 100 and E-Stars). Around the same time the Paris Bourse launched futures and options contracts based on three Dow Jones Stoxx pan-European sector indices, while Eurex listed futures and options contracts based on the equity indices of Dow Jones Stoxx 50 and Dow Jones Euro Stoxx 50 indices.

²¹ Single stock futures have been traded for several years in Finland, Portugal and Spain. In December 2000 Euronext Amsterdam launched eight new futures contracts on individual stocks (selected from Dutch companies with large capitalisations). Outside the euro area, LIFFE launched in January 2001 its first 25 Universal cash-settled Stock Futures with a combined market capitalization of EUR 3.8 trillion. By comparison, US exchanges have expressed a strong interest in stock futures, but they must wait until the current ban on trading of these type of derivatives is lifted (legislation passed at the end of 2000 will allow trading of single-stock futures in the United States by the end of 2001).

derivative products are forwards and options on indexed portfolios, which behave according to the performance of a specific country or sector. This type of activity is said to be growing strongly, with investment and pension funds now often benchmarked to market indices, and with the introduction of capital-guaranteed products.

4.2.2 Equity-linked securities

Equity-linked securities are a (“mezzanine”) product combining elements of debt and equity. Convertible bonds are a well-known instrument which offer the issuer the advantage of lower coupon payments (by comparison with a normal bond), while the investor holds a right (call option) to transform the bond into equity. Reverse convertibles combine a higher coupon for the investor with a right for the issuer to transform the obligation into equity (put option). The convertible segment has always been a relatively popular tool for low rated and riskier companies to attract new capital. In this respect, it was noted that from 1999 the convertibles market shifted from banks and insurance companies to corporates, especially in the TMT sector (see Table 3). Some observers also noted that convertibles contributed towards industrial restructuring by enabling companies willing to sell off their stake in a subsidiary to issue convertible bonds which could be exchanged for shares in the subsidiary. The current low yield environment implied an impulse to reverse convertible bonds.

Table 3
Issuance of equity-linked securities¹⁾ in the euro area by type of issuer

	Total issuance (EUR billions)	Corporates	Banks/Finance	Utilities
1996	5.1	68%	32%	-
1997	7.8	48%	52%	-
1998	15.3	43%	55%	2%
1999	22.3	71%	27%	2%
2000	24.9	70%	30%	-

Source: Capital Data Bondware.

1) Including convertible bonds and bonds with equity warrants attached.

When comparing the respective structures of the US and the euro area markets, some observers noted that the US market for high yield bonds (better known by the misnomer “junk bonds”) formed the basis of the success of the Nasdaq stock market. In some respects the market for equity-linked securities performs a similar function in the euro area, by providing a new channel for raising funds, particularly in the case of technology and telecommunications ventures.

4.2.3 Capital-guaranteed funds and exchange-traded funds

Innovations mentioned in the interviews were investment funds that offer investors capital guarantees and what are known as exchange-traded funds (ETFs).

Capital-guaranteed investment funds have become rather popular among retail investors. This development was attributed to the fact that the euro area has many novice investors in equities. Capital-guaranteed funds have proven to be an appealing concept for this investor group because the downside risk of the equity exposure is limited. It was noted that the managers of such funds generate substantial hedging demand in equity options in the OTC markets (tailor-made) and on exchanges (standard options). Judging from the data available from FEFSI²² on capital-guaranteed funds, the assets invested in these types of funds, although growing rapidly, still represent in most countries a small share of the total assets managed by investment funds (between 1% and 5% for

²² FEFSI (Fédération Européenne de Fonds et sociétés d’investissement) is an institution acting as a lobby defending undertakings for collective investment in transferable securities (UCITS) interests at the European level.

France, Luxembourg and Portugal). It is only in Spain and Belgium that their market share is higher (around 20%).

ETFs are targeted at both institutional and retail investors as low cost investment vehicles that track specified stock indices. The investments made by these funds therefore replicate the composition of the index. For this reason, they are also referred to as "trackers". Shares of ETFs can be bought or sold throughout the trading day while the traditional index investment funds can generally be purchased or redeemed only at the end-of-day closing price. Limits on the deviations between the indicative net asset value of the ETF and the ETF price on the exchange are ensured by arbitrage between the trackers and the basket of underlying constituent securities.

In the United States ETFs were listed on the American Stock Exchange (Amex) for the first time in 1993. They have since become very popular, in particular by contrast with classical index investment funds. In the euro area and other EU countries, the ETFs have been slower to develop, but their prospects seem very promising. At the end of 2000, ETFs products were listed at the Deutsche Börse and the London Stock Exchange. Euronext launched a specific segment for ETFs in January 2001.

Table 4
Characteristics of the main exchange-traded funds segments in the EU and the United States as at the end of 2000

Stock exchange	Market segment	Date of listing of the first ETF	No. of ETFs	Assets under management (EUR millions)	Main underlying indexes	Expected new issues Q1 2001
Deutsche Börse	XTF	11 April 2000	2	438	DJ Euro Stoxx 50, DJ Stoxx 50	ETFs on DAX, NEMAX, MDAX
London Stock Exchange	ExtraMark	28 April 2000	3	260	FTSE100, FTSE TMT, FTSE exUK 100	-
Euronext	NextTrack	January 2001 (e)	-	-		ETFs on DJ Euro Stoxx 50 and Stoxx 50, CAC40, AEX
American Stock Exchange	ETF	1993	92	75,000	Nasdaq100, S&P 500, DJIA	-

(e) = expected

Sources: Deutsche Börse, London Stock Exchange, Euronext, American Stock Exchange (Amex).

5. Trends in the secondary market

Equity investments in the euro area have gained great popularity in recent years among both households and institutional investors (investment funds, life insurance companies and pension funds). The share of equity in financial assets held by these two categories of investors almost doubled between 1995 and 1999. This increase not only resulted from the favourable market conditions for equities, but was also supported by new inflows in and reallocations between interest rate and equity investments within the underlying portfolios.

The first part of this chapter will try to establish a typology of the structure of equity holdings in order to provide a more accurate analysis of the different trends in equity holdings.

The second part of this chapter will discuss the factors that have led to a greater risk appetite and higher equity holdings on the part of euro area investors. One should, however, bear in mind that the culture of equity investment in most of the euro area economies is still less developed by comparison with that of the United States and the United Kingdom.

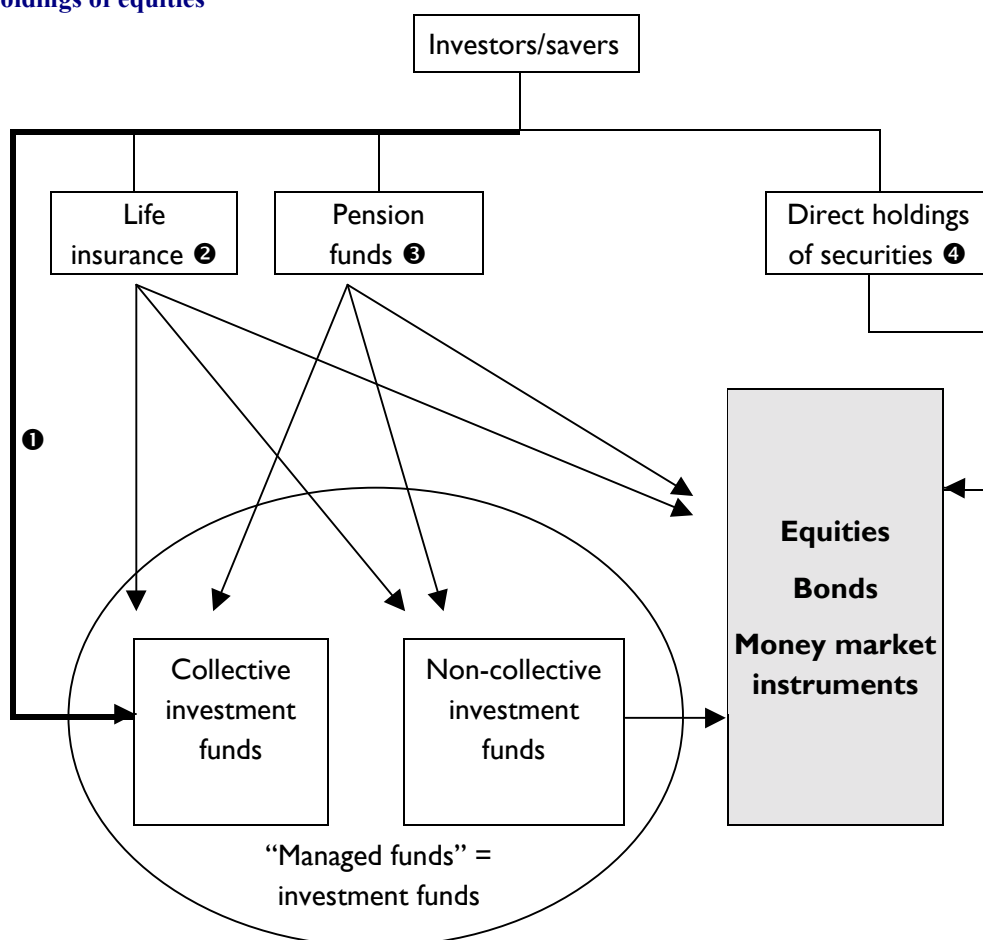
A third theme to be addressed in this chapter is the internationalisation of the equity portfolios managed by institutional investors in the euro area. The move towards more international equity exposure implies sizeable flows within the euro area as well as outflows from the euro area to the United Kingdom and the United States. This geographical diversification is, in the case of investment funds (and, to a certain extent, insurance companies) mainly fuelled by new inflows, while for pension funds reallocation within the equity portfolios seems to be the main driving force.

5.1 Structure of equity holdings

The structure of equity holdings can be summarised in a simplified way by the diagram below.

Diagram 1

Holdings of equities



The diagram shows that four main channels can be used by investors to gain equity exposure:

- ❶ Investment funds (collective or non-collective).
- ❷ Investment in life insurance products, which can be managed directly or indirectly by the insurance company (through collective or non-collective investment funds).
- ❸ Investment in pension funds, which can be managed directly or indirectly by the insurance company (through collective or non-collective investment funds).
- ❹ Direct holdings of equities.

This chapter will review these four channels and attempt to highlight the major trends at work for each of them. The first three investment vehicles (investment funds, life insurance and pension funds) will be referred to as “institutional investors”. The focus will be on third-party asset management by institutional investors and holdings of equities by households. The behaviour of banks as managers of their own assets will be disregarded, as will the direct equity holdings of non-financial corporations.

5.2 Key forces leading to higher equity holdings

Interviewees mentioned the growing awareness of the implications of the ageing problem and the convergence of interest yields in the euro area as structural forces shaping demand for equities.

Population ageing

Interviewees highlighted the widely different situations in Europe concerning pension financing. In countries such as the Netherlands, Ireland, Sweden and the United Kingdom, funded public or private pension plans are well developed and already contribute to higher equity holdings. The rest of Europe (mostly euro area countries), however, lacks a capitalisation scheme and relies mainly on a compulsory, pay-as-you-go system, where pensions are predominantly financed by current contributions from workers. As the ratio of elderly people to those of working age is projected to double by the year 2050, individuals in these countries seek to secure their income position after retirement by increasing overall savings and in particular by investing in equities. The recent wave of tax and pension reforms in the euro area is widely expected to provide further incentives for retail investors to commit funds to pension saving schemes.

The convergence of interest yields within the euro area

This second argument is clearly linked to the Stage Three of EMU. The convergence of interest rates to the lowest level prevailing in Germany associated with lower inflation expectations prompted a reallocation of investments towards equity markets. Given the high level of interest rates prior to Stage Three, the impact on investor behaviour of converging interest rates was most strongly felt in Italy and Spain, which is reflected in the exuberant growth of equity funds in these countries. More recently, this has also held true for Greece, which joined the euro area on 1 January 2001.

Other factors

The low yield environment has also encouraged private investors to seek higher returns in other countries in the euro area. In this regard, the interviewees mentioned that the strong performance of equity markets in the second half of the 1990s had provided an additional impulse for the burgeoning equity culture. Private investors had taken a more relaxed attitude towards market risks stemming from equity investments, as evidenced by the large net inflows to sectors characterised by volatile valuations. The publicity surrounding privatisation programmes and, from time to time, the astonishing market performance of certain IPOs were also mentioned as factors stimulating public interest in equity holdings.

5.3 Changes affecting equity holdings by investment channel

5.3.1 Elements of strategy common to investment funds, life insurance and pension funds

Institutional investors, in particular pension funds, located in the euro area have changed their investment strategies for equities quite dramatically since the introduction of the euro. The main implication has been a portfolio shift away from domestic to foreign equities.

Re-benchmarking

The elimination of currency risks within the euro area and the globalisation of capital markets have led institutional investors, who generally had a bias towards investing in domestic securities,

to adopt a more international orientation. According to the interviewees, a pan-European focus now dominates the relevant equity benchmarks. Simultaneously, a sector approach to differentiate between investment opportunities in different industries has become commonplace, in particular with large asset managers. The introduction of a sector approach and the anticipation of further European integration (including expansion of EMU) would explain why the shift in home bias has not stopped at the borders of the euro area. In order to achieve balanced exposures (in sectors such as pharmaceuticals, food, banking and telecommunications equipment) the inclusion of stocks of companies located in the United Kingdom, Sweden and Switzerland in the benchmark is seen as a necessity. Furthermore, it was observed that investment opportunities in euro area technology funds were more limited than in the United States. This was the case for both the number of available technology stocks and their market capitalisation. It was suggested that the latter factor has led euro area investors to increase their exposure towards US stocks.

The re-benchmarking by euro area investors generated major equity flows within Europe and net outflows to the United States and, to a certain extent, the Pacific (see also Chart 8, "Purchases of foreign equities by area of issuer for a selection of euro area countries"). There is strong evidence that pension funds have taken the lead in this area. According to market participants, the process of reallocation by pension funds started as early as 1997, while the bulk of the transactions were implemented in 1999. It was observed that the re-benchmarking of assets held by euro area life insurance companies had been a far more gradual process, mainly dependent on new policies sold. The fact that insurance obligations are mainly covered by fixed-income assets and tax considerations (buy and hold investment style to avoid capital gains tax) were mentioned as contributing factors.

In EU countries outside the euro area re-benchmarking is not so much a theme among institutional investors²³. Pension funds in the United Kingdom have relied on a high equity exposure and a strong home bias (see section 5.3.4 on pension funds) for several decades. In smaller countries, such as Denmark and Sweden, pension funds have had higher exposure towards foreign securities. Nevertheless, the home bias is still sizeable, similar to the situation in the Netherlands before 1998.

Use of passive mandates

Among the institutional investors that delegate the management of the money they collect to other asset managers, the share of those delegating the management of part or all of the collected money to index funds (*passive mandates*) has increased significantly. What are known as index funds aim to track benchmark returns as closely as possible. Investing in index funds is easy to implement and relatively cost effective. The popularity of passive strategies among institutional investors in the euro area has grown rather spectacularly in recent years (the market share of index funds is estimated by an expert in this field to have reached 15%), but has not reached US levels as yet (market share of 30%). It was generally argued that the re-benchmarking process and a focus on relative performance had increased the orientation towards passive strategies. Index strategies are thought to be able to fill the gap resulting from a lack of expertise on cross-border investments, while offering (in relative terms) predictable results.

²³ It should be noted, however, that new investment rules for the Swedish government-owned pension fund system (AP Fonden) entered into force in January 2001, giving AP Fonden greater scope to invest in equities and in foreign assets. This will presumably trigger some re-benchmarking in Sweden even if it is too early to assess the extent of this movement.

Use of derivatives

Institutional investors are generally not very active in the derivatives market. This can be explained largely by their long investment horizon and the limited need for active position-taking through leveraged instruments. Most applications are, therefore, confined to liquidity management, tactical positioning and rebalancing operations. Some professionals interviewed also judged the costs of positioning through OTC instruments to be prohibitive. Equity swaps are used from time to time to transform portfolio compositions.²⁴ Exchange-traded futures on equity baskets are mainly traded to adjust changes in exposure on account of portfolio inflows or outflows as well as for tactical positioning.

With regard to investment funds and life insurance companies, interviewees mentioned that the popularity of capital-guaranteed investment products had led to a greater involvement of these asset managers in options markets. They usually involve rather complex option hedges that require frequent rebalancing. Continued retail demand for this type of investment product is expected to contribute towards further robust expansion in the market for equity options, both on exchanges and in the OTC market.

Currency hedging

The information gathered during interviews suggests that “asset only” investors, such as investment funds, generally do not employ currency hedging strategies for equity investments. In the case of asset and liability managers, such as pension funds, the picture is more mixed. Some pension funds have started hedging a substantial part of their currency exposure (both equity and fixed income) in recent years. In these cases, the rationale for currency hedging was to enable a higher allocation to equities within the asset mix at a given level of value-at-risk (which determines the need for technical reserves).

Interviewees cited methodological problems when trying to measure the currency exposure of an equity portfolio as a factor. For instance, a simple approach whereby an amount of dollars equal to the market value of a stock listed in the United States is sold forward in the foreign exchange market is not justifiable as soon as the value of the company is sensitive to international currency movements. If an attempt is made to overcome this problem by statistically documenting this sensitivity, the reliability of the relationships found is in most cases highly questionable. Factors limiting the stability of correlations over time are, for example, the changing structure of companies and changes in their behaviour regarding the hedging of currency exposure.

The majority of institutional investors are still reluctant to hedge the currency exposure stemming from their equity holdings. Cross-border equity flows by portfolio investors will therefore, on balance, affect the supply and demand conditions in currency markets.

5.3.2 Investment funds

The major trends affecting investment funds holdings are:

- a sharp increase in equity holdings within the total assets under management, and
- an increase in assets invested in pan-European and sector-specific equity funds, but the position of domestic equity funds remains strong.

²⁴ Tax distortions sometimes prevent reshuffling of existing portfolio compositions.

A sharp increase in equity holdings

According to the FEFSI statistics total assets managed by euro area investment funds stood at €2.8 trillion²⁵ at the end of 2000, showing an increase of 33% in 2000. Total assets under management have increased markedly since 1995 (see Table 5), especially in the category “equity funds” where assets increased almost sevenfold. Over the same period assets invested in money market funds showed very limited growth (+10%) and assets invested in bond funds experienced an increase (+88% since 1995) well below that of equity funds. Although the share of assets invested in equity funds in the total assets under management has grown at a spectacular pace in the euro area over the last five years – it increased from 15% in 1995 to 40%²⁶ at the end of 2000 – it remains relatively small compared with the United States (52%) and other EU countries (72%, see also Table 5). However, it should be noted that in 2000 the share of equities in investment funds assets dropped in the United States and in other EU countries, while it continued to increase in the euro area. Equity funds in the euro area are concentrated in four countries: Luxembourg (31%), France (19%), Italy (14%) and Germany (13%).

Table 5
Assets under management by investment funds

(end of period, EUR billions)

	1995	1998	1999	2000
Euro area				
Total	1017	1963	2492	2885
Equities	152	481	859	1146
Equities (%)	15%	24%	34%	40%
Other EU				
Total	154	335	516	564
Equities	127	248	394	408
Equities (%)	77%	74%	76%	72%
United States				
Total	1974	4234	6104	6652
Equities	780	2150	3384	3436
Equities (%)	40%	51%	55%	52%

Sources: FEFSI statistics for Europe/Flow of funds for the United States.

The number of funds in the euro area at the end of 2000 (about 21,000) was very high compared with the United States (8,000). The interviewees linked this difference to the high costs for redeeming an investment, tax considerations, national legislation, inefficiencies in the distribution channels and comparative advantages in the management of domestic portfolios. The average size of investment funds in the euro area (€135 billion) is also significantly smaller than in the United States (around €1 trillion).

A decrease in home bias but position of domestic funds still strong

When looking at the area of investment of equity funds domiciled in the euro area, assets held by pan-European and euro area-only investment funds represented 25% of total assets at the end of 2000, up from 12% in 1998. Over the same period, the domestic and global funds market share

²⁵ The analysis here is restricted to UCITS funds, which invest in transferable securities and money market products. The amount invested in non-UCITS funds, such as close-end, property and institutional funds, adds up to EUR 0.9 trillion.

²⁶ This increase is not only the result of new investments in equity funds. It also stems from the higher performance of equity funds relative to bond and money market funds over the last five years (for example, from end-1995 to end-2000, the DJ EuroStoxx index grew 183 % while the Morgan Stanley euro debt index, which includes sovereign and non-sovereign issuers, grew only 46 %).

decreased from 43% and 45% respectively to 34% and 41% respectively. However, the share of assets of domestic funds is still higher than that of pan-European and euro area funds combined. This is presumably related to the costs incurred when rebalancing assets (e.g. high transaction costs for investment funds, taxation of realised gains, loss of tax privileges and regulatory aspects, such as the modification of prospectuses) and the higher familiarity with domestic companies. The strong increase in the number of equity funds supports the view expressed by the interviewees that the diversification had mainly taken place through the opening of new funds and not as a result of a reallocation of previous investments.

Table 6

Assets of equity funds domiciled in the euro area by area of investment (estimates)

Area of investment	Domestic	Euro area only	European	Global	Total
1998	43%	-	12%	45%	100%
1999	33%	8%	14%	45%	100%
2000	34%	10%	15%	41%	100%

Source: FEFSI statistics.

Estimates do not include IE, LU and NL as a breakdown by area of investment is not available for these countries.

5.3.3 Life insurance

Interviewees pointed out that the most noticeable trend in the life insurance sector was the shift of retail interest from traditional defined benefit insurances to what are known as unit linked products (see glossary). While premiums of the former type are invested mainly in fixed income securities, new inflows related to unit linked products are invested in a mixture of fixed income and equities. Unlike defined benefit insurances, the market risks involved are borne by the policyholder in the case of unit linked products. The difficulty in modifying contracts underlying existing insurance products, as well as the disincentive to realise profits on outstanding positions mainly to avoid taxation, suggest that the driving force behind changes in overall exposure stems from new products, such as unit linked life insurance.

Reliable data on the importance of the life insurance sector and its equity holdings in Europe are available through the Organisation for Economic Co-operation and Development (OECD) but are compiled on a bi-annual basis only. Although these data give a good idea of the structural forces at work, showing the growing importance of the life insurance industry and the increase in the share of assets invested in equity, it is somewhat tricky to identify the trends related to the run up to the introduction of the euro.

Table 7

Size of life insurance in the economy and share of equity holdings

	1991	1995	1996	1997	1998
Size as a % of GDP					
EMU (1)	2.3%	3.1%	3.3%	3.6%	3.6%
EU-15 (2)	2.9%	3.6%	3.9%	4.2%	4.4%
United States	3.6%	3.9%	4.0%	4.1%	4.4%
Equity as a % of total assets					
EMU (1)	10%	10%	11%	13%	14%
EU-15 (2)	18%	19%	20%	23%	22%
United States	5%	6%	6%	6%	7%

Source: OECD insurance statistics yearbook 1991-1998, 2000 edition.

(1) Coverage: EMU excluding ES (all years), LU (1997 and 1998), PT (1991). No data are available for these countries and years.

(2) Coverage: EMU plus DK, SE, UK.

Data are not entirely comparable (certain countries report assets at market value, others at historic value).

5.3.4 Pension funds

Among institutional investors, euro area pension funds were the first to change the geographical asset allocation of their portfolio in reaction to the introduction of the euro, thus reducing their home bias in equity investment. In order to discuss this process in more depth and point out the specific trends at work in the euro area, a comparison is drawn here between changes in the portfolio composition of Dutch and UK pension funds, for which detailed data are available. The data examined are provided by the WM company²⁷ and cover the respective areas fairly well.²⁸

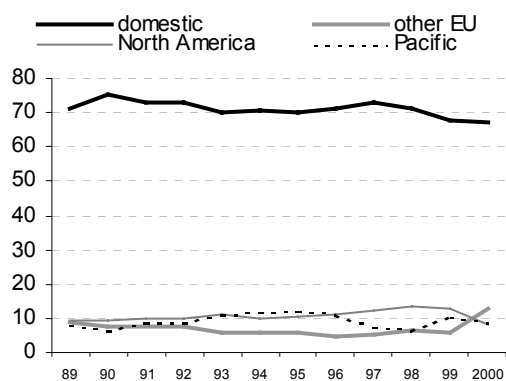
Both the United Kingdom and the Netherlands have a high capitalisation rate of pension savings. The pension fund industries in these countries, with a total amount under management of €1.15 billion and €0.43 trillion respectively, are among the biggest investor categories in Europe. Over the last decade UK pension funds have had a relatively stable asset mix with a high equity exposure (on average 75%). In the second half of the 1990s, the equity exposure decreased owing to the introduction of minimum funding requirements.²⁹ In contrast to their UK counterparts, which have a long-standing tradition of equity investments, Dutch pension funds gradually increased their equity holdings from 20% of total assets in 1990 to around 40% in 2000.

Chart 6

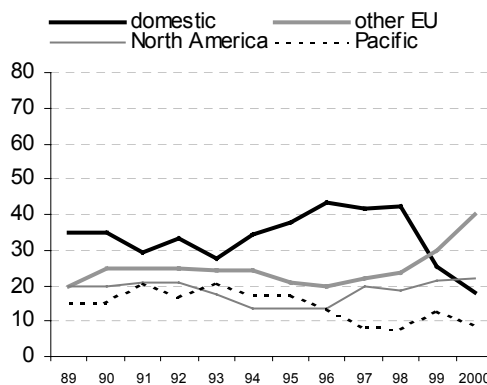
Composition of equity portfolio of pension funds in selected countries

(as a percentage)

UK pension funds



Dutch pension funds



Sources: The WM Company and ECB calculations.

The composition of the equity portfolios (see charts above) indicates a much stronger home bias for UK pension funds by comparison with their Dutch counterparts, which is consistent with the different size of the two equity markets. In the last ten years an average of more than 70% of the

²⁷ The WM Company is a member of the Deutsche Bank Group and specialises in the supply of performance measurement and investment administration services to the owners and managers of investment funds.

²⁸ The two largest pension funds in the Netherlands – ABP and PGGM – are not included, but bilateral discussions have confirmed that the general trends noted with respect to Dutch pension funds also apply to these institutions.

²⁹ The Minimum Funding Requirement (MFR), which came into force in the United Kingdom in 1997, requires that pension funds hold enough assets to balance their long-term liabilities, discounted over time. Since the discount rate used for liabilities relating to pensions already in or approaching payment is a 15-year gilt yield, UK pension funds have increased their holdings of gilts (UK bonds) in order to match their assets and liabilities and to avoid failing the MFR. The MFR rules are currently being reviewed (see the box entitled “The Minimum Funding Requirement review”, page 334 of the Bank of England Quarterly Bulletin, November 2000).

equity holdings of UK pension funds was invested in UK-based companies. Pension funds in the Netherlands had a more internationally diversified equity portfolio. As a result of the introduction of the euro, the latter decreased their exposure in domestic equities even further (from around 40% to less than 20% at the end of 2000) through disinvestments of up to €9 billion per year in 1999 and 2000.

A significant proportion was re-invested in other European stocks, which can be interpreted as a broadening of the home base. Equity exposure in the major overseas regions was also increased. The disappearance of currency risks within the euro area made this possible, according to most market participants.³⁰ Representatives of Dutch pension funds reported that they had completed the restructuring of their portfolios in 2000. Market observers believe that if the United Kingdom were to participate in the single currency, this would bring about a similar shift for UK pension funds in their equity holdings.

More broadly, it should be noted that the upcoming regulation on pension funds by the European Commission could have implications for the current asset composition of all EU pension funds.

5.3.5 Direct equity holdings by households

Recently updated statistics on direct equity holdings are not regularly available, which limits the scope for analysing ongoing trends since the start of Stage Three of EMU. The most reliable statistics published can be found in the national financial accounts of the Member States of the EU, updated on a yearly basis.³¹

Table 8

Direct holdings of shares and other equity (quoted and unquoted) by households¹⁾

	1995	1996	1997	1998	1999
Euro area					
as % of households' financial assets	24%	25%	29%	34%	39%
as % of GDP	36%	44%	54%	67%	84%
Other EU					
as % of households' financial assets	19%	20%	22%	21%	24%
as % of GDP	44%	52%	62%	55%	77%

Source: National Financial Accounts.

1) More precisely, "Households and non-profit institutions serving households", sectors S.14 and S.15 of the national financial accounts under the ESA 95.

Euro area coverage: BE, DE, ES, IT, FR, NL, AT, PT, FI (figures could be slightly overestimated as IT and FI figures include investment funds shares).

Other EU coverage: UK, SE, DK (figures could be slightly overestimated as UK and SE figures include investment funds shares).

Direct equity holdings (quoted and unquoted) by euro area households have experienced a rapid growth in the past five years, both as a percentage of households' financial assets (from 24% to 39%) and as a percentage of GDP (from 36% to 84%). In countries where the amount of quoted shares directly held by households is available (France and Belgium), one could draw a similar conclusion for direct holdings of quoted shares.³² The interviews fully supported this view, even

³⁰ However, it must be noted that the case for lower currency risks is not as clear-cut as it first seems when discussing equity exposures, since companies, and especially those known as "blue chips", bear high currency exposures and are therefore sensitive to currency movements.

³¹ Luxembourg, Ireland and Greece do not publish financial accounts since they have derogations for Tables 6 and 7 of the ESA 95 transmission programme (financial accounts data on transactions and balance sheets) up to 2005.

³² In France quoted shares increased from 4% to 7% of households' financial assets between 1995 and 1999, and in Belgium from 5% to 9%.

suggesting a booming environment. Privatisation programmes in the second half of the 1990s widely contributed to the increase in direct equity holdings by households. A number of developments in the banking and brokerage industry also point towards robust growth. Online brokerage, in most cases facilitating domestic transactions, is growing rapidly and attempts are being made to extend this to cross-border trading (see also section 6.5 on brokerage trends).³³ For the stock and derivatives exchanges, retail business is an important market segment in which new products have been successfully launched. The popularity of a certain range of products, such as Dow Jones Stoxx 50 futures, warrants, products with built-in guarantees and (reverse) convertibles can, as seen above, to a large extent be attributed to retail involvement. Finally, it is worth mentioning that the number of households which report to trade equity products is, in certain countries (the Netherlands, Germany and Italy were mentioned), growing rapidly.

5.4 Market impact of equity flows

Net demand for equity in the euro area and reallocations within equity portfolios have been quite substantial, as is illustrated above. According to market participants the flows have had a noticeable impact on the relative valuations of, in particular, European equities. Furthermore, it was suggested that the weakness of the euro during 1999 and most of 2000 could (partially) be attributed to outflows to the United States stemming from changes in equity portfolios and direct investments.

5.4.1 Impact of equity flows within the euro area

The easiest way to build a higher international equity exposure is to buy liquid, well-researched large capitalisations (e.g. “blue chip” companies). According to the interviewees the portfolio adjustments in the euro area have therefore favoured large capitalisations in recent years, contributing to the latter’s outperformance of small capitalisations. This change in the relative price of large versus small companies was also encouraged by selling activity in domestic equity portfolios, which often contained a mixture of large, medium and small capitalisations. Because the significance of large capitalisations and the weight of institutional money (i.e. assets under management by investment funds, life insurance companies and pension funds) vary between euro area countries, the reallocation process has affected the relative performances of national stock indices in Europe. For instance, the lagging of the Dutch stock index during 1999 was attributed by interviewees to a substantial selling of domestic assets by Dutch pension funds, life insurance companies and investment funds that manage large amounts of assets. The inflows from other countries into the Dutch large capitalisations barely offset this trend. In the case of the Belgian and Irish stock indices the underperformance was seen as a result of the low number of large capitalisations listed, so that these stock markets did not benefit from the reallocation process.

Investments in indexed funds are also believed to have contributed to the noted change in the relative price of large versus small companies, because only large companies are included in the major reference indices. When asked about the long-term market impact of the observed move towards index management, market participants gave diverging views. Some expressed the opinion that there is no impact on the macro level, while others felt that indexing has increased the scope for herding behaviour and has therefore contributed to a higher level of volatility. On the micro level, interviewees voiced concerns about the impact on individual stocks as a result of changes in the composition of the indices involved.³⁴

³³ In France, for instance, over 20% of the orders executed at Paris Bourse are online retail orders. Source: Brokers On Line (French professional association of online brokers).

³⁴ Active managers even identified these price effects as good investment opportunities.

Furthermore, market participants stressed that the shift from “market capitalisation” to “free float”³⁵ for some of the major indices could create market turbulence. The shifts already announced³⁶ indeed led to substantial cross-border flows and affected relative pricing, since there are major differences between countries in terms of the market share of free floating equities on account of, for example, cross holdings between companies and unfinished privatisation programmes.

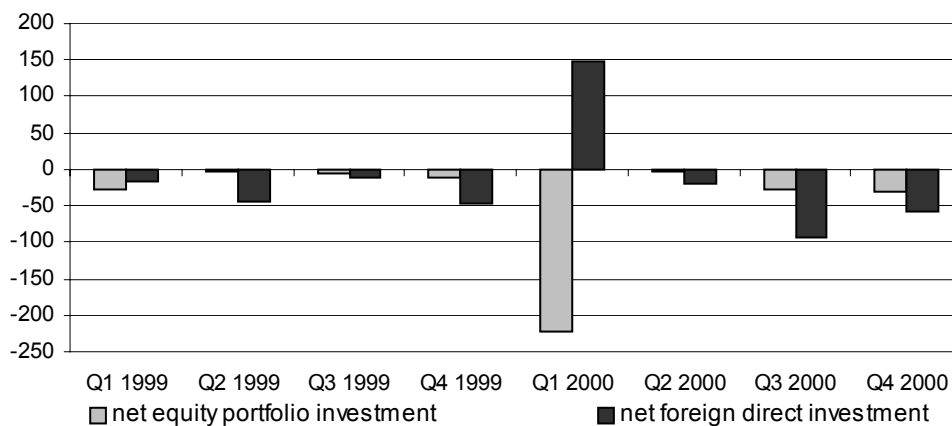
The quick growth of sectorial, in particular technology and telecommunications, funds has often been linked to retail investor activity. Some observers indicated, in this respect, that the equities involved were significantly overbought owing to the fact that retailers seem to be interested only in positioning, while neglecting valuations. Another example of this is the speculative frenzy surrounding the IPOs of some “new economy” companies.³⁷

5.4.2 Impact of cross-border equity flows on currency markets

The importance of international security flows by comparison with other financial transactions and trade flows has grown rapidly in the last decade. Within the category of security flows the share of equity transactions has increased fairly rapidly.

Chart 7
Net equity portfolio investment and net foreign direct investment flows for the euro area in 1999 and 2000

(EUR billions)



Source: ECB.

Note: Q1 2000 financial flows were greatly influenced by a single transaction involving the acquisition of a euro area company by a non-resident company which was settled through an exchange of shares. In accordance with international standards, the investment in the resident company was recorded as direct investment and the settlement of the transaction in shares as portfolio equity investment. This resulted in a very high inflow of direct investment and an outflow of portfolio equity investment of a similar size.

³⁵ The technique of measuring equities not by their overall capitalisation but by the amount of shares available for trading.

³⁶ FTSE announced in August 1999 its shift to free float weighting and the change was completed in June 2001. STOXX Limited announced its new free float market capitalisation weighting for DJ Stoxx indexes in July 2000 and the change was effective in September 2000. MSCI announced its shift to free float weighting in February 2001. The details of the shift were disclosed in May 2001 and the shift is due to take place in two phases and to be completed by the end of May 2002.

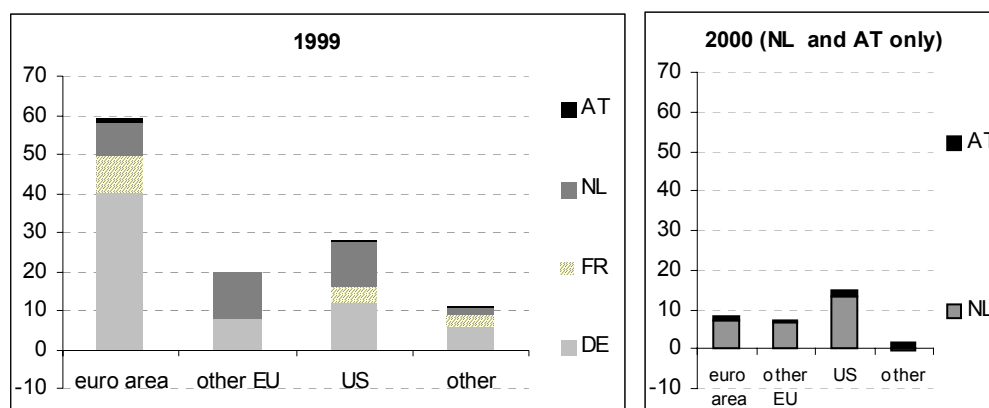
³⁷ An example in this respect is the bogus IPO announcement of a company called Frydair.com (read “fried air”) through the internet which reportedly attracted subscriptions up to a total amount of €60 million.

The international equity flows, mainly generated by net purchases of investment funds and reallocations by pension funds, but also by M&A deals settled in shares, led to an almost continuous outflow to countries outside the euro area in 1999 and 2000 (see Chart 7). The total net outflow in equities during 1999 and 2000 amounted to €49 billion and €280 billion respectively (up from €0.3 billion in 1998). However, the particularly high outflow in 2000 is partly due to a single acquisition settled through an exchange of shares (see note to Chart 7).

Chart 8

Purchases of foreign equities by area of issuer for a selection of euro area countries

(EUR billions)



Source: National balance of payments statistics.

Many interviewees identified these equity flows as a source of the weakness of the euro vis-à-vis the US dollar in 1999 and most of 2000. The geographical breakdown of flow data for a selection of euro area countries in Chart 8 indeed indicates that a major part of the outflows from the euro area in 1999 went to the United States. Although the conclusion drawn by market participants is worth considering, one should keep in mind that currency rate movements are influenced by numerous factors, such as interest rate differentials, growth expectations and other balance of payment flows. Nevertheless, it has become clear that, in particular, developments in the investment fund industry as well as M&A flows (see below on foreign direct investments) are closely monitored by professional market players in order to identify potential currency movements. Furthermore, interviewees identified the foreseen pension reforms or, more generally speaking, concerns regarding the ageing of the population, as a structural force driving Europeans towards higher equity holdings. They therefore expect continued interest in foreign (US) equity, as new money is committed to pension schemes.

In 1999 and 2000 direct investment flows were closely related to M&A activity. In 1999, direct investment led to a sizeable net outflow of funds from the euro area (€120 billion in total, see Chart 7). An important part of this outflow is related to the acquisition of foreign companies by euro area companies. During the interviews, several arguments were put forward to explain the orientation of euro area companies towards the United States for finding suitable takeover candidates. Until recently euro area companies were, generally speaking, focused on their domestic market. The need to globalise – not least on account of the advancing European integration – has now been recognised. In some sectors, according to the interviewees, US companies offer attractive valuations (by comparison with euro area companies). In general, acquisitions in the euro area were viewed to be more cumbersome than those in the United States and the United Kingdom. Reference was made to differences in regulation governing the percentage of stock required to achieve full ownership (in the United States 50% gives full control, while in most other countries higher levels are required). Lastly, the cash richness of euro area

companies was mentioned as a factor driving acquisitions. In 2000, the picture was slightly different. The net outflow of funds from the euro area stemming from direct investments decreased to €23 billion, mainly owing to a single large transaction involving the acquisition of a euro area company by a non-resident company. However, the “Equity capital and reinvested earnings” component of direct investment flows, which retraces M&A activity more precisely,³⁸ resulted in an outflow of €71 billion in 2000, reflecting that the large acquisition mentioned above was more than offset by acquisitions of foreign companies by euro area companies.

Interviewees expressed the view that both direct investment and portfolio outflows had weighed on the euro since the start of Stage Three of EMU. The short-term impact of large M&A deals in particular was quoted as an example of the sensitivity of the foreign exchange market to such flows. An interesting observation in this context is that US investors tend to sell foreign shares acquired through M&A transactions. It was suggested that this might be related to the higher share of index management in the United States which precludes the detention of foreign shares by those investors.

³⁸ The other component of foreign direct investment is “Other capital, mostly intercompany loans”. This breakdown has only been available since Q4 1999.

6. Market structure

The strong demand for equities and cross-border investment within the euro area is fuelling far-reaching changes in market structures, in both exchange-traded markets and the brokerage industry. These changes occur not only in the euro area market structures, but rather on a pan-European level. Key developments are discussed below, such as the amalgamation of national stock exchanges and the impact of alternative trading platforms. With regard to equity brokerage, concentration trends in the wholesale markets and the growth of online brokerage at the retail level are examined.

6.1 Moving towards a pan-European stock market

The first initiative towards providing a single venue for trading European stocks emerged in the mid-1980s in London (under the name of *Seaq International*). This telephone-based trading system was able to attract significant volume and liquidity, putting substantial pressure on established stock exchanges throughout Europe to modernise and internationalise. The latter responded by introducing electronic (mostly order-driven) systems, replacing open outcry trading on the exchange floor. A second impetus for the modernisation of the European stock exchanges came with the *Investment Services Directive (ISD)* in 1993.³⁹ This opened up the opportunity for exchanges to attract members from other Member States of the EU by simply giving them remote access (the “European passport”) via screen-based trading. This new legal framework also attracted banks and brokers from outside the EU, as they required, from that time on, only a presence in one of the Member States to gain market access to the entire EU.

The new environment triggered a number of changes. In some cases regional exchanges consolidated on a national level, although many remain (for example, Germany has eight stock exchanges, Spain has four). Countries without a derivative exchange felt compelled to open one, fearing others would otherwise fill this void. Furthermore, some stock and derivative exchanges merged to share trading technology and central clearing counterparties, providing benefits for market participants active in both markets. With a view to facilitating market integration and transparency, exchanges in the euro area agreed to quote all securities and indices in euro as of 1 January 1999.

Box I

Order-driven and price-driven market

One may distinguish between two different models concerning the organisation of trading on stock exchanges.

In a price-driven, or quote-driven, market every security is quoted by one or several market-makers who display a firm bid and ask price. They are in principle obliged to buy or sell a certain amount of securities at these prices. This kind of organisation is based on the activity of market intermediaries who are dealing for their own accounts and whose profits are derived from bid/offer spreads.

³⁹ Many other steps in the harmonisation process of the EU legal framework have contributed to the present changes in market structure, especially a number of Directives for issuers which include the public-offer prospectus for newly issued entities (Directive 89/298/EEC), the listing particulars (prospectus) for the listing of securities in a stock exchange (Directive 80/390/EEC, as amended), the annual reports and annual accounts (Directive 79/279/EEC and several other accounting Directives), the regular reporting of listed companies (Directive 82/121/EEC) and the dissemination of important news (Directive 79/279/EEC) as amended by the Insider Dealing Directive (89/592/EEC).

In an order-driven market, sell and buy orders are centralised in a single order book which collects information such as the limit price, the volume and the time at which the order is registered. Deals are then made at an equilibrium price that results from the confrontation of supply and demand. This confrontation can be continuous or can happen only once or twice a day (fixing). Stock exchanges have specific rules describing conditions under which the different categories of market players can access the information contained in the central order book (best limits, detail of the orders, counterparties involved).

In practice most stock exchanges combine elements of price-driven and order-driven market structures.

Particularly in the case of smaller capitalisation stocks and initial offerings, most exchanges assign specialists or market-makers to provide two-way price quotes in support of liquidity. Advocates of quote-driven markets argue that market-makers can help to absorb liquidity shocks and may thus help to dampen price volatility related to temporary imbalances in supply and demand. Opponents argue that the introduction of a bid-offer spread by the market-maker lowers market efficiency, particularly in the case of large cap stocks with high levels of "natural" liquidity.

Notwithstanding the aforementioned changes in market structure, until recently the exchanges remained largely focused on their respective home markets and thus somewhat fragmented. The start of Stage Three of EMU made this particularly apparent. In 1999 eight European exchanges (London, Frankfurt, Paris, Amsterdam, Brussels, Madrid, Milan and Zurich) announced an alliance, proposing a single interface to their customers which was to give access to the various national exchange platforms. The proposal stopped short of a fully-fledged merger, but did hold out the prospect of a common trading system.

This event was quickly overtaken by outright cross-border mergers between exchanges, the first being Euronext in September 2000 (bringing together the exchanges of Paris, Amsterdam and Brussels). Demutualisation has provided the legal basis for the transformation of traditional exchanges into for-profit and publicly-quoted companies. Newcomers have also emerged in the bid to launch a single entry point and trading platform for European stocks (Virt-x⁴⁰ and Jiway are two such examples).

When asked to comment on market functioning, brokers and end-users mostly judge the various European exchanges to be efficient and note that liquidity is good. When comparing European and US stock exchange models, it was noted that US exchanges had been slower to introduce electronic trading and central order limit books, thus leaving a larger role for intermediaries in the process of price discovery. Some observers felt this made US markets more contestable for newcomers, particularly in the case of trading in large capitalisation stocks that generate sufficient supply and demand to be matched automatically.

Furthermore, interviewees generally judged favourably the tendency in Europe for cash and derivative exchanges to operate alongside each other. This structure facilitates the execution of hedging transactions and allows for the cross-margining of positions in the case of a single central counterparty. According to the interviewees, the main shortcomings of the current market structure are the absence of a single venue for trading the top European stocks and the high cost of trade execution and processing across national borders. Against this background the big players are pushing for a further amalgamation of exchanges and for a common means of clearing and settlement, their ultimate aim being straight-through processing of trades.

⁴⁰ It should be noted though that Virt-x is not completely a newcomer because it is partly owned by the Swiss stock exchange.

Views diverged on the desired degree of centralisation in market structures. Interviewees noted that there is a trade-off between the clear efficiency gains of consolidation and the benefits that competition brings, such as product innovation and the drive to reduce costs. Large market participants appear to favour the migration of national trading towards a pan-European or even a global trading platform. This would limit market fragmentation and leave open the option of exchanges specialising by market segment (e.g. small caps, new economy stocks). Views on the optimal structure of clearing and settlement also appeared to be diverse. At this stage, both increased levels of vertical integration (with trading platforms) and horizontal integration (between providers) are viewed as beneficial. Observers noted that vested interests of market participants, differences in regular oversight and policies to promote financial centres by national authorities make the process of integrating market structures in Europe a complex one. In this regard initiatives that foster competition and harmonise the regulation and supervision of securities markets at a European level are generally welcomed.

6.2 Strategies to capture liquidity

As technology has made exchange-based markets more contestable (lowering the barrier for new entrants), stock and derivative exchanges need to improve services and lower transaction costs to expand turnover. Some of the strategies being pursued are discussed in more detail below.

6.2.1 Speed to market and branding

Market liquidity tends to be “sticky”, meaning that turnover for stocks and derivatives still tends to be concentrated on the first market of listing (usually the home market). Exchanges therefore want to be the first to launch certain contracts or market segments. Experience has shown that these initiatives need to be supported by strong marketing. In this regard, interviewees mentioned the growing importance of retail flows in providing critical mass to the central market. Some felt that the US equity market offered a higher level of “natural” liquidity in relation to Europe, noting the importance of US retail investors. The success of a number of European exchanges in raising trading volume was attributed in particular to strong product branding and the provision of real-time price information to retail investors. Increasingly, dedicated television channels and online brokerage systems also provide the channel for transmitting such real-time price data in Europe.

6.2.2 Connectivity and the extension of trading hours

“Connectivity” was mentioned as an important factor in attracting wholesale market participants to an exchange-based market. In practice this means providing access to a central order limit book at a competitive cost. Technology and remote access are key factors. Some exchanges recoup some of their development costs by selling their trading system to peers, which also has the additional advantage that future mergers are potentially easier to realise. Cross-membership through stock exchange alliances is also seen as an instrument to boost market access and thereby turnover. Experience on this point has been mixed so far, as remaining differences in trading rules and technology limit synergies for members.

Trading hours have been extended to attract investors from other time zones. Particularly in the field of derivatives large brokers and investors demand 24-hour execution capability. Against this background it is perhaps not surprising that derivative exchanges have been the first to implement (electronic) after-hours trading systems and are now increasingly engaged in global alliances to provide continuous trading. Stock exchanges also seem to be moving in this direction. The high cost of extending local trading hours and the fact that liquidity already moves along time zones for the largest stocks provide a good business case for co-operation between exchanges on continuous trading.

6.2.3 Cross listings and stock exchange requirements

Dual or cross listing of the same stock at different exchanges enables issuers of stock to enlarge their investor base. Exchanges may benefit from higher trading volumes.

With regard to stock exchange requirements, interviewees noted a trend towards harmonisation of listing requirements and more stringent disclosure standards. As regards the regulatory environment for securities offerings, some interviewees expressed the desire for an EU-wide securities markets regulator, citing differences in national regulation and stock exchange supervision. The Report of the Committee of Wise Men, endorsed by the European Council in March 2001, defines a set of priorities for the regulation of the European securities market (see Chapter 7) which includes the harmonisation of listing requirements.

On the subject of potential gaps in regulation, some interviewees questioned the oversight of advertising targeted at the general public just ahead of securities offerings. It was noted that, in some cases, aggressive advertising had contributed to the heated retail demand for IPOs during the spring of 2000.

6.3 Implications of alternative trading systems

The emergence of alternative trading systems (ATS) is seen as an important factor driving changes in market structure. These systems bring together buy and sell orders by electronic means (lowering transaction costs) and typically focus on services that established exchanges do not always provide (e.g. central limit order book, after-hours trading or direct access for institutional investors). In the United States and Europe alike, some of these platforms have applied for an exchange licence and are already regulated as such, others are mostly regulated as broker-dealers.⁴¹ Remote access (EU passport) and/or clearing house services may be reasons to apply for recognition as an exchange.⁴² The advantage of a clearing house is that market participants benefit from a reduction of credit risk and achieve full trade anonymity. It was noted by some interviewees that when central clearing is lacking (not all European exchanges have implemented a central counterparty), wholesale market participants tend to migrate from the exchange to the OTC market.⁴³

Compared with the United States, there are only a few ATS for equities active in Europe. Two strategies have emerged, one focusing on the wholesale market (possibility of direct trades for institutional investors by crossing orders within the system and central order limit books for trading the top European stocks), the other focusing on capturing retail order flow. Interviewees generally viewed the opportunities for ATS in Europe to be more limited than in the United States. They attributed this to the modernisation of European exchanges during the 1980s and 1990s, which made them more efficient (by comparison with the United States). In particular the early introduction of order-driven electronic trading was seen to have limited the scope for achieving better terms in alternative trading systems.

⁴¹ The regulation of exchanges focuses primarily on market integrity issues, while the regulation of brokers-dealers focuses more on investor protection.

⁴² The Committee of Wise Men has included the single passport for recognised exchanges among the priorities due to come into force by end-2003.

⁴³ A wholesale market participant would first "test the waters" with a small trade on the exchange. Once information about the counterparty is obtained from trade confirmations, the balance of the trade might be conducted outside the exchange (contacting the interested party directly), in order to benefit from central counterparty clearing when this facility is available for OTC transactions but not available through the exchange.

Institutional investors mentioned the lower execution cost and anonymity offered by crossing networks as an advantage. With the market impact of large trades representing a growing concern for institutional investors, crossing networks are viewed as a useful additional trading channel. According to some of the large banks interviewed, their investments in multiple ATS (often in addition to their membership/shares in exchanges) are justified by the uncertain outcome of changes in market structure. Exchange representatives confirmed the view that new entrants were increasing pressure on them to move towards consolidation on a European level. Some noted that demutualisation had reduced the influence of the large domestic banks on the policies of exchanges. It was suggested that the participation of the large players in ATS could in part be explained by the need to compensate for their loss of power over the policies pursued by exchanges.

6.4 Risks of market fragmentation

Interviewees voiced concerns about market fragmentation as exchanges compete for business, particularly in the case of the large capitalisation stocks. The main concern appears to be with market liquidity. It was pointed out that previously centralised markets (on the national level) could be fragmented into separate pools of liquidity. The capture of retail flows in broker systems and the migration of institutional turnover to crossing networks were given as examples of such a development. Furthermore, it was suggested that some market participants may already be too large for the current levels of liquidity. In this respect interviewees pointed to the increasing size of and concentration among institutional investors. The market impact of their block and programme trades was seen to be increasing.

Other interviewees were less concerned about the issue of market fragmentation. They pointed out that it was very difficult to siphon liquidity off an (order-driven) electronic trading platform once it had achieved a critical mass. In this matter also the efficient trading platforms of European exchanges were considered an advantage over US peers. Fragmentation would probably be no more than a temporary phenomenon in the run-up to further stock exchange mergers, according to this view. Some also indicated they were not worried about liquidity, even if it were to become fragmented. The reason given was that smart agents and order routing systems enable liquidity to be accessed at the best price, wherever that may be. Large asset managers interviewed confirmed that they were upgrading in-house dealing capacities, enabling them to participate in multiple platforms and to better execute trades (also in Asian and US markets). The dealing and portfolio management functions are generally separated for this purpose.

6.5 Brokerage trends

The forces driving changes in equity brokerage are of both a global and a Europe-specific nature. A global tendency towards further concentration has become clear in the wholesale segment. Factors specific to Europe were the increased demand for brokerage services, which were associated with privatisation and the dynamism of IPO and M&A activity. In the European retail segment various initiatives are being undertaken to capture this growing market for equity brokerage.

6.5.1 The wholesale market

Brokerage activities in the primary market for equities, such as lead management of new issuance and M&A advisory business, have become increasingly specialised. From a global perspective, the number of companies able to offer these services has declined significantly. In Europe there has traditionally been a strong domestic orientation towards equity brokers as trading needs were –

because of a home bias – localised and regulation favoured domestic lead managers. The abolition of lead management requirements during the 1990s attracted foreign players, in particular US companies.

The international orientation and distribution capacity of US companies put them in a strong starting position. A limited number of European banks with a large home market and strong capital base also managed to build a substantial presence in the M&A and IPO business. It was also pointed out by interviewees that while US investment banks are never ranked first in a single European country, they are ranked high in each one of them, typically between the third and sixth position, so that they are ranked first overall at the European level. By contrast, very few European banks have an equity-related presence in all European countries. This situation could be partially reversed through mergers and alliances.

As regards brokerage activities in the secondary market, the tendency towards higher concentration was, according to the interviews, mainly demand-driven. Several arguments were put forward for this. First, it was mentioned that the scale of transactions in the wholesale market had increased strongly, as had the size of the institutions that operate in them. This had placed demands on brokers for block and programme trading. Only a few institutions have a broad enough client base to back these transactions and/or have the capital base to support the market risks involved. Second, asset managers were scaling down on broker lists. The advent of Stage Three of EMU has also served as a catalyst here. The asset managers no longer need to have at least one broker per country. Their shift to more cross-border investment has triggered a rationalisation of broker lists, increasing the prominence of pan-European players, who are typically globally active. The fact that the largest brokers had already adopted an organisational structure that could provide research and execution in an international setting was mentioned as a driving force.

Most of the participants interviewed expected a further global consolidation of the industry, driven by the economies of scale achieved in asset management, custody and investment banking services. Over the next few years the top broker-dealers are expecting to expand their M&A advisory practice. Sales and research staff have already moved from country-oriented teams to global teams with sectorial orientation. Capital becomes increasingly important as clients demand credit lines for advisory mandates or IPO work. Following the substantial inroads made by US investment banks and the associated competitive pressure, larger European banks are now undertaking substantial capital commitments to investment banking and equity brokerage. One strategy pursued is to purchase well-established investment banking or brokerage entities.

6.5.2 The retail market

Brokerage services aimed at retailers still have a strong domestic orientation and are therefore rather fragmented. Growth is supported by increasing internet penetration and the introduction of online financial services by traditional players and new entrants, such as the online discount brokers. Increasingly, online specialists are offering a wide range of financial services, from insurance to mortgages and investment funds.

Over the past three years online discount brokers have registered tremendous growth in Europe. They are providing retail investors with a convenient low-cost vehicle for becoming active in equity markets. The fact that average transaction size on the exchanges has fallen can be taken as

evidence of increasing retail participation.⁴⁴ According to estimates of JP Morgan, the number of online brokerage customers in the euro area has grown tenfold over the past four years to reach about 3 million. However, the vast majority of discount brokerage companies are still locally oriented. As this industry matures, major consolidation is expected on a pan-European level. Cross-border acquisitions of discount brokers have taken place recently. Within the euro area, German online brokers have the largest client base (see Table 9). Internet brokerage has opened the way for many new names, as most incumbents have been slow to enter this market. It is also remarkable that established US online brokers have been relatively slow to move into the euro area market.

Table 9
Online discount brokerage customers in selected countries of the European Union

estimates (millions)

	1997	1998	1999	2000
France	0.1	0.1	0.1	0.4
Germany	0.2	0.4	0.8	1.9
Italy	0.0	0.0	0.0	0.3
Netherlands	0.0	0.0	0.1	0.2
Spain	-	0.0	0.0	0.2
Total Euro area	0.3	0.5	1	3
Sweden	0.0	0.1	0.2	0.4
United Kingdom	0.1	0.1	0.1	0.3
Total other EU	0.1	0.2	0.3	0.7

Sources: "European Online Investor, Secular versus Cyclical Growth", J.P. Morgan Securities Ltd., Equity Research, 21 February 2001.

To date, day trading has not been as significant a phenomenon in the euro area as it has been in the United States.⁴⁵ It is worth noting, however, that day-trading centres have been set up in a number of euro area countries. This has prompted national securities markets regulators to formulate guidelines on the intermediation involved and to try to establish a definition of the professional investor (see the Report of the Committee of Wise Men, Chapter 7).

Other forces affecting retail brokerage are initiatives to facilitate cross-border trading. A number of recent initiatives cater for the growing discount broker demand for (one-stop) pan-European trade execution. Some large institutions interviewed indicated that they hoped to capitalise on the growth of retail investors by matching orders internally before bringing the remaining balance to the market. It was noted by interviewees that this process may cause some price volatility if the net order flow remaining is off-loaded in a concentrated manner (e.g. fixed intervals during the day). The net flow might at times be difficult to absorb and could therefore create price turbulence.

⁴⁴ A further reason for the drop in the average trade volume was the popularity of "new economy" stocks, which normally need to be traded in small lots, in particular for recent start-ups.

⁴⁵ In mid-2000 there were reportedly about 10,000 active day-traders in the United States, accounting for a substantial share of daily turnover in Nasdaq and contributing to the high volatility of this index.

7. Prospects for further market integration

The ongoing growth and integration of the euro equity markets can be expected to bestow many benefits. A larger capital market will promote accumulation of capital and enable savings to be channelled into the corporate sector more efficiently, giving rise to higher levels of economic growth. The US experience shows that the prospects of equity and corporate bond markets are closely related. The existence of a corporate (high yield) bond market facilitates access to equity capital for new companies, thus sowing the seeds for innovation and further growth in equity market capitalisation. In terms of comparative advantage, the sheer size of the euro area capital markets (equities and bonds) may also enhance the attractiveness of the euro as an international reserve currency.

An integrated euro equity market could be defined as a market in which the parties involved in equity transactions (issuers, investors and intermediaries) are indifferent to their respective locations and the place of trading and settlement. Obstacles towards integration in equity markets are mainly located in three fields: (1) market functioning and infrastructure, (2) regulatory and legal framework and (3) investment culture.

7.1 Market functioning and infrastructure

As regards market functioning, economic agents have a common interest in deep and liquid markets that allow dealing with low market impact and with low transaction costs. Furthermore, it is important that they are in a position to deal with one another on an equal (competitive) footing and in a secure manner. Market participants note that further progress towards a single European securities market requires further action on harmonised rules (level playing-field) and measures to increase market efficiency.

Interviewees saw the main obstacle for market infrastructure as occurring in the field of clearing and settlement systems. The reduction of the cross-border costs arising from clearing and settlement was mentioned as a priority in terms of increasing market efficiency. There were diverging views as to whether the private sector would be able to deliver an efficient clearing and settlement system. Further integration is also expected to increase the security of transactions. Settlement risks are expected to decline as central clearing becomes more widespread and shorter settlement conventions are introduced (currently down to T+3 in most cases).

Another obstacle is related to the lack of integration of trading systems, as stock markets remain largely organised along country lines. Current trends already show some progress. The fact that electronic trading does not require a specific physical presence (i.e. a trading floor) in any one country greatly simplifies the process of market integration. Dematerialisation of equities and bonds is also a great facilitator of this development.

7.2 Legal and regulatory framework

Interviewees noted the following obstacles :

- Different national tax systems and legal frameworks hinder M&A activity and cross-border diversification by investors.
- Differences in securities markets legislation and supervision hinder issuance outside the “home” market. European harmonisation of listing requirements and rules governing the public offer of securities are therefore felt to be a particular priority.

Substantial progress is expected towards an efficient and flexible regulatory and legal framework through the European Commission's Financial Services Action Plan, which aims to complete the single market for financial services by 2005. The final report of the Committee of Wise Men on the regulation of European securities markets, endorsed by the European Council in Stockholm in March 2001, has defined a set of priorities from the Financial Services Action Plan, to be adopted by the end of 2003:

- Single prospectus for issuers;
- Modernisation of admission to listing;
- Home country control for all wholesale members and definition of professional investor;
- Modernisation of investment rules for UCITs and pension funds;
- Adoption of international accounting standards; and
- Single passport for recognised stock markets.

A new regulatory framework, which is faster and more flexible, was also adopted by the European Council in Stockholm according to the four-level approach of the Committee of Wise Men. It is planned that this will function by the end of 2001.

7.3 Investment culture

The obstacles in this area are related to the remaining national bias in investment decisions which prevents the emergence of a euro, and more generally, a pan-European equity culture. Although the first two areas (market infrastructure and regulatory framework) can foster integration in this field, cultural changes will probably take place more gradually, especially among retail investors.

Annex I Glossary

Active fund: is a fund that has an active strategy for choosing which shares or assets to invest in and when to buy or sell them, rather than a strategy of following an index.

AEX (Amsterdam Exchange): stock index of the 25 largest companies listed on the Amsterdam Stock Exchange.

Alternative trading systems (ATSs): systems that offer additional means of trading compared to established exchanges. They operate electronically (lowering transaction costs) and focus on services that established exchanges do not always provide (e.g. central limit order book, after hours trading or direct access for institutional investors).

Amex: American Stock Exchange

Arbitrage: profiting from differences in price when the same security, currency or commodity is traded in two or more markets.

Asset allocation: the process of deciding in which assets to make investments and what proportion of total capital available should be allocated to each choice.

Bank certificates of deposit (CDs): short-term securities issued by banks.

Benchmark: Value used as a reference or means of comparison for measuring the performance of an investment

Benchmarking: basing the investment allocation on an industry standard and/or on a fixed securities index.

Bid-ask spread: differential prevailing in the market between the bid price and the offered price.

BIS: Bank for International Settlements.

Block trade: large, potentially market-moving trades.

Blue Chip: term for the most prestigious industrial shares.

Bon à taux fixe (BTF): French Treasury bill.

Bonos del Estado (Bonos): Spanish Treasury bonds with original maturity between two and five years.

Bons du Trésor à taux fixe et à intérêt annuel (BTAN): negotiable fixed-rate medium-term French Treasury notes with annual interest. On issue their maturity is either two or five years.

Broker: firm which operates in a market on behalf of other participants to arrange transactions without being a party to the transactions itself.

Bubill: German Treasury bill.

Buoni Ordinari del Tesoro (BOT): Italian Treasury bill.

Buoni Poliennali del Tesoro (BTP): Italian Treasury bonds with original maturity of three to thirty years.

CAC 40: stock index of the 40 largest companies listed on the Paris Stock Exchange.

Capitalisation : see Market capitalisation.

Central counterparty: an intermediary which takes over the obligation of either side in respect of a trade. After clearing with a central counterparty, the two trading parties no longer have an

obligation towards each other, but rather towards the central counterparty, which thereby assumes any replacement cost risk resulting from market moves between the time of trade and the time of settlement.

Centralisation: tendency for trading activity, price determination and information generation to be concentrated in a single market.

Certificati del Tesoro zero cupon (CTZ): Italian government debt instrument issued at discount with an original maturity of up to two years.

Certificati di Credito del Tesoro (CCT): Italian Treasury floating rate securities with a seven-year original maturity.

Central securities depository (CSD): a facility for holding securities which enables securities transactions to be processed by book entry. Physical securities may be immobilised by the depository or securities may be dematerialised (i.e. so that they exist only as electronic records). In addition to safekeeping, a central securities depository may incorporate comparison, clearing and settlement functions.

Clearing: the process of transmitting, reconciling and, in some cases, confirming the payment order and the securities transfer prior to settlement. In the context of repos, this can have three separate aspects: confirmation/matching, netting and clearing with the central counterparty.

Collective investment funds: funds where assets are purchased and managed on behalf of all the participants in the fund, and the benefits of the fund are shared out in proportion to participants' holdings. Investors buy units, or alternatively shares, in the funds. In an open-ended collective investment fund the managers can create new units or cancel existing ones, as supply and demand dictate. In a close-ended collective investment fund the supply of units is fixed, and those entering or leaving the fund have to buy or sell existing units.

Commercial paper (CP): short-term obligations with maturities ranging from 2 to 270 days issued by banks, corporations and other borrowers. Such instruments are unsecured and usually discounted, although some are interest bearing.

Confirmation/matching: the process of ensuring that the two counterparties agree with regard to the terms of the repo – price, asset(s), value dates, settlement data, including relevant account numbers – before the payment and transfer orders are sent for settlement.

Convertible bond: bond exchangeable for equity at a set price.

Counterparty: the opposite party to a financial transaction.

Credit risk: the risk that a counterparty will not settle an obligation for full values, either when due or at any time thereafter.

Cross margining: netting of margin requirements for the simultaneous sale and purchase of securities.

Crossing network: system matching buy and sell at a price determined in another market. Such systems play no part in price discovery.

Currency risk: the risk that the operations of a business or the value of an investment will be affected by changes in exchange rates.

DAX (Deutscher Aktienindex): stock index that tracks the price movements of the 30 largest and most actively traded German stocks.

Day trading: purchase and sale of a position during the same day.

Dealer: firm whose primary business is entering into transactions on both sides of wholesale financial markets and seeking profits by taking risks in these markets.

Defined benefit insurance policies: policies for which the benefits are defined ex-ante.

Delisting: when a company is no longer included in the listed companies at the exchange.

Dematerialisation: the elimination of physical certificates or documents of title which represent ownership of securities so that securities exist only as accounting records.

Depo/repo spread: differential prevailing in the market between the interest rate of unsecured and secured transactions.

Depository: an agent with the primary role of recording securities either physically or electronically and keeping records of ownership of these securities.

Derivative: a financial contract the value of which depends on the value of one or more underlying reference assets, rates or indices. For analytical purposes, all derivatives contracts can be divided into basic building blocks of forward contracts, options or combinations thereof.

DJ Stoxx indexes: the Dow Jones STOXX SM indexes are published by STOXX Limited, a partnership of Deutsche Börse AG, Dow Jones and Company, Euronext Paris SA and SWX Swiss Exchange. They are a family of investable and tradable European equity indexes that are fully integrated with the Dow Jones Global Indexes. The best known DJ Stoxx indexes are the DJ EuroStoxx 50, focused on the euro area, and the DJ Stoxx 50 which is Pan-European.

DJIA: Dow Jones Industrial Average.

Electronic trading: in broad terms, this refers to any use of electronic means of sending orders (bids and offers) to the market.

EMU: Economic and Monetary Union.

End-user: an entity that takes positions for investment or hedging purposes. An end-user often deals only on one side of the market.

Equity Swaps: a transaction that allows an investor to exchange the rate of return (or a component thereof) on an equity investment (an individual share, a basket or index) for the rate of return on another non-equity or equity investment.

ESA 95: new European System of Accounts where 95 is the reference year. The previous system was ESA 79.

EU: European Union.

Eurex: German/Swiss futures and options exchange market.

EURIBOR: the euro area interbank offered rate for the euro, sponsored by the European Banking Federation (EBF) and the Association Cambiste Internationale (ACI). It is an index price source covering dealings from 49 prime banks⁴⁶

Euro overnight index average (EONIA): the overnight rate computed as the euro area interbank offered overnight rate for the euro. It is computed as a weighted average of all overnight unsecured lending transactions in the interbank market, initiated within the euro area by the contributing panel of 49 prime banks⁴⁷

⁴⁶ Number of panel banks as of 19 January 2001.

⁴⁷ Number of panel banks as of 19 January 2001.

Euronext: company born from the merger of the exchanges of Amsterdam, Brussels and Paris on 22 September 2000.

European Master Agreement: legal contract sponsored by the European Banking and the European Savings Association which aims to consolidate into a single set of harmonised documents various master agreements used within the euro area and certain neighbouring countries, particularly for repurchase transactions and securities lending.

European System of Central Banks (ESCB): the European Central Bank and the national central banks of the EU Member States.

Eurosystem: the European Central Bank and the national central banks of the EU Member States which have adopted the euro.

Exchange traded funds (ETFs): a fund that is traded on a stock exchange like a share.

FEFSI (Federation Europeenne de Fonds et societes d'investissement); European Federation of Investment Funds and Companies.

FIBV (Federation Internationale des Bourses de Valeurs): International Federation of Stock exchanges. This is the trade organisation for regulated securities and derivative markets, and related clearing houses world-wide.

Financial services action plan (FSAP): Elaborated and adopted by the European Commission in 1999, the action plan was endorsed by the Lisbon European Council in March 2000 which set a deadline for its implementation of 2005 at the latest. Its purpose is to improve the single market in financial services in order to reap the full benefits of the euro. The action plan suggests indicative priorities and time-scales for legislative and other measures to tackle three strategic objectives, namely ensuring a Single Market for wholesale financial services, open and secure retail markets and state-of-the-art prudential rules and supervision.

Flow back: shares used to pay for a (cross-border) acquisition and sold quickly by investor.

Foreign currency swap: an agreement between two parties to exchange future payments in one currency for payment in another currency. These agreements are used to transform the currency denomination of assets or liabilities.

Forward rate agreement (FRA): cash-settled forward contract on a deposit.

Forwards: purchase or sale of a specific quantity of a commodity at the current price, with delivery and settlement at a specified future date.

Free float: freely traded securities.

FTSE 100: stock index of the 100 largest companies listed on the London Stock Exchange. It is calculated and maintained by FTSE International Ltd.

FTSE International Ltd: index provider co-owned by the Financial Times (FT) and the London Stock Exchange (LSE).

Futures: agreement to buy or sell a specific amount of a commodity or financial instrument at a particular price on a stipulated future date.

General collateral: collateral which, owing to its homogeneous features, is broadly accepted.

Hedge fund: private investment partnership whose offering memorandum allows for the fund to take both long and short positions, use leverage and derivatives, and invest in many markets.

Hedging: strategy to offset investment risk.

Home bias: tendency of investors to limit their holdings to the domestic market.

Interest rate swap (IRS): exchange between two parties of a fixed interest rate instrument or of two floating interest rate instruments.

Investment services directive (ISD): refers to the Council Directive 93/22/EEC of 10 May 1993 on provision of investment services in the securities field. One of the main achievements of the ISD has been to provide a single European passport for investment firms by allowing them to provide services, or establish branches in other Member States, on the basis of home country authorisation. As a corollary, the ISD has introduced the right of investment firms to become member or to have access to regulated markets of another Member State either with a presence in that State or by remote membership.

IPO: Initial public offering. A company's first offering of stock to the public.

International central securities depository (ICSD): a central securities depository which clears and settles international securities or cross-border transactions in domestic securities.

Junk bond: high-yield bond with a credit rating of BB or lower.

Large capitalisations: stock with a large market capitalisation, usually at least USD 5 billion.

Lead manager: main underwriter of securities offerings. Usually leader with a syndicate of underwriters.

Leverage: company debt expressed as a percentage of equity capital. High leverage means that debts are high in relation to assets. The equivalent UK term is gearing.

Leveraged Buy Outs (LBO): see Management Buy Outs.

LIFFE: London International Financial Futures and Options Exchange.

Liquid (market): three aspects of liquidity are tightness in bid-ask spreads, depth and resiliency. It is characterised by the ability to transact in a market without significantly moving prices.

M&A: mergers and acquisitions.

Management buy-out: purchase of all of a company's publicly held shares by the existing management, which takes the company private. (*Leveraged buy-out*, if the management has to borrow heavily to finance the transaction).

Market capitalisation: value of a corporation as determined by the market price of its issued and outstanding common stock.

Market maker: dealer obliged to quote buy and sell prices in return for certain privileges within a market (sometimes used to refer to anybody who provides quotes).

Market transparency: ability of market participants to observe (pre-trade) quotes, (post-trade) prices and volumes in timely fashion.

MATIF: Marché A Terme International de France (French international futures and options exchange).

MDAX: index comprising the 70 German companies that rank behind the 30 DAX stocks in terms of size.

Mercato Interbancario dei Depositi (MID): Italian screen-based market for interbank deposits.

Mibor: interbank offered rate in Madrid for unsecured transactions.

Monetary Financial Institutions (MFIs): financial institutions which form the money-issuing sector of the euro area. It includes the Eurosystem, resident credit institutions as defined in Community law and all other resident financial institutions whose business is to receive deposits

and/or close substitutes for deposits from entities other than MFIs and, for their own account (at least in economic terms), to grant credit and/or invest in securities. The latter group consists predominantly of money market funds.

Money market fund (MMF): fund that invests in short-term securities.

Morgan Stanley Capital International (MSCI); index provider

Mortgage bond: bond issue secured by a mortgage on the issuer's property, the lien on which is conveyed to the bondholders by a deed of trust.

Mutual funds: Investment company that raises money from shareholders and invests the proceeds (also *investment funds*).

NEMAX: index of the 50 largest growth stocks listed in Frankfurt Neuer Markt.

Net Asset Value: for an investment fund, is calculated by taking the market value of all securities owned plus all other assets such as cash, subtracting all liabilities, then dividing the result (total net assets) by the total number of shares outstanding.

Netting: the process of offsetting cash or securities positions. Through netting, the gross positions are reduced. This is particularly true for the cash side, as all cash is fungible, whereas assets are not.

NM markets: new markets set up in Europe in the second half of the nineties to meet the needs of fast-growing young companies seeking capital to finance expansion. The 6 NM markets are: Amsterdam NM, Brussels NM, Helsinki NM, Neuer Markt, Nouveau Marche, Nuovo Mercato.

Non-collective investment funds: funds not managed on a collective basis, but on behalf of an individual institution, or possibly of an individual. Important institutional investors are pension funds and insurance companies, which might delegate the management of funds to an external fund manager or within the financial group to which it belongs. By contrast with collective investments, "non-collective investments" may be characterised as private placements not marketed to the general public but established by direct contracts between the investor and the fund manager.

NYSE: New York Stock Exchange.

Obligaciones del Estado: Spanish Treasury bonds, with initial maturity of more than five years.

Obligations Assimilables du Trésor (OAT): French fungible Treasury bonds with original maturities from seven to thirty years.

Obligations Linéaires-Lineaire Obligaties (OLO): Belgian fungible medium- and long-term Treasury bonds with original maturity up to thirty years.

OECD: Organisation of Economic Cooperation and Development.

Online: in electronic money systems, this indicates that a direct connection is made to a centralised computer system for authorisation or validation before a transaction can be executed.

Open interest: total number of contracts in a commodity or options market that are still open; that is, they have not been exercised, closed out, or allowed to expire.

Open outcry: method of trading on commodity exchanges. The term derives from the fact that traders must shout out their buy or sell orders.

Options: right to sell or buy a security in exchange for an agreed sum.

Order book: a centralised market where prices are determined by an order execution algorithm from participants sending firm buy and sell orders.

Order routing: delivery of messages from end-users to the execution system.

Order-driven market: a market where sell and buy orders are centralised in a single order book which collects information such as the limit price, volume and time of order. Deals are then made at an equilibrium price that results from the confrontation of supply and demand.

OTC (over-the-counter): over-the-counter, bilateral transactions not conducted on a formal exchange.

Passive management: a style of investment management, which seeks to replicate the performance of a market index. Passive management is also called index management.

Pfandbriefe: German mortgage bond.

Pledge: legal arrangement by which the borrower pledges some assets to the lender in order to collateralise a credit. By contrast with a repo, a pledge can only be used to generate cash credit.

Price-driven market: a usually decentralised market where a class of participants, possibly market makers, post bid and offer quotes, often indicative, with prices being determined through bilateral negotiation.

Primary dealer: selected credit institution authorised to buy and sell original issuance of government securities in direct dealing with the Treasury.

Primary market: market for new issues of securities.

Private equity: shares that are not listed on a stock exchange.

Privatisation: process of converting a publicly operated enterprise into a privately owned and operated entity.

Real-time gross settlement (RTGS) system: a settlement system in which processing and settlement take place on an order-by-order basis (without netting) in real time (continuously).

Remote access: access to a system granted to a participant which has neither its head office nor any of its branches located in the country where the system is based.

Repo: financial instrument which serves to exchange cash temporarily for securities for a predetermined period. Various legal arrangements exist to perform this basic economic function (repurchase agreements, reverse repurchase agreements, sell/buybacks and securities lending). All forms of repos entail a change in ownership.

Reserve maintenance period: period over which compliance with reserve requirements is calculated. For the Eurosystem this would be one month, starting on the 24th calendar day of each month and ending on the 23rd calendar day of the following month.

Reserve requirement: requirement for institutions to hold minimum reserves with the central bank.

Retail investor: investor who buys securities and commodities on his own behalf, not for an organisation.

Return on equity: amount, expressed as a percentage, earned on a company's common stock investment for a given period.

S&P 500 (Standard & Poor's): stock index of 500 leading American companies.

Screen-based trading: trading conducted through a network of electronic terminals.

Secondary market: exchanges and over-the-counter markets where securities are bought and sold subsequent to the original issuance, which took place in the primary market.

Settlement: completion of a transaction by exchange of instruments and funds.

Small capitalisations: small cap stocks usually have a market capitalisation equivalent to USD 500 million or less.

Smart agent: an enhanced search engine that can compare different sites and find the best deal.

Special collateral: collateral other than general collateral.

Standard & Poor's (S&P): index provider

Straight-through processing (STP): the capture of trade details directly from front office systems to back office.

Swap: an agreement for an exchange of payments between two counterparties at some point(s) in the future and according to a specified formula.

TARGET (Trans-European Automated Real-time Gross settlement Express Transfer system): TARGET is the RTGS payment system for the euro. It consists of 15 national RTGS systems and the ECB payment mechanism, which are interlinked so as to provide a uniform platform for the processing of cross-border payments.

Tier one assets: marketable assets fulfilling certain uniform euro area-wide eligibility criteria specified by the ECB. Among these criteria are the requirements that they must be denominated in euro, be issued (or guaranteed) by entities located in EEA countries, and be located in a national central bank or SSS of the euro area.

Tier two assets: marketable or non-marketable assets for which specific eligibility criteria are established by the national central banks, subject to ECB approval.

TMT: Technology, Media, Telecom.

Treasury bill: short-term government debt instrument issued at a discount with a maturity of one year or less.

Treaty: the Treaty establishing the European Community. It comprises the original EEC Treaty (Treaty of Rome) as amended by the Treaty on European Union (signed in Maastricht on 7 February 1992).

UCITS: undertakings for collective investment in transferable securities.

Unit linked insurance policies: policies in which the policyholder's premiums are used to buy units in a fund run by the insurer. The value of the policyholder's units fluctuates and is directly linked to the value of the underlying assets.

Variation margin: funds that are paid to (or received from) a counterparty (clearing house) to settle any losses (gains) for a given confidence level (e.g. 95%).

Venture capital: an investment in a start-up business that is perceived to have excellent growth prospects, but does not have access to capital markets. This type of financing is sought by early-stage companies seeking to grow rapidly.

Warrants: a security that entitles the holder to buy a proportionate amount of common stock at a specified price, usually higher than the price at the time of issuance, for a period of years or in perpetuity.

Zero coupon bond: a security issued at discount or one which delivers a single coupon at maturity.

Annex 2 Co-ordination of studies

The three studies of the Market Operations Committee of the ESCB were conducted by working groups involving representatives from the NCBs and the ECB. The working groups were chaired respectively by:

- Mrs. Elisabeth Pauly of the Banque de France – the Euro Money Market
- Mr. Emerico Zautzik, co-chaired by Mr. Andrea Santorelli, of the Banca d'Italia – the Euro Bond Market
- Mr. Eloy W. Lindeijer of De Nederlandsche Bank – the Euro Equity Markets.

Mr. Paul Mercier, of the European Central Bank, co-ordinated the editorial group, which prepared the publication of these reports.