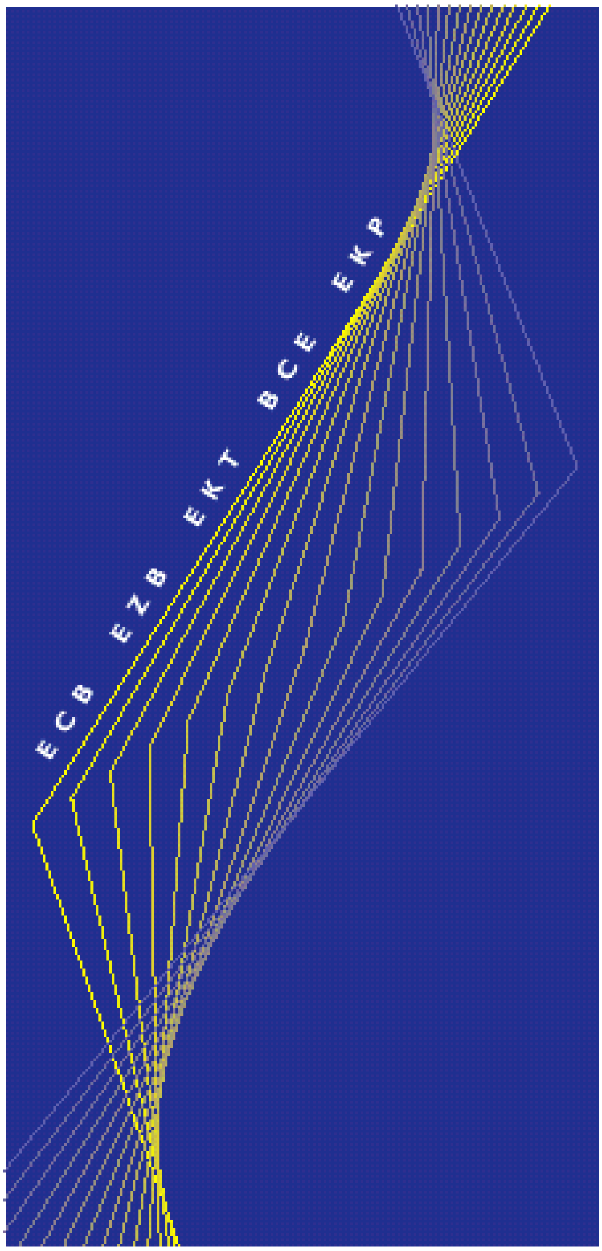
EUROPEAN CENTRAL BANK



THE EURO MONEY MARKET

July 2001

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Address	**Kaiserstrasse 29** **D-60311 Frankfurt am Main** **Germany**
Postal address	**Postfach 16 03 19** **D-60066 Frankfurt am Main** **Germany**
Telephone	**+49 69 1344 0**
Internet	**http://www.ecb.int**
Fax	**+49 69 1344 6000**
Telex	**411 144 ecb d**

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Contents

The following country abbreviations are used in the report:

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

1. 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 study aimed to assess the level of integration and efficiency of the euro area money and bond markets after 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 on in this paper and in two companion papers ("the Euro Bond Market" and a forthcoming publication on the equity markets), 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 Statistics Committees of the ESCB.

This report presents the results of the money market study and aims at assessing developments in the integration and efficiency of the euro money market that were observed already in 1999. The report includes quantitative and qualitative information that has been collected by national central banks (BE, DE, ES, AT, FR, IE, IT, LU, PT, FI, UK) through a selected panel of market participants. The section on short-term securities is based partly on the above-mentioned survey and partly on data from the ECB securities database, while the section on futures markets relies on data published by the London International Financial Futures and Options Exchange (LIFFE). However, the quantitative data collected through panel surveys was not obtained from the standard reporting systems of credit institutions and does not, therefore, provide an indication of volumes of transactions in the euro area money market fulfilling all statistical standards. Instead, its purpose is to highlight the main trends that have been observed in the market structure. As a consequence, the report does not assess the overall size of the different segments of the euro money market, nor does it compare the euro area money market with that of the United States or Japan.

2. Executive summary

A key feature emerging from the 2000 money market survey is that activity seems to be increasingly influenced by the focus of market players on issues such as capital adequacy rules and return-on-equity requirements. As a consequence, activities involving euro-denominated money market derivatives, like interest rate swaps and futures, experienced a significant increase as these are seen as less constraining than other money market instruments from the point of view of the consumption of capital by banks for regulatory purposes. The increase in activity is notable both for OTC ("over-the-counter" transactions, i.e. those carried out in non-organised markets) and exchange-traded derivatives products. The liquidity of the interest rate swap market has been further enhanced by the systematic use of this segment of the market for hedging and position-taking purposes.

The market for unsecured deposits, repo and foreign exchange swap transactions (cash market) is used mainly for the management of cash positions, which leads to a very high concentration on short-term maturities. These segments of the money market have, however, undergone uneven developments: the *repo market* registered sustained growth while the *foreign exchange swap market* resumed growth after a decline in 1999. By contrast, the *unsecured market* remained largely static and concentrated on transactions with an overnight maturity.

Compared with 1999, the survey conducted in 2000 shows that there have been some significant changes in the way the market functions.

Firstly, the money market, which (with the exception of Italy) until last year was largely unaffected by the concentration of trading on electronic platforms taking place in other markets, has become increasingly screen-based. Market participants, who generally welcome this trend, acknowledge the benefits of electronic trading in terms of enhanced price transparency, speed of deal processing and cost savings. Indeed, some participants are connected to more than one platform even if the coexistence of several systems may result in a fragmentation of global liquidity. The explanation for this seems to be the reluctance on the part of some market participants to post all their interest on a single system because the transparency implied in electronic trading systems reveals their activity in the money market. The emergence of central clearing facilities could, in this context, foster the further enhancement of electronic trading in the money market.

Secondly, the money market is characterised by an increasing importance of indexation to one specific reference interest rate, the EONIA (euro overnight index average), and a concentration of activity among a small number of major players. This trend is most striking in the interest rate swap market. The accumulation of large positions among a few participants is not without potential drawbacks, especially at times of adverse market developments. Nevertheless, market participants do not consider this high concentration of volumes on a few major market players to put the functioning of the overnight cash market at risk.

In the 1999 money market survey, signs of integration were particularly evident in the unsecured and swap segments, each of which quickly merged into a euro area-wide market. Although less integrated, the repo market also showed some improvements in 1999, while the market for short-term securities remained more fragmented. The 2000 money market survey reveals that improvements have been made in the integration of the repo market, as evidenced by an increase in cross-border transactions. Further integration of the repo market appears now to be dependent on the emergence of a unified General Collateral repo market, i.e. a repo market where the main purpose is to exchange funds and the specific securities exchanged are of little importance. The residual heterogeneity of General Collateral definitions in different national segments of the market reflects the fact that different government bonds are not seen as fully substitutable. Although market players still point to the technical difficulties in the management of collateral, they also report that they have been more or less able to circumvent them by using a number of links that have been developed between national Central Securities Depositories (CSDs) and International Central Securities Depositories (ICSDs).[1]

[1] For a more extensive analysis of the use of links, see "Cross-border use of collateral: a user's survey", ECB February 2001 (available at www.ecb.int).

However, the interviewees emphasised the obstacles arising from the lack of homogeneity in legal and fiscal frameworks.

The degree of integration in the short-term securities markets remains significantly lower than in the other segments of the money market, even if progress has been made there as well. This progress has been mainly witnessed in the dynamic growth of commercial paper (CP) issuance, which has been sustained by a general trend of an increasing emphasis on market-based financing.[2] Also noteworthy is the recourse by some governments to the CP market for their short-term borrowing. One aim of these governments has been to broaden their investor base beyond their traditional domestic market.

Progress towards integration is also evidenced by a centralisation of treasury management activities on a pan-euro area basis. This process of centralisation is regarded by many multinational banking groups as approaching its final stage. However, the benefits of a centralisation of the access to the Eurosystem operations have to be balanced against the advantage of accessing collateral on a local level. This is considered, by some interviewees, to be easier than making recourse to cross-border procedures for the transfer of collateral.

The share of cross-border transactions in relation to the overall level of activity remained broadly stable at a high level in 2000 and these now seem to be considered as quasi-domestic transactions. The composition of cross-border transactions has changed, however, showing a slight decline in the share of unsecured transactions and an increase in the share of cross-border transactions in the repo market. As regards the interest rate swap market, this is a pan-European market with cross-border transactions accounting for more than two-thirds of the overall notional amounts.

2 See *The Euro Bond Market*, July 2001

3. Trends in the market

This study consists of information derived from a quantitative and qualitative survey conducted in 11 countries (BE, DE, ES, FR, IE, IT, LU, AT, PT, FI, UK) for the second quarter of 2000 (the quantitative survey does not include Germany). The section on short-term securities is, however, based both on the quantitative survey and on data collected from the ECB's securities database. The section on futures markets relies on data published by the London International Financial Futures and Options Exchange (LIFFE). Each national central bank selected a number of banks for the survey with a view to obtaining a good coverage of money market activities and a total of 76 banks responded. Nevertheless, as data are not issued from the standard reporting systems of the participating banks, with the exception of the section on short-term securities, results must be regarded as highlighting structural patterns and trends, not as a fully fledged statistical report on euro area money markets.

This section focuses on developments in the cash market (i.e. unsecured transactions, repo market transactions and foreign exchange swap transactions), the market for short-term securities up to an original maturity of 12 months and the market for derivatives (i.e. interest rate swaps and futures).

The study conducted in 1999 revealed that, of the various segments of the euro money market, the interbank unsecured deposit market had achieved the highest degree of integration. The differences between the various domestic interbank markets at the end of 1998 virtually disappeared shortly after the introduction of the euro. Besides the important effect of the single monetary policy and the harmonisation of market practices, the immediate and full success of euro area indices such as the EONIA and the EURIBOR and the smooth functioning of the settlement of cross-border payments, mainly performed through TARGET, were the most important factors behind this successful integration. The 2000 money market survey reveals that activities seem to be increasingly influenced by the focus of market players on issues such as capital adequacy rules and return-on-equity requirements. This has had the effect that activity in derivatives instruments have increased significantly as these types of instruments are seen as less constraining than other money market instruments (cash market instruments) from the point of view of the consumption of capital by banks for regulatory purposes.

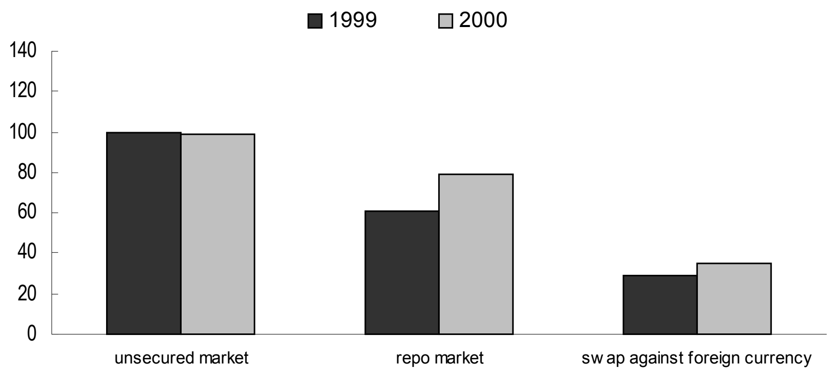
3.1 Developments in the cash market

The survey carried out in the second quarter of 2000 shows that, overall, cash lending transactions (i.e. unsecured, repo and foreign exchange swap transactions) in the euro money market continued to increase, confirming the trend registered in 1999. On the basis of the data collected from the credit institutions included in the survey, transaction volumes increased by 13% year-on-year, between the second quarter of 1999 and the second quarter of 2000. Broken down by market segment, the turnover in the repo market continued to increase significantly, rising by almost 30%, while volumes in the unsecured market remained broadly unchanged. While the foreign exchange swap market against the euro underwent a decline in turnover in 1999, which was mainly related to the disappearance of cross-currency trading in the legacy currencies of the euro area after the introduction of the euro, a slight increase in trading volumes was observed in 2000.

Chart 1

Activity in the euro area unsecured, repo and foreign currency swap markets

(2000 (Q2) compared with 1999 (Q2))[1)]



Source: ESCB market survey (2000).

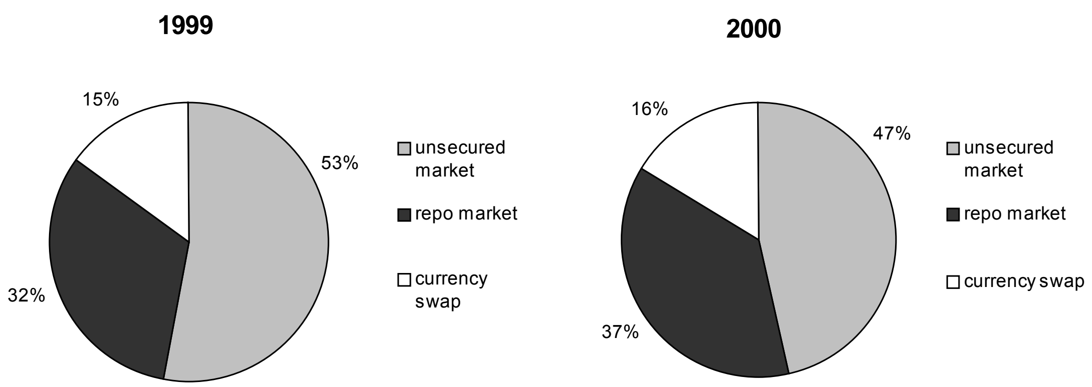
(1) Relative size of average daily transactions. Basis 100 = volume of transactions in the unsecured market in Q2 1999.

Consequently, the relative shares of these segments within the cash market have changed significantly. The slight consolidation in activity that can be seen in the market for unsecured instruments has translated into a noticeable decline in its predominant share, accounting for 47% of the euro money market turnover in the 2000 survey, against 53% the previous year.[3] The share of foreign exchange swaps was largely unchanged, recording a slight increase from 15% to 16%, while the repo market share grew from 32% to 37% of the average daily turnover (see Charts 2A and 2B).

Charts 2A and 2B

Unsecured, repo and foreign currency swap markets as a share of total activity in the cash market

(2000 (Q2) compared with 1999 (Q2))



Source: ESCB market survey (2000)

Further concentration in very short-term maturities

In the cash market, the trend towards a concentration in very short-term maturities was confirmed in the 2000 survey: operations up to one month accounted for 93% of the total turnover in 2000, against 90% in 1999. This

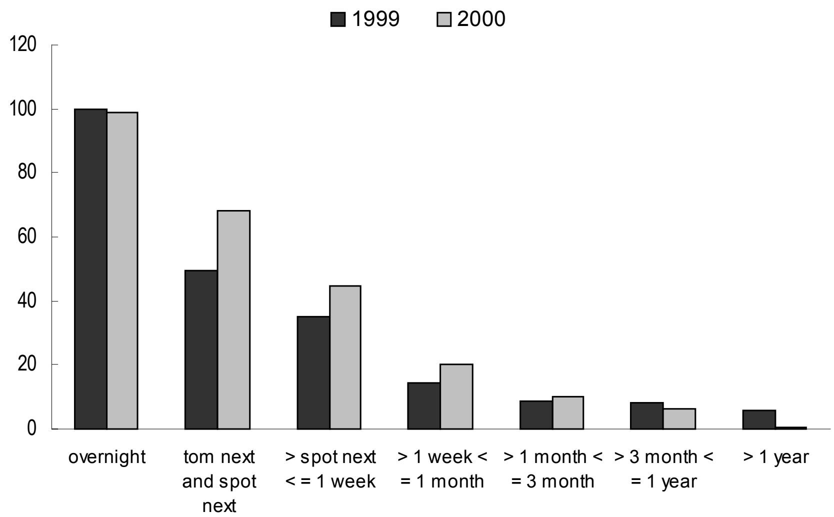
[3] Figures for Q2 1999 collected in 2000 differ slightly from those of the survey conducted in 1999 due to differences in the panel of participating banks. Also, the data do not include German banks, as these could not contribute to the quantitative survey.

increase in activity was particularly strong for maturities between one day and up to one month, while overnight maturities were relatively stable (Chart 3).

Chart 3

Cash euro money market

(2000 (Q2) compared with 1999 (Q2))[1)]



Source: ESCB market survey (2000)

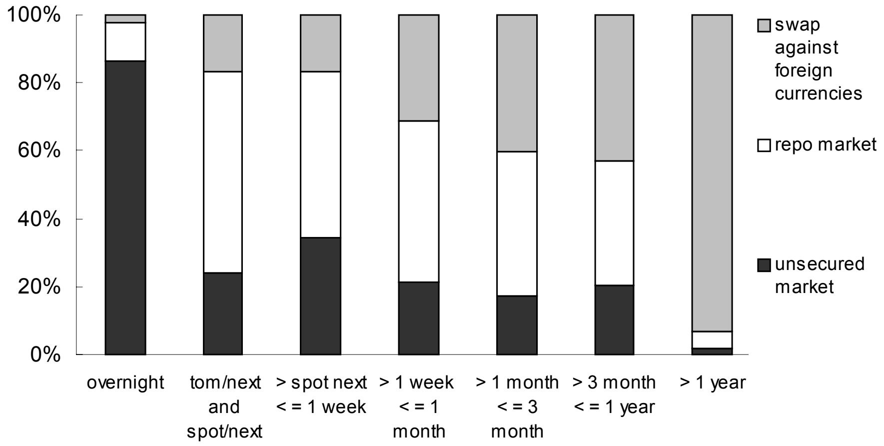
(1) Relative size of average daily transactions. Basis 100 = volume of transactions in the overnight market in Q2 1999.

As shown by the breakdown by maturities in each money market segment (Charts 4A and 4B), unsecured deposit transactions remained predominant in the overnight maturity, as securities settlement considerations seem to restrain overnight (same day value) repo activity and as credit risk is perceived to be of limited relevance for this very short-term maturity. This is in contrast with the situation prevailing in maturities between tomorrow/next and up to one month, for which repo operations are preferred to unsecured transactions. This situation can also be put into perspective against conditions in the overnight interest rate swap market (see section 3.3.1), i.e. while banks manage their cash exposure overnight, the short-term interest rate exposure is managed through EONIA swaps. Finally, for maturities above one month, foreign exchange swap operations dominate unsecured and repo lending operations.

Chart 4A

Euro cash market, breakdown by maturities

(1999 (Q2))

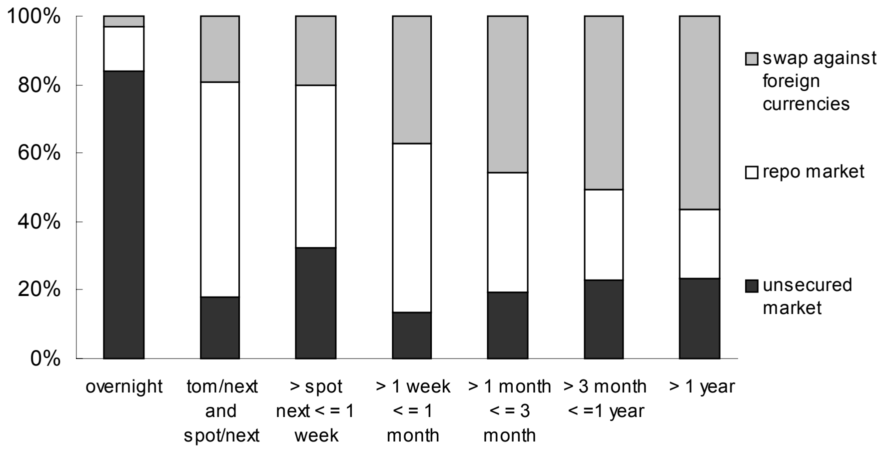


Source: ESCB market survey (2000)

Chart 4B

Euro cash market, breakdown by maturities

(2000 (Q2))



Source: ESCB market survey (2000).

3.1.1 Unsecured market

The unsecured deposit market involves a broad range of small, medium- and large-sized credit institutions. Small and some medium-sized institutions that are unable to develop substantial activity in each segment of the money market, namely on foreign exchange swap and repo markets, concentrate their activity mainly in the unsecured segment in order to obtain funds. Moreover, as mentioned above, fewer banks are active in the deposit market owing to the facts that capital requirements and return-on-equity ratios are playing an increasing role in their capital allocation decisions. This constraint explains the stability of the volume transacted on the unsecured market. The concentration of turnover at the very short end of the yield curve in the cash market is particularly significant on the unsecured interbank market, with operations of up to one month maturity representing 97% of the total uncollateralised turnover (unchanged compared with 1999).

However, compared with the second quarter of 1999, overnight operations showed a slight decrease in the second quarter of 2000 (- 4%), while transactions of up to one week expanded somewhat. The concentration of activity in very short-term maturities can be explained by several factors, inter alia:

- the weekly refinancing operations of the Eurosystem and the monthly maintenance period of the minimum reserve requirement system, with averaging provisions, contribute to increasing the activity in the short end of the curve, beyond the overnight transactions, as banks can "arbitrage" their cost of funding over a period of up to one month;

- a majority of market participants are predominantly active in short-term maturities due to the constraints of counterparty risk management and balance sheet restrictions. As a consequence, only maturities of up to three months are actively quoted by market participants;

3.1.2 Repo market

The repo market experienced a further expansion in global trading volumes, with the activity of the banks participating in the survey growing by 30% in the second quarter of 2000 compared with the second quarter of 1999. The continued growth of the repo market can be viewed against a background of the enhanced ability of fund managers to invest in a whole range of euro area papers and market participants' better knowledge of the specificities of national markets and settlement systems. Among the reasons for the growing interest in repo transactions, market participants underlined the following as the most important:

- the increasing need to limit credit risk exposures, and constraints resulting from capital adequacy requirements;
- the emergence of new players, such as insurance companies and small and medium-sized banks, has compensated for reduced hedge fund activities. Demand for structured forward repos on the part of the customers has also increased[4];
- the trend towards cross-border transactions related to market participants' growing interest in non-domestic collateral.

A breakdown of lending maturities shows that the repo market recorded an increase at the short end of the interest rate curve, with maturities of up to one month accounting for 94% of the total repo activity, compared with 90% last year. Activities in the overnight repo market remained modest, though, accounting for only 14% of the total activities; this percentage is similar to that for the second quarter of 1999. Market participants believe this is because unsecured transactions are preferred in the overnight maturity because of settlement considerations. However, a strong increase was experienced in tomorrow/next and spot/next operations

[4] This trend has become evident from interviews with banks. Quantitative data covers interbank operations only, not operations with other categories of customers.

(+46%), as well as in operations with a maturity from one week up to one month (+49%). Conversely, volumes transacted with longer maturities exhibited a decrease, especially for the segment from three months up to one year (-45%). As a consequence, tomorrow/next and spot/next transactions remained by far the most dominant maturities, accounting together for 46% of the total activity in the repo market.

The global growth of the repo market overshadows uneven developments throughout the euro area. Market participants stress that this is primarily a reflection of the fact that underlying collateral remains split between the various countries and, although narrowing, rate differentials among the various repo markets remain. Thus, a global euro General Collateral (see Box 1) market does not yet exist, as such; instead, there are different, albeit connected, General Collateral national markets, e.g. the Belgian market, the Italian market etc., and market participants still have to specify the type of collateral to be used before they conclude a repo transaction. Major players have become accustomed to trading in all segments of the market, taking advantage of its characteristics, and to carrying out their repo operations in the market that provides the best conditions depending on the players' motivation (i.e. funding, arbitrage opportunities, yield enhancement etc.). This natural 'arbitrage' of price and liquidity conditions among the various domestic markets is one reason why price differences have narrowed compared with the survey in 1999: while Italian General Collateral was traded 1 or 2 basis points above the EONIA at the beginning of 1999, compared with 1 and 6 basis points below the EONIA for Belgian and French General Collateral respectively, it has gradually become more expensive and is now traded below the EONIA. This also reflects in part the changes in Italian debt management policy and a reduction in net supply.[5] Market participants indicate that they prefer some national markets to others for repo transactions. As a consequence, the market shares of the euro area countries have changed progressively since the introduction of the euro: according to the banks participating in the 2000 money market survey, the Italian and, to a lesser extent, the Belgian government bond repo markets have become the most active General Collateral markets, owing to the availability of large volumes of relatively inexpensive collateral (sovereign bonds). Concurrently, German government bonds have continued to dominate the "Specials" repo market, mainly because of their deliverability in the Eurex futures contract. The French market, however, has recorded a clear decrease in activity in both the "Specials" repo market and in the General Collateral repo market, mainly because French government bonds are expensive relative to Italian and Belgian General Collateral.

[5] See *The Euro Bond Market,* July 2001.

Box 1 General Collateral repo (GC) and Special repo

General Collateral repo consists of a repurchase agreement transaction between buyer and seller, the main purpose of which is to exchange funds, with the securities transferred being of little importance ("cash-driven" transaction).
In contrast, the purpose of a **Special repo** is to lend or borrow certain bonds or shares on the market ("security-driven transaction"). The securities are lent against cash collateral so that they are in the foreground and the cash involved acts only as a guarantee.

The functioning of the repo market and the behaviour of market participants changed little in the period between the two surveys:

- market players use the repo market for a variety of reasons, for example for taking open positions, in order to fund or hedge their portfolio, for the active management of long-term portfolios, investment of cash holdings (mainly to fulfil regulatory or risk control requirements) etc.
- the widespread use of fixed-rate quotations seems to have increased further and they now account for more than 85% of total activity. An exception is the French repo market, a sizeable part of which continues to be based on variable rate quotations. As for variable rate quotations, the EONIA is the main index that is used and the pricing of repos in the General Collateral segment is mainly linked to the EONIA swap yield curve.
- although some progress has been made towards integration, there has been no change in the use of underlying collateral. Thus, in each national market repo transactions based on domestic securities are still dominant, accounting for about 70% of the total. A lack of uniform fiscal treatment, different settlement systems and different trading systems are mentioned by market participants as contributing to this phenomenon. Sovereign debt still makes up the bulk of the collateral, with government paper accounting for 90% of the collateral used. The Pfandbrief repo market has developed well, although it has remained essentially national and is mostly of the "Special" kind, with German banks accounting for the bulk of activities.
- in the General Collateral repo segment, the average size of a transaction is €100 million, but large transactions can reach €1 to €2 billion. The average size of a transaction in the "Special" segment ranges from €20 to €50 million and a large ticket can sometimes exceed €100 million.

3.2 Market for short-term securities

The market for short-term securities includes government securities (Treasury bills) and private securities, i.e. mainly commercial paper (CP, i.e. short-term securities traditionally issued by non-financial corporations) and bank certificates of deposits (CDs, i.e. short-term securities issued by banks). This section draws both on the quantitative and qualitative data obtained from the ESCB market survey referred to in the introduction, as well as on data gathered from the ECB's securities database.

The market for short-term securities took a further step towards integration, although some fragmentation among the euro area countries remains. In some of the countries, the market is still embryonic, with few transactions that are essentially domestically oriented. This is seen by market participants as being mainly the result of infrastructure heterogeneity, such as a lack of harmonisation in the trading environment and settlement systems, as well as different legal and tax treatments.[6]

6 Annex 2 presents the main features of negotiable debt securities.

In most countries, issuance of private paper is becoming more important than government paper for several reasons. The two most important factors on the demand side are, firstly, the larger investor base that results from a more integrated euro area money market, and, secondly, the increasing number of rated issuances. On the supply side, the key factors are the search for various sources of funding and the ongoing disintermediation process, in which non-financial corporations finance themselves directly from final investors by issuing securities, rather than drawing on bank credit lines. The inclusion of private paper in the list of assets eligible as collateral for Eurosystem operations and the decrease in the issuance of Treasury bills have also played a role in this development.[7] The latter factor is related to three developments, which may differ in importance across the euro area:

- the decline in outstanding public debt in those countries, which have a budget surplus (Finland, Ireland, Luxembourg and the Netherlands posted a fiscal surplus in 1999; the same four countries, plus Germany, also recorded a surplus in 2000, so that the euro area as a whole registered a small fiscal surplus of 0.3% of GDP),
- a preference among national debt managers to lengthen the maturity of the public debt through the issuance of medium- and long-term bonds rather than bills[8],
- the issuance of Euro CP (ECP) by some governments (those in Belgium, Ireland, Italy, Portugal)[9], because the ECP market is regarded as giving access to a larger investor base. In some countries, it is also deemed to be deeper and more liquid than the domestic public debt market, thus offering more attractive financing conditions for governments. The ECP is usually placed in international financial centres, such as London.[10]

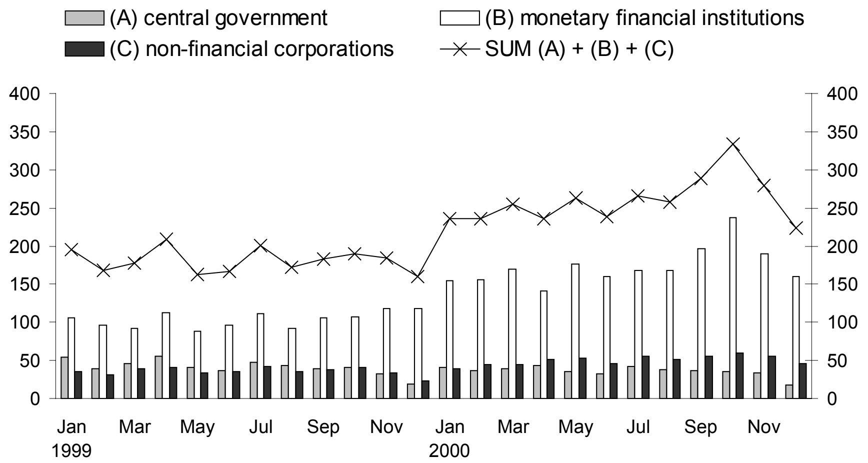
After stabilising in the second half of 1999, the total gross issuance of short-term securities significantly increased in 2000 (Chart 5). For the whole of 2000, gross issuance of short-term securities amounted to €3,317 billion, a 44% increase over 1999. The most buoyant sector has been that of the financial institutions, for which gross issuance increased by 66%, while it increased by 45% for non-financial corporations. In contrast, the gross issuance of general governments (with central governments accounting for the bulk) decreased by 12% in 2000 compared with 1999. As a consequence, the share of central government in the amount outstanding in short-term securities dropped from 57% at the introduction of the euro to 38% by the end of 2000. The share accounted for by financial institutions, however, rose from 34% to 45% over the same period.

[7] In Spain, Finland and France the global amount of short-term government securities increased in 2000 compared with 1999.
[8] See *The Euro Bond Market*, July 2001.
[9] Two non-euro area EU countries, Denmark and Sweden, also use multicurrency ECP programmes.
[10] In Portugal, the Treasury has not issued any Treasury bills since mid-1999. However, it has resorted to ECP issuance for its short-term financing.

Chart 5

Gross issuance of euro-denominated short-term securities by issuer sector in 1999 and 2000

(monthly data, EUR billions)



Source: ECB securities database.

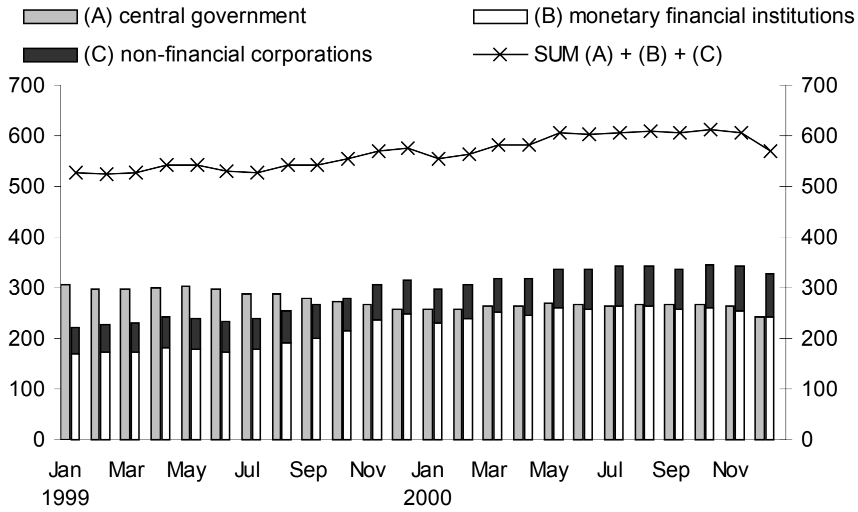
Note: Values refer to the gross issuance of euro-denominated short-term securities issued by euro area residents.

The outstanding stock of euro-denominated short-term securities reached €569 billion in December 2000, slightly below the amount outstanding for the same month in 1999 (see Chart 6).

Chart 6

Outstanding amounts of euro-denominated short-term securities by issuer sector in 1999 and 2000

(monthly data; EUR billions)



Source: ECB securities database.

Note: Values refer to the outstanding amount of euro-denominated short-term securities issued by euro area residents.

A comparison of the breakdown by issuer between 1999 and 2000 shows that the outstanding amount of securities issued by the private sector overtook that issued by the public sector. The latter represented 42% of the total outstanding amount in December 2000 (compared with 45% one year before)[11]. Commercial paper (CP) registered the highest increase. In addition to the disintermediation process mentioned earlier, several factors contributed to this trend:

- a sizeable portion of CP programmes is dedicated to the funding of Special Purpose Vehicles (SPV) that are set up for securitisation operations;
- the surge in mergers and acquisitions has fostered a recourse to bridge financing[12];
- in some cases, the issuance of CP is the first step for a company starting to issue private debt, before it can access the bond market.

These trends have emerged at the same time as there has been an increasing use of rating agencies in euro area countries. It is difficult to judge whether this additional use of rating agencies has underpinned the development of the CP market or is a consequence of this growth. From the issuer's point of view, the rating increases the attractiveness of private paper and helps to improve access to a broader base of international investors. However, non-rated issuance is still possible, for instance in the case of issuance of CP that is subscribed by institutional investors involved in a global business relationship with the issuers.

The developments towards better integration and an expansion of market-oriented techniques described above contrast with two negative factors:

- the different national segments remain fragmented. In particular, differences in legal and fiscal frameworks hamper cross-border transactions. Nevertheless, substantial changes have been observed in 1999 and 2000, namely the reform that took place in Spain, which consisted mainly of changes in taxation, the introduction of simpler and more flexible issuance procedures and the addition of new instruments.

- The secondary market is negligible in most countries as 'buy and hold' strategies inevitably prevail for players participating in the CP market for short-term purposes. Hence, investors buy such securities because of the higher yield opportunities, and keep them in their portfolio until the redemption date. The same holds true for CDs, which are sold to customers seeking alternative investments for their savings. [13]

3.3 Derivatives

3.3.1 Interest rate swap market

The market for euro-denominated interest rate swaps is highly integrated, both in terms of the maturity of transactions and in terms of the activity of the dominant players, who are based mainly in Frankfurt, London and Paris. Most market participants use this market as "end-users" in order to hedge their interest rate exposure. Only a small number of market-makers effectively assume the role of intermediary and engage in trading and risk-taking.

Available data and anecdotal evidence from market participants suggest that the euro interest rate swap market is growing strongly. In some areas it grew by as much as 100% in Q2 2000, year-on-year. This rising trend is widespread and includes all segments of the interest rate curve, with both euro area and non-euro area counterparties participating. The high liquidity of the market and the advantages this provides in terms of low

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[11] The private-sector outstanding amount exceeded the central-government outstanding amount as from October 1999.
[12] Temporary financing to cover the period before adequate long-term financing can be secured.
[13] A secondary market would determine the existence of regular quotations and the monitoring of yield spreads relating to CP and CDs. In most countries, quotations are not regularly displayed, nor is it usual to monitor yield spreads for short-term securities. However, these instruments are quoted in countries like Luxembourg, Finland and Spain. In the UK, regular quotations are available.

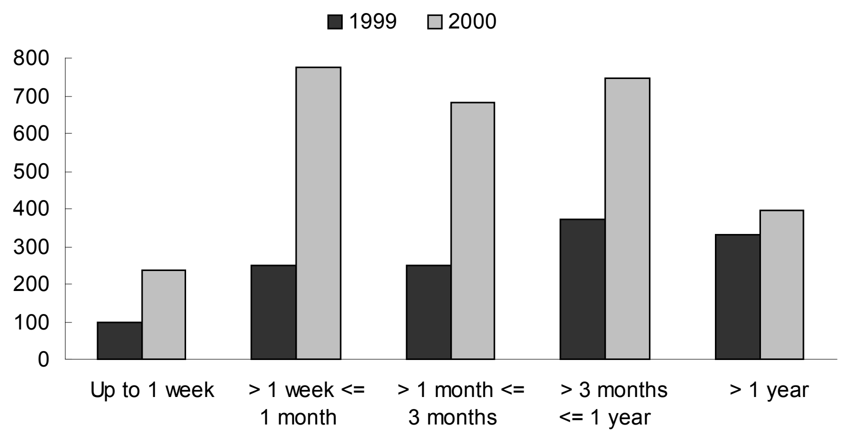
consumption of regulatory capital are the main factors underlying this rapid development. Indeed, the short-term swap market and, more specifically, the EONIA swap market, is used both for position-taking and for hedging short-term (below three months) funding risks, as it enables market participants to trade large volumes without creating distortions in their cash flows, especially with regard to the fulfilment of minimum reserves. Some survey respondents noted the usefulness of interest rate swaps as a liquidity management tool, as it enables them to freeze the cost of building up the minimum reserves over a maintenance period, independently of their cash holdings. Market participants report that they tend therefore to systematically turn to this market, as they find it comparatively more efficient than the cash market (see section 3.1.1). Other market players that use the interest rate swap market extensively are investors such as money market funds, who benchmark their returns against EONIA and use the swap market in order to hedge their assets against fluctuations in the overnight rate.

Turnover in the interest rate swap market is spread along the whole short-term curve, with very significant activity up to one year.

Chart 7

Interest swap turnover

(2000 (Q2) compared with 1999 (Q2))[1)]



Source: ESCB market survey (2000).

(1) Relative size of average daily transactions. Basis 100= volume of transactions on the maturities up to 1 week in Q2 1999.

The main characteristics of the interest rate swap market are the following:

- ticket sizes are generally larger than in other segments of the money market, most notably shorter-term maturities are very liquid and traded in particularly large volumes. Up to three months' maturity, swaps amounting to €500 million are regularly traded and market participants linked to the main swap trading centres report that they frequently transact volumes of €1 billion. Tickets of up to €5 billion and €10 billion have been transacted on electronic platforms. Swaps of €100 –200 million are common between six-month and one year maturities. The market for swaps with durations of up to two years is regarded as reasonably liquid;
- due to the high degree of standardisation and competition in the swap market, bid-offer spreads are very tight, commonly at one basis point;

- the significant size of transactions and the low level of spreads has caused a fall in the number of market makers in EONIA swaps. Only a handful of large banks are able to quote prices for transactions up to €3-4 billion on a regular basis. Despite this concentration, the overall number of participants has increased, when taking into account not only the long-established banks that make the market, but also newcomers and end-users such as US investment banks, as well as the repo, T-bills, funding and asset and liability management desks of the financial sector in general (including insurance companies and mutual funds);
- although direct bilateral trading is increasing**,** most swaps are still traded through brokers (this applies to approximately two-thirds of the overall turnover);
- survey results show that EONIA dominates as the basis for short-term swaps. EONIA has now almost replaced EURIBOR – which was still dominant at the beginning of 1999 – as the key reference rate for swaps trading.

3.3.2 Futures market

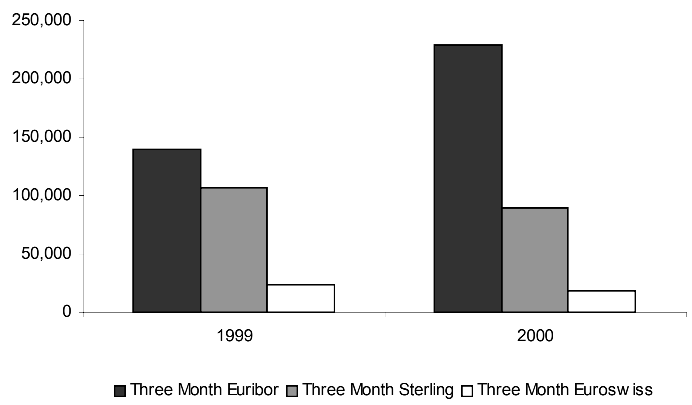
Activity in the euro futures and options market increased by over 50% in 2000 year-on-year, according to data published by derivatives exchanges. The main recent developments in the EURIBOR *futures* contracts, which are designed for dealing on euro short-term interest rates, can be found in turnover data published by the London International Financial Futures and Options Exchange (LIFFE) in London. LIFFE EURIBOR trading represents 98% of the total turnover of short-term future contracts, with the rest on Eurex and the EURONEXT Paris S.A. (Matif). Data from LIFFE shows that the number of EURIBOR contracts traded on LIFFE increased by 63% in the year 2000, compared with 1999. In parallel, at the end of December 2000, the number of open interest contracts had increased by 24% over the same period.

EURIBOR futures contracts are the most actively traded short-term interest future contracts in Europe, and accounted for more than two-thirds of the activity on LIFFE in 2000. Comparatively, the share of the sterling and the Euroswiss future contracts continued to narrow: they represented respectively 27% and 5% of the activity in futures contracts in 2000, against 39% and 9% in 1999 (see Chart 8).

Chart 8

Short-term interest rate futures traded on LIFFE

(daily volume on an annual basis; number of contracts)



Source: LIFFE

EURIBOR *options* also benefited from strong growth, although overall growth in short-term interest rate options traded on LIFFE was relatively weak, up by 7% in 2000 (compared with +56% in 1999). In contrast, the number of EURIBOR options traded contracts strongly increased (+69%). As a consequence, this segment currently represents two-thirds of short-term interest rate option activity on LIFFE.

The increasing domination of short-term interest rate options and futures traded on EURIBOR appears to be fuelled by a "concentration effect", meaning that investors favour the most liquid markets when they need to hedge their positions. The growth of future contracts can also be explained by investors' preference for liquidity. This standardised instrument allows them to rapidly take a position on an important underlying amount of cash, but also permits them, at the same time, to be able to reverse their position easily, if needed. However, as standardisation is accompanied by a certain rigidity in those contracts, investors tend to prefer, in many cases, interest rate swaps which offer other advantages, such as broad flexibility in the definition of the swap (dates, amount). This allows investors to adapt the product to their needs and expectations, and a relatively small amount of capital is needed to cover a position (no margin calls). This mix of pros and cons may explain the different growth rates in these two segments of the derivatives market.

4. Trends in the market structure and infrastructure

This section deals with developments in the infrastructure of the euro money market and changes in the structure in terms of the increasing importance of the EONIA as a reference rate. Specifically, new developments in electronic trading are dealt with in section 4.1. Section 4.2 focuses on the increasing importance of EONIA and the concentration of activity among a small number of major market players.

4.1 New developments in electronic trading

While electronic platforms for the bond and foreign exchange markets have flourished, the money market has been slower to adopt technological innovation. The characteristics of the money market, especially in terms of the size of individual transactions, the management of credit risk and the use of non-standardised contracts, help to explain why bilateral and brokered transactions still prevail on the money market. However, trading in the money market is becoming increasingly screen-based, and, according to most market participants, these developments will continue.[14]

In this respect, the e-MID system is striving to establish a euro area-wide platform for electronic trading in the money market. This system covers most of the segments of this market, namely loans and deposits, repos and derivatives. While such a platform has been widely used for loans and deposits in the Italian market since the early nineties, it is only recently that it began to expand abroad, offering a diversified range of products to remote-access participants. In the market for swaps and deposits, bilateral trading has increasingly been conducted through the Reuters 2000 electronic platform.

[14] For a more comprehensive discussion of the consequences of the introduction of electronic trading for financial markets, see "The implication of electronic trading for financial markets", Committee on the Global Financial System, January 2001 (available on www.bis.org).

Box 2 Main features of the e-MID system

The e-MID has been in operation since 1990 and has over 200 members, of which 20 are foreign banks (i.e. non-Italian banks) using remote access. The traded maturities range from overnight transactions to 12-month deposits: around 90% of the traded volume is in overnight, tomorrow/next and spot/next maturities.

The system provides for the execution of speedy transactions: about 97% of the transactions are executed within one second. It offers a high degree of transparency, as trading is not anonymous: bid or ask offers display the amount, the interest rate and also the name of the quoting institution.

An application made for a bid quote results in the automatic conclusion of a transaction; in all other cases (for instance, an application made for an ask quote) an express confirmation or refusal by the quoting operator is required within 90 seconds.

Domestic transactions are settled automatically through the national RTGS (real-time gross settlement system), while the cross-border transactions are settled through TARGET. Cross-border settlement is currently based on a semi-automatic procedure, but an extension of automatic settlement is being developed. The system automatically sends deal confirmation and payment notification to the counterparties.

Based on the minimum trading size, there are two segments:
*The deal pages, where the minimum trading amount is €50 thousand
*The large deal pages (since 4 September 2000), for which the minimum amount is equal to €100 million.

The large deal pages were introduced in order to increase the attractiveness of the market for large banks, particularly non-Italian banks. The large deals contracts account for around 20% of the total daily traded volume on the most traded maturity (overnight) and about 35% on the tomorrow/next maturity.
Other developments have been implemented in the course of the year 2000:

*"All or None" facility, which allow the major participants to avoid small-size tickets;
*Repo facility;
*EONIA swap facility

Some specificities of electronic trading on the money market are worth stressing:

- *Widespread information means higher transparency.* The information content of electronic broker systems is one of the main advantages claimed by users. However, there are differences among market participants about the desirability of a higher degree of transparency. Small to medium-size participants, who behave more like "price takers", are more interested in transparency than the larger participants who, as market makers, are the main providers of liquidity to the market. Therefore, there is less interest among the major international participants in posting all their operations on an electronic broker system and therefore they prefer to continue to use direct dealing systems, such as Reuters Dealing, in parallel to the e-MID. This is especially the case for large-size transactions that contain a high degree of information.

- *The importance of credit risk considerations.* Unlike bond markets, where delivery-versus-payment (DVP) helps to reduce the credit risk component of a transaction, the unsecured interbank market is, by nature, heavily influenced by credit risk considerations. This credit dimension has proved difficult to integrate in electronic systems, and has contributed to a somewhat slower development of electronic platforms in the money market.

- *Characteristics of money market transactions.* The usefulness of an electronic platform for term-maturities appears less obvious to many participants, as liquidity in this segment is more sporadic and tailor-made transactions more frequent.

Opinions also appear to be quite mixed as regards the development of an electronic trading platform for interest rate swaps. This market is divided into a small group of major market makers and a large group of swap users, with the two groups having different interests in terms of transparency and the disclosure of information.

The development of electronic repo trading platforms is more widely welcomed by market participants. Such systems have been developed more as a complement to bond trading platforms than as a component of money market electronic trading systems. As with the bond market, the situation is characterised by a multiplicity of systems, running the risk of a fragmentation of global liquidity. Hence, many participants still hesitate to participate, as they are expecting some consolidation and a higher degree of legal/regulatory harmonisation. A few of them, however, are more proactive and are connected to several platforms in order to adapt their internal procedures as fast as possible and to be in a position to arbitrage price differences.

4.2 Increasing importance of EONIA and a concentration of activity among a small number of major market players

Since the introduction of the euro, the money market has been characterised by an increasing indexation on the EONIA, and an increasing concentration of intermediation activity within a relatively small number of major institutions that are active across the euro area. These institutions are market makers in most segments of the money market. Besides these global players, small to medium-size participants remain more nationally oriented in their behaviour.

This development is particularly striking as regards the swap market. At the short end of the interest rate curve, the swap market is exclusively based on the EONIA reference. Furthermore, this overnight-interest-swap (OIS) market is dominated by a limited number of major market participants. These participants are distinguished from other participants by their capacity to make a market and to transact significant amounts relative to other segments of the money market (tickets with nominal amounts of up to €10 billion have been reported by some participants in the survey) and to manage sizeable books. The presence of these major participants has pushed forward the rapid integration of the euro swap market and contributed to its deep liquidity. This has accelerated the opening of the swap market to a wider range of market participants. Considering the sheer growth of the swap market and the significant contribution by these participants to its growth, a number of issues are worth considering. These issues relate to the management of risks arising from this activity, the increasing indexation on the EONIA and to the potential imbalances between the size of the market and the underlying cash market.

Firstly, as regards the *risk exposure* that emanates from activities on the swap market, it should be noted that this does not only result from market-making activities, arbitrage activity (for example, between the EONIA and the EURIBOR curves) or pure positioning along the interest rate curve, but also, to a significant extent, from hedging activities. Banks report that they generally feel that it is more suitable to use the swap market for hedging purposes as a large proportion of the positions to be hedged are cash activities indexed on the EONIA (and, to some extent, on EURIBOR). For many market participants, risk management techniques involve the setting of limits, expressed in billions of euro and/or translated into the equivalent amount of EURIBOR contracts. The translation of limits into the equivalent value in EURIBOR contracts is viewed as particularly useful as it gives an immediate and "ready-to-use" expression of the risks enshrined in the activity on the swap market. More frequently, limits tend to be established both for the global interest rate risk as well as for inter-product spreads. A common feature is that limits can vary in the course of a given reserve maintenance period, particularly in order to take into account the volatility of short-term rates that may occur at the end of the maintenance period.

Secondly, market participants do not consider that the increasing indexation of balance sheet items on the EONIA is a source of concern because it protects them against volatility and because assets and liabilities indexed on the EONIA are usually well matched.

Thirdly, the size of the OIS market is fairly significant considering that it is linked to an index based, on average, on €40 billion in daily transactions. Indeed, activity in the swap market that is directly linked to hedging cash positions is considered by market participants as representing sometimes no more than 10% of the total activity of the OIS market, meaning that the most significant activity is of more speculative nature. The significant difference between the size of the OIS market and the size of the deposit market indicates the importance of the representative nature of the EONIA, both in terms of the technique and the functioning of the deposit market. In this respect, survey respondents point out that the technique used to determine the value of the EONIA ensures that it can be considered as representing the vast majority of overnight transactions undertaken in euro, not only between the members of the panel, but for the overnight market as a whole. As regards the market functioning in general, all respondents underline the depth of the swap market and its extremely high liquidity that results from the capacity of the large market-makers to quote for significant transactions. Their central role in the market enables them to attract a large share of the transactions and, in their market-making activity, to easily redistribute the positions arising from these transactions towards medium and small-sized players. Only a very high turnover ensures the profitability of the activity due to the narrowness of the bid-offer spreads. However, some participants stress that the concentration of the market making in a few banks may raise questions with respect to their pricing power and their ability to provide liquidity on a permanent basis, especially during adverse market developments.

5. Progress towards integration

Progress towards integration is evidenced by the virtual completion of the rationalisation of treasury management by banks (section 5.1), by the dominance of cross-border transactions as well as by the progressive emergence of a real euro area-wide repo market (5.2). New initiatives and prospects for additional improvements in the repo market should add impetus to this trend (5.3).

5.1 Rationalisation of treasury management almost completed

The centralisation of treasury management activities on a euro area-wide basis is regarded, in many multinational banking groups, as having reached the final stage. Associated with this is the preference of several banking groups to consolidate internal money flows as much as possible in order to simplify counterparty risk management as well as to make efficient use of own funds dedicated to market activities.

With respect to the participation in operations of the Eurosystem, however, the trend towards centralisation within each banking group is offset, to a certain extent, by the advantages of keeping several sources for access to central bank money. In particular, by doing this, a banking group may facilitate the use of collateral on a local basis, which is considered easier than having recourse to cross-border procedures (such as the Correspondent Central Banking Model (CCBM) or the links between Central Securities Depositories (CSDs)). The same pattern can also be found at the national level, where some banking groups keep a decentralised set-up, with different entities participating in the Eurosystem tenders. Such an organisation tends to prevail when the type of collateral available to each entity of the group is heterogeneous, requiring differentiated back office procedures. In this case, very few economies of scale are expected from stronger centralisation. Decentralised access to central bank liquidity and centralised participation in the interbank market is a solution adopted by some major players that are looking for a combination of safety (several points of access to central bank liquidity facilitating the management of collateral), size effect and economies of scale when negotiating in the interbank market.

In contrast, large banking groups that are mainly based outside the euro area normally choose a single point of access to central bank liquidity. They appear to base their choice on the availability of collateral, the technical infrastructure of their various branches within the euro area, and their assessment of the efficiency of the platforms (national RTGS, CSDs, DVP systems) available in each financial centre.

5.2 Cross-border transactions now considered as domestic transactions

The cash market experienced overall an expansion of 12% in cross-border transactions[15], while their share of the overall activity remained broadly stable at the very high level of 68% already observed in 1999. The share of cross-border transactions in the market for unsecured transactions came down slightly, from 71% (1999) to 68% (2000), while the process of integration has continued in the repo market, as reflected by the increase in the share of cross-border transactions from 56% to 60%.

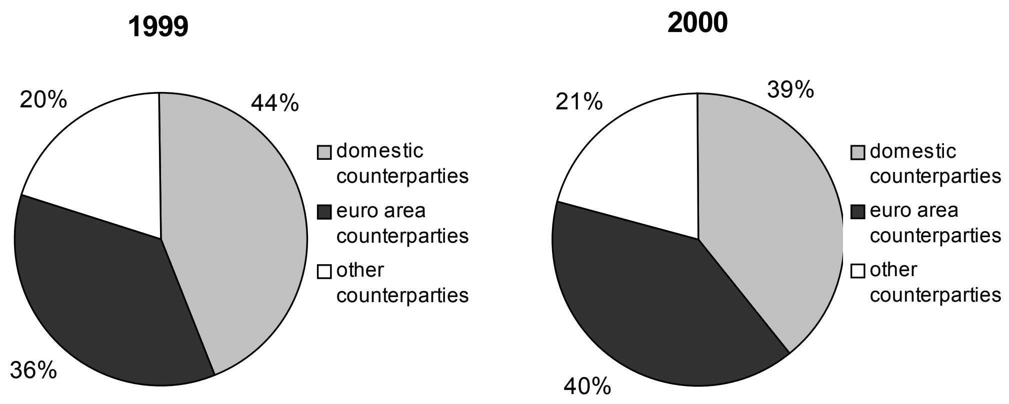
As regards the repo market, it is worth noting that the increase in cross-border operations mainly reflects an increase in transactions between euro area counterparties (with an increase in the relative share of these transactions by 4 percentage points). This development reflects the wider ability of traders to invest not only in domestic paper, but also in a larger range of European collateral.

[15] Cross-border transactions are defined as lending transactions (cash) with euro area counterparties and non-euro area counterparties.

Chart 9A and 9B

Repo market turnover

(2000 (Q2) compared with 1999 (Q2))



Source: ESCB market survey (2000)

The increase in cross-border transactions of euro area counterparties, both in absolute and relative terms, shows that, although it is not yet a fully unified market, the repo market has made further progress towards integration. The increase in cross-border transactions in the euro repo market has had two consequences:

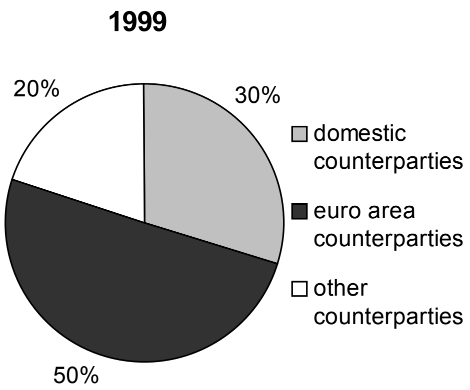
- in the large majority of banks, internal procedures have been set up to overcome complexities with respect to the settlement of various types of collateral and back-office practices are now sufficiently well established to enable traders to participate in all segments of the market as 'domestic' players. Against this background, the main drivers of choice given by the survey respondents are, firstly, price conditions, secondly, liquidity and thirdly, counterparty credit risk. Meanwhile, very few respondents continue to mention settlement issues as a major impediment to the further integration of the repo market. While the coexistence of several CSDs is considered cumbersome, sub-optimal and implying unwarranted transaction costs (compared notably to the situation prevailing in the US), it does not deter market participants from being active in all segments of the market. On the other hand, liquidity conditions are considered as crucial, with the lack of liquidity of some local markets explaining the weak development of cross-border transactions in these markets.
- the lack of harmonisation of contractual arrangements has also been circumvented by a general recourse to the PSA/ISMA Master Agreement. While local master repo agreements are widely used in domestic transactions, market participants tend to consider the PSA/ISMA contract as the standard in cross-border transactions. The more recently introduced European Master Agreement (EMA) has not yet been adopted as a general reference contract. It is too early to say whether this will take place or not, as the signature of bilateral conventions is known to be a very long and cumbersome process. Market participants have also aimed to overcome difficulties attached to the legal status of repo transactions in some countries by using sell-and-buy-back contracts.

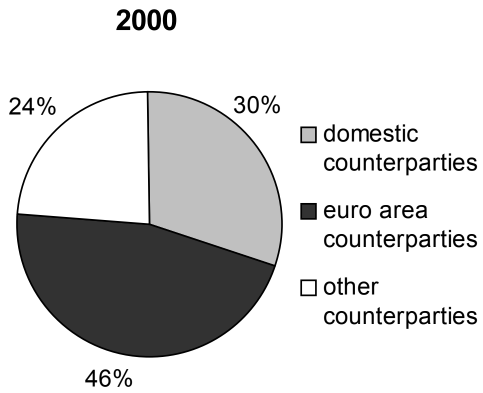
The swap market is a genuine pan-European market with cross-border transactions accounting for more than two-thirds of the overall notional amounts. In the case of interest rate swaps, trades with euro area counterparties account for nearly half of the overall amount. Countries which have no national market-maker for swaps naturally report higher proportions of swaps traded cross-border. In particular, there is a concentration of market-makers in Frankfurt, London and Paris, while participants wishing to hedge interest rate risk are scattered across the euro area.

Chart 10A and 10B

Interest rate swap market turnover

(2000 (Q2) compared with 1999 (Q2))





Source: ESCB market survey (2000)

5.3 Current issues, prospects and initiatives in the repo market

In spite of improvements in the handling of issues related to settlement and legal contracts, the euro repo market is still considered by market participants as relatively fragmented and not sufficiently uniform. Besides the lack of homogeneity in underlying assets (as mentioned in section 3.1.2), survey respondents list the following factors as the main remaining obstacles for further integration of the euro area repo market:

- the persistence of different national legal frameworks is still considered as a source of concern. Indeed, the use of a single Master Agreement does not in itself eliminate legal issues based on the existence of different national legal frameworks. The legal enforceability of margin arrangements or differences in legal procedures applied in case of insolvency are issues that are particularly mentioned by market participants.
- differences in the tax treatments of repo transactions (tax treatment of coupons in Italy for instance) are also considered as obstructing greater unification of the market. This applies also to the Spanish and Portuguese markets, which remain largely national due to specific tax treatments.
- the absence of harmonised accounting and netting rules has also been pointed out. The fact that netting schemes are not taken into account for prudential purposes in France was specifically underlined by the respondents as hindering the establishment of a level playing field among market participants and distorting competition.
- finally, it has also been pointed out that, even if securities settlement systems do not raise major obstacles to the development of the market, this does not mean that further improvements in this field cannot be achieved. There is already a clear trend towards greater unification since the process of mergers is already under way. Ongoing co-operation and merger discussions between securities settlement systems and stock exchanges may ultimately lead to a unified settlement and clearing system.[16]

There is a general view among market participants that the build-up of standardised netting possibilities across the euro area would efficiently promote the development of a single euro area market. With such possibilities,

[16] See *The Euro Bond Market*, July 2001.

market participants would expect a surge in liquidity in the euro-area repo business, especially owing to the enhancement of trading brought about by the reduction of risk exposure, regulatory capital savings and significant cuts in operating costs. In this respect, the creation of a central clearing-house counterparty and the increasing co-operation between different netting providers are viewed as positive developments. Ultimately, the combination of electronic trading systems (provided that they offer enough liquidity) connected to a clearing house as a central counterparty is expected to speed up the development and integration of the market.

The development of triparty repo techniques (in the Benelux and London for the time being) is also viewed as a positive initiative even if its impact is assessed differently: some market participants consider it as an important vehicle for further standardisation of General Collateral trading, whereas others are more sceptical and consider it as a simple facility for risk management. The new arrangement could significantly reduce the documentation involved between banks and facilitate margin calculations for small banks.

The involvement of market participants to promote a more integrated repo market has led to the setting-up of the European Repo Council (ERC), a merger of the ISMA Repo sub-committee and the ACI working group for repo, in September 1999[17] with the aim of enhancing the efficient functioning of the European repo market. This industry group acts as a forum for discussion on legal issues, market practice rules[18], custodian questions and infrastructure developments.

The ERC has notably worked to favour the introduction of netting arrangements and triparty repo and to promote the use of a standard contract for repo transactions.

[17] Date of the ISMA annual general meeting, which endorsed cooperation with the ACI.
[18] Repo Trading Practices Guidelines were issued on 26 July 2000.

Annex 1 Main Features of Negotiable Debt Securities

– AUGUST 2000 –

Type of security	Certificates of deposit (CD)	Commercial paper (CP)	Medium-Term Notes (MTN)
Categories of issuers	Credit institutions. In BE and UK, non-resident banks need European passport to issue CDs in the domestic market.	In SP, only corporates whereas in IE, credit institutions and non-bank entities benefit from an exemption by the NCB. Corporates and financial institutions everywhere else. Local authority (BE, FI), international public institutions (BE, FR) and banks (FI, PT). In UK, all issuers with no restriction.	Issuers of CDs and CP. In IE, only credit institutions. In BE, no MTNs since CDs and CP can be issued with no limitation as regards maturity. In PT, no MTNs but a similar kind of security, named "cash certificates" (excluding corporate issues however).
Maturities	The situation is quite different depending on the country : – no restriction in BE (7 days minimum in practice), – minimum maturity from 1 day (FI, FR) or 1 week (ES) to 3 months (IT), – upper limit of 1 year in general but it can reach 3 years (ES) or even 5 years (IT, UK in some circumstances).	Lower limit maturity : - no limit (UK, BE) - 1 day (FI, FR) or 2 days (DE) 7 days (ES, IE) - 3 months (IT) - Upper limit maturity : - 1 year (IT, FI, FR, UK, IE) - 2 years (DE, PT) or 3 years (ES) - no limit (BE)	Very different situation depending on the country : - from 1 day to 7 years in FI (in practice from 1 to 7 years) - in UK, DE, IE and FR minimum maturity of 1 year; upper limit of 10 years in IE and 30 years in DE - minimum of 2 years in PT - minimum of 3 years in ES
Minimum amount	– no minimum amount : PT, IT, IE, – from EUR 1000 in ES (max. EUR 1 million) to EUR 5 million (DE) with many intermediate amounts: GBP 100 000 (UK), EUR 100,000 (FI), 150,000 (FR) and 250,000 (BE).	– no minimum amount: PT, IE – from EUR 1000 in ES to EUR 1 million, (GE) with manyintermediate situations : GBP 100,000 (UK), EUR 52,000 (IT), 100,000 (FI), 150,000 (FR),and 250,000 (BE). In DE, the programme must have a minimum of EUR 100 million (in exceptional cases: EUR 50 million)	- no minimum amount: PT, IE (in practice EUR 1 million), IT, GE - from EUR 1,000 in ES to EUR 150,000 (FR). - In UK, unlisted securities have a minimum denomination of GBP 100,000 as well as listed securities under 3-year maturity.

Issue price	In general, interest bearing. In some countries however papers are issued on a discount basis (ES, BE) or can be issued on a discount basis but it is a rare occurrence (GE, UK). In some countries, issuers are free to choose (IE, BE, FR).	Generally discount paper : DE, UK, ES. In BE, securities of less than 1 year are issued on a discount basis whereas securities of more than 1 year on interest-bearing basis (these are market practices). In IE, FR and PT, issuers are free to choose any possibility (discount, par, premium…)	Generally everything is possible. In the UK and PT, however, interest bearing is the most frequent.
Currency of issue	Any currency, unless exception (OECD in BE). EUR is the most popular currency.	Any currency, unless exception (OECD in BE).	Any currency, unless exception (OECD in BE).
Interest	Fixed or variable rate everywhere. In BE, index-linked rates are not allowed. In FR, when the remuneration varies according to an index not linked to a usual interbank market, money market or bond market rate, this index must be first declared to the NCB.	Fixed or variable rate (Euribor is quite common). In IT, issues in the form of promissory note. As regards FR, same comment as for CDs.	Fixed or variable rate, index-linked, structured, zero coupon… In PT, variable rate must be in connection with a reference rate defined in an Executive Order published by the Ministry of Finance. As regards FR, same comment as for CDs.
Award and withdrawal of visa	No visa except in ES where it is delivered by the CNMV. In FR, issuers without a presence in FR that do not have a rating are awarded a visa by the COB.	No visa except in ES where it is delivered by the CNMV and in IE where non-bank entities must apply to the NCB for an exemption. In FR, visa awarded by the COB to issuers that do not have a rating.	No visa except in ES where it is delivered by the CNMV. In FR, visa awarded by the COB to non-credit institution issuers and to credit institutions without a presence in FR that do not have a rating.
Rating	Most often CDs are not rated except in FI and FR. In the latter, rated CDs represent over 90% of the total outstanding amounts.	Generally speaking, rating is not compulsory but it is more and more frequent (UK, GE, IE, FR).	Generally speaking, rating is not compulsory but it is more and more frequent (UK, DE, IE, FR...)

Guarantee	No specific device. In FR, CDs may be guaranteed by a credit institution or an investment firm if this firm has financial links with the issuer (at least 20% of the capital).	Mandatory guarantee in IT if the issuer is not a company listed on a regulated market. Possible in many countries, which may sometimes (PT) ease the requirements in terms of balance sheet figures (stand-alone guarantees given by credit institutions). In FR, guarantees can be given by credit institutions, investment firms with financial links with the issuer or other entity authorised to issue CP provided that this firm has financial links with the issuer.	Generally possible but no details were available in the answers to the questionnaire. In FR, depending on the issuer, MTNs may be guaranteed according to the rules applicable respectively to CDs and CP.
Administra-tion and domiciling	Domiciliation by credit institutions, the issuer often being its own agent. In FR mandatory domiciliation with a credit institution or investment firm present in FR. The securities may be administered by the local central securities depository or international clearer.	Domiciliation by arrangers, issuing agents or other agent (credit institution) designed for this purpose. In FR, mandatory domiciliation with a credit institution or investment firm present in FR. The securities may be administered by local central securities depository or an international clearer.	Domiciliation by arrangers, issuing agents or other agent (credit institution) designed for this purpose. In FR mandatory domiciliation with a credit institution or investment firm present in FR. The securities may be administered by local central securities depository or international clearer.
Placement and trading	Placement by credit institutions (the issuer itself) or brokers (UK). Some countries insist on the weakness of the secondary market (GE, IE).	Placement by credit institutions. Usually the secondary market is negligible.	In some countries (DE, IE) the/a? secondary market exists.
Dematerialisatio n	CDs are mainly dematerialised except in IT and PT (some CDs are also not dematerialised in UK and IE).	Dematerialisation everywhere (although not complete in PT) except in IT and UK (in the latter it is planned).	Dematerialisation for new issues in ES. Both dematerialised and physical delivery in DE, PT and FI. Physical delivery in DE occuring.

Market supervision sanctions	No specific regulation in BE, DE, IT (banking supervision). Depending on the country, national central banks are involved (FI, FR, IE, PT) as well as securities commissions (UK, FI, ES). In FR, the NCB takes the measures necessary to ensure the proper functioning of the market (individual as well as "collective" measures).	No specific regulation in BE, DE, UK and IT. Securities commissions are often in charge of supervision (ES, FI and PT when public issues). In IE, the NCB is involved as far as credit institutions are concerned and in FR the NCB may suspend or prohibit issues by an issuer that does not comply with the provisions in force.	No specific regulation in DE, UK and IT. Securities commissions are often in charge of supervision (ES, FI and PT). In IE, the NCB is involved as far as credit institutions are concerned and in FR, the NCB may suspend or prohibit issues by an issuer that does not comply with the provisions in force.
Disclosure of information	Usually there are no legal obligations, although in practice issuers release an information memorandum. In FR, issuers must submit to the NCB a financial presentation dossier before the first issue and the dossier must be updated annually. In PT, credit institutions are required to give detailed information either before or after the issue to the NCB.	In most countries, issuers have to release a prospectus containing the main features of the programme and financial documents (annual report, interim report). The prospectus must be updated annually and each time an event occurs that might influence the creditworthiness of the issuer.	Information memorandum or prospectus in many countries. The prospectus must be sent to the NCB in PT before the issuance. In FR, issuers must submit to the NCB a financial presentation dossier before the first issue and the dossier must be updated annually.
Buy-backs by issuers	It is possible but it is very unusual, except in IT and FR (in FR reporting to the NCB on a monthly basis). In ES, it is not allowed and in PT it implies the redemption of the corresponding underlying deposit.	Possible in UK, GE, IE, PT, FI and FR, but rather unusual except in FR, where reporting to the NCB must be done on a monthly basis. Impossible in IT and ES.	Possible everywhere but in PT, only allowed 2 years after the issue date.
Early redemption and cancellation	Same comment as above. In FR, reporting to the NCB on a weekly basis.	Same comment as above. In FR reporting to the NCB on a weekly basis.	Possible everywhere but in PT, only allowed 12 months after the issue date.

Reporting requirements	Reporting requirements to NCBs for statistical purposes in UK and DE and for banking supervision in IT, PT, IE. Prudential reporting to FSA in UK and CNMV in SP. In FR, issuers provide the NCB with statistical information about the daily outstanding amounts and the characteristics of each issue.	*Reporting requirements to NCBs most often for statistical purposes. In PT, issuers have to publish on a regular basis the items defined in a Notice released by the NCB. In FR, issuers provide the NCB with statistical information about the daily outstanding amounts and the characteristics of each issue.*	Reporting requirements to NCBs in IE, UK, IT or to securities commissions in ES and IT, if securities listed. In FR, issuers provide the NCB with statistical information about the daily outstanding amounts and the characteristics of each issue. In DE, reporting requirements for statistical purposes.
Negotiable debt securities: regulated market (ISD) or not	Except in ES, the market for CDs is not a regulated market.	Except in ES, the market for CP is not a regulated market.	Many countries seem to regard MTNs as traded on a regulated market provided that the securities are listed. For FR and IE however the market for MTN is not regulated.

Annex 2 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 securites 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 banks.[19]

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 banks.[20]

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 strategict objectives, namely ensuring a Single Market for wholesale financial services, open and secure retail markets and state-of-the-art prudential rules and supervision.

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[19] *Number of panel banks as of 19 January 2001.*
[20] *Number of panel banks as of 19 January 2001.*

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 precense 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 3 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.