EUROPEAN CENTRAL BANK

EURO MONEY MARKET STUDY 2004

MAY 2005

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In 2005 all ECB publications will feature a motif taken from the €50 banknote.

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Executive summary

This fifth study on the structure and functioning of the euro money market is the result of a survey conducted by the European Central Bank and those national central banks that were members of the European System of Central Banks before 1 May 2004. The turnover data collected from banks cover the second quarters of 2003 and 2004. The analysis in this study also makes use of the data collected in previous surveys.

The aggregated turnover of the euro money market stagnated in the second quarter of 2004, after a strong increase in the second quarter of 2003. This development was, however, not homogenous across all market segments. After the increase in activity observed in all market segments in the second quarter of 2003, overnight interest rate, cross-currency and FX swaps recorded a fall in activity in the second quarter of 2004. Conversely, there was a rise in turnover in the unsecured, secured, other interest rate swap, forward rate agreement and short-term securities segments. The survey confirms the secured segment as the largest money market segment. Another notable development was the marked contraction in turnover in the overnight interest rate swap segment in the second quarter of 2004, after a strong increase in the second quarter of 2003. This development was probably linked to interest rate speculation, which was much stronger in 2003 than in 2004. The creation of a new benchmark (the EONIA Swap Index) by EURIBOR-ACI for the overnight interest rate swap market will probably further stimulate the development of this market segment.

Activity in the unsecured, secured, overnight interest rate swap and FX swap segments continued to be concentrated at very short-term maturities. Other interest rate and cross-currency swaps are instruments traded at longer maturities.

Regarding the structure of the different money market segments, overall the activity in the euro money market seems to have become less concentrated over the last years. Nevertheless, there are still large differences across market segments. The unsecured segment remains by far the least concentrated. The forward rate agreement, other interest rate swap and cross-currency swap segments continued to be highly concentrated, with the ten most active institutions holding in each case more than 70% of the market share.

One of the structural developments that can be observed with regard to money market products (e.g. short-term deposits, repos, EONIA swaps and FX swaps) is a further narrowing

of bid-offer spreads reflecting a further increase in liquidity in these market segments. As for the trading structure, in general the survey showed that electronic transactions continued to grow in most of the market segments (e.g. in the secured, interest rate swap and FX swap segments) in the second quarter of 2004. There was remarkable growth in the use of electronic trading systems in the secured market in the last two years. However, while electronic trading accounts for a very large share of total activity in this market, it remains marginal in most of the OTC derivatives markets (i.e. the forward rate agreement, overnight interest rate swap, other interest rate swap and cross-currency swap segments).

1. Introduction

In the second quarter of 2004, the European Central Bank and the 15 national central banks (NCBs) which were members of the European System of Central Banks (ESCB) before 1 May 2004 conducted, under the auspices of the Market Operations Committee of the ESCB, a quantitative and qualitative survey among banks in 14 countries regarding the euro money market. Based on the results of this survey, this study analyses the euro money market, following on from similar studies conducted for the second quarters of 1999, 2000, 2001 and 2002.[1] It aims to assess trends and developments in the integration and efficiency of the euro money market, using information derived from the 2004 survey and previous surveys. The 2004 survey covers data for the second quarters of 2003 and 2004. Each NCB selected a number of banks with a view to obtaining a representative coverage of money market activities. Altogether, a total of 124 banks participated in the survey, of which 3 were located in Belgium, 17 in Germany, 8 in Greece, 15 in Spain, 10 in France, 8 in Ireland, 10 in Italy, 5 in Luxembourg, 5 in the Netherlands, 7 in Austria, 16 in Portugal, 4 in Finland, 4 in Sweden and 12 in the United Kingdom. The methodological notes contained in the questionnaire can be found in Annex 1 of this study.

Compared with the previous surveys, two changes were made to the 2004 money market survey. For the first time, data on tri-party repos were collected. Tri-party repos were included as a separate asset class along with bilateral repos. Furthermore, in the qualitative part of the survey, a question about the share of transactions executed spot and forward was also added.

It should be stressed that the quantitative data were not obtained from the standard reporting systems of credit institutions. Collecting the data from a sample of credit institutions implies that the survey does not provide comprehensive information on transaction volumes in the euro money market. Instead, the purpose of this study is to highlight the main trends affecting the market structure. Therefore, this study neither assesses the overall size of the different segments of the euro money market, nor does it compare this money market with other major money markets, such as those of the United States or Japan.

[1] See the following ECB publications: "The impact of the euro on money and bond markets", July 2000; "The euro money market", July 2001; "Euro money market study 2001", December 2002; "Money market study 2002", November 2003.

It should also be noted that the number of reporting banks varies considerably from one market segment to another (between 38 and 120 banks per segment). Indeed, not all banks are active in each segment of the money market and therefore not all banks filled in the questionnaire for each individual segment. However, even if the reporting panels for the different segments do not include the same number of banks, a (rough) comparison between the various segments can still be made. This assumes that the banks did not report volumes in a particular segment either because they do not have any activity in that segment or because their activity there is negligible. The number of banks participating in each of the successive annual surveys also varies considerably. To compare the findings with those of the previous surveys, only data contributed by a constant panel for each segment (i.e. only those banks that reported data for the money market surveys in 2000, 2001, 2002, 2003 and 2004) were used to analyse the different trends over the last five years.

Finally, in addition to the survey, other data sources have been used: the section on futures and options markets (Section 2.5) relies on data published by the Euronext-London International Financial Futures and Options Exchange (Euronext.liffe), while the section on the short-term securities market (Section 2.6) also draws on data from both ECB securities issues statistics and the Euroclear database.

2. Main trends in the different market segments

2.1 The euro money market in 2003 and 2004

Money market developments in the euro area in 2003 and 2004 occurred in an environment of declining and historically low interest rates.

In the second quarter of 2003 the euro money market yield curve was inverted and influenced by considerable uncertainty related to the high geopolitical tensions in the Middle East and the associated turbulence in oil prices and financial markets. The struggling global economy and the structural rigidities in the euro area itself translated into growing pessimism with regard to economic growth in the euro area. This, together with easing inflationary pressures, created expectations of a further interest rate cut by the ECB. The 12-month EURIBOR hit a low of 1.93% in mid-June 2003. At the same time, bond yields continued to decrease in the euro area and the 10-year German government bond yield recorded a low of 3.47%. The Governing Council lowered the key ECB interest rates in March and June 2003 by 25 and 50 basis points respectively, reaching 2.00%. At the same time, the Fed funds target rate was lowered to 1.00% in June 2003.

Between June 2003 and June 2004 monetary policy interest rates in the euro area remained unchanged, although interest rate expectations were subject to some fluctuations. At the end of the first quarter of 2004 the money market yield curve was slightly inverted, with long-term money market interest rates slightly below the ECB's minimum bid rate, indicating modest interest rate cut expectations. However, by the end of June 2004, the improving economic conditions in the United States and a respite in the appreciation of the euro gave rise to increasing rate hike expectations. Thus, the 12-month EURIBOR ended the second quarter at 2.43%, while the shorter end of the curve remained closer to the ECB's minimum bid rate of 2.00%.

The ECB introduced some changes to its operational framework, which came into effect starting from the main refinancing operation conducted on 9 March 2004. The maturity of the weekly main refinancing operation was shortened to seven days from the previously overlapping two-week operations, which were conducted weekly. Furthermore, from March 2004 onwards, new floating minimum reserve maintenance periods became effective. Since then, reserve maintenance periods have started on the settlement day of the main refinancing operation

following the Governing Council meeting at which the monthly assessment of the monetary policy stance is pre-scheduled. In addition, the change in the rate on the standing facilities is as a rule only implemented on the first day of the new maintenance period.

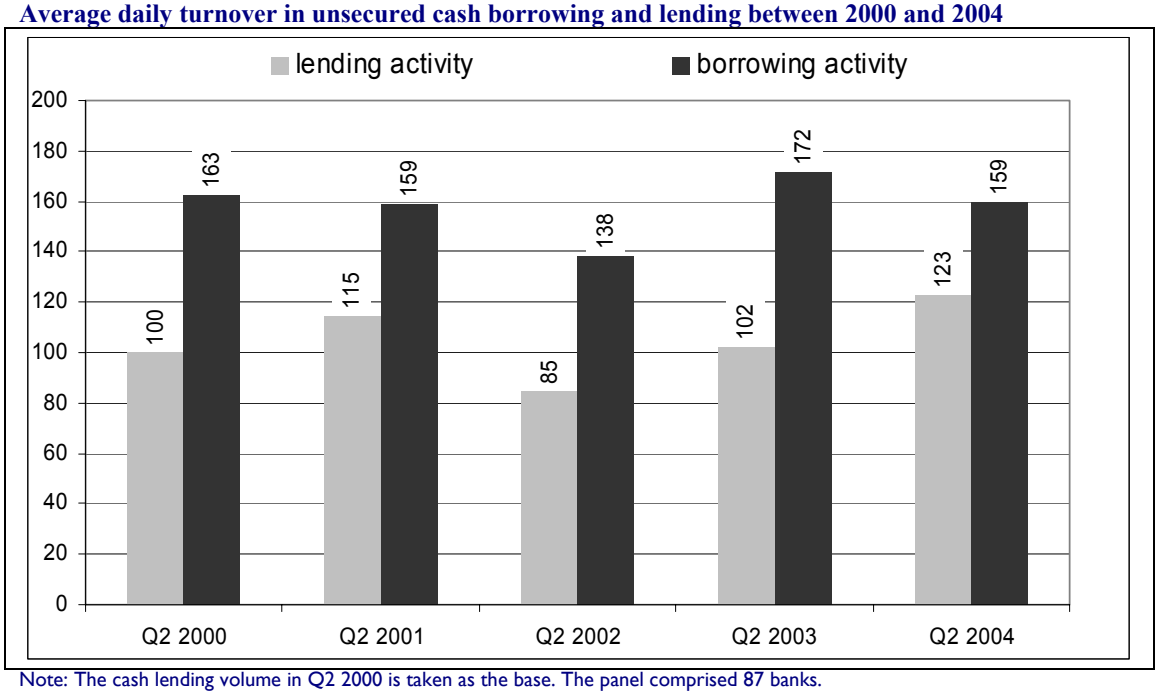
2.2 Developments in the unsecured market

2.2.1 Turnover analysis

A five-year comparison of turnover in the unsecured money market showed moderate growth (+7%) in trading volumes. A deeper analysis highlights some interesting phenomena behind the overall data. The moderate growth is the result of a large decline in market activity in the second quarter of 2002, followed by steady growth in the last two years. As indicated in the 2002 money market study, the environment of great uncertainty after the terrorist attacks in the United States on 11 September 2001 affected market activity negatively in 2002. Interviewed banks reported that their trading activity fell by 19% compared with 2001. The decline was more pronounced for lending activity (-26%) than for borrowing activity (-13%). Since the second quarter of 2002, activity on the unsecured market has experienced a relative recovery, with trading volumes returning to the daily turnover prevailing in 2001 (Chart 1).

Chart 1

Average daily turnover in unsecured cash borrowing and lending between 2000 and 2004



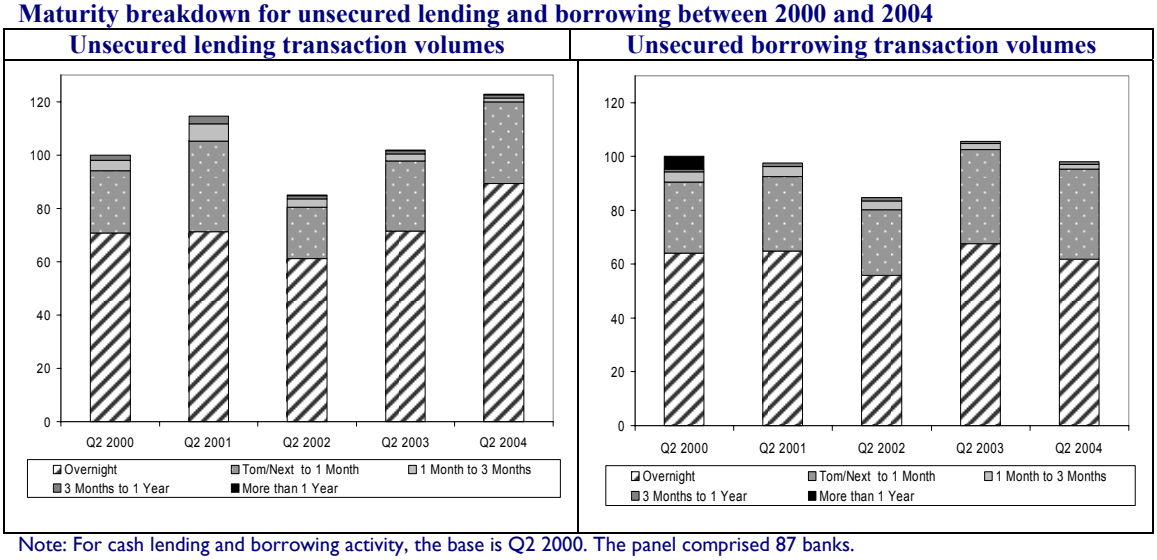
Note: The cash lending volume in Q2 2000 is taken as the base. The panel comprised 87 banks.

2.2.2 Maturity analysis

Chart 2 shows the evolution of the relative weight of each maturity band over the past five years, using the total volume of the second quarter of 2000 as the base value. The share of the shortest contracts (up to one month) was virtually unchanged over the last five years, representing more than 90% of the turnover. The overnight maturity alone accounts for more than 65% of total turnover.

Chart 2

Maturity breakdown for unsecured lending and borrowing between 2000 and 2004



Note: For cash lending and borrowing activity, the base is Q2 2000. The panel comprised 87 banks.

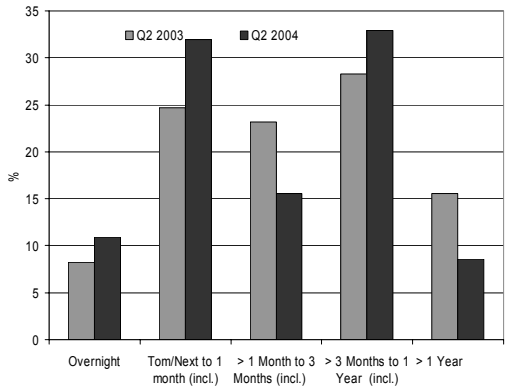
The prominent role of short-term maturities up to one month in the unsecured market is also confirmed by the analysis of maturity-weighted volumes. In the last two years (2003 and 2004), the relative weight of the overnight maturity was 11%, while the "tomorrow/next to one month" maturity band accounted for 30% of the overall volume (Chart 3).

The description of the unsecured market as an "overnight" market is a structural development that stems from the increasing focus of banks on capital consumption. As a consequence, interbank deposits are used only to adjust the liquidity position on a daily basis, while other instruments (such as overnight interest rate swaps, OIS) are more suitable for hedging or speculative positioning.

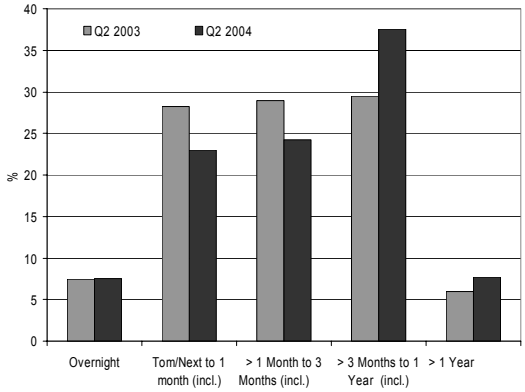
Chart 3

Maturity breakdown for (maturity-weighted) unsecured lending and borrowing in 2003 and 2004

Unsecured lending transaction volumes



Unsecured borrowing transaction volumes



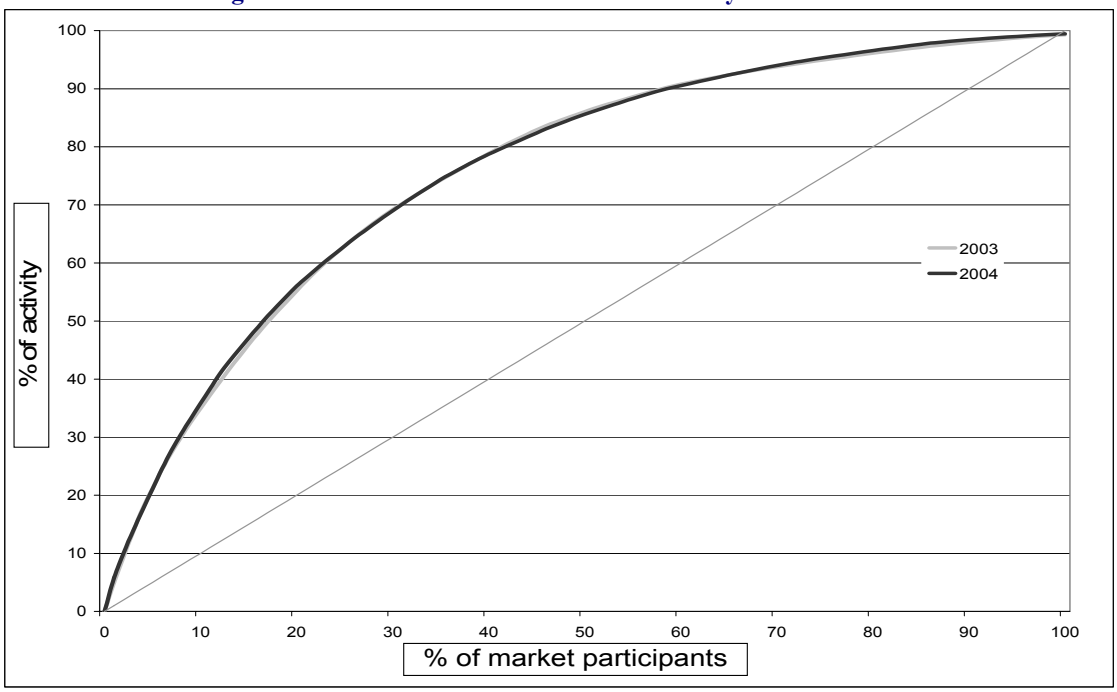
Note: The panel comprised 120 banks.

2.2.3 Market structure

In 2004 the degree of concentration in the unsecured market, shown by the Lorenz curve, was virtually unchanged compared with the previous year. The largest five players accounted for 21% of the total turnover, while the share of the largest 10 and 20 banks was around 35% and 55% respectively.

Chart 4

Lorenz curve showing the concentration of total unsecured activity in 2003 and 2004



Note: The panel comprised 120 banks.

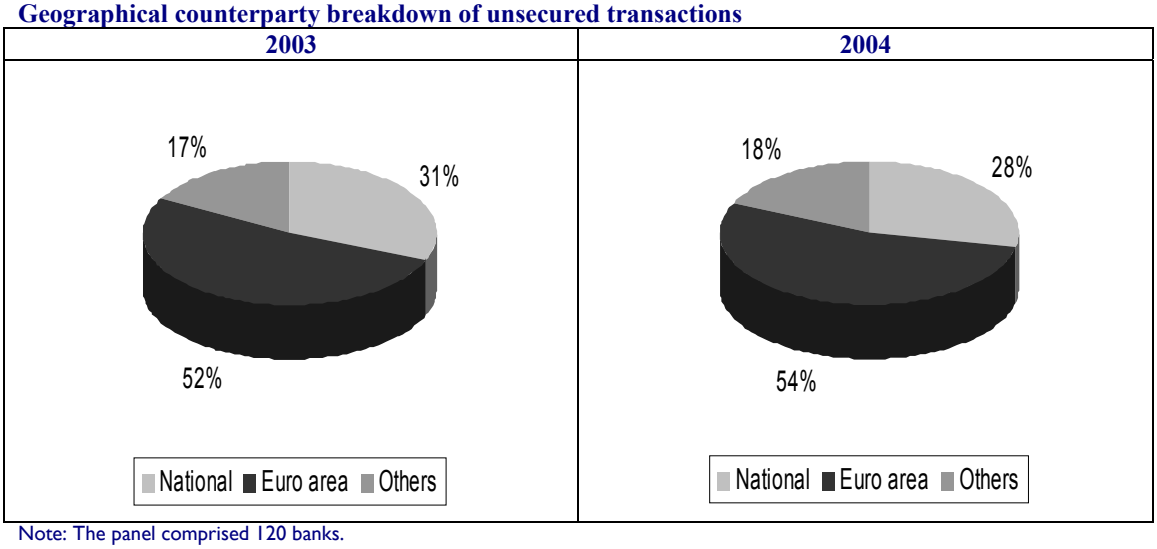
The qualitative survey confirms that a large majority of the banks interviewed consider the unsecured market as either very (58%) or extremely (16%) efficient in the euro area.

A majority of the respondents (54%) felt that the liquidity of the unsecured market had not changed. One-third said that the liquidity had slightly improved in 2004 compared with 2003.

The geographical counterparty breakdown shows that a significant percentage of the turnover (28% as shown in Chart 5) is traded between two national counterparties, while 54% is concluded between two euro area counterparties. This geographical "specialisation" is probably related to the main reason for using the unsecured market (i.e. adjusting the liquidity position) and to the preference of treasurers to trade with domestic counterparties, especially as in many countries the liquidity is redistributed to smaller banks by larger banks. Some banks think that the availability of credit lines could be another reason behind the large percentage of trades with national counterparties. The process of concentration of treasury activities at the home country branch is also limiting the need for liquidity adjustment operations between euro area counterparties and counterparties from the rest of the world.

Chart 5

Geographical counterparty breakdown of unsecured transactions



Note: The panel comprised 120 banks.

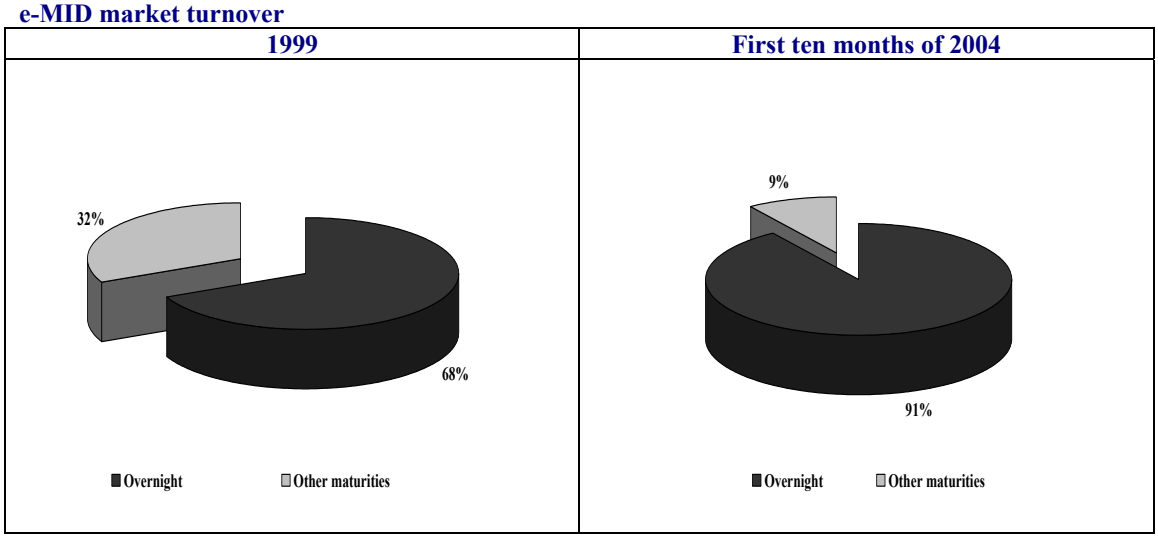
As regards the trading structure, no significant changes from previous years have taken place. Direct trading is still the most common way to perform transactions (58%), while voice brokers and electronic platforms represent respectively 25% and 17% of the market turnover.

2.2.4 Electronic trading

The concentration of trading in the overnight segment is also confirmed by e-MID data. E-MID is the most active electronic platform for trading on the unsecured market in the euro area. The share of the overnight maturity on this platform is even more significant than in the interbank deposit market. In 1999 the volume traded in the overnight maturity accounted for 68% of the total turnover (EUR 14.2 billion) on the e-MID platform, while in the first ten months of 2004 it accounted for 91% of total turnover (EUR 20.7 billion) (Chart 6).

Chart 6

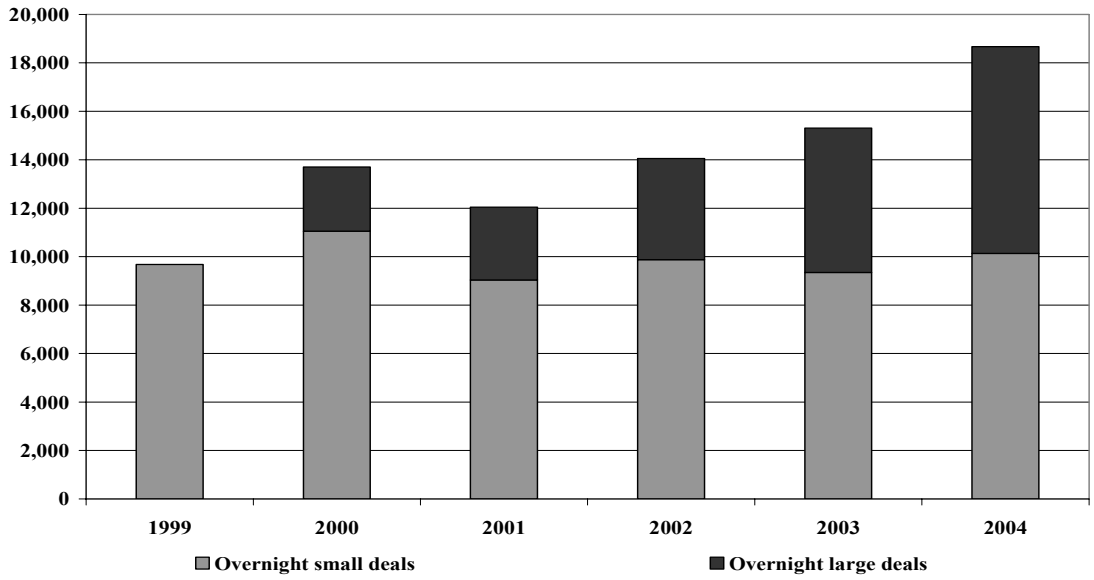
e-MID market turnover



The e-MID data also show that the share of large deals (i.e. with a minimum contract size equal to or greater than EUR 100 million) increased from 19% of the overall overnight trading activity in 2000 to 46% in the first ten months of 2004.

Chart 7

Daily trading volumes in overnight contracts on the e-MID market (EUR billions)



In the last two years, the Italian-based e-MID market has internationalised further. The number of non-Italian banks in the overall number of participating banks has increased from 54 to 66 and

these banks (from 16 countries) now account for a significant part of e-MID activity. These banks now represent around 30% of the number of banks trading on e-MID. Their share of the total market volume has doubled from 2002 to 2004, reaching around 40%. This may have also contributed to the growth of the large deal segment. It should, however, be noted that the participation in an electronic market such as the e-MID is particularly valuable for small and medium-sized banks, both in terms of more competitive price conditions and a wider range of counterparties. The big banks, usually acting as market-makers, could be discouraged from trading, as the narrowing of the bid-offer spreads reduces the market-makers' profits. According to some banks, this is the main obstacle preventing an electronic platform such as the e-Mid from becoming a standard platform for the interbank deposit market in the euro area.

2.3 Developments in the secured market

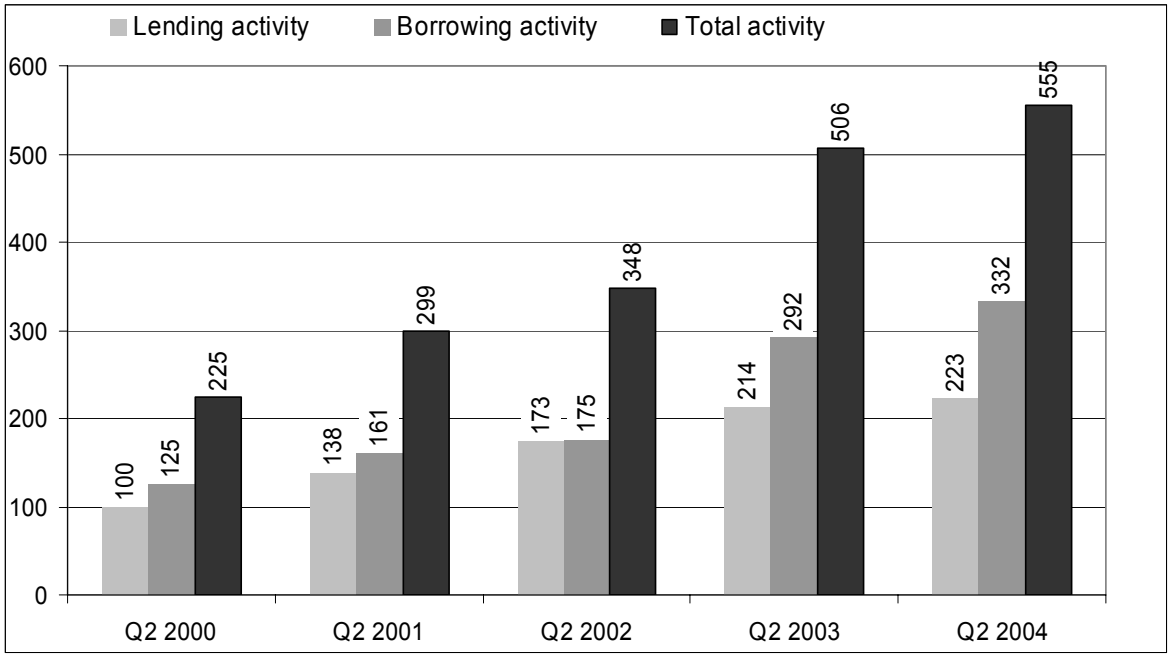
2.3.1 Turnover analysis

The survey confirms the upward trend in turnover in the secured market (Chart 8). Between the second quarter of 2000 and the second quarter of 2004,[2] overall activity in the secured market increased by 147%. Since 2000, reverse repo transactions (i.e. cash lending against securities) increased by a yearly average of 22%, while repo transactions (i.e. cash borrowing against securities) grew by a yearly average of 28%. The growth of the repo market in 2004 was, however, less significant than in the previous year. While the rate of growth was around 24% for reverse repos and 67% for repos from 2002 to 2003, the rate of growth from 2003 to 2004 was only around 4% and 14% respectively. One of the reasons for the lower growth rates is that the secured market has become a more mature market. Another factor is that 2003 was a year of robust growth in the secured market compared with other market segments (in particular the unsecured market) as banks tried harder to reduce risks in their balance sheets.

[2] For a common panel of 78 banks.

Chart 8

Average daily turnover in secured cash lending and borrowing between 2000 and 2004



Note: The cash lending volume in Q2 2000 is taken as the base. The panel comprised 78 banks.

The surveys for the period 2000-04 showed that borrowing activities for the panel of banks continued to be higher than lending activities. This development was, however, more pronounced in the second quarter of 2004 when repos exceeded reverse repos by 49%, as against 37% in the second quarter of 2003.

Possible explanations for the robust growth in the secured money market, some of which have already been put forward in previous studies, are:

- the ongoing securitisation/disintermediation process, in particular the pattern of growth in the underlying securities markets in Europe;
- the need to limit credit risk exposures and constraints resulting from capital adequacy requirements;
- bank treasurers' growing desire to maximise returns on their securities holdings (more specifically their return on assets);
- the increasing integration of this market segment in the euro area, as demonstrated in the qualitative part of this survey; and
- a wider and more accepted use of tri-party repos as a means of reducing settlement problems.

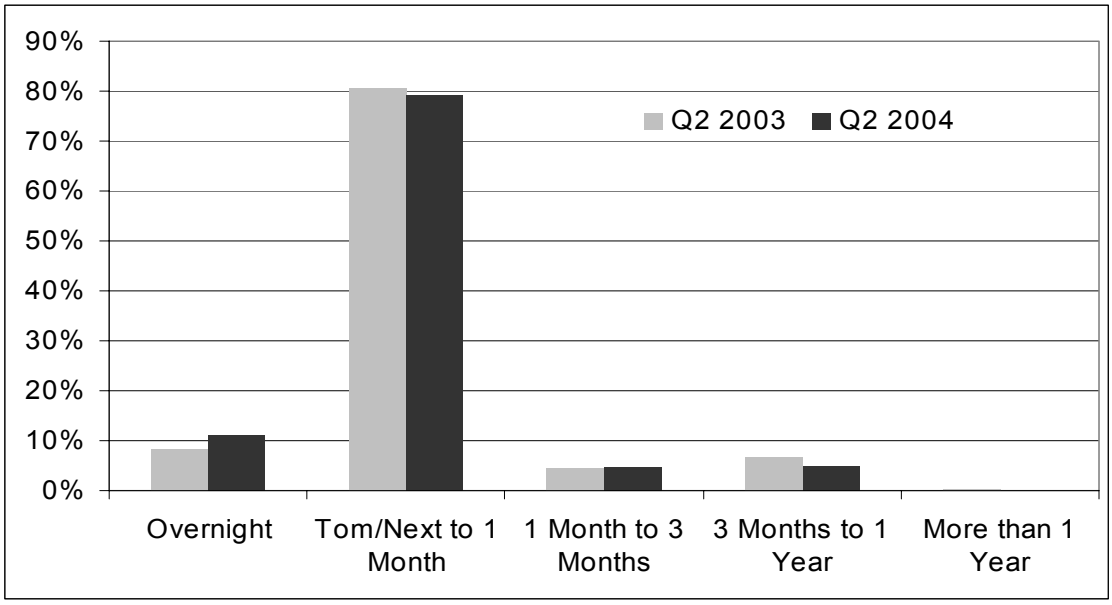
The survey of the European Repo Council (ERC) of June 2004 also underlined the continuous and robust growth of the secured market. Since June 2001, the ERC has been conducting semi-annual surveys of the European repo market. The institutions that participated in the June 2003 and June 2004 ERC surveys reported in June 2004 growth in outstanding repos of around 15% year on year, similar to the growth rate found in the 2004 euro money market survey.[3] Annex 2 compares the characteristics of the two surveys.

2.3.2 Maturity analysis

A breakdown by maturity shows that for both repo and reverse repo transactions, turnover was concentrated at the short end of the yield curve. For the sample of 94 banks that reported data in the second quarter of 2004, overnight transactions accounted for 11% of overall secured activity (reverse repos and repos), the maturity band "tomorrow/next to one month" for 79% and maturities over one month for 10% (Chart 9).

Chart 9

Maturity breakdown for overall secured lending and borrowing activities in 2003 and 2004



Note: The panel comprised 94 banks.

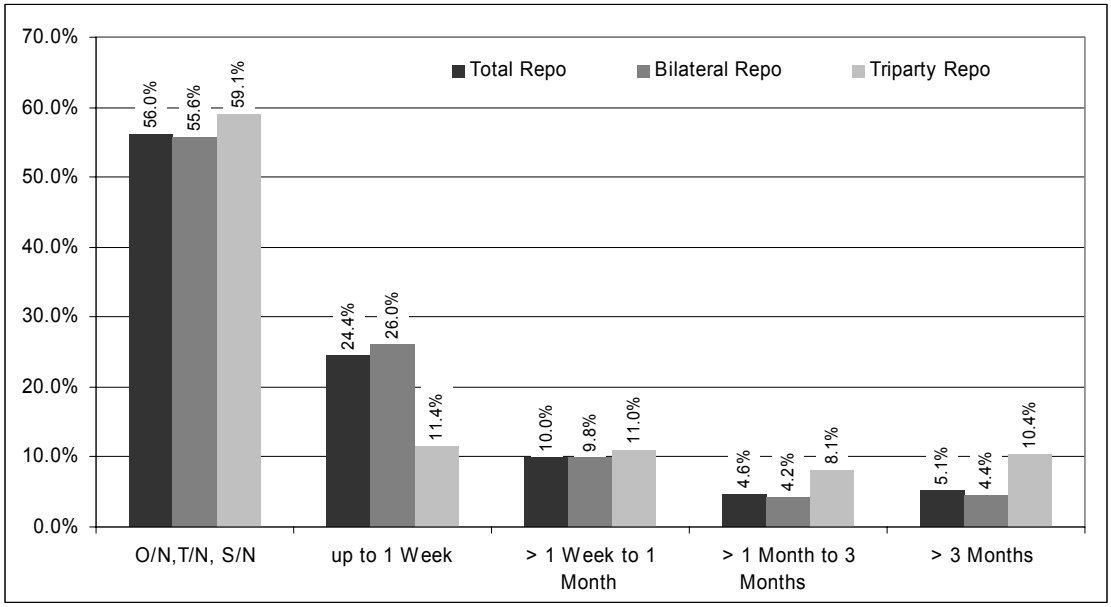
Compared with the second quarter of 2003, the maturity structure in the second quarter of 2004 was rather similar for both reverse repos and repos, with only the overnight maturity gaining a greater share of turnover. The slightly greater share of this maturity band could

[3] For the panel of 94 banks of the 2003-04 survey.

indicate that, among other factors, settlement considerations have become a little less of a reason to decide against secured transactions. This trend should also be seen in the light of the increasing overall importance of tri-party repos. Tri-party repos are more likely to be used for the shortest maturities (see Chart 10 and Section 2.3.4).

Chart 10

Maturity breakdown for repo activity in 2004

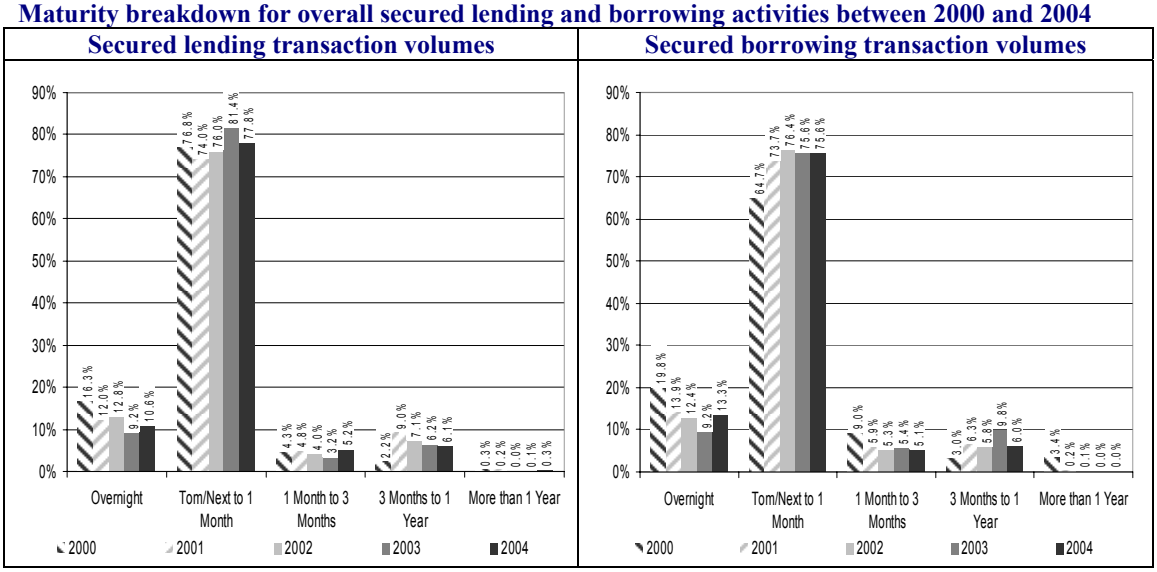


Note: The panel comprised 94 banks.

However, a comparison of the maturity structure between 2000 and 2004 shows that no fundamental structural changes have occurred for both reverse repo and repo transactions (Chart 11).

Chart 11

Maturity breakdown for overall secured lending and borrowing activities between 2000 and 2004



Note: The panel comprised 78 banks.

A historical analysis confirms the clear preference for the maturity band "tomorrow/next to one month" in both reverse repo and repo business. The share of overnight business in repo and reverse repo activity decreased from the second quarter of 2000 to the second quarter of 2003, but this trend reversed itself in 2004 (Chart 11). The maturity band "tomorrow/next to one month" remained the most traded.

A comparison between this study and the ERC study concerning the maturity structure shows some discrepancies, probably stemming from the fact that the ECB survey is based on flows and initial maturities, whereas the ERC study focuses on stocks and residual maturities. Indeed, the ECB survey finds considerably more business with an initial one-business-day maturity (49% for cash lending and 61% for cash borrowing in 2004, each including "overnight", "tomorrow/next" and "spot/next"), whereas the ERC survey reports only a 17% share for this maturity for 2004.

2.3.3 Market structure

The feedback from the qualitative part of the survey shows that the majority of market participants deemed the secured market to be "significantly efficient". Market participants were more satisfied with market efficiency in 2004 than in the previous year. Respondents also indicated that market liquidity had improved slightly.

A geographical analysis of the collateral used in cash lending activity[4] reveals that, in the second quarter of 2004, 58% of the collateral used was issued by an entity located in the euro area (53% in the second quarter of 2003). National collateral was used in 38% of the transactions (40% in the second quarter of 2003). The corresponding figures for cash borrowing are different. In 2004, collateral was predominantly national. The share of national collateral amounted to 50% compared with 48% for euro area collateral.

The collateral used on the borrowing side reflects the fact that the setting up of an integrated repo market in the euro area remains a challenge. The remaining obstacles to integration lie, above all, in the diversity of the types of securities in the euro area, the fragmentation of the settlement infrastructure and the differences of legal frameworks. Although noticeable progress has been made, especially with the establishment of a single list of collateral eligible for the regular Eurosystem refinancing operations, it is still a slow and complex process. Initiatives like the Automated Daytime Bridge between the two international central securities depositories (ICSDs), Clearstream and Euroclear, are welcome. The Automated Daytime Bridge is an electronic communications link, which facilitates the efficient settlement of securities transactions between counterparties in Clearstream Banking Luxembourg and Euroclear Bank.

Moreover, on 17 March 2005, Eurex Repo in Frankfurt launched a new product called Euro GC Pooling.

Box 1

Euro GC Pooling

Euro GC Pooling is a secured money market instrument that offers a new solution for short-term collateralised funding. It is possible to trade internationally a general collateral basket including several thousand Eurosystem-eligible securities. It enables both domestic and international banks to use their free collateral more efficiently in short-term repo transactions via the existing Eurex Repo platform. Anonymous trading is ensured, with Eurex Clearing acting as central counterparty. The maturities initially include overnight, tomorrow/next and a so-called one-week tender contract (harmonised with the tender maturity of the main refinancing operations of the Eurosystem). This latter contract can be used by banks to optimise their management of liquidity and collateral and it allows them to directly reallocate excess tender liquidity obtained from the central bank via a repo with the same maturity. Euro GC Pooling

[4] For the panel of 94 banks of the 2003-04 survey.

offers a combination of an electronic repo trading system with an automated collateral allocation process. The trading, clearing, settlement and collateral process are fully integrated, facilitating the day-to-day use of overnight repos. Euro GC Pooling was initially launched in the German market-place and requires access to Xemac, the Clearstream Banking collateral management system. Xemac users can use one holding of collateral for both Eurosystem operations and for Euro GC Pooling, with the advantage of reducing clearing and settlement costs.

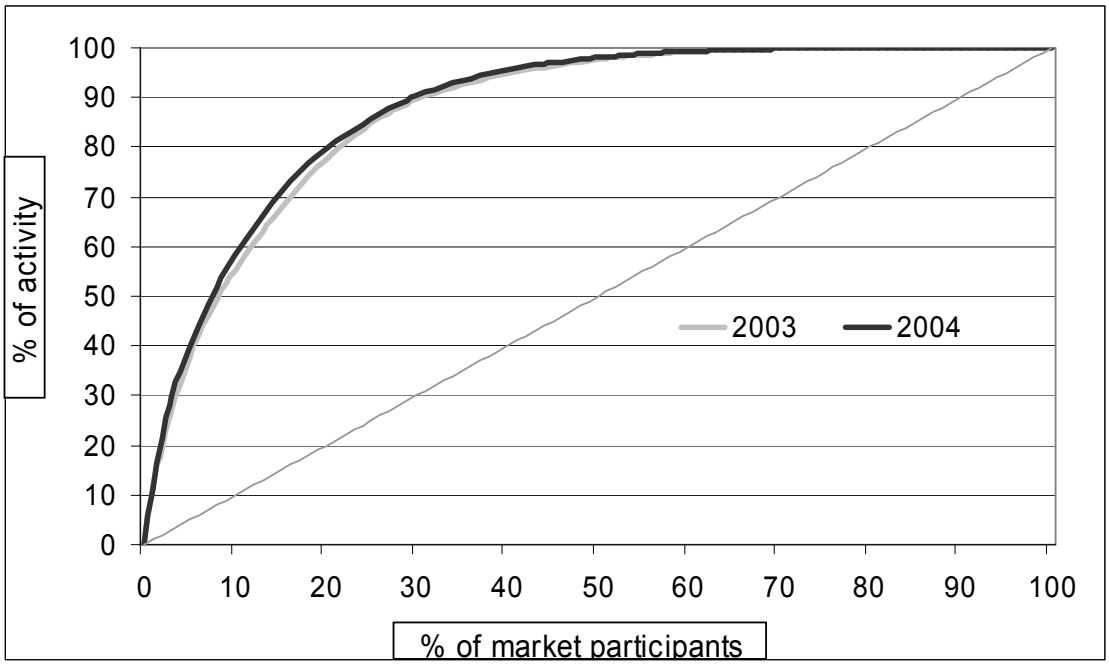
According to the qualitative part of the survey, the geographical counterparty analysis for cash lending and borrowing activities shows that 38% of counterparties are domestic, 42% of the deals are concluded between counterparties from two different euro area countries, and for 20% of the deals only one party to the transaction is located in the euro area.

With regard to the trading structure, the qualitative part of the survey showed that 42% of repo transactions were executed via electronic platforms (the leading platforms are Broker Tec, Eurex Repo and MTS), and that voice brokers and direct execution each accounted for around 29% in 2004. Compared with the second quarter of 2003, both electronic platforms and voice brokers gained market share, with the latter growing more strongly (by 5%) than electronic platforms (by 2%).

The concentration of secured business (for both reverse repos and repos) increased slightly in 2004 compared with the previous year (Chart 12). In the second quarter of 2004, the five largest counterparties in the market accounted for 40% of total turnover (compared with 38% in 2003), the ten largest for 58% (55% in 2003) and the 20 largest for 80% (78% in 2003). The June 2004 ERC study revealed that the banks which are responsible for the bulk of turnover are also the most active in tri-party repos.

Chart 12

Lorenz curve for total secured money market activity in 2003 and 2004



Note: The panel comprised 94 banks.

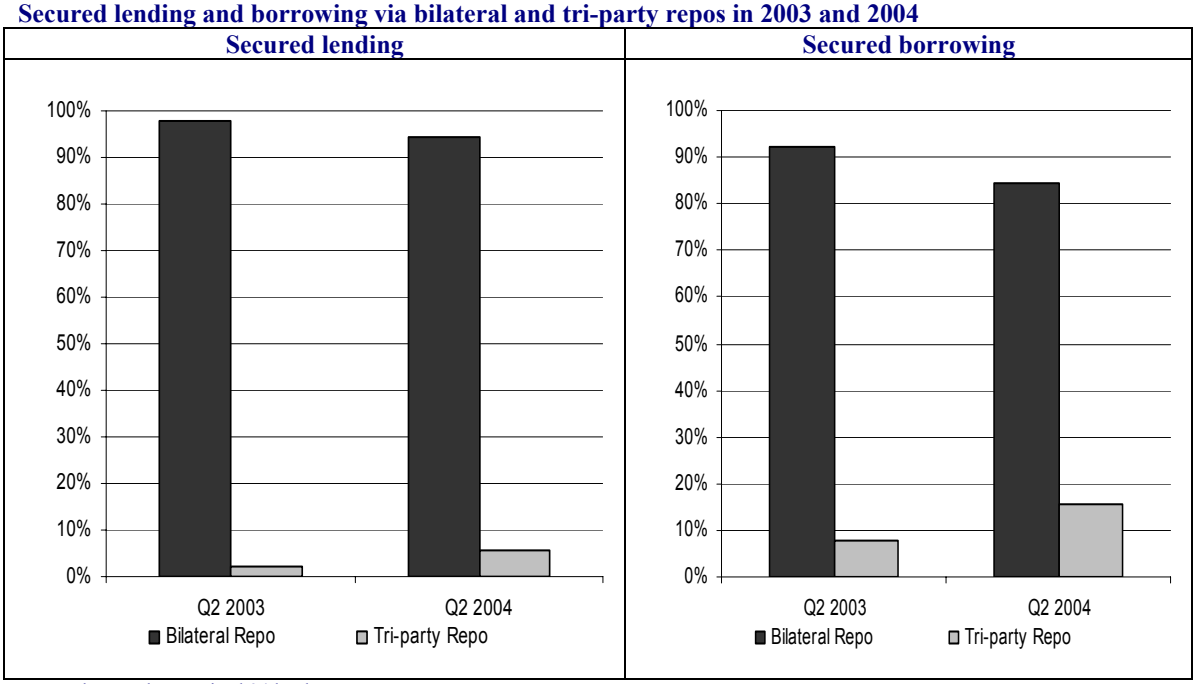
2.3.4 Tri-party repo

For the first time, the 2004 survey investigated tri-party repos[5] as part of the secured business. In 2004 the overall tri-party repo business grew strongly versus 2003, rising by 173% for reverse repo transactions and by 125% for repo transactions. The share of tri-party repos in total reverse repo activities rose from 2% in 2003 to 5% in 2004 and, in the case of repo activities, from 8% to 15% (Chart 13). It should be borne in mind that only one in five banks that reported data on the secured market reported turnover in tri-party repos.

[5] A tri-party repo is a repo that involves a third party, commonly a custodian bank or an ICSD acting as an agent to exchange cash and collateral for one or both of the other two counterparties.

Chart 13

Secured lending and borrowing via bilateral and tri-party repos in 2003 and 2004



Note: The panel comprised 94 banks.

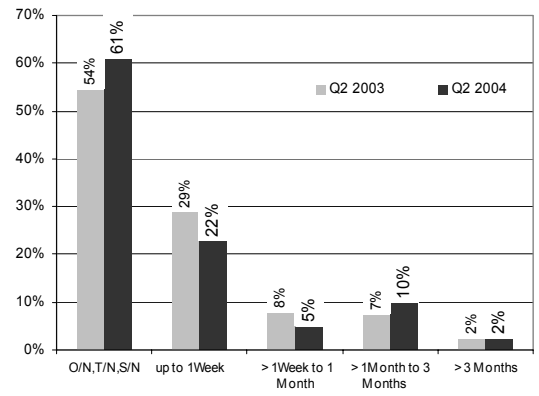
The rise in tri-party repo activity over the last two years is confirmed by the June 2004 ERC survey. According to this survey, 11% of total outstanding business was settled through tri-party repo arrangements, compared with 6% in June 2003. However, it should be added that one institution accounted for most of the growth in tri-party repo activity in 2004.

There was a strong concentration of tri-party repos at short-term maturities (between overnight and one week). In 2004, 71% of the deals were performed in this maturity band. The maturity analysis also shows a focus on maturities over three months, which is mainly due to the fact that tri-party agreements allow for a switching of collateral in transactions with longer maturities (Chart 14).

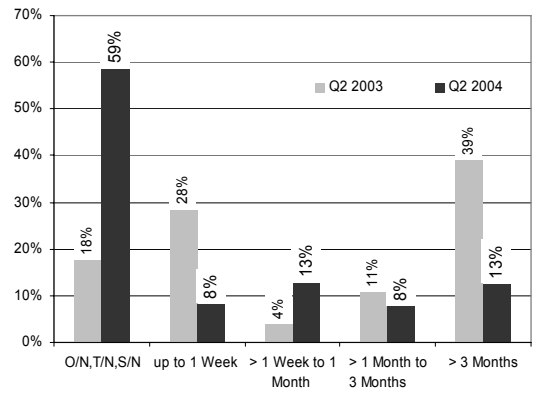
Chart 14

Maturity breakdown for tri-party repo transactions in 2003 and 2004

Secured cash lending transactions



Secured cash borrowing transactions



Note: The panel comprised 94 banks.

The main reasons for a wider use of tri-party repos are:

- they reduce settlement problems and costs;
- the market in the shortest maturities (overnight, tomorrow/next, spot/next) is slightly more liquid for tri-party repos than for bilateral repos;
- the increasing need for financial institutions to refinance assets using other means than plain-vanilla instruments (including asset-backed securities); and
- they are an additional option for securing liquidity.

2.4 Developments in the OTC derivatives markets

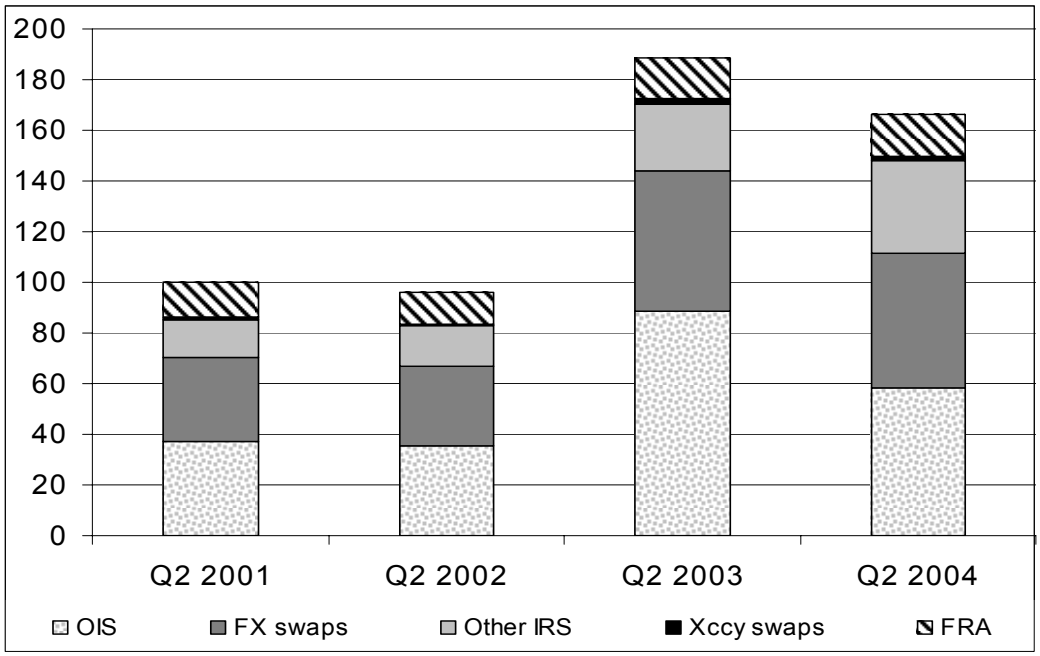
2.4.1 Turnover analysis

Turnover data were collected on the following euro-denominated OTC derivatives market segments: the interest rate swap market, comprising overnight interest rate swaps (OIS) and other interest rate swaps (other IRS); forward rate agreements (FRAs); and derivative instruments linked to the foreign exchange market, comprising foreign exchange swaps and outright forwards (FX swaps and FX forwards),[6] and cross-currency swaps (Xccy swaps).

6 In the following section, the "FX swap and FX forward" segment will be referred to as the "FX swap" segment.

Chart 15

Developments in market shares of the various swap market segments



Note: This chart is based on the volumes reported by a sample of banks for Q2 2001, Q2 2002, Q2 2003, Q2 2004 (the Q2 2001 volume is taken as the base).

The reported volumes for the sample of banks that reported data from 2001 to 2004[7] show some consolidation in 2004, after the sharp increase in 2003. The main factor driving this trend was the development of the OIS market.

In 2004 the OIS and FX swap segments were of similar magnitude (representing 35% and 32% of the total volume respectively). While the share of the FX swap segment has remained quite stable since 2001 (at around 30%), the share of the OIS segment increased sharply in 2003 (to 47% from 37% in 2002), before falling back to 35% in 2004.

After having lost share in 2003 (falling to 14% from 17% in 2002), the other IRS segment regained market share in 2004 (which rose to 22% of the total volume).

The FRA segment's share remained at around 10% of the total OTC derivatives market volume in 2004. The volume of the cross-currency swap segment continued to be very modest, accounting for only 1% of the total volume.

The considerable fall (34%) in the volume of the OIS segment in the second quarter of 2004, after the very sharp rise seen in the second quarter of 2003 (150%), was probably linked to the

7 Not 2000, since FRAs were not included in the first euro money market study.

stronger expectations of short-term interest rate changes in 2003 than in 2002 and 2004. The OIS is indeed the main trading instrument for speculating on and hedging against interest rate movements. While the key ECB interest rates remained unchanged in the second quarters of 2002 and 2004, the ECB cut the MRO minimum bid rate by 50 basis points to 2.00% in June 2003. Another explanatory factor for the rise in OIS activity in 2003 (although some market participants doubt that it had a significant impact) could be the introduction of EONIA futures on Eurex in January 2003 and on Euronext.liffe in February 2003.

After a sharp rise in 2003 (76%), the FX swap market volume stabilised in 2004. This is in line with the finding that a pick-up in activity on the foreign exchange market has occurred since 2001, as reported in the BIS 2004 Triennial Central Bank Survey on foreign exchange and derivatives market activity. The FX swap volume has risen by 58% since 2001.

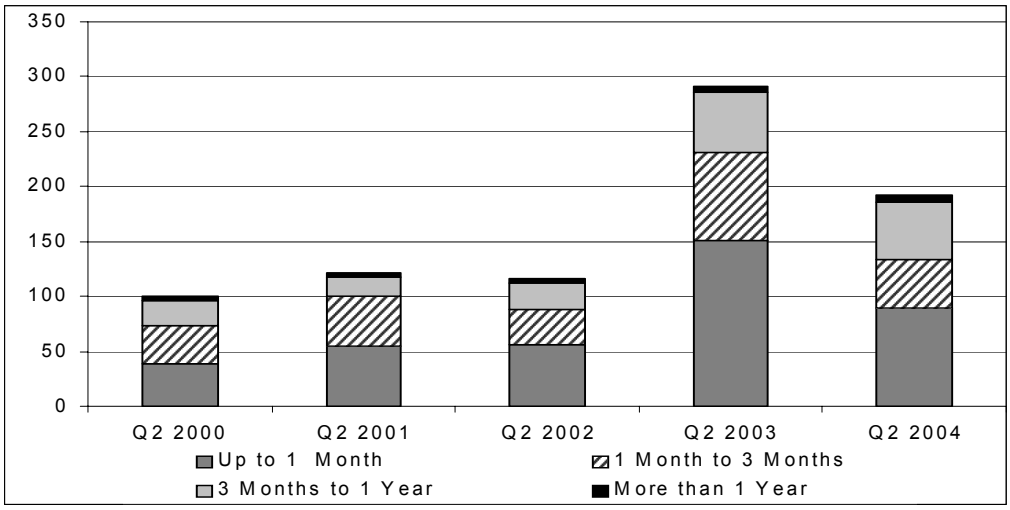
The cross-currency swap volume decreased by about 30% in 2004, after a very sharp rise in 2003 (162%). This trend was probably linked to the issuance activity in the euro bond market (with the BIS Quarterly Review showing an increase in issuance activity in the second quarter of 2003 and a lower level of issuance in the second quarter of 2004). Cross-currency swaps are often used to convert the flows related to a bond issue in one currency into another currency. Overall, the volume in this segment remains very modest, however, as it is a rather specific and complex market.

2.4.2 Maturity analysis

2.4.2.1 The overnight interest rate swap market (EONIA swap market)

Chart 16

Developments in the OIS segment between 2000 and 2004



Note: The Q2 2000 volume is taken as the base. The panel comprised 64 banks.[8]

As already mentioned, after rising by 150% in 2003, the OIS volume fell by 34% in 2004. The "up to one month" maturity band explained this development, with a 166% rise in volume in 2003 and a 40% fall in 2004. The share of this segment rose from 48% in 2002 to 52% in 2003, before falling back to 47% in 2004. The temporary move to shorter maturities in 2003 was also reflected in the evolution of the average maturity, which dropped to 75 days in 2003, compared with around 90 days in 2002 and 2004. This shift was probably linked to the speculation about an imminent change in ECB interest rates in 2003.

The more detailed 2004 data[9] showed a shift in market share from the "one week to one month" segment (whose market share fell from 43% in 2003 to 28% in 2004) to the "up to one week" segment (whose share, despite the overall shift to longer maturities in 2004, rose from 15% to 18%). Given that banks also use the OIS market for hedging their liquidity position,[10] this relative strength of the "up to one week" segment may be linked to the shortening of the

8 "Up to one month" (only for 2000), "up to one week" and "one week to one month" (from 2001 onwards).

9 The 2004 survey split the "up to one month" maturity band in two: "up to (and including) one week" and "one week to one month".

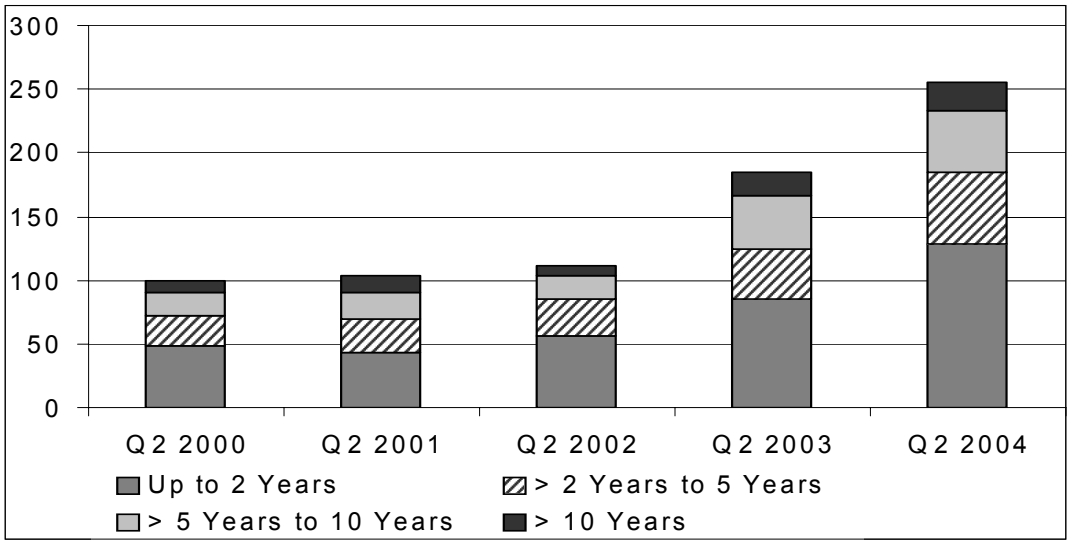
10 The use of EONIA swaps in connection with the Eurosystem's main refinancing operations was explained in Box 1 of the "Euro money market study 2001".

maturity of the Eurosystem's main refinancing operations from two weeks to one week in March 2004.

2.4.2.2 Other interest rate swaps[11]

Chart 17

Developments in the other IRS segment between 2000 and 2004



Note: The Q2 2000 volume is taken as the base. The panel comprised 74 banks.

The volume of the other IRS segment steadily increased over the past five years, with growth being mainly driven by the "up to two years" segment (or rather by the "up to one year" segment, as is shown by the more detailed 2003-04 survey data). This segment remained by far the largest (representing 50% of the total volume in 2004).

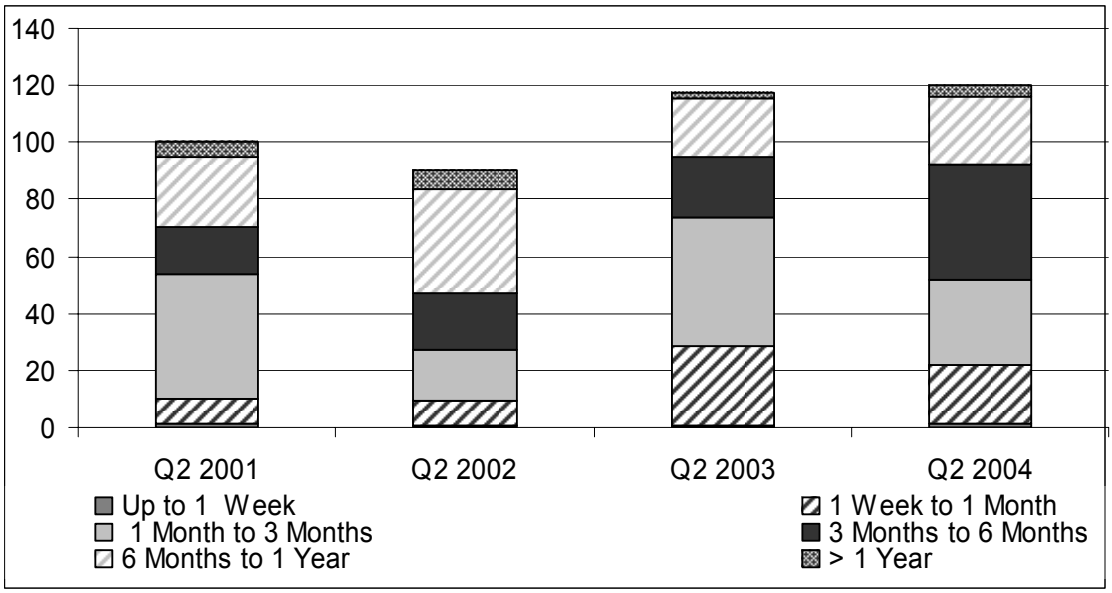
The main development in the maturity structure since 2002 has been that the "two years to five years" segment lost some market share in favour of longer maturities. The shift to longer maturities in 2003 is also illustrated by the trend in average maturity, which rose from 2.5 years in 2002 to above 4 years in 2003 and 2004.

[11] Interest rate swaps excluding the overnight interest rate swaps

2.4.2.3 FRAs

Chart 18

Developments in the FRA segment between 2001 and 2004



Note: The Q2 2001 volume is taken as the base. The panel comprised 42 banks.

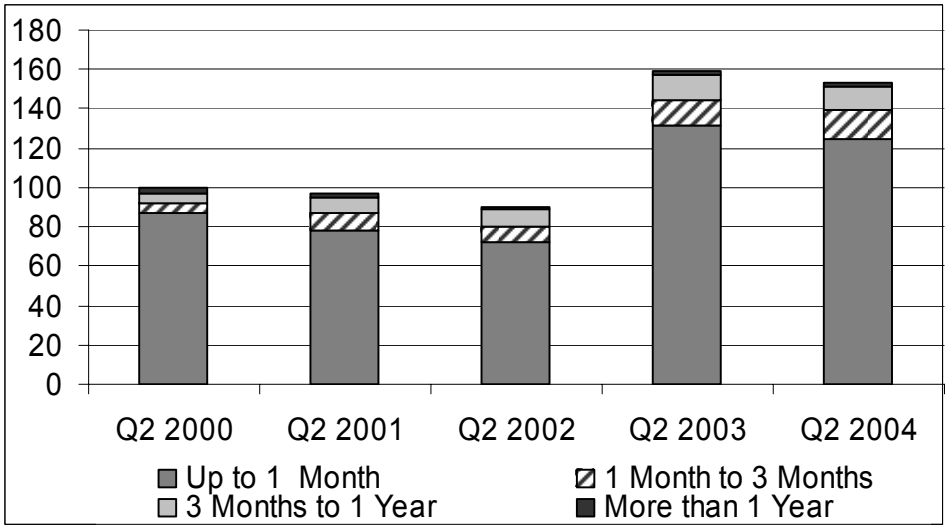
The volume of the FRA segment remained more or less at the same level in 2004, after having risen by 31% in 2003.

The rise in the 2003 volume was mainly driven by the shorter maturities such as the "one week to one month" and the "one month to three months" segments, whose volumes rose by 225% and 155% respectively compared with 2002. In 2004, however, the volumes of these segments receded by around 30%. These two segments together still represent 42% of the overall turnover. The average maturity shows a similar trend, falling from 149 days in 2002 to 108 days in 2003 and then rising to 122 days in 2004.

2.4.2.4 FX swaps

Chart 19

Maturity breakdown for the FX swap segment between 2000 and 2004



Note: The Q2 2000 volume is taken as the base. The panel comprised 76 banks.

As already mentioned, the volume of the FX swap segment stayed more or less at the same level in 2004, after having increased sharply by 76% in 2003.

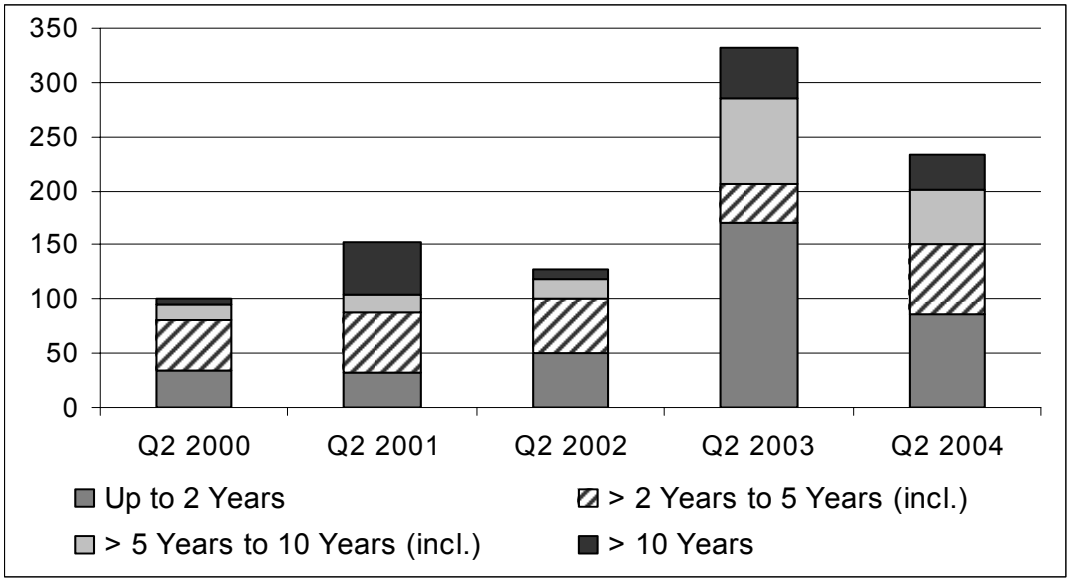
The maturity structure has changed relatively little over the past few years. The "up to one month" segment, which accounted for 82% in 2004,[12] remains by far the largest. The average maturity declined steadily from 33 days in 2001 to 26 days in 2004.

[12] Using the more detailed data from the 2003-04 survey, it turns out that the bulk of the volume (about 70% of the total) is in the "up to one week" segment.

2.4.2.5 Cross-currency swaps

Chart 20

Maturity breakdown for the cross-currency swap segment between 2000 and 2004



Note: The Q2 2000 volume is taken as the base. The panel comprised 38 banks.

As already noted, the 29% decrease in cross-currency swap volume in 2004, after the sharp 162% rise in 2003, was mainly linked to developments in issuance activity.

The sharp rise in 2003 was driven by an increase in all maturity bands, except the "two to five years" segment, which actually decreased by 27%, causing its share to fall sharply from 39% in 2002 to 11% in 2003. However, in 2004 part of this increase was reversed and the "two to five years" segment recovered market share, which rose to 28% of total cross-currency swap volume in 2004. This resulted in a maturity structure which was, on balance, quite similar to that of 2002. Nevertheless, the average maturity gradually recovered over the past two years, rising to five years in 2004, after having fallen sharply from seven to four years in 2002. The "up to two years" segment remained the largest segment in 2004, with a share of 37% of total cross-currency swap volume.

2.4.3 Market structure

As regards efficiency, the 2004 study confirmed the findings of the 2002 study. Participating banks continue to regard the OIS and the IRS markets as the most efficient segments, followed by the FX swap and FRA segments. The cross-currency swap segment continues to be perceived as the least efficient segment of the OTC derivatives market. Possible explanations for this, as

already mentioned in the 2002 study, are the lower number of banks actively participating in this market segment, the limited number of market-makers and the complexity of the cross-currency product, which is a mixture of a foreign exchange product and an interest rate product.

With respect to the liquidity of the various OTC derivatives market segments, participating banks were of the opinion that it had remained the same over the past few years.

A geographical counterparty analysis shows that around 50% of the OTC derivatives market volume was conducted with euro area counterparties (slightly more than in 2002). Around 20% of the volume was carried out with national counterparties and 23-33% with other counterparties. It is no surprise that the highest proportion of transactions with other counterparties was recorded for the FX swap market, given the status of London as the most active foreign exchange trading centre, as confirmed by the BIS 2004 Triennial Central Bank Survey on foreign exchange and derivatives market activity.

Cross-currency swap and to a lesser extent IRS transactions were mainly done directly (70% and 58% respectively), while FRA and OIS transactions were more often executed through voice brokers (51% and 55%, which was more than in 2002). FX swaps were mainly done directly (40%), but transactions through voice brokers (34%) and electronic brokers (26%) were also significant. Over the past few years electronic broking does not seem to have gained much market share. The share of electronic trading remained very low for OTC derivatives, with the exception of FX swaps.

As regards concentration, the 2004 money market survey data show that the activity in euro OTC derivatives remained quite concentrated. While in 2003 concentration increased somewhat in the FX swap and cross-currency swap segments, it decreased to some extent in 2004. Compared with 2002, concentration decreased considerably in the FRA and cross-currency swap segments. In 2004 concentration was the lowest for the OIS and FX swap segments.

Table: Concentration for OTC derivatives in Q2 2004

	OIS	Other IRS	FRAs	FX swaps	Cross-currency swaps
Top 5 banks	42%	62%	57%	38%	52%
Top 10 banks	62%	79%	78%	64%	75%

Box 2

EONIA Swap Index

Since the introduction of the euro, the EONIA swap market has developed rapidly. This has led to an increasingly homogenous and integrated swap market in the euro area. The potential development of new products derived from the EONIA swap may profit from the creation of a benchmark. The EURIBOR-ACI (sponsored by the European Banking Federation, FBE) has therefore promoted the creation of a new index, the EONIA Swap Index.

This index is expected to go live in the second quarter of 2005. Like the EURIBOR and Eurepo, the EONIA Swap Index will be introduced under the umbrella of the FBE. As a new derivative benchmark for money market derivatives, it will complete the range of the already existing benchmarks for the unsecured (EURIBOR) and secured (Eurepo) cash markets.

The EONIA Swap Index will be the mid-market rate, at which EONIA swaps are quoted between prime banks, which actively provide prices in the EONIA swap market. It will be fixed on a daily basis and quoted on an actual/360 day count. The index will be calculated at 16.30 C.E.T. to three decimal places on every TARGET business day. The range of quoted maturities will be 1, 2 and 3 weeks and 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12 months.

The new index could promote the development of the swap market in three ways:

- The index will serve as a controlling and valuation tool. It will set the basis for market conformity checks and allow banks and their clients, like money market funds, to run their revaluation against an official reference rate. The fixing time of 16.30 C.E.T. ideally supports this function.
- The new index will lead to new product development and market enhancements. A new EONIA swap FRA product has already been planned. Here, two counterparties are contracting an EONIA swap rate for an agreed period and notional amount for a future date. Two value days before the starting date of the EONIA swap, this contract will be fixed against the EONIA Swap Index. The contract will be settled in cash. Its settlement amount will be calculated from the difference between the agreed rate and the actual index. No EONIA swap position will result from the settlement of this deal. The new index will also be used as a reference rate for longer-dated interest rate swaps. A revival of the very active French TAM (Taux Annuel Monétaire) swap market is thinkable. Also, the basis swap market is expected to see additional flow volumes resulting from a precise basis perception of the market participants.
- Finally, the new index will serve as a benchmarking tool for the derivatives markets similarly to the EURIBOR and Eurepo indices at the short end of the European yield curves.

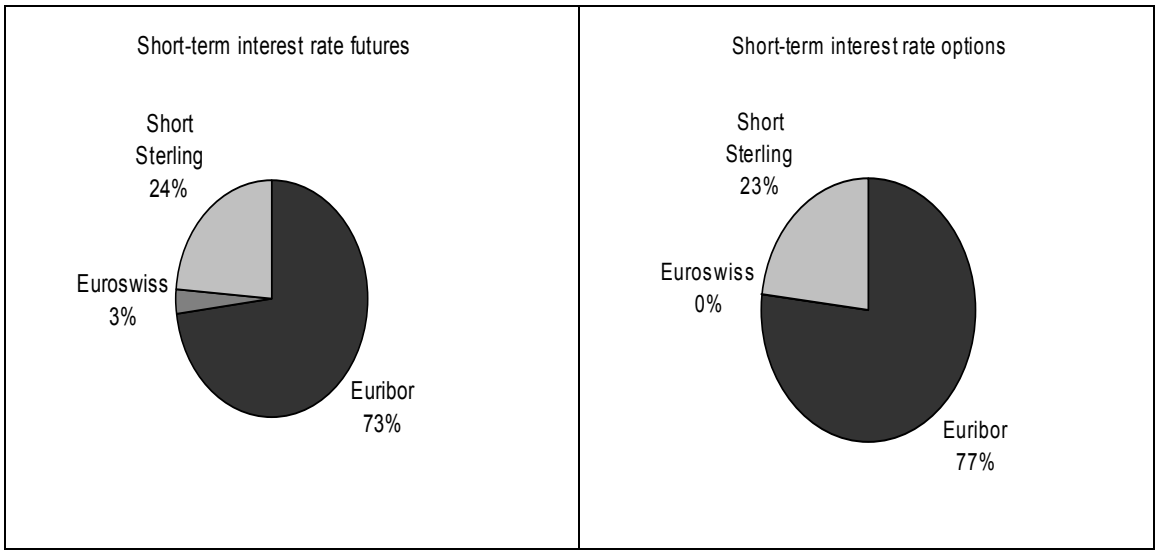
2.5 Developments in the short-term interest rate futures and options markets

The activity on the euro futures and options markets increased at a slower pace in 2004: it went up by 13% during 2004, compared with a 38% rise in 2003, according to data published by the Euronext-London International Financial Futures and Options Exchange (Euronext.liffe). The slowdown in the growth rate is probably related (as in 2002 when it grew by 16%) to market expectations of unchanged interest rates for most of 2004.

The number of EURIBOR contracts traded on Euronext.liffe increased by 16%, as in 2002. The growth rate was 30% in 2003 and 56% in 2001. In 2004, the volumes traded on EURIBOR markets were 4.5 times greater than in 1999.

Chart 21

Breakdown by volume of short-term interest rate futures and options in 2004



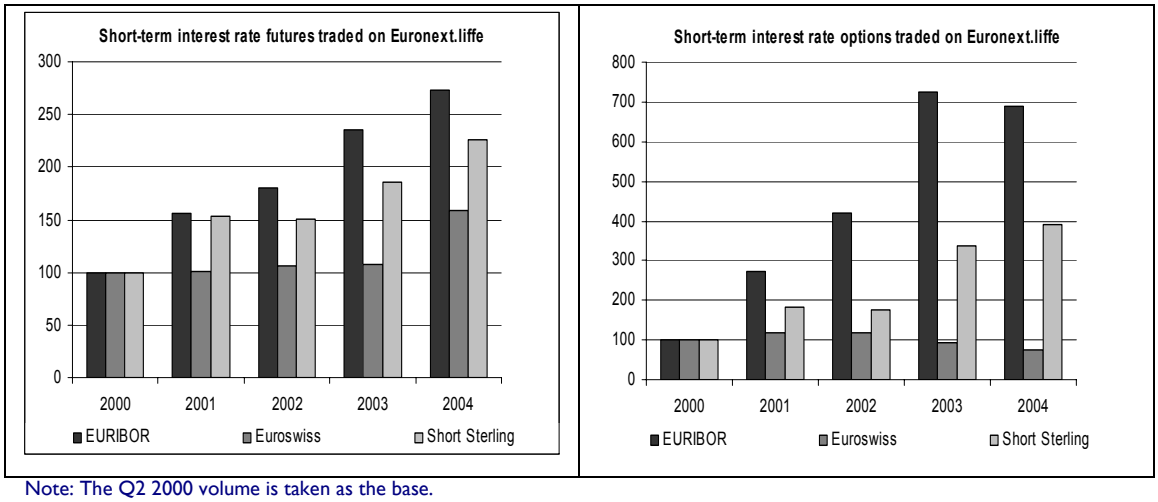
EURIBOR futures remain the most commonly traded short-term interest rate futures contract in Europe. In 2004 EURIBOR futures contracts accounted for 73% of the volume of futures activity on Euronext.liffe, compared with 52% in 1999. The share of short sterling contracts was 24% in 2004, and that of Euroswiss futures was 3%. The market structure has been stable since 2002.

For the first time since 1999, the traded volume of options decreased slightly in 2004 (-1%) after having soared in the previous years (+140% in 2001, +39% in 2002 and +76% in 2003). The

decrease can mainly be attributed to a 5% decline in EURIBOR options, whereas the short sterling contract registered a 16% increase. The activity in Euroswiss options decreased by 19% in 2004, but volumes in this instrument are still very small (0.07% of all the options trades in 2004). During 2004 EURIBOR options accounted for 77% of the options activity on Euronext.liffe, compared with 80% in 2003. Short sterling contracts accounted for 23% in 2004 (against 20% in 2003).

Chart 22

Developments in short-term interest rate futures and options between 2000 and 2004



Note: The Q2 2000 volume is taken as the base.

2.6 Developments in the short-term securities market

2.6.1 Turnover analysis

The volume of transactions in the secondary market for short-term securities[13] has continued to expand at a fast pace. Compared with the 2003 figures,[14] average daily turnover for all types of short-term securities increased by 48% in 2004. Turnover in bank securities recorded a 71% rise over 2003, surpassing for the first time the daily turnover in T-bills (up 21% in 2004). Transactions in corporate paper also exhibited a high growth rate (64%). The increased turnover in bank securities cannot be attributed alone to a rise in the volume of issuance, as the growth of the issuance amount was moderate in 2004 (see Section 2.6.2).

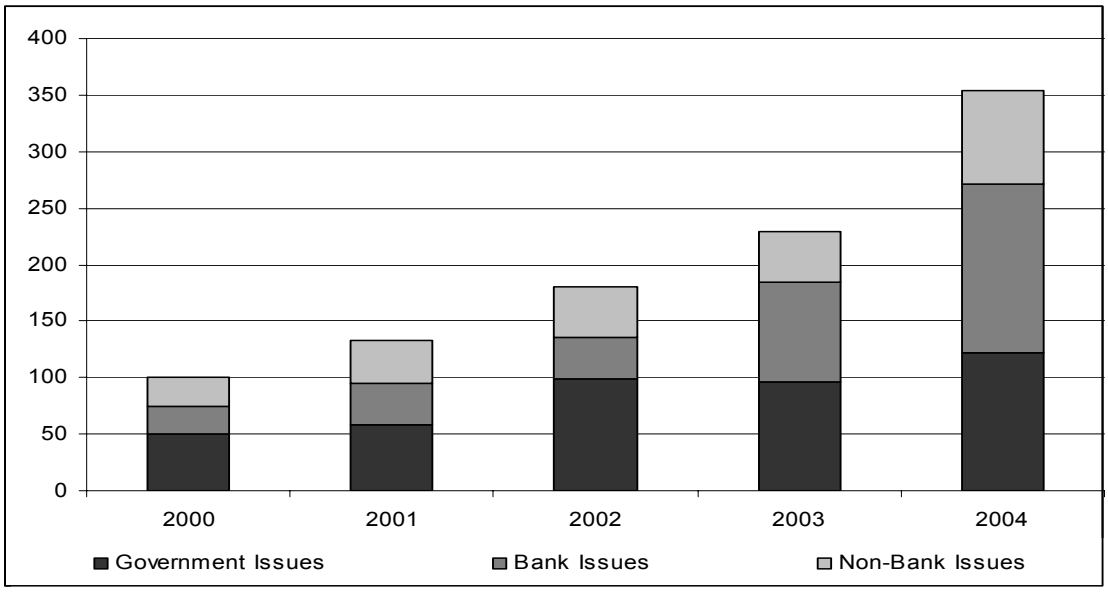
[13] The information on the secondary market on euro-denominated short-term securities is divided into 3 categories: Government Issues (e.g. T Bills), Bank Issues (i.e. paper issued by euro area credit institutions) and Non-Bank Issues (i.e. paper issued by corporates). Short-term securities are defined in a broad way as all securities with an initial maturity of up to 12 months, including T Bills, CPs ECPs, ABCPs, CDs etc…

[14] For a common panel of 78 banks.

Between 2000 and 2004[15] on the secondary market, the growth rate of transactions in short-term securities reached 253%. The turnover in bank issues and non-bank issues grew by 498% and 233% respectively, while T-bill issuance rose by 143%.

Chart 23

Developments in outright transactions between 2000 and 2004



Note: The Q2 2000 volume is taken as the base. The panel comprised 71 banks.

2.6.2 Outstanding amounts and issuance

The outstanding stock of euro-denominated short-term securities increased from EUR 796 billion in the second quarter of 2003 to EUR 811 billion in June 2004, according to the ECB securities database.

The increase is mostly attributable to the public sector, which by the second quarter of 2004 had issued 49% of the total stock outstanding, compared with 48% for the same period in 2003. The nominal volume of outstanding central government short-term securities reached its highest level since 1996. By contrast, the outstanding volume issued by banks declined slightly between the second quarter of 2003 and that of 2004.

The gross issuance of short-term securities reached EUR 458 billion in June 2004, up from EUR 413 billion in June 2003. The total (cumulative) amount issued between the second quarter of 2003 and that of 2004 was EUR 5,220 billion, up 3% from the same period in 2002-03. It seems that during 2003 and especially during 2004 overall issuance activity rebounded, after a 2%

[15] For a common panel of 71 banks.

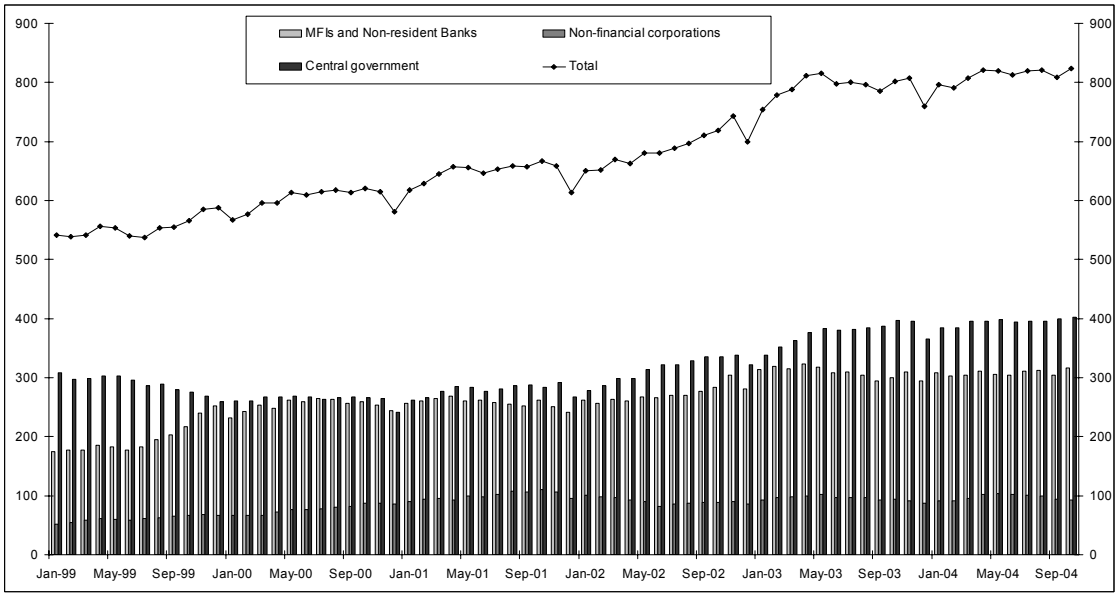
contraction in 2002. The share of banks remained steady at around 70% in 2003 and 2004, while that of central government remained at around 15%.

According to the money market survey data, issuance volumes by banks were down by 29% in 2004 compared with 2003. Nevertheless, this finding should not be given too much importance as broader data from the ECB securities database show a small increase in bank issuance volumes in 2004.

A noticeable development in the past four years has been the shortening in maturities of certificates of deposit. Average maturities stood at less than two months in 2004. On the other hand, the maturity of non-bank issues shows no clear trend and has remained relatively stable at just under two months.

Chart 24

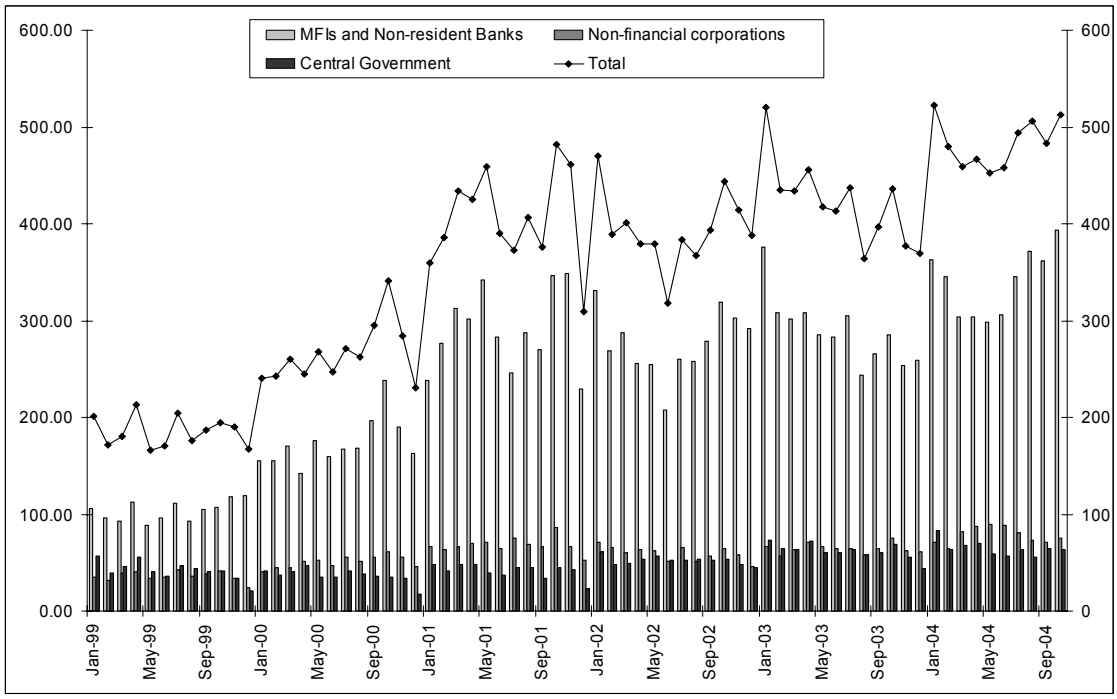
Outstanding amounts of euro-denominated short-term securities by issuer sector since January 1999 (EUR billions)



Source: ECB securities issues statistics.

Chart 25

Gross issuance of euro-denominated short-term securities by issuer sector since January 1999 (EUR billions)



Source: ECB securities issues statistics.

2.6.3 Market structure

According to the replies to the qualitative part of the questionnaire, most respondents (88%) view the euro denominated short-term securities market as sufficiently efficient. Nevertheless, 12% of the respondents regarded the efficiency of this market as limited. This remains the highest percentage for limited efficiency among the different markets surveyed for the present study.

Over the past two years, a significant development has taken place in the geographical distribution of transactions in short-term securities. Domestic turnover now accounts for only 28% of the total, as opposed to more than half in 2002. Volume traded with the rest of the euro area has risen to 57% (against 24% in 2002), indicating better integration despite various existing obstacles. The integration of this market segment is expected to improve further in the coming years, also thanks to the implementation of the Short-Term European Paper (STEP) initiative. In March 2004 the EURIBOR-ACI published a report proposing a comprehensive set of recommendations aimed at establishing the STEP market to foster the convergence of the

heterogenous market standards and practices that currently prevail in the segmented European short-term markets.

Electronic brokers have been gaining ground at the expense of voice brokers since 2002. They now account for 14% of total turnover, compared with 15% for voice brokers. Direct trading remains the main way of trading, with 70% of the market share.

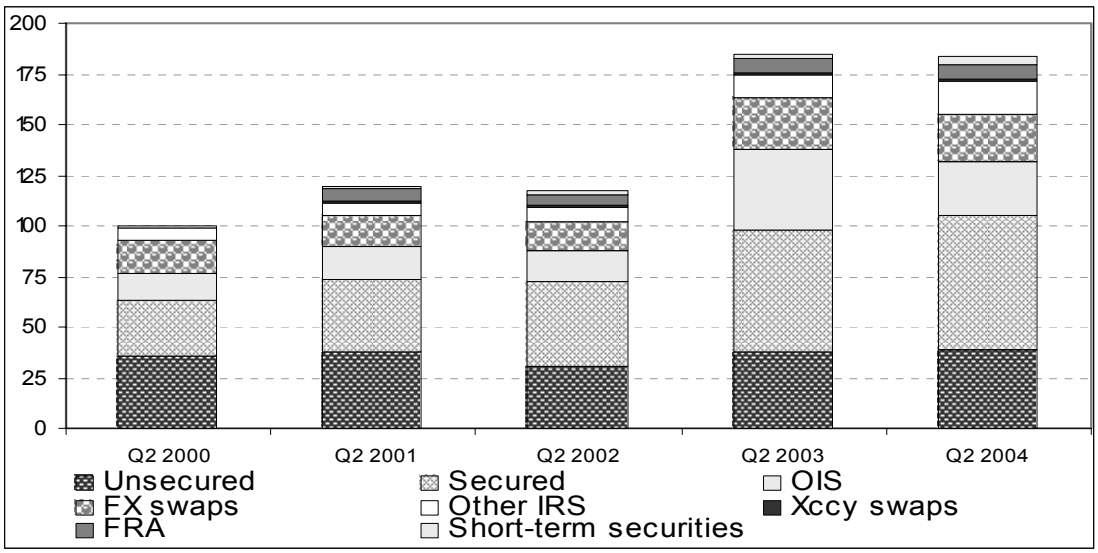
2.7 Cross-market segment analysis

2.7.1 Turnover analysis

The aggregated turnover of the euro money market stagnated in the second quarter of 2004, after a strong increase in the second quarter of 2003, reflecting differing trends in the various market segments. After the increase in activity observed across all market segments in the second quarter of 2003, activity fell for OIS, cross-currency swaps and FX swaps in the second quarter of 2004. By contrast, the turnover of the unsecured, secured, other IRS, FRA and short-term securities segments increased in 2004.

Chart 26

Aggregated turnover of the euro money market between 2000 and 2004



Note: The Q2 2000 volume is taken as the base. No data on FRA turnover were available in 2000.

The turnover in the secured market continued to increase in the second quarter of 2004, although at a slower pace than in previous years. Therefore, this segment confirmed its increasing trend and consolidated its position as the most important segment of the euro money market, accounting for 36% of the total turnover in the second quarter of 2004. In fact, the

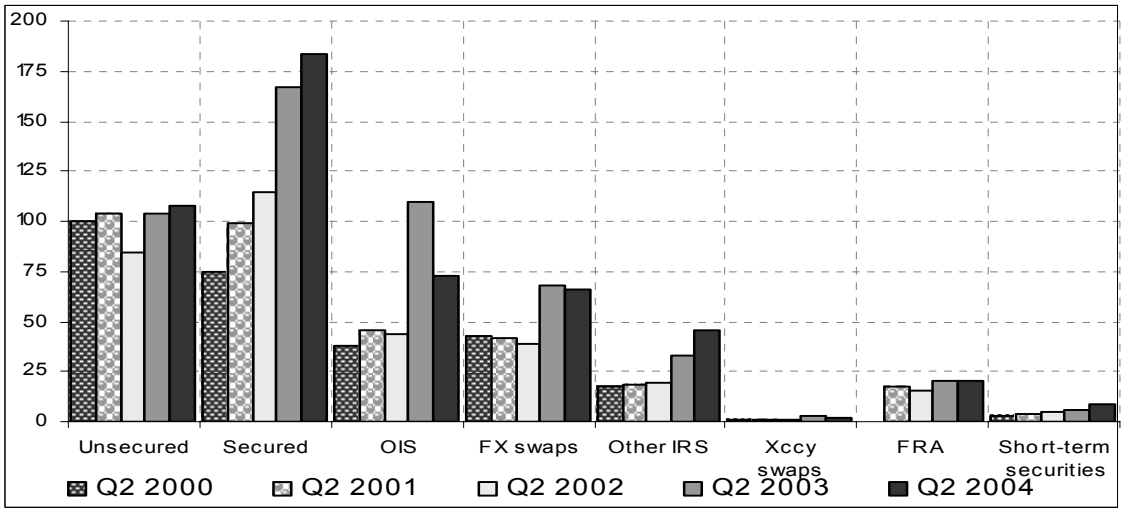
secured market, along with the other IRS and short-term securities markets, were the segments in which turnover has continuously increased since the second quarter of 2000. The preference for limiting credit risk exposure, together with constraints stemming from capital adequacy requirements, seem to have been playing an important role in this trend in secured market turnover.

In the period 2000-01, the unsecured market was the most important segment of the euro money market, but it has since become less predominant. As from the second quarter of 2002, the secured market took over the leading position. Despite the fact that the share of the unsecured market has shrunk since the second quarter of 2001, mainly to the benefit of the secured market, the segment recovered, in the second quarter of 2004, its position as the second largest. In 2003 it had fallen to third position owing to the striking increase in OIS activity.

Although the results of the 2003 survey pointed to a strengthening of the expansion trend in the OIS market, its turnover contracted in the second quarter of 2004, reversing the strong increase in the second quarter of 2003. This development was probably linked to interest rate speculation, which was much stronger in 2003 than in 2004. Thus, this segment lost some ground in terms of its share of overall euro money market activity, falling to third position as its share in total turnover decreased from 22% in 2003 to 14% in 2004.

Chart 27

Average daily turnover in each money market segment between 2000 and 2004



Note: The Q2 2000 unsecured volume is taken as the base. No data on FRA turnover were available in 2000.

The other IRS market has expanded rapidly and steadily in recent years driven by hedging and positioning activity. The relative importance of this segment increased during the period 2000-04, reaching a share of 9% of overall euro money market activity in the second quarter of 2004. Conversely, the shares of the FRA and FX swap segments in overall market activity barely changed in the period under analysis, standing at around 4% and 13%, respectively.

Despite the strong growth in the short-term securities segment in recent years, its share in total turnover remained limited at 2% in the second quarter of 2004. Cross-currency swaps maintained a negligible share, remaining by far the smallest segment.

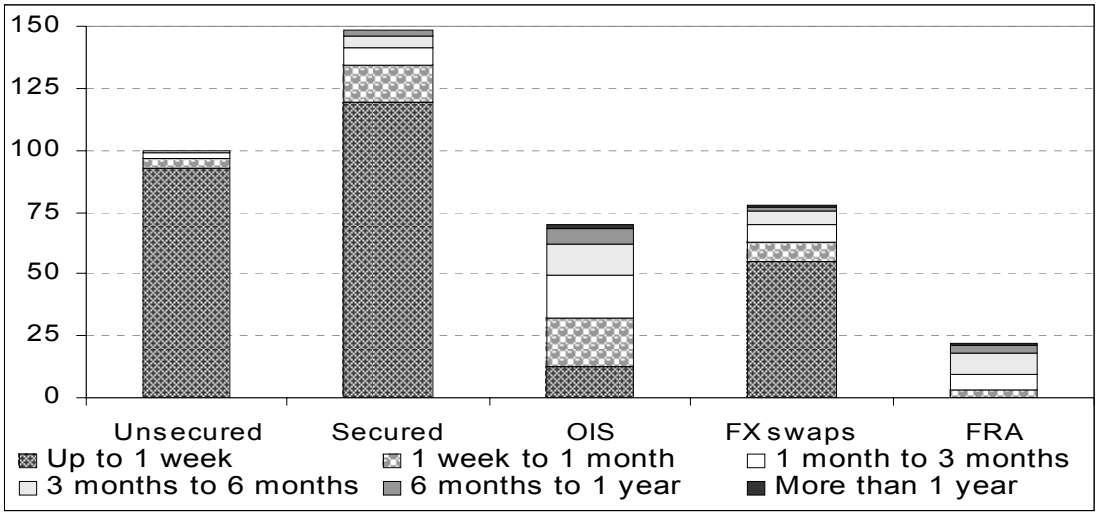
2.7.2 Maturity analysis

In the second quarter of 2004, the major features of the maturity structure of the different euro money market segments barely changed.

Activity in the unsecured, secured and FX swap segments continued to be largely concentrated at very short-term maturities, with the bulk of transactions being made with a maturity of up to one week. Trading in the OIS segment remained highly concentrated at maturities up to three months, while the bulk of FRA turnover was concentrated between one month and one year.

Chart 28

Total unsecured, secured, OIS, FX swap and FRA turnover for the different maturity bands in 2004



Note: The Q2 2004 unsecured volume is taken as the base.

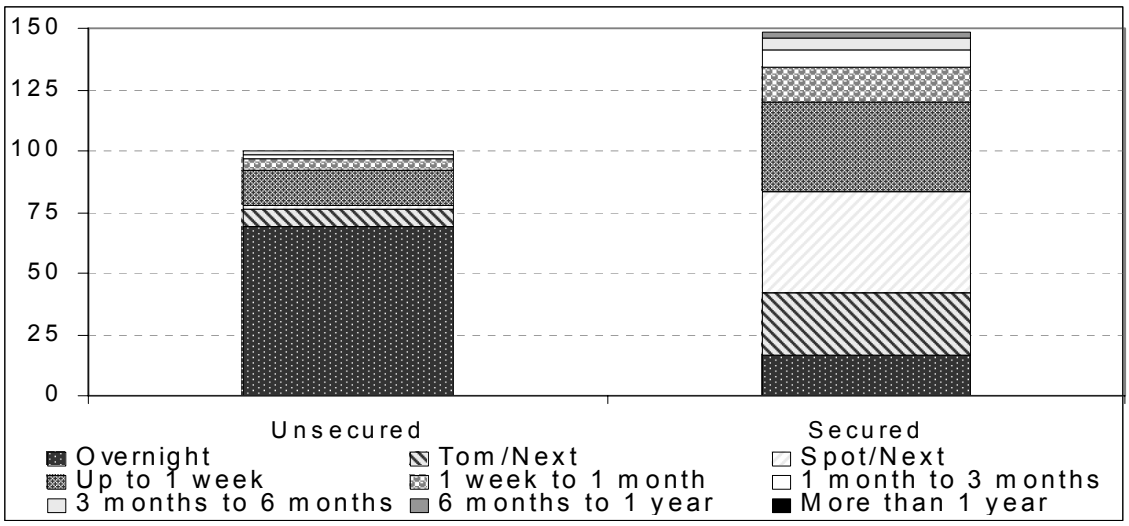
An in-depth analysis of the maturity structure of both the unsecured and secured segments reveals that business in the unsecured segment remained very concentrated in the overnight

maturity, which accounted for 69% of total turnover in the second quarter of 2004, while for the secured segment the maturity structure in 2004 was quite similar to that in previous surveys, despite a slight increase in activity in the overnight maturity. The bulk of transactions was still made in the maturity band "up to one week" (excluding overnight), which represented 69% of the total turnover. Securities settlement constraints continued to limit the development of overnight transactions in the secured market, which accounted for 11% of total activity in 2004.

The other IRS and cross-currency swap segments, which had a very similar maturity structure in the second quarter of 2003, developed slightly differently. While the maturity structure of other IRS transactions remained broadly in line with the pattern observed in the previous two surveys (the majority of transactions being made with a maturity of up to two years), the breakdown by maturity of the cross-currency swap segment showed a significant increase in the weight of activity for maturities of more than two years, resulting in a maturity structure similar to that of 2002.

Chart 29

Total unsecured and secured turnover for the different maturity bands in 2004



Note: The Q2 2004 unsecured volume is taken as the base.

2.7.3 Market structure

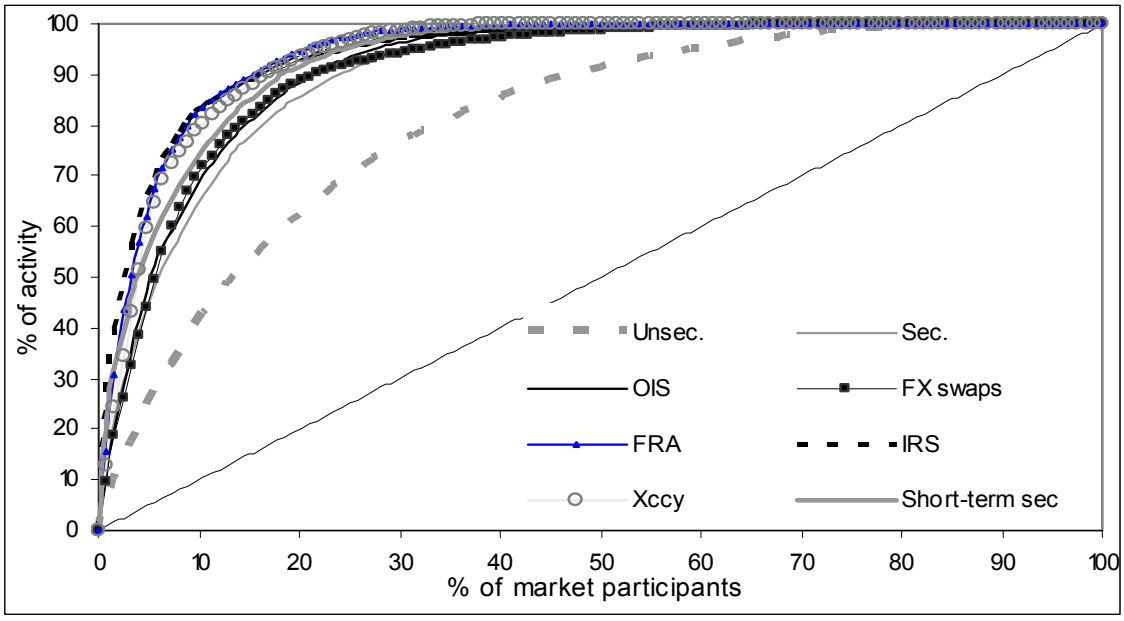
Overall, activity in the euro money market seems to have become less concentrated over the last years. However, there are still large differences across market segments.

Despite the slight increase in the degree of concentration of the unsecured segment in the second quarter of 2004, this segment remained by far the least concentrated, followed by the secured and OIS segments. The FX swap segment experienced a significant decrease in the degree of concentration, reaching a similar level to the OIS and secured segments. Indeed, the market share of the top ten institutions in the FX swap segment decreased from 72% in the second quarter of 2003 to 64% in the second quarter of 2004.

However, some segments of the euro money market continued to show a high degree of concentration, in particular the OTC derivatives markets. In terms of turnover, the ten most active institutions in the FRA, other IRS and cross-currency swap segments continued to hold a market share of above 70%. The concentration in the other IRS segment even increased, with the market share of the ten largest institutions rising from 73% in the second quarter of 2003 to 79% in the second quarter of 2004. More than half of all trading activity in the other IRS segment in the second quarter of 2004 was concentrated among three institutions.

Chart 30

Lorenz curves showing the concentration of activity in the different market segments in 2004

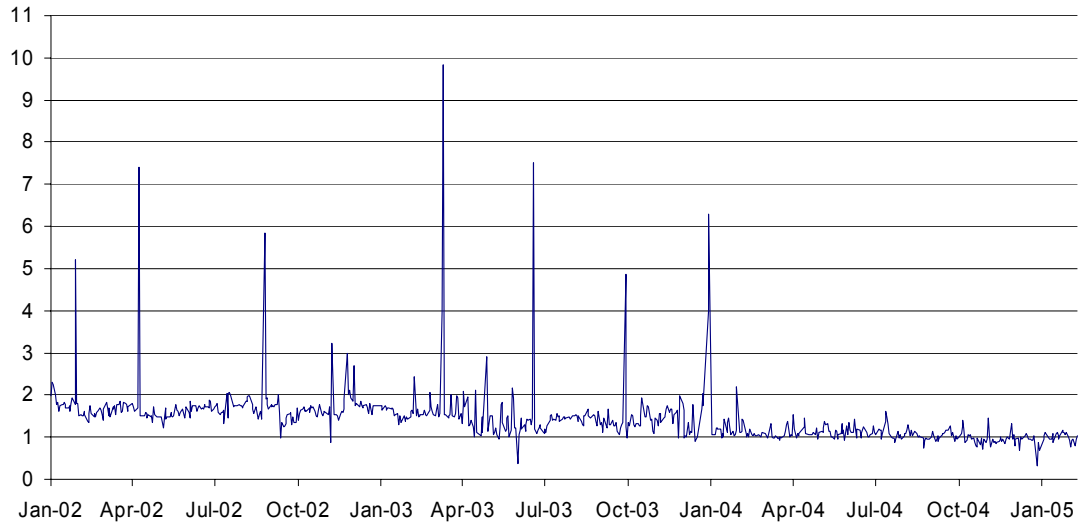


Box 3

Narrowing of bid-offer spreads

One of the developments that can be observed with regard to euro money market instruments (e.g. short-term deposits, FX swaps, repos and EONIA swaps) is a further narrowing of the bid-offer spreads. Bid-offer spreads can be considered as an indication of the liquidity in the market. The increased volume and liquidity in the EONIA swap market has led to spreads that are often narrower than one basis point. This development has brought about another phenomenon in the market: quoting in an increased number of decimals.

Chart A Bid-offer spread for the one-month EONIA swap (basis points)



Source: E-Mid.

In Europe, the narrowing of spreads in the money market accelerated with the creation of the euro in 1999. At the beginning of Economic and Monetary Union, spreads were still attractive for a bank that wished to act as a market-maker. Since then, bid-offer spreads have come down to levels at which it is becoming less attractive for banks to act as market-makers. Market observers have attributed this development to several factors:

(i) Increased transparency in markets and increased professionalism outside the banking industry (clients are well informed about market conditions and require the best prices). The amounts traded in euro are larger than the amounts formerly traded in domestic currencies. The

larger ticket size has reduced the number of deals and hence the costs per transaction. Because of this cost saving, banks are often prepared to be a little more flexible on the bid and offer sides.

(ii) The concentration of cash money market trading at the very short end of the curve (up to one month). Banks' increased awareness of solvency costs is seen as the main driving force behind this development, combined with increased possibilities for using derivatives (such as EONIA swaps) to manage interest rate risk. This requires less solvency capital than traditional interbank lending.

(iii) Fierce competition because of the concentration of cash trading at the short end of the curve.

(iv) The absolute low level and the lower volatility of interest rates.

With the lower spreads, risks for traders have increased. Spreads have nearly ceased to act as a buffer for market movements, so dealers are confronted sooner with losses on their positions. This has led to more immediate squaring of positions by dealers when they are forced into positions they do not like. While in the past traders made profits because of the spreads, these days they mainly do so by adopting a view and trading according to that view.

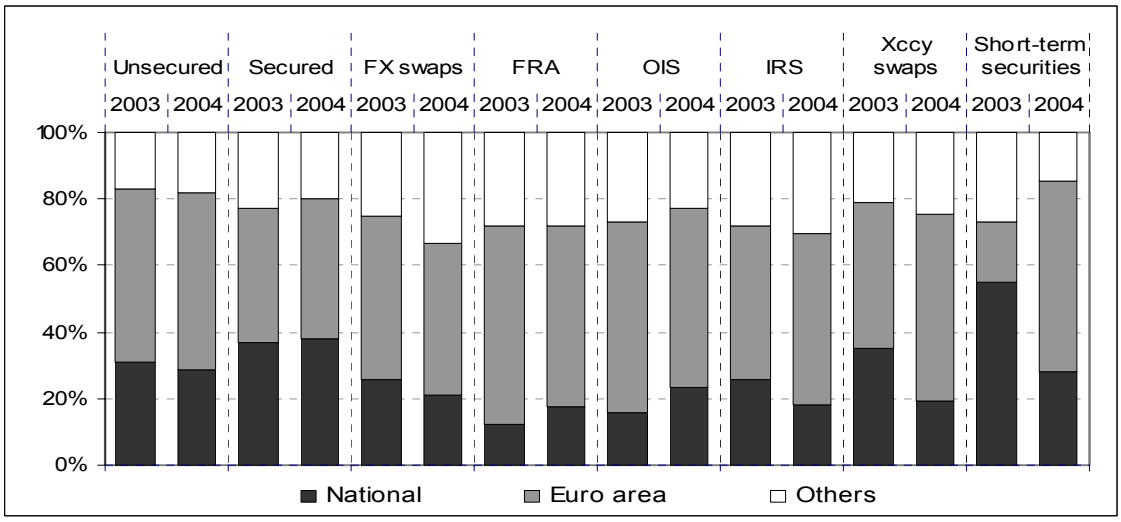
The narrowing of spreads can also be seen as the driving force behind the quoting in an increased number of decimals. Quotes for large EONIA swap transactions have been expressed in as many as five decimals. However, dealers try to limit the trade prices to three decimals for practical reasons.

Turning to the geographical counterparty breakdown of the turnover in the second quarter of 2004, the structure remained broadly unchanged across all segments except the short-term securities and cross-currency swap segments, when compared with the second quarter of 2003. The bulk of business continued to be carried out with counterparties from the euro area.

The most relevant change in the geographical counterparty structure was the loss of predominance of transactions with national counterparties in the short-term securities segment. Indeed, in the short-term securities and cross-currency swap segments, the share of transactions carried out with counterparties from the euro area surged to the highest levels across all market segments, indicating better integration despite various existing obstacles.

Chart 31

Geographical counterparty structure of the different market segments in 2003 and 2004



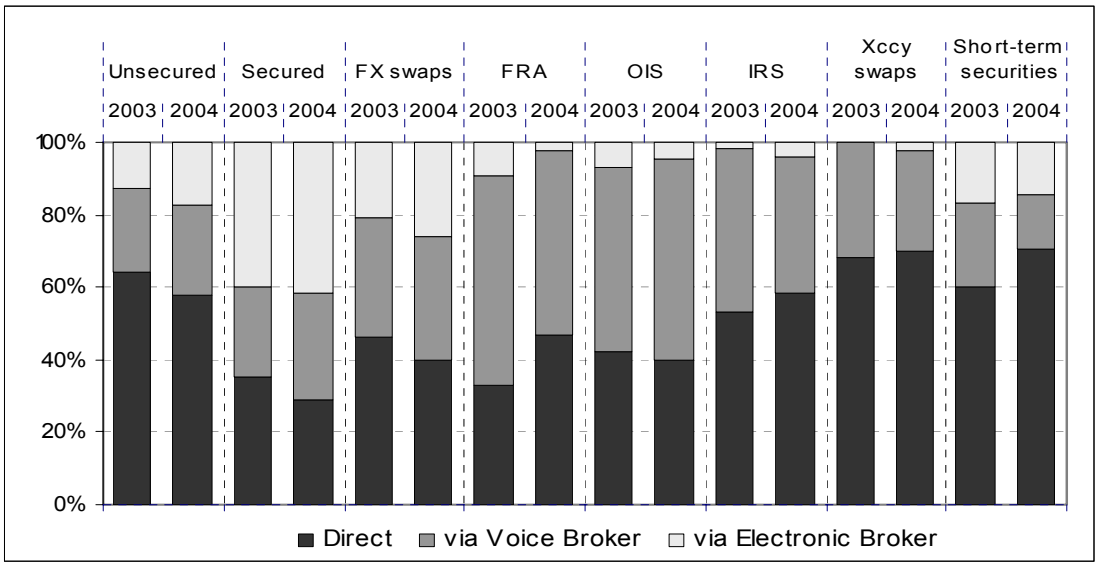
The fact that the proportion of business in the secured market carried out with national counterparties remained much larger than for other market segments reveals that the integration of national repo markets across the euro area continues to be a slow and complex process, despite the considerable progress registered in the last years.

As for the trading structure, in general the survey showed that electronic trading transactions continued to grow in most of the market segments in the second quarter of 2004. However, their share of total activity remained rather small in some segments. Indeed, in segments other than the secured market, electronic trading still accounts for the smallest share of overall activity. It is worthwhile noting that, in the secured market, the use of electronic trading systems showed a strong increase in the last two years, rising from 13% of total activity in the second quarter of 2002 to 42% in the second quarter of 2004.

Direct trading continued to be the most important way of carrying out business in the unsecured, other IRS, cross-currency swap and short-term securities segments. In the OIS and FRA segments, nearly half of the turnover is traded through voice brokers, which is also an important way of conducting transactions in the other IRS segment. A comparison with 2003 shows that voice brokers gained ground in 2004 in the secured, unsecured and OIS segments, mostly at the expense of direct trade.

Chart 32

Trading structure of the different market segments in 2003 and 2004



Annexes

Annex 1: Technical annex

Scope of the study

In this fifth money market survey, banks were invited to provide data about their interbank activity during the second quarters of 2003 and 2004, covering the main segments of the euro money market. Non-interbank or customer transactions (i.e. transactions with corporate customers, central banks or supranational institutions) are not reported as they do not fall within the scope of the study.

Banks reported interbank activity if this activity is booked in their own entity. Intragroup flows derived from intragroup operations are excluded from this study. Any interbank activity by another subsidiary/branch of the group is reported by the relevant entity of the group in a separate questionnaire. The data reported are nominal amounts for cash transactions and notional amounts for derivative transactions. In addition, transactions related to the rollover of previous positions were taken into consideration. The turnover for each maturity band was the "average" daily turnover over the relevant quarter. This average is calculated by dividing the total amount of transactions executed during the reporting period by the number of business days in the reporting period. The reporting banks were asked to specify the number of business days considered for this calculation.

The turnover was allocated to each maturity band according to the initial maturity of the transactions (including forward transactions, regardless of the settlement date). In the case of transactions redeemable at notice, the length of the notice period has been taken as the maturity.

In addition, banks were asked to fill in a qualitative survey, providing information about efficiency, changes in liquidity and the breakdown of transaction amounts by both location of counterparty and trading system for each money market segment. Trading systems were broken down into direct trading, trading via broker, and trading via electronic devices. Finally, the 2004 survey also collected information about the share of transactions executed spot and forward.

As concerns the location of counterparties with which reporting banks have transacted during the second quarter of 2004, these were in the qualitative survey broken down in terms of

geographical location of the counterparty: national, euro area, and others. "National" refers to counterparties located in the same country as the reporting bank. If the reporting bank is not located in the euro area, "euro area" refers to counterparties located in the 12 euro area countries; if the reporting bank is located in the euro area, "euro area" refers to counterparties located in the other 11 euro area countries. "Others" refers to counterparties located in all non-euro area countries.

Secured and unsecured segments

For the secured and unsecured segments of the money market, the activity tables are divided according to the terms of the lending and borrowing activity. For the secured segment, "cash lending" refers to buy/sell-back transactions and reverse repos, while "cash borrowing" refers to sell/buy-back transactions and repos. Information about the origin of collateral has been provided as a percentage of the average daily transactions in secured markets. For the country of issuance of the security used as collateral, the same geographical approach as for the location of counterparties is used: national, euro area, and others. For the first time, a split between bilateral and tri-party repos in the secured markets was reported in 2004.

Swap segments

This study covers different kinds of swap transactions.

- Overnight interest rate swaps (OIS) are financial operations involving an exchange of cash flows on a specified date. On the one hand, they involve paying or receiving a fixed cash flow, and on the other, paying or receiving a variable rate cash flow. In the euro money market the most widely recognised overnight index is the EONIA. Banks were asked to provide the percentage of the average daily OIS turnover not indexed to EONIA.
- Foreign exchange swaps are transactions which involve the actual exchange of two currencies (principal amount only) on a specific date at a rate agreed at the time of conclusion of the contract (the short leg), and a reverse exchange of the same two currencies at a future date at a rate (generally different from the one applied to the short leg) agreed at the time of the contract (the long leg). Both spot/forward and forward/forward swaps fall into this category. Banks have reported FX swaps only if one of the two currencies exchanged is the euro and if the leg in euro for FX swaps should be reported.

- Interest rate swaps (IRS) are agreements to exchange periodic payments related to interest rates in one currency, here the euro; they can be fixed for floating or floating for floating, based on different indices.
- Cross-currency swaps are contracts that commit two counterparties to exchange streams of interest payments in different currencies for an agreed period of time and to exchange principal amounts in different currencies at a pre-agreed exchange rate at maturity. Banks were asked to consider cross-currency swaps only if one of the currencies involved is the euro.

Short-term securities

The information on the turnover in outright transactions in euro-denominated short-term securities is divided into three categories: government issues (e.g. T-bills), bank issues (i.e. paper issued by euro area credit institutions) and non-bank issues (i.e. paper issued by corporations). Banks report the daily outright transactions' average. Outright transactions are defined as a sale or purchase of short-term securities on the interbank secondary market. Short-term securities are defined in a broad way as all securities with an initial maturity of up to 12 months, including Treasury bills, commercial paper, euro commercial paper, asset-backed commercial paper, certificates of deposit, etc. The primary market or issuance activity has not been included, but there is a separate item for the issuance by the panel bank.

Annex 2: A comparison of the European Repo Council survey and the ECB survey on euro interbank money market activity

	ERC survey	ECB survey
Measure	Outstanding amount (i.e. stock) at the end of June/December.	Turnover (i.e. flow); specifically, daily average turnover for the second quarter of the year.
Periodicity	Semi-annual.	Yearly.
Location of respondents	All European countries.	15 EU countries (those EU countries before 1 May 2004).
Type of institution	All financial institutions (e.g. including national debt and other public agencies).	Credit institutions only.
	Transactions with all counterparties except central banks.	Interbank transactions only (i.e. excludes transactions with customers and central banks).
Currencies	The total figure is broken down into: EUR; GBP; USD; SEK; DKK; JPY; other.	EUR only.
	The total figure is broken down into: cross-currency; other (same currency).	
Maturities	Measures remaining term to maturity.	Measures original term to maturity.
	Aggregates one-day transactions.	One-day transactions are broken down into: overnight; tomorrow/next; spot/next.
	Other transactions are broken down into: (1) 2-7 days; 1 week to 1 month; 1 month to 3 months; 3 months to 6 months; over 6 months; forward-forwards.	Other transactions are broken down into: (1) 2-7 days; 1 week to 1 month; 1 month to 3 months; 3 months to 6 months; 6 months to 1 year; over 1 year (no forward-forward category).
		For each maturity band, a weighted average maturity is calculated.
Collateral	The total figure is broken down into: fixed income; equities.	

	Fixed income is broken down into 15 EU countries and the US; in the case of collateral issued in other countries, it is analysed by OECD membership or region. Each EU country is further broken down into: government; other. "Other" German collateral is broken down into: Pfandbrief; other.	The total figure is broken down into: domestic ("national"); euro area; other.
Counterparties	The total figure is broken down into: direct; via voice broker; via ATS. Each category is further broken down into: domestic; cross-border eurozone; cross-border non-eurozone.	The total figure is broken down into: domestic; euro area; other.
	ATS is also further broken down into: anonymous via a CCP. There are therefore 10 counterparty type/location sub-categories.	The total figure is broken down into: direct; via voice broker; via ATS ("electronic broker").
Type of transaction	All types of repo, classic and sell/buy-backs. Securities lending against any type of collateral which is conducted from repo desks is measured separately.	All types of repo and securities lending against cash collateral.
	The total figure is broken down into: classic repo; documented sell/buy-backs; undocumented sell/buy-backs.	
	Each sub-category is broken down into repo and reverse repo.	Each sub-category is broken down into repo and reverse repo, except for analysis of: location of counterparty; type of counterparty.
	The total figure is broken down into: fixed rate; floating rate; open.	Each maturity band is further broken down into: floating rate ("indexed"); other (fixed rate and open). There are therefore 9 maturity/rate sub-categories.
	The total figure is broken down into: tri-party repo; other (delivery & hold-in-custody). Tri-party repo is further broken down into: fixed-term; open.	The total figure is broken down into: bilateral repo; tri-party repo.

Annex 3: Glossary

Automated trading system (ATS): system that offers additional means of trading compared with established exchanges. These systems 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).

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

Bid-ask/bid-offer spread: differential prevailing on the market between the bid price and the offered price.

BIS: Bank for International Settlements.

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

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.

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.

Counterparty: the opposite party in a financial transaction.

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

Cross-currency swap: a contract that commits two counterparties to exchange streams of interest payments in different currencies for an agreed period of time and to exchange principal amounts in different currencies at a pre-agreed exchange rate at maturity.

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

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 three basic building blocks: forward contracts, options or combinations thereof.

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

Eurepo: this is the benchmark rate of the large euro repo market that has emerged subsequent to the introduction of the euro in 1999. Eurepo is the successor rate to the BBA euro repo benchmark. It is the rate at which one prime bank offers funds in euro to another prime bank if in exchange the former receives from the latter Eurepo GC as collateral. Eurepo is supported by the European Banking Federation (FBE) and the European Repo Council (ERC).

Eurex: German/Swiss futures and options market.

EURIBOR: the euro area interbank offered rate for the euro, sponsored by the European Banking Federation (FBE) and the Association Cambiste Internationale (ACI). It is an index price source covering dealings from 48 prime banks.[16]

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 48 prime banks.[17]

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

Euronext.liffe: Euronext-London International Financial Futures and Options Exchange. Euronext took over Liffe in October 2001.

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 those EU Member States that have adopted the euro.

Foreign exchange swap (FX swap): the simultaneous spot purchase/sale and forward sale/purchase of one currency against another. Banks were asked to report FX swaps only if one of the two currencies exchanged is the euro and in this case the euro amount of the short leg.

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

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

Future: 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 (GC): collateral which, owing to its homogenous features, is widely accepted.

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

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

Key ECB interest rates: the interest rates, set by the Governing Council, which reflect the monetary policy stance of the ECB. They are the minimum bid rate on the main refinancing operations, the interest rate on the marginal lending facility and the interest rate on the deposit facility.

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

Lorenz curves: these are cumulative frequency curves that compare the distribution of one variable (money market activity) with the uniform distribution that represents equality (diagonal line in the charts). For convenience of interpretation, the Lorenz curves presented in this study have been plotted above the equality line, instead of below of it (which is the more standard

[16] Number of panel banks as of January 2005.
[17] Idem

mode of presentation), since market players were sorted by descending order of their activity share.

Market-maker: a dealer that is 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: the ability of market participants to observe (pre-trade) quotes, (post-trade) prices and volumes in a timely fashion.

Monetary financial institutions (MFIs): financial institutions which form the money-issuing sector of the euro area. This 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: the market in which short-term funds are raised, invested and traded using instruments which generally have an original maturity of less than one year

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

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

Overnight interest rate swap (OIS): a financial operation involving an exchange of cash flows on a specified date. On the one hand, it involves paying or receiving a fixed cash flow, and on the other, paying or receiving a variable rate cash flow.

Primary market: the market for new issues of securities.

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).

Repo: a 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/buy-backs and securities lending). All forms of repos entail a change in ownership.

Reserve maintenance period: period over which compliance with reserve requirements is calculated. Maintenance periods begin on the settlement day of the first main refinancing operation following the meeting of the Governing Council at which the monthly assessment of the monetary policy stance is pre-scheduled. They normally end on the day preceding the similar settlement day in the following month.

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

Reverse repo: a contract with a counterparty to buy and subsequently resell securities at a specified date and price; the mirror image of a repo.

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

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

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 to provide a uniform platform for the processing of cross-border payments.

Tomorrow/next (day): this expression is used in relation to the practice among foreign exchange traders of swapping currencies for short periods to maximise the holders' return on their money.

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

Tri-party repo: a repo that involves a third party, commonly a custodian bank or an ICSD acting as an agent to exchange cash and collateral for one or both of the counterparties.

Annex 4: Co-ordination of the study

This study of the Market Operations Committee of the ESCB was conducted by a working group involving staff members from the ECB and NCBs.