



EUROPEAN CENTRAL BANK

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EURO MONEY MARKET STUDY

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Address

Kaiserstrasse 29
60311 Frankfurt am Main
Germany

Postal address

Postfach 16 03 19
60066 Frankfurt am Main
Germany

Telephone

+49 69 1344 0

Website

<http://www.ecb.europa.eu>

Fax

+49 69 1344 6000

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EXECUTIVE SUMMARY

This eighth study on the structure and functioning of the euro money market is the result of a survey conducted by the European Central Bank (ECB) and the national central banks that are members of the European System of Central Banks (ESCB).¹ The survey asked panel banks (listed in Annex 4) to indicate their average daily turnover in various money market instruments during the second quarter of 2010 and 2009 and to answer a number of qualitative questions. Two features are new to this study which did not feature in the previous ones: the coverage of the survey was extended from 169 to 172 counterparties and additional procedures were put in place to enhance the quality of the data and to better assess the impact of the financial market turbulence, that began in 2007, on the euro money market.

The main findings of the study suggest that the financial market turbulence and the sovereign crisis that hit Europe in the second quarter of 2010 had an important impact on the euro money market.

Aggregate turnover for all instruments decreased in the second quarter of 2010 by 3%. Volumes declined for the third consecutive year, albeit at a slower pace. The largest declines in turnover were observed in the unsecured market and in the overnight index swaps (OIS) segments (18% and 19% respectively). The contraction in the unsecured market was influenced by credit risk concerns and, in the second instance, by the large participation in the ECB's 1-year long-term refinancing operations in June, September and December 2009 that provided a gross EUR 614 billion to the market and which remained outstanding over the period of analysis covered by the survey. The steep decline in the OIS segment is partly the result of lower volatility in short-term interest rates following the increase in surplus liquidity conditions in the interbank market, and similar declines were also observed in other interest rate derivative segments.

In contrast, the secured market segment (also referred to as "repo" in this study) increased by 8%, positively influenced by the higher share of transactions concluded through a central counterparty (CCP). The CCP share rose from 41% of all repo transactions reported in 2009 to 45% in 2010. The main reason behind the growing importance of CCP is counterparties' interest in protecting themselves from rising credit-risk concerns and the greater use of electronic platforms for trading repos via CCPs.

As regards the derivative segments covered by the study, there was a general decline. Apart from the above-mentioned OIS segment, turnover in forward rate agreements (FRA) decreased by 10%, in other interest rate swaps (other IRS), excluding OIS, by 11% and in cross currency (Xccy) swaps by 4%. The only exception to this trend was that of foreign exchange (FX) swaps, whose turnover increased by 3%, as this segment benefited from an increased demand from European banks from outside the euro area.

Turnover in short-term securities also registered an important increase, growing by 67% in the second quarter of 2010 mainly as a result of a growing volume of transactions in securities issued by credit institutions.

Concentration on short-term maturities remained very strong, in particular in the unsecured, secured and FX swaps segments. The shortening of the maturities traded in the unsecured and secured segments in particular has been a feature of the market since the outbreak of the financial turmoil, as the greater weight attached by banks to counterparty credit risk led them to reduce their longer-term exposures.

As regards the perception of market conditions, the respondents to this year's survey assessed market liquidity to have deteriorated in the

¹ The ESCB consists of the ECB and the national central banks of the European Union (EU) Member States.

unsecured market and worsened significantly in Xccy swaps segments. Conditions in the other segments stabilised or improved slightly in comparison with the second quarter of 2009.

According to the 2010 survey the structure of the euro money market changed slightly compared with 2009. The data relating to the constant panel indicates that, in the unsecured market, the share of transactions concluded with counterparties outside the euro area was 31% in 2010, against 24% in 2009. In the secured market, the number of transactions concluded with a counterparty outside the euro area fell to 19% from 24% in 2009, while the number of transactions with a national counterparty increased from 32% to 37%. The data on the use of collateral shows that the share of national collateral used for repo transactions declined to 32% from 36% last year, while the use of euro-area collateral increased from 59% to 64% in 2010. The trading structure saw some relevant changes too. The introduction of new electronic platforms led to a decrease in voice broker transactions, in favour of electronic and direct trading. In general, direct trading tends to be more frequent in the other IRS and Xccy swap segments and in the unsecured market, while about 57% of the repo market relies on electronic trading, against 24% for direct trading. This data depends largely on the CCP repo subset, where transactions are conducted almost exclusively via electronic platforms.

Finally, concentration data revealed mixed trends. Concentration increased in the unsecured market, especially in lending, where the first five institutions lend over 46% of interbank deposits, but it decreased in the repo market, and to a larger extent in the CCP repo segment. As regards over-the-counter (OTC) products, concentration increased noticeably in all segments reported. The short-term securities market is one of the most concentrated segments. The top five institutions cover over 68% of the market, and the top 20 account for more than 92%.

I INTRODUCTION

In the second quarter of 2010, under the auspices of the Market Operations Committee of the European System of Central Banks (ESCB) and in co-operation with the Money Market Contact Group of the European Central Bank (ECB), the ECB and the 27 national central banks (NCBs) in the ESCB conducted a quantitative and qualitative survey on the euro money market among banks in the 27 EU countries and one non-EU country.² On the basis of that survey, the 2010 euro money market study analyses the euro money market in terms of trends and developments in its integration and efficiency, following on from similar studies conducted in the second quarters of 1999, 2000, 2001, 2002, 2004, 2006 and 2008.³ The 2010 study covers the second quarters of 2009 and 2010, and each participating bank reported the daily average turnover in each of the money market segments during these two periods. Each NCB selected a number of banks with a view to obtaining a representative coverage of euro money market activities. Altogether, a total of 172 banks participated in the survey. The country breakdown of the participating banks is shown in Table 1.

The 172 banks surveyed accounted for approximately 52% of the outstanding volume in ECB open market operations during the second quarter of 2010. The methodological

notes contained in the questionnaire can be found in Annex 1.

One French bank, one Dutch bank, four Polish banks and two UK banks were included in the study which had not been included in the 2009 survey, and one Austrian bank, one Danish bank, one Spanish bank and one UK bank that had been included were this year removed from the group of participating banks.

The purpose of the study is to highlight the main trends affecting the market structure of the euro money market. The study neither assesses the overall size of the different segments of the euro money market, nor compares it with other major money markets, such as those of the United States or Japan.⁴ Results from the qualitative questions are weighted by the turnover data reported by each institution in that market segment.

The number of banks participating in each of the successive annual surveys varies considerably, and also changes from one market segment to another, as not all banks are active in all segments of the money market. Hence two types of samples were used for the analysis, depending on the time frame. The first sample group, which was used to analyse the evolution of the euro money market over the last two years, included all reporting banks (i.e. 172 banks). The second sample group, which was used for a

Table 1 Country breakdown of participating banks in 2010

Austria	9	Lithuania	3
Belgium	3	Luxemburg	3
Bulgaria	4	Malta	4
Cyprus	3	Netherlands	6
Czech Republic	8	Poland	13
Denmark	1	Portugal	14
Finland	2	Romania	3
France	9	Slovakia	3
Germany	17	Slovenia	3
Greece	8	Spain	15
Hungary	3	Sweden	3
Ireland	6	Switzerland	1
Italy	7	UK	17
Latvia	4	Total	172

2 One panel bank is from Switzerland.

3 This survey of developments in the euro area money markets is conducted and the data published every year. From 2002 onwards, the ECB decided to publish a detailed report analysing the data from the survey only every two years (in even years). 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); "Euro money market study 2004" (May 2005); "Euro money market study 2006" (February 2007) and "Euro money market study 2008" (February 2009). In years where there is no accompanying study (in odd years), the data from the annual survey are published as a set of charts (see for example "Euro money market survey 2009").

4 The quantitative data were not obtained from the standard reporting systems of credit institutions. Collecting the data from a sample of credit institutions means that this survey does not provide comprehensive information on transaction volumes in the euro money market.

longer-term analysis of the period since 2000, when the survey was first conducted, is referred to as “the constant panel of banks”. In the 2006 euro money market study, 29 banks were added to this constant panel for the period from 2002 onwards to make the analysis more complete; this increased the size of the panel from 85 banks in 2000 to 114 for the period 2002-2006. Some further modifications were made to the constant panel in the euro money market study of 2008, when it was reduced from 114 to 109 banks, seven banks which had not taken part in the survey since 2006 being removed and two others added.⁵ In 2009, as a consequence of mergers of contributors which are part of the constant panel, the number formally dropped to 105. The composition of the constant panel is the same for all market segments. The base year for the euro money market study is 2002, on account of the more representative nature of the enlarged panel. The effects of the changes in the constant panel of banks are detailed in Annex 1.

Finally, in addition to the results of the survey, other data sources have been used. The section on the Monetary Policy Environment in 2009 and 2010 (section 2) elaborates on data from the ECB on the use of deposit facilities and the use of collateral in the euro system; the section on the unsecured market (section 3) uses data from the Bank of International Settlements (BIS); the section on the secured market (section 4) draws on data from Euroclear Bank, Clearstream Banking Luxembourg, the International Capital Market Association (ICMA) survey, the electronic market for Interbank Deposits (e-MID) Collateralised Interbank Market (MIC), Eurex Repo and the ECB’s Statistical Data Warehouse; the futures and options markets section (section 6) relies on data published by Euronext.liffe (short for Euronext-London International Financial Futures and Options Exchange) the European Banking Federation (EBF) on EURIBOR and Bloomberg; the section on the short-term securities market (section 7) analyses data from ECB securities issues statistics, STEP (short for short-term European paper) ECB, Dealogic, the Federal Reserve system, Banque

de France and CD Ware; and the section on cross-market analysis (section 8) includes data from Bloomberg and Reuters.

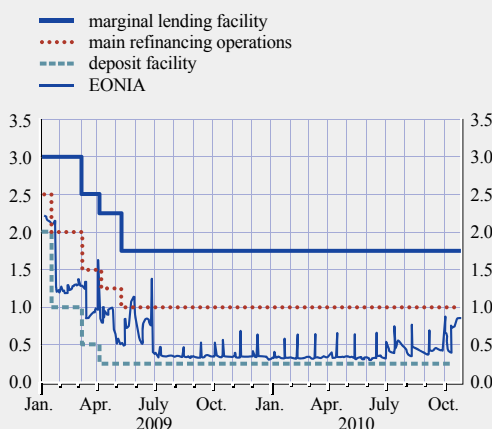
2 THE MONETARY POLICY ENVIRONMENT IN 2009 AND 2010

Against a backdrop of subdued inflationary pressures and a severe economic downturn, the Governing Council continued to reduce key ECB interest rates during the first half of 2009. At the end of 2008 the minimum bid rate for the main refinancing operations (MRO) stood at 2.5% but by May 2009 it had been cut to 1.0%, the lowest level since the introduction of the euro (Chart 1). Between January and May 2009, the rates on the deposit and marginal lending facilities were also reduced by 175 basis points and 125 basis points respectively. These reductions brought the deposit facility rate to 0.25% and the marginal lending rate to 1.75%, thereby re-widening the corridor of standing facility rates to 150 basis points.⁶ All key official interest rates remained unchanged from June 2009 to June 2010, the closing date of the Euro Money Market Survey.

5 For all new additions to the constant panel, including the most recent changes, all data series start in 2000.

Chart 1 Evolution of key ECB interest rates

(percentage)



Source: ECB, EBF.

In addition to reducing the key interest rates in the Eurosystem, the ECB also adopted a series of further non-standard measures in 2009 (see Box 1) which together with measures already taken in October 2008 the ECB referred to as “enhanced credit support”. These measures were taken in order to enhance the flow of credit above and beyond what could be achieved through reductions in the policy interest rate alone. They were also instrumental in the maintenance of price stability since, in the face of downside risks to price stability, they ensured that the easing of the monetary policy stance was also translated into a broader easing of financing

conditions. In particular, the ECB expanded the scope for central bank intermediation of transactions between banks, thereby offering an alternative to the malfunctioning private interbank money market. At the same time, the measures supported financial stability by containing and mitigating the systemic consequences of liquidity tensions in the money market.⁷

6 The interest rate corridor between the rates on the ECB’s Marginal Lending and Deposit facilities had been narrowed from 200 to 100 basis points in October 2008.

7 See speech by J.C. Trichet, “The great financial crisis: lessons for financial stability and monetary policy”, 20 May 2010.

Box 1

THE ECB’S NON-STANDARD MEASURES AND THE FINANCIAL CRISIS

In order to contain the impact of the financial crisis on the euro-area economy and preserve price stability between October 2008 and May 2009 the ECB cut its main policy rate by a cumulative 325 basis points and brought the interest rate in its main refinancing operations (MROs) down to a historically low level of 1%. In addition, the ECB has engaged in “enhanced credit support”. This comprises special and primarily bank-based measures that are being taken to enhance the flow of credit above and beyond what could be achieved through reductions in the policy interest rate alone.

In response to the initial phase of the financial crisis and against the background of increasing tensions in money markets, in August 2007 the ECB took its first policy actions to counter the effects of the crisis. It initially stabilised Eurosystem liquidity conditions by conducting additional fine-tuning operations, shifting the liquidity supply within the maintenance period, accommodating counterparties’ increased demand to front-load the fulfilment of minimum reserve requirements, and conducting supplementary 3-month and 6-month operations. In addition, the ECB introduced foreign-currency liquidity-providing operations to provide US dollar funding to Eurosystem counterparties. All of these operations were carried out through a variable-rate tender procedure and the ECB maintained control of aggregate liquidity conditions within the Eurosystem, making sure that they were kept balanced. These additional measures succeeded in ensuring the banking system’s access to liquidity and alleviating tensions in the money markets.

Following the failure of Lehman Brothers in September 2008, however, pressures in funding markets increased considerably and the interbank market effectively shut down. Amid significantly impaired markets and elevated counterparty credit concerns, demand for liquidity rose sharply within the banking system while interbank lending declined rapidly. The ECB reacted by increasing its intermediation role in the euro area money market, providing unlimited liquidity to those banks that were in need of liquidity and receiving deposits from those banks that had excess liquidity. This led to a situation where the total aggregate liquidity demanded by banks from the Eurosystem was higher than the actual aggregate liquidity needs of the banking sector, producing a situation of excess liquidity in the system.

Taking into account, amongst other factors, the potential increase in the amounts of credit allotted in the Eurosystem's open-market operations implied by the fixed-rate full allotment and the offering of foreign-currency providing operations, the ECB also temporarily broadened the list of ECB-eligible collateral counterparties could use. Eligible collateral was expanded to include marketable debt instruments denominated in currencies other than the euro (namely the US dollar, the British pound and the Japanese yen), debt instruments issued by credit institutions which are traded on certain accepted non-regulated markets, and subordinated debt instruments covered by an acceptable guarantee. Furthermore, the ECB announced that it would lower the credit threshold for marketable and non-marketable assets (with the exception of asset-backed securities (ABS)) from A- to BBB-.

This additional collateral was subject to a 5% haircut add-on apart from the debt instruments denominated in other currencies which were subject to a haircut add-on of 8%.

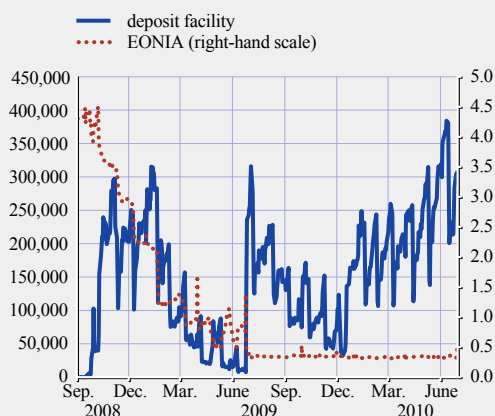
The average use of the deposit facility from October 2007 to September 2008 was €1.3 billion while from October 2008 to September 2009 it increased significantly to €132 billion. Abundant liquidity conditions in the market contributed to the stabilisation of EONIA rates at very low levels. The expectation of continued low EONIA levels, because of the significant excess liquidity caused by fixed-rate full allotment, also put downward pressure on the EURIBOR with 1-month, 3-month, 6-month and 12-month rates declining sharply from October onwards. The fixed-rate, full-allotment policy was also extended to US dollar operations amid a sharp deterioration in US dollar funding conditions, while Swiss Franc providing operations were also introduced.

In May 2009, the ECB announced additional "enhanced credit support" measures, including three 1-year longer-term refinancing operations (LTROs) with full allotment and a covered bond purchase programme (CBPP) for €60 billion.

In the first 1-year LTRO, conducted in June 2009, banks borrowed €442 billion, which led to further downward pressure in euro money market rates amid a sharp increase in excess liquidity in the system. As a consequence, recourse to the deposit facility, which had been declining gradually prior to the allotment of the June 1-year LTRO, rose considerably following the settlement of the operation. Although there was lower demand in the two subsequent 1-year LTROs in September (€75 billion) and December (€97 billion), it is important to note that at the end of December 2009, the 1-year LTROs accounted for 82% of the total Eurosystem outstanding refinancing volume, while the outstanding volume of 1-year LTROs alone (€614 billion) exceeded by €23 billion the aggregate liquidity needs of the banking system. The 1-year operations therefore had the effect of changing significantly the maturity profile of the Eurosystem's monetary policy operations. These operations also meant that excess liquidity (and hence recourse to the deposit facility) would remain a feature of the euro-area money market for a considerable period of time.

EONIA and use of deposit facility

(EUR million; percentages)



Source: ECB.

Note: The EONIA series excludes the last day of the reserve maintenance period.

In December 2009, as market conditions showed signs of improvement, the ECB began a gradual phasing out of its non-standard measures. The 1-year and 6-month operations and supplementary 3-month operations were suspended, while FX swap lines with the Federal Reserve and the Swiss National Bank were suspended. In addition, the ECB signalled a return to variable-rate tenders at the regular 3-month LTROs, with the first variable-rate LTRO conducted in April.

However, in May 2010, amid deteriorating financial market conditions related to euro-area sovereign debt concerns, the ECB slowed down its phasing-out process. In response to the renewed tensions in financial markets, the ECB announced that the 3-month LTRO would return to a fixed-rate, full-allotment procedure and conducted an additional 6-month supplementary LTRO on 12 May 2010. Temporary liquidity swap lines with the Federal Reserve were also reactivated to resume the providing of US dollar liquidity to euro-area banks. Finally, the Securities Markets Programme (SMP) was announced to ensure depth and liquidity in those market segments which were dysfunctional and to restore an appropriate monetary-policy transmission mechanism.

On 2 September 2010, the ECB announced that it would extend the fixed-rate, full-allotment procedure in the MRO and the maintenance period operation until at least 18 January 2011. Furthermore, it announced that it would conduct the 3-month LTROs which settle on 28 October, 25 November and 23 December as fixed-rate tenders with full allotment, while the rate of these operations would be fixed at the average rate of the MROs over the life of the respective LTRO. On 2 December 2010 the ECB decided to continue conducting its MROs as fixed-rate full-allotment tenders for as long as necessary, and at least until the end of the third maintenance period of 2011. The fixed-rate full-allotment procedure will also remain in use for the Eurosystem's operations with a maturity of one maintenance period, which will continue to be conducted for as long as needed, and at least until the end of the first quarter of 2011. The fixed rate in these operations will be the same as the MRO rate prevailing at the time. Furthermore, the ECB also decided to conduct the three-month longer-term refinancing operations (LTROs) to be allotted on 26 January, 23 February and 30 March 2011 as fixed rate tender procedures with full allotment. The rates in these three-month operations will be fixed at the average rate of the MROs over the life of the respective LTRO.

The fixed-rate, full-allotment policy was launched in October 2008 together with a temporary expansion of the eligible collateral list (see Box 2). In 2009, three 1-year refinancing operations were launched. The Covered Bond Purchase Programme (CBPP) and the Securities Market Programme (SMP) were launched in May 2009 and May 2010 respectively.

The ECB began to purchase covered bonds in July 2009 with the aim of supporting this specific market segment because it considered it to play a particularly important role in the funding of euro-area banks and in supporting financing conditions in the euro-area housing market which had been especially badly affected by the financial crisis. Overall, the CBPP led

to a tightening of covered bond spreads and encouraged a strong rebound in the primary issuance volumes of covered bonds, helping to deepen primary market activity in previously underdeveloped jurisdictions.

The SMP is intended to address the malfunctioning in the euro area's securities markets and to restore an appropriate monetary policy transmission mechanism by ensuring depth and liquidity in those market segments which are dysfunctional. Under the SMP the ECB may purchase public and private debt securities only in the secondary market. The ECB sterilises the impact of these purchases on the liquidity conditions in the banking system by regularly re-absorbing the liquidity injected through the SMP purchases.

Thus, the SMP does not imply a change in the monetary policy stance and is neutral with regard to interbank liquidity conditions.

The increase in surplus interbank liquidity that followed the introduction of fixed-rate and full-allotment liquidity-providing operations by the ECB in October 2008 caused the gap between the Euro OverNight Index Average (EONIA) rate and the rate at the ECB's main refinancing operations to widen significantly (Chart 1). The degree of surplus interbank liquidity, however, depended on the changing amounts of cash that banks decided to demand at the different ECB liquidity providing operations at different times. This feature at times caused a significant amount of uncertainty about the outlook for liquidity conditions and short-term rates in the market. The uncertainty over the spread between the overnight rate and the policy rate also made it increasingly difficult to measure markets' expectations about the future path of the ECB's policy rates. In this environment, EONIA swap rates declined between January and May 2009, partly reflecting cuts in the ECB's policy rates over these months, markets' expectations of further cuts and changes in surplus liquidity conditions.

In the United States, as of 31 December 2008, the federal funds target rate stood at 0.00-0.25% and has remained there since. The Federal Reserve did however increase its discount rate by 25 basis points from 0.50% to 0.75%.⁸ In total, the Federal Reserve has cut its target

rate for federal funds by 500 basis points since September 2007. In addition to cutting the federal funds rate, the Federal Reserve also pursued a series of non-conventional policies which Chairman Ben Bernanke called Credit Easing (CE) to distinguish it from the policy approach adopted by the Bank of Japan (BoJ) in 2001-2006 which had been labelled Quantitative Easing (QE).⁹ During this period, the Federal Reserve also purchased US Treasuries and mortgage-related securities in order to improve conditions in private credit markets, such as mortgage markets. According to Mr Bernanke, in contrast to QE the focus of policy under CE is not the quantity of bank reserves but the composition of loans and securities on the asset side of the central bank's balance sheet.

Since Autumn 2008, the BoJ has reduced its policy interest rate to a range between 0% and 0.1% and has taken various measures to ensure the stability of financial markets and facilitate corporate financing. Those measures include US dollar funds-supplying operations against pooled collateral, the outright purchases of commercial paper (CP) and corporate bonds, and special funds-supplying operations to facilitate corporate financing. In addition, because it has focused particularly on maintaining the stability of the financial system, the BoJ has also taken measures such as the purchase of stocks held by banks and the provision of subordinated loans to banks.

⁸ Press release NYFED 18 February 2010.

⁹ See speech by Ben S. Bernanke, "The crisis and the policy response", 13 January 2009.

Box 2

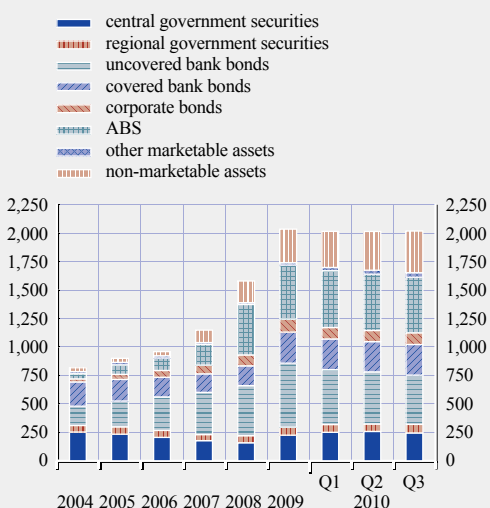
EVOLUTION OF THE USE OF COLLATERAL IN ECB MONETARY POLICY OPERATIONS

Since the start of the financial market turmoil in August 2007, the growth of the amount of collateral posted with the Eurosystem has been substantial. The average value of marketable and non-marketable assets deposited by counterparties as collateral for Eurosystem credit (which consists of liquidity-providing monetary policy operations, the marginal lending facility and intraday credit) increased on average by 28% per annum between 2006 and 2009 (see Chart A). The largest increase, approximately 38%, occurred between 2007 and 2008 and partly coincided with the introduction of the first package of non-standard measures, including the fixed-rate,



Chart A Collateral posted with the Eurosystem

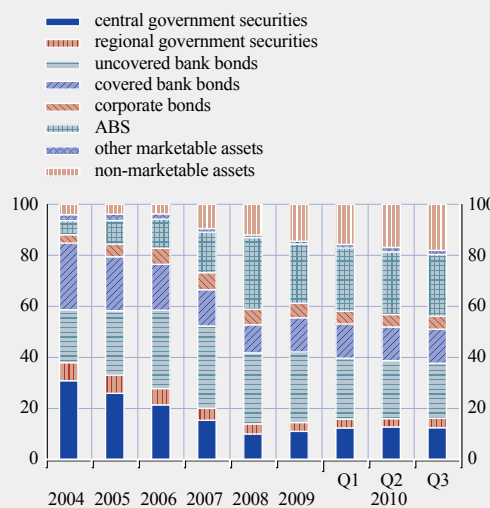
(EUR billion)



Source: ECB.

Chart B Shares of asset types in total used collateral

(percentage)



Source: ECB.

full-allotment tender procedures, in October 2008. The growth levelled off in 2009, a total amount of €2,035 billion being deposited that year. During the first nine months of 2010 the total amount of collateral deposited decreased very slightly and despite the maturity of the large-scale 1-year long-term refinancing operation in July 2010, the total amount of collateral deposited still exceeded €2 trillion in the third quarter of 2010

With regard to the composition of the collateral deposited (see Chart B), the average share of asset-backed securities (ABS) increased from 11% in 2006 to 28% in 2008 and decreased to around 24% in the first three quarters of 2010. Notwithstanding this decrease in relative terms, ABS have become the largest single asset class deposited, followed by uncovered bank bonds. Non-marketable assets, in particular credit claims (i.e. bank loans), increased significantly as well, up from 10% in 2007 to around 18% in 2010.

The increased share of less liquid assets, in particular ABS, deposited with the Eurosystem as collateral may reflect the ongoing real and financial market turbulence and indicate that counterparties are using less liquid assets with the Eurosystem while keeping the more liquid assets for the private repo and interbank markets. This is also suggested by Charts A and B, which indicate that the use of central government securities has decreased from around 21% in 2006 to around 12% in 2009 and 2010.

The Eurosystem's operational and collateral framework is designed with a view to ensuring the participation of a broad range of counterparties and allowing them to use a broad range of assets as collateral in large-size monetary policy operations. With a view to protecting the Eurosystem from incurring financial losses in its monetary policy operations, ensuring the equal treatment of counterparties and enhancing operational efficiency and transparency, all Eurosystem credit operations need to be based on adequate collateral which have to fulfil certain criteria. The Eurosystem has further refined these criteria in the course of 2010.

On 8 April 2010 the Governing Council decided to keep the minimum credit threshold for assets in the Eurosystem collateral framework at investment level, i.e. BBB-/Baa3, beyond the end of 2010. This minimum credit threshold was introduced in October 2008 (reduced from the original threshold of A-) as part of a first set of temporary non-standard measures to address the financial market turmoil. At the same time, the Governing Council introduced graduated valuation haircuts for lower-rated assets in its collateral framework which were published in July 2010. These will be applied as of 1 January 2011.

On 23 April 2010, the Eurosystem launched the step-wise practical establishment of loan-level information requirements for eventual application in respect of asset-backed securities in its collateral framework. As the Eurosystem is the main recipient of asset-backed securities, the new requirement would clearly increase the transparency of collateral pools in the market, contributing to more informed risk assessments and helping to restore confidence in the ABS markets.

In July 2010, in the context of a periodical review, the ECB revised the risk control measures related to the monetary policy implementation framework. In addition to the introduction of the graduated valuation haircuts for lower-rated assets, it fine-tuned the definition of liquidity categories for marketable assets. For example, all non-Jumbo covered bonds, including structured covered bonds, multi-issuer covered bonds and UCITS-compliant covered bonds will be classified in liquidity category III. Moreover, the additional valuation mark-down of 5% in the case of theoretical valuations was extended to all bank bonds (both covered and uncovered).

Finally, on 9 October 2010, the ECB presented additional amendments to the framework for implementation of monetary policy in the euro area. The Eurosystem regularly reviews and where necessary amends the provisions of its monetary policy framework, inter alia on the basis of careful monitoring of the use of collateral by the counterparties and of their behaviour in banking markets and in Eurosystem operations. The 2010 review included in particular clearer and more stringent provisions on the cash-flow generating assets of ABS, for example by designating swaps and synthetic securities as non-eligible underlying assets. The new provisions also restrict the residence of ABS originators and the place of issuance of the underlying assets to the European Economic Area (EEA). In addition, new provisions were introduced for structured covered bonds backed by residential real estate loans used as collateral in Eurosystem credit operations.

3 THE UNSECURED MARKET

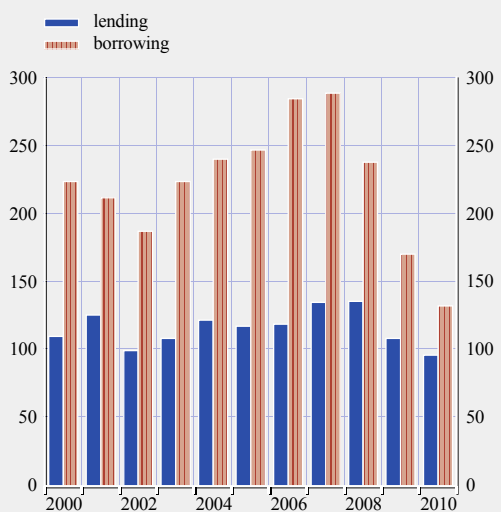
3.1 TURNOVER ANALYSIS

Over the past two years the average turnover in unsecured lending and borrowing continued to decline (total activity in the unsecured market already began to shrink in 2008 after five years of continuous growth – see Chart 2). In both 2009 and 2010 turnover declined much more on the borrowing side than on the lending side. In 2010, for example, the former declined by 22% whereas the latter fell by only 11%.

As unsecured lending exposes the lender to the highest degree of counterparty default risk, it is not surprising that turnover in the unsecured market continued to decline since aversion to counterparty credit risk remained very high as a result of the crisis. Reportedly, greater aversion to credit risk was also reflected in the imposition of stricter credit limits by the risk departments of banks. These limits, for example, restricted banks' lending choices to borrowers with the highest credit ratings, usually banks that are less active borrowers in the interbank market. Limits also restricted lending to the shorter

Chart 2 Average daily turnover in unsecured cash lending and borrowing

(index: cash lending volume in 2002 = 100)



Note: The panel comprised 85 credit institutions in 2000 and 2001 and 105 credit institutions thereafter.

maturities (typically one week or less), which carry relatively less risk for the lender.

An increased preference for secured transactions, which by definition imply less credit risk, also helps explain the decline. Indeed, the results of the survey show that the decline in turnover in the unsecured market was mirrored by an increase in secured market turnover (see Chapter 4).

The emphasis placed by regulators and banks on capital preservation after the crisis also means that unsecured lending, which is more capital absorbing than other activities, tends to be avoided by banks in favour of other kinds of lending (e.g. secured lending) with lower risk. This is particularly true for unsecured lending with longer maturities.

Liquidity regulations may also have had an impact on turnover in the unsecured market (see Box 3). Some banks, for example, reported that liquidity regulations which require them to hold large liquidity buffers help explain the decline in the amount of unsecured lending for overnight maturities. The reason is that a large

part of their liquidity buffers is made up of cash they deposit overnight with central banks which they no longer lend out to the market. Liquidity regulations have also caused these banks to push out the maturity of their liabilities and so their demand for short-term unsecured cash has declined as a result.

Another major factor explaining the decline in turnover in this market was the unlimited amount of liquidity offered by the Eurosystem to thwart market disruptions and the resulting abundant surplus of liquidity, which made it less necessary than before for many banks to rely on the interbank market to borrow cash. This phenomenon became particularly evident in the aftermath of the first ECB 1-year refinancing operation in June 2009 (see Box 1). In this 1-year operation slightly more than €442 billion were allotted (the highest amount ever allotted in any ECB operation, although not the highest amount ever bid) to a record number of counterparties (1,121).

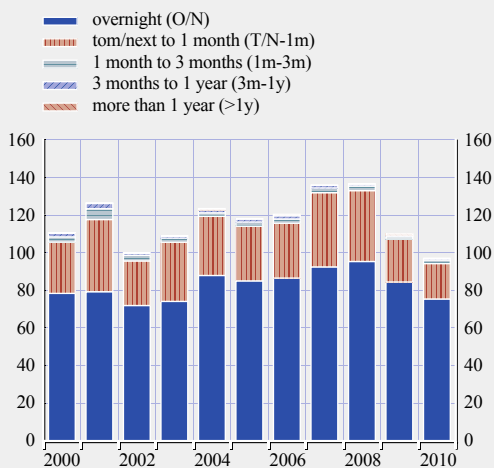
A further driver of the reduction in borrowing volumes in the unsecured market was the increasing issuance of short-term debt obligations such as certificates of deposits (CDs). Reportedly, many banks considered short-term paper an attractive funding alternative and investors also began to view this instrument with increasing interest after the Eurosystem decided in October 2008 temporarily to accept debt instruments issued by credit institutions (and traded in ECB-accepted non-regulated markets) as eligible collateral for its liquidity-providing operations (see Chapter 6).

3.2 MATURITY ANALYSIS

In 2010 most of the turnover in the unsecured market continued to be concentrated in the overnight (O/N) maturity segment, as regards both lending and borrowing (Charts 3 and 4). The disproportionate weight of O/N maturities has been a persistent feature of the unsecured market since O/N has been the maturity which banks have typically used to adjust their

Chart 3 Maturity breakdown for average daily turnover in unsecured lending

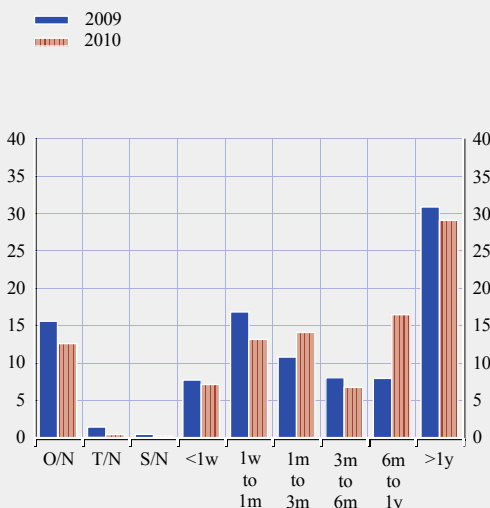
(index: cash lending volume in 2002 = 100)



Note: The panel comprised 85 credit institutions in 2000 and 2001 and 105 credit institutions thereafter.

Chart 5 Maturity-weighted breakdown for average daily turnover in unsecured lending

(percentages of total)



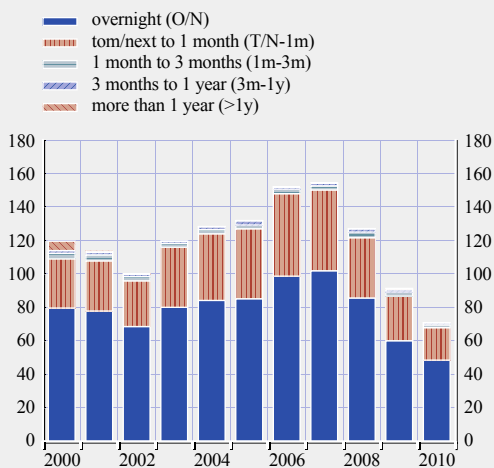
Note: The panel comprised 172 credit institutions.

day-to-day cash imbalances. Given that default risk at overnight maturities is the lowest of any unsecured transaction and that unsecured cash transactions are relatively simple to settle

(compared with repo transactions, for example), unsecured O/N transactions have traditionally been preferred by bank treasury departments for the management of day-to-day flows.

Chart 4 Maturity breakdown for average daily turnover in unsecured borrowing

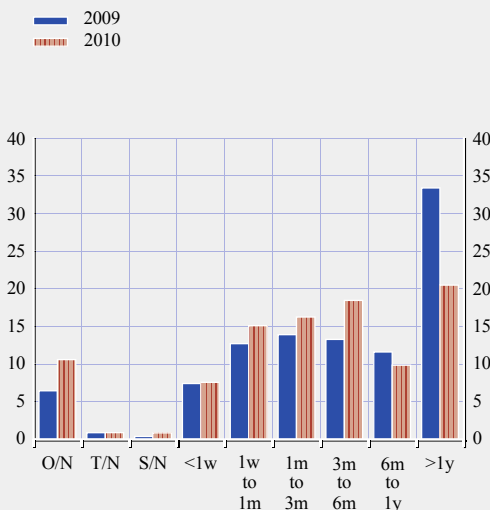
(index: cash borrowing volume in 2002 = 100)



Note: The panel comprised 85 credit institutions in 2000 and 2001 and 105 credit institutions thereafter.

Chart 6 Maturity-weighted breakdown for average daily turnover in unsecured borrowing

(percentages of total)



Note: The panel comprised 172 credit institutions.

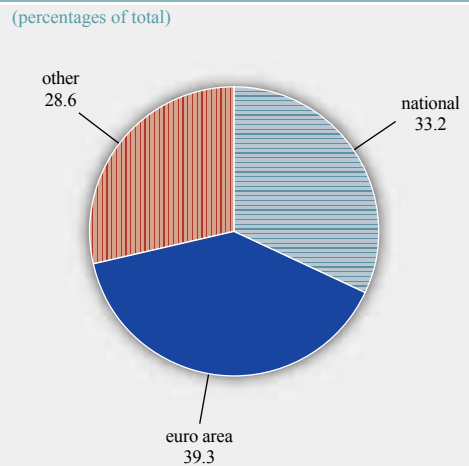
The maturity-weighted breakdown of average daily turnover figures provides a gross measure of banks' exposure to changes in money market rates (Charts 5 and 6). According to these figures, the biggest decrease – as a percentage of the total – was in borrowing transactions for maturities of longer than one year (down from 33% in 2009 to 20% in 2010 – see Chart 6). Generally speaking, interbank transactions with maturities of longer than one year have always been rather limited but their decline confirms that longer-term borrowing was replaced by a massive participation in the Eurosystem's longer-term refinancing operations.

The decrease in O/N lending turnover was mirrored by a larger use of O/N deposits with the Eurosystem, as a consequence of the liquidity hoarding by cash lenders in the interbank market.

3.3 MARKET STRUCTURE

The geographical breakdown of counterparties for unsecured transactions (see Charts 7 and 8) shows that the trend towards national segmentation, one of the consequences of the financial turmoil, diminished in 2010 in

Chart 8 Geographical counterparty breakdown for unsecured average daily turnover in 2010

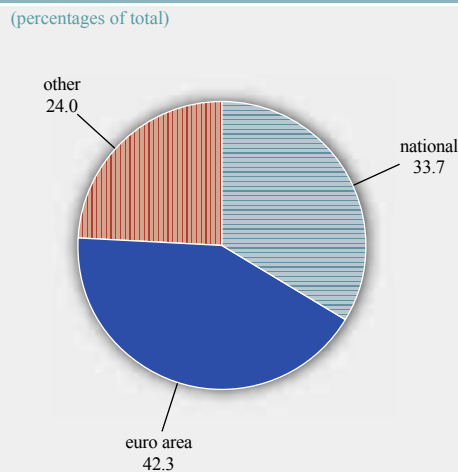


Note: The panel comprised 172 credit institutions.

comparison with 2009 since the percentage of national counterparties fell from 33.7% to 32.1% and that of counterparties not resident in the euro area increased from 24.0% to 28.6%.

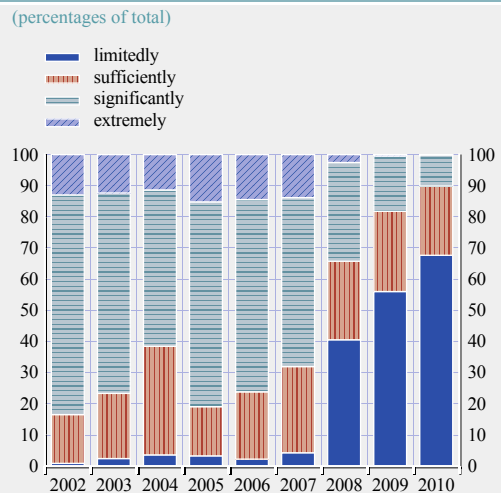
Most of the panel banks reported that the efficiency of the unsecured money market had been rather limited over the past two years, and

Chart 7 Geographical counterparty breakdown for unsecured average daily turnover in 2009



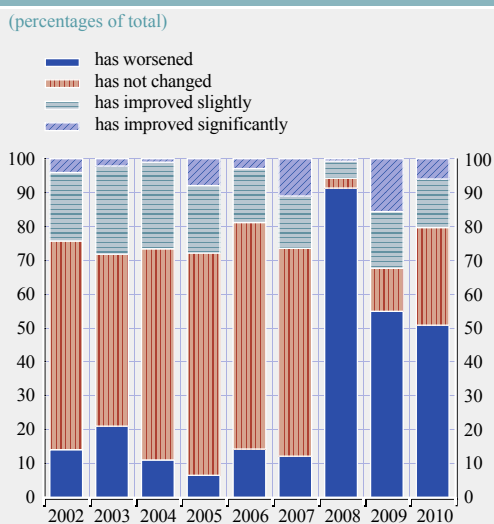
Note: The panel comprised 172 credit institutions.

Chart 9 Is the unsecured segment in your opinion efficient?



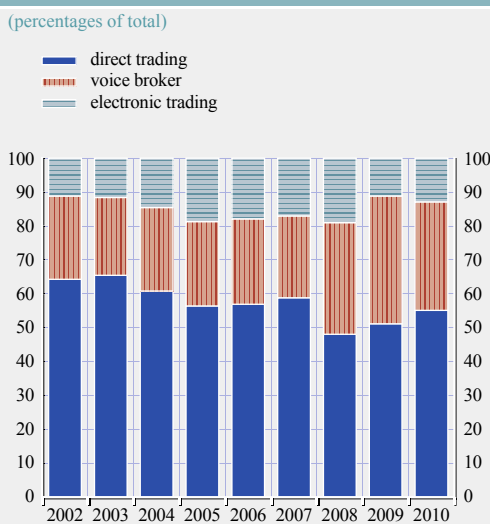
Note: The panel comprised 105 credit institutions.

Chart 10 Has the market liquidity in the unsecured market changed with respect to last year?



Note: The panel comprised 105 credit institutions.

Chart 11 Trading structure of unsecured transactions



Note: The panel comprised 105 credit institutions.

virtually none ranked the market as extremely efficient (see Chart 9). As regards market liquidity, the percentage of banks reporting a worsening (roughly 50%) decreased slightly in 2010 in comparison with the previous year; however, the proportion reporting a significant improvement more than halved (from 16% to 6% of the panel – see Chart 10).

In terms of the mode of trading, roughly half of the transactions over the past two years (55% in 2010 and 51% in 2009) were executed on a bilateral basis (Chart 11). The percentage of transactions executed via an electronic platform increased slightly in 2010 (just under 13% of the total) in comparison with 2009 (11% of the total).

Box 3

LIQUIDITY REGULATION: THE INTERNATIONAL APPROACH

The term “liquidity risk” is commonly defined as the risk that a bank might be unable to meet its obligations as they fall due as a result of a sudden, and potentially extended, increase in net cash outflows. As the recent financial crisis highlighted, liquidity risk is of key importance to the functioning of money markets and the stability of the banking sector. This box summarises the main features of the proposals on international liquidity regulation put forward by the Basel Committee on Banking Supervision (BCBS), which are by far the most important initiative in this area to have emerged from the experience of the crisis.

In September 2008 the BCBS published its “Principles for sound liquidity risk management and supervision”¹ to demonstrate the lessons learnt during the crisis. Then, in December 2009,

¹ This document represents a fundamental review of the BCBS’s previous “Sound practices for Managing Liquidity in banking organizations” which was published in 2000.

the BCBS issued a key consultative document called “International framework for liquidity risk measurement, standards and monitoring”, which outlined a set of detailed proposals for the creation of a global framework to strengthen liquidity risk management and as well to increase the international harmonisation of its supervision.

On 26 July 2010, following a period of consultation, the Group of Governors and Heads of Supervision (GHOS), the oversight body of the BCBS, finally reached broad agreement on a new set of global liquidity standards.

The proposals include a minimum liquidity standard for internationally active banks based on two key regulatory ratios: the liquidity coverage ratio (LCR) and the net stable-funding ratio (NSFR). They also outline a set of four liquidity risk monitoring tools involving contractual maturity mismatch, funding concentration (with regard to counterparties, instruments and currencies), availability of unencumbered assets, and market-related monitoring tools.

Although agreement on the final details of the LCR is much more advanced than on those of the NSFR, it is important to emphasise that both standards are still under discussion within the BCBS.

The LCR identifies the minimum amount, to be specified by the supervisors, of unencumbered, high-quality liquid assets to be held by a bank for use in offsetting the net cash outflows that the bank might encounter under an acute stress scenario lasting 30 days.² The exact definition of the LCR metric is:

$$\frac{\text{Stock of high quality liquid assets}}{\text{Net cash outflows over a 30-day time period}} \geq 100\%$$

The new proposed standard would require that the value of the ratio be no lower than 100% (i.e. the stock of liquid assets should at least equal the estimated net cash outflows).

The definition of “liquid assets” encompasses cash, central bank reserves, marketable securities issued or guaranteed by international bodies³ and government or central bank debt issued in domestic currencies. Moreover, it was agreed by the GHOS to split such assets into so-called level 1 and level 2 categories. Level 1 liquid assets are defined as: 1) government and public sector entity assets qualifying for the 0% risk weight under Basel II and 2) sovereign debt that does not have a 0% risk weight, issued in foreign currency, provided that the currency matches the currency needs of the bank’s operations in that jurisdiction. Level 2 liquid assets may only account for a maximum share of 40% of the total stock of liquid assets and consist of: 1) government and public sector entity assets qualifying for the 20% risk weight under Basel II and 2) corporate and covered bonds (not self-issued) rated at least AA-. A 15% haircut will apply on the level 2 liquid assets.

The “net cash outflows” denominator of the LCR consists of a series of bank funding liability categories which are weighted according to the potential difficulties that a bank may have in rolling them over in the short-term. These weights (the so-called “run-off” or “roll-off” rates)⁴

2 The scenario involves both institution-specific and systemic shocks, namely a significant downgrade of the institution’s public credit rating, a partial loss of deposits, a loss of unsecured wholesale funding, a significant increase in secured funding haircuts, and increases in derivative collateral calls and substantial calls on contractual and non-contractual off-balance-sheet exposures, including committed credit and liquidity facilities.

3 Provided some criteria are met.

4 The run-off (or roll-off) rate means the amount of funding maturing in the 30-day period that will not be rolled over.

are of particular relevance for banks' relative reliance on wholesale interbank funding as opposed to other sources of funding. Retail deposits, for example, are given a much lower run-off rate (5-10%) than interbank unsecured funding (100% run-off rate). Secured sources of funding (e.g. repo) backed by assets that would not be included in the LCR stock of liquid assets⁵ are given a 25% run-off rate.

The NSFR is a longer-term structural ratio that focuses on the stability of funds on the liability side of banks' balance sheets. It is intended to promote more medium and long-term stable funding of the assets and activities of banks and to limit over-reliance on wholesale funding during periods of buoyant market liquidity. The standard also seeks to encourage better assessment of liquidity risk by banks across both their on and off-balance-sheet items. The NSFR is defined as a ratio of the available amount of stable funding to a required amount of stable funding. This ratio must be greater than 100%.

$$\frac{\text{Available amount of stable funding}}{\text{Required amount of stable funding}} > 100\%$$

In this context available stable funding (ASF) is defined as those types and amounts of equity and liability financing expected to be reliable sources of funds over a 1-year time horizon under conditions of extended stress. A certain weight (an ASF factor) is allocated to the items on the liability side of the balance sheet depending on their availability in the extended firm-specific stress scenario.⁶ The "required amount of stable funding" is calculated as the sum of the value of the assets held and funded by a bank. Asset categories deemed more illiquid are assigned a higher weighting⁷ so they require a higher amount of stable funds under the NSFR ratio. Illiquidity, according to this measure, is defined as the amount of a particular asset that could not be monetised through sale or use as collateral in a secured borrowing on an extended basis during a liquidity event lasting one year.

The July 2010 GHOS press release stated that the BCBS was still discussing alternative ways of modifying the initial NSFR proposals outlined in December 2009.

The LCR will be subject to observation until 31 December 2014, after which the measure will be applied as a minimum standard. Similarly, the observation period for the NSFR will last from 2012 until the end of 2017.

⁵ Double counting is not allowed, i.e. if a liquid asset is being used for secured funding, it cannot also count as part of the pool of liquid assets or as a cash inflow.

⁶ As an example, capital, preferred stock and secured and unsecured borrowings and liabilities with effective maturities of one year or more are allocated 100% ASF factor.

⁷ This is known as a Required Stable Funding (RSF) factor. As an example, cash and money market instruments will have a 0% RSF factor.

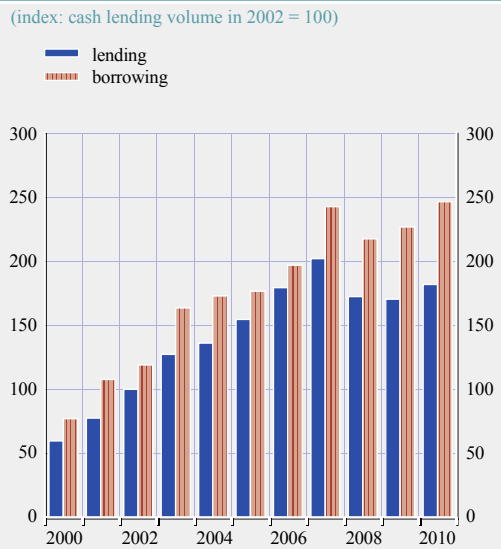
4 THE SECURED MARKET

4.1 TURNOVER ANALYSIS

The secured market segment recovered in 2010 after the weaker development in the previous two years (Chart 12). Reverse repos (cash lending against securities) and repo transactions

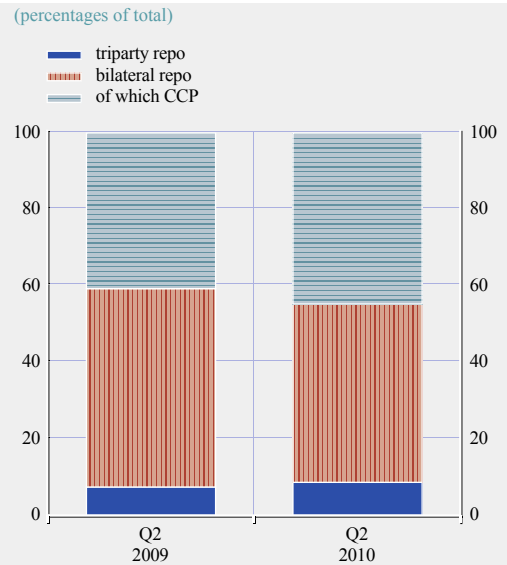
(cash borrowing against securities) taken together increased by 8% and overall turnover increased to pre-crisis levels. As unsecured transactions declined, the secured segment was able to strengthen further its position as the largest segment of the euro money market in 2010, representing 36% of total turnover.

Chart 12 Average daily turnover in secured cash lending and borrowing



Note: The panel comprised 85 credit institutions in 2000 and 2001 and 105 credit institutions thereafter.

Chart 13 Share of triparty, bilateral and bilateral CCP repos of total repos



Note: The panel comprised 172 credit institutions.

This recovery has three main drivers. The first is the ongoing trend and pull towards secured transactions in order to limit credit risk exposure and constraints resulting from capital adequacy requirements, this trend having already been evident before the financial turmoil. This development corresponds to a decline in the unsecured money market. The second driver is that banks seemed to handle the combination of counterparty risk and quality of collateral better than in the aftermath of Lehman Brothers' default and thus were able to generate business from "collateral quality spreads" because, for example, no counterparty risk was assumed for banks of systemic importance. A third, smaller driver may have been the increased use of electronic platforms and, in particular, of trading facilities with Central Counterparties (CCPs).

However, the growth in the secured segment might have been even stronger had there not been a significant shift to central bank refinancing as

a result of the large demand generated by the Eurosystem's first 1-year tender.

The 2010 survey includes for the second time data on activity in the secured market cleared through CCPs as a sub-segment of the repo market, which accounts this year for 45% of total secured market turnover compared to 41% in 2009 (Chart 13). The main reasons behind the greater use of CCPs are the desire to avoid counterparty credit risk, the perceived benefits of anonymous trading in a risk averse environment, and the introduction and consolidation of repo platforms across Europe (on the growing use of CCPs and related market infrastructure see Boxes 4, 5 and 6).

The survey shows that, similarly to the previous year, borrowing activity in the secured market outweighed lending activity throughout the second quarter of 2010 for the constant panel of 105 banks (Chart 12). This could be related to the fact that the banks participating

in the survey tend to be relatively large, and might be structurally in greater need of cash or have better access to the interbank market than others.

The semi-annual survey published by the European Repo Council (ERC) in June 2010 also reflected the growth in the European secured market. The panel of institutions which

participated in the ERC survey reported an aggregate increase in turnover of around 25% over the second half of 2009, a higher increase than reflected in this Eurosystem survey (+8%). However, these diverging growth rates may be the result of the different samples of banks and considerable methodological differences between the two surveys which are described in Annex 2.

Box 4

CLEARING AND SETTLEMENT REPO MARKET INFRASTRUCTURE: THE CASE OF CENTRAL COUNTERPARTIES

The Committee of Payment and Settlement Systems (CPSS) recently published a report entitled “Strengthening repo market infrastructure” which examines the extent to which the practices, procedures and systems used for clearing and settlement of repo transactions may have limited or added to the uncertainty observed in the repo market of several countries during the crisis.¹ Because of the great variety of arrangements in place in the various countries, the report, in suggesting options to strengthen the repo market infrastructure, invites the relevant stakeholders in each market to analyse which of the identified issues may be relevant in their case and consider the various options available to address them. One of the most interesting issues analysed in this report is the greater resilience shown during the recent financial crisis by repo transactions cleared by central counterparties (CCPs) compared with bilateral and triparty repos.

Data from the ECB’s Statistical Data Warehouse, for example, show that the value of euro-denominated debt securities repo contracts (on a post-novation basis) cleared by the two largest CCPs in the euro market, Eurex Clearing and LCH.Clearnet S.A., continued to increase throughout the worst periods of the crisis. Indeed, the data shows that the value of contracts cleared by Eurex Clearing increased from €10,000 billion in 2008 to €12,109 billion in 2009; higher frequency data reported in Box 5 of the current report also show that Eurex repo volumes have continued increasing in 2010. Contracts cleared by LCH.Clearnet S.A. grew from €33,289 billion in 2008 to €34,264 billion in 2009. Central counterparties which are more oriented towards their respective domestic markets, such as Cassa di Compensazione e Garanzia (CC&G) (Italy) or MEFFClear (Spain) also reported increasing business. CC&G saw volumes increase from €7,016 billion in 2008 to €13,110 billion in 2009, while volumes cleared by MEFFClear increased from €87 billion to €177 billion over the same period.

The CPSS report outlines various important features of CCPs which help explain why they were able to contribute to the resilience of the repo market during the crisis. First, a CCP can significantly reduce market participants’ level of counterparty credit risk. Following a process called “netting by novation” via the CCP, the two parties involved in a repo transaction remain exposed only to the CCP instead of to each other. Netting by novation refers to an agreement

¹ The report is available at <http://www.bis.org/publ/cpss91.htm>

whereby the obligations derived from individual transfer orders are netted and replaced by a new obligation vis-à-vis the CCP, which interposes itself between the parties and becomes a buyer to every seller and a seller to every buyer. The CCP is, of course, a relatively more robust counterparty as long as it has a robust and transparent risk management framework, has sufficient financial resources and is adequately regulated. Second, the role, responsibilities and procedures of CCPs are usually well known to its members, which eliminates uncertainties as to the level of risk the members assume by using them. Third, concerns about collateral liquidation in case of default by a counterparty are less pronounced when repo transactions are cleared through a CCP. This is because the responsibility to liquidate collateral is transferred from the (original) collateral taker to the CCP and to the extent that the CCP is better prepared for this task this is expected to contribute to a more orderly collateral liquidation. Only under certain, well-defined circumstances, e.g. in the absence of adequate prices for collateral valuation, may the CCP reserve the right to reallocate the collateral back to the surviving participants; they would then still have the onus of liquidating the collateral. Because of multilateral netting benefits achieved through the CCP, the overall collateral to be liquidated is usually lower. Fourth, the various means the CCP can employ to manage the risks it assumes (including the haircuts and margin requirements) are known ex ante to its members. Transparency about the risk management framework in place helps participants to anticipate changes in collateral requirements and margin calls by CCPs and to be better prepared to manage funding and liquidity risks. Because CCPs tend to have strong risk management frameworks, as the crisis developed they may have needed to make smaller adjustments than less risk-conservative players, which may have limited somewhat the pro-cyclicality of margin requirements (i.e. the phenomena whereby the liquidity and collateral required to meet margin calls can also amplify liquidity constraints during times of market stress).

While CCP clearing has helped protect market participants' confidence and their willingness to operate in the repo market during the turmoil, the CPSS report cautions against viewing CCPs as a solution to all market-functioning problems during a crisis. In this regard, the report also outlines a number of important limitations of CCPs. For instance, in some markets the small number of counterparties or the type of counterparties active in the repo market (e.g. banks mainly on the cash borrowing side and investment funds on the lending side) offer only limited scope for efficiently exploiting the benefits arising from the multilateral netting arrangements described above. Furthermore, CCP clearing is costly and the expected benefits from establishing a CCP infrastructure may not justify the costs in smaller markets for instance. Individual markets that have not previously had or used a CCP need comprehensively to assess the balance of the benefits, costs and risks of a CCP against existing arrangements. The fact that risk is concentrated in a single entity should also be taken into account. Central counterparties themselves may not be willing to assume all the risks that the market seeks to avoid during a situation of market stress as this may also reduce the perceived "safety" of the CCP and this would undermine users' confidence. Furthermore, if a CCP seeks to protect itself during a situation of market stress by rapidly and significantly raising its haircuts and margins on particular sets of collateral used in repo transactions, this could contribute to reducing liquidity in the market.

The ability of CCPs to intermediate interbank repo transaction throughout the entire euro area is also limited by the fact that there is insufficient cross-border integration in the securities settlement industry and this de facto limits efficient access to the various euro-area (international)

central securities depositories (CSDs) where securities used as collateral in repos are held. In this regard, the euro-area market infrastructure is expected to benefit, in the coming years, from the ongoing process of rationalisation in the securities settlement industry. The Eurosystem in particular has undertaken two projects that will also benefit repo market participants and infrastructures. The TARGET2-Securities (T2S) project will contribute to removing the residual geographical segmentation in securities settlement in Europe, even beyond the euro area. The Collateral Central Bank Management (CCBM2) project will support the swift and more efficient handling of collateral for Eurosystem credit operations and indirectly also support banks' own liquidity and collateral management. CCBM2 will also help financial market integration by making it easier to use cross-border triparty collateral management services as provided by some (I)CSDs in Eurosystem credit operations. This in turn will enhance collateral re-use possibilities for repo market participants that are also Eurosystem counterparties.

4.2 MATURITY ANALYSIS

A breakdown by maturity for the constant panel of 105 banks shows that, for both repo and reverse repo transactions, turnover was concentrated in shorter maturities (Chart 14). This is despite the fact that the average maturity of secured transactions is still comparatively longer than that for unsecured transactions. In the second quarter of 2010, overnight secured transactions declined slightly, although they still accounted for 19.5% of the overall secured market

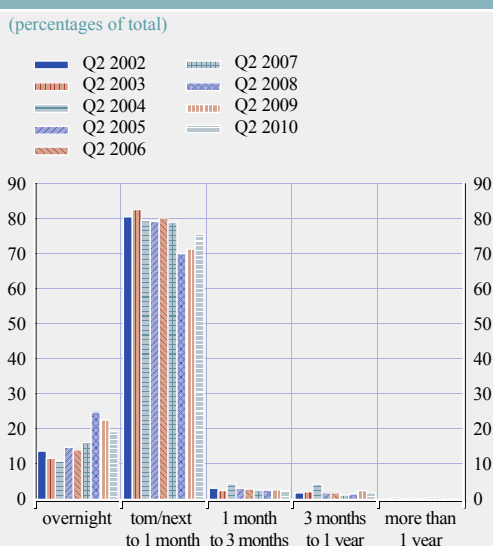
turnover, and the share of overnight transactions has doubled in six years. Transactions in the maturity bucket "tomorrow/next up to one month" increased to 76% of the total and remained the most traded, while maturities over one month – representing about 4.5% – were, as in the previous years, of minor importance.

The share of overnight business declined to 19.5% of total secured market turnover in 2010, compared with 22.8% in 2009 and 25.1% in 2008. However, as the O/N maturity in the unsecured segment also went down perceptibly there was less need for daily surplus balancing on account of the heavy involvement of central banks in the redistribution of longer-term liquidity.

A comparison of maturity-weighted volumes for reverse repo transactions (both cash lending and borrowing) between 2009 and 2010 revealed a clear shift to the 6-month to 1-year maturity bucket (Chart 15). This could indicate that some cash rich banks may have chosen to marginally lengthen their cash lending to take advantage of wide spreads in term reverse repos against the highest quality collateral. However, the share of such longer-term business was at all times small.

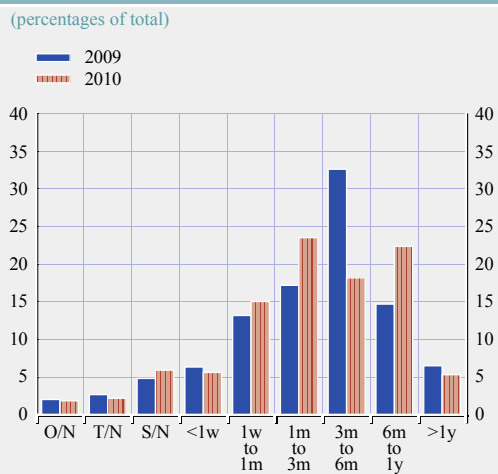
A comparison with the maturity structure of the ERC survey reveals some discrepancies, most likely stemming from the fact that the ECB survey is based on flows and initial maturities, whereas the ERC survey focuses on stocks and

Chart 14 Maturity breakdown for overall secured lending and borrowing activity from 2002 to 2010



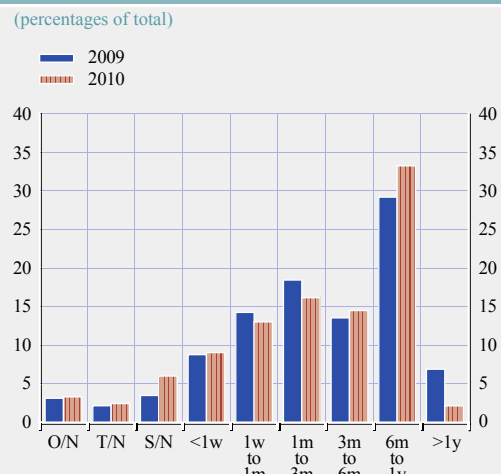
Note: The panel comprised 85 credit institutions in 2000 and 2001 and 105 credit institutions thereafter.

Chart 15 Maturity-weighted breakdown for average daily turnover in secured lending



Note: The panel comprised 172 credit institutions.

Chart 16 Maturity-weighted breakdown for average daily turnover in secured borrowing



Note: The panel comprised 172 credit institutions.

residual maturities on a certain reference date. The ECB survey finds a very large amount of business with an initial one-business-day maturity (78% of overall secured activities in

2010, including “overnight”, “tomorrow/next”, and “spot/next”), while the ERC semi-annual survey released in June 2010 reports a smaller figure (18% share).

Box 5

THE TREND TOWARDS CENTRAL COUNTERPARTIES (CCPs) IN THE SECURED MONEY MARKET – RECENT DEVELOPMENTS AND INNOVATIONS IN GC POOLING

The financial market crisis has clearly reinforced the general trend towards more secured and, in particular, more CCP-based transactions in the money market. The main electronic repo market platforms offering collateralised euro money market trading via CCPs are ICAP BrokerTec, Eurex Repo and MTS. For these platforms LCH.Clearnet, Eurex Clearing and Cassa di Compensazione e Garanzia act as CCPs. A CCP acts as the legal counterparty to every trade. The contracts between the original trading entities are thus discharged and two new, legally binding contracts are created – one between each original trading parties and the CCP. This places the CCP in a unique position in which it has direct interaction with and counterparty risk exposure to each trading party. For credit institutions, secured money market trading involving a CCP offers important advantages such as anonymous trading, efficient settlement and no or low prudential capital requirements. However, the major benefit for banks of trading via a CCP is the minimisation of counterparty credit risk.

Since the onset of the crisis Euro GC Pooling has experienced significant growth. Euro GC Pooling is a funding-oriented market segment of Eurex Repo which consists of money market transactions collateralised by securities of high quality and liquidity (general collateral or GC).

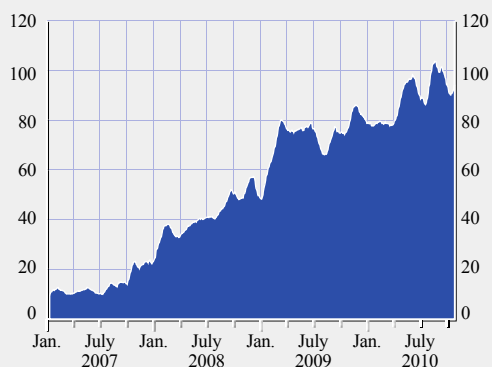
The outstanding volume of transactions in GC Pooling has risen noticeably, swelling from some €10 billion in January 2007 to a peak just above €100 billion in September 2010 before stabilising at around €95 billion (see Chart A). At the same time, the share of longer-term transactions has risen considerably. Since the end of 2007, in particular, participants traded more in the maturity bucket from one week to twelve months at the expense of transactions with a maturity of one week or less (see Chart B). The higher outstanding transaction volume is the result not of an increase in volumes per transaction but rather of a greater number of transactions, which can be attributed in part to a larger group of participants, not least due to the growing number of international participants. The number of GC Pooling participants has risen by 32 since the beginning of 2007, and stood at 49 in November 2010. The number of participants based outside Germany has increased from just one in early 2007 to 19 in 2010.

Following the Eurosystem's decision in mid-October 2008 to temporarily extend its collateral framework, in November 2008 Eurex Repo introduced a new broader GC basket – the so-called GC Pooling ECB EXTENDED Basket – in addition to the existing GC Pooling ECB Basket. While the latter includes around 9,000 ECB-eligible instruments (mainly government securities and covered bank bonds) with a minimum rating of A-/A3, the new EXTENDED Basket is composed of around 27,000 ECB-eligible securities with ratings up to a threshold of BBB-, including uncovered bank bonds as well as corporate bonds. The EXTENDED Basket was created in response to market participants' demand also to have the option of refinancing a broader range of ECB-eligible assets in the GC Pooling market and also enjoying the advantages of the CCP for assets which tend to be less liquid. Given the perceived lower liquidity of some assets included in the EXTENDED Basket, however, cash lenders tend to quote and cash takers are willing to pay slightly higher rates for trades based on EXTENDED Basket collateral. For example, in 2010 the O/N rates for trades in the EXTENDED Basket were on average nearly three basis points higher than the O/N rates in the regular GC basket.

After the temporary introduction of the 12-month tenders by the Eurosystem and in particular in the prevailing money market context of high surplus liquidity and very

Chart A Euro GC Pooling outstanding volume (ECB Basket and ECB EXTENDED Basket)

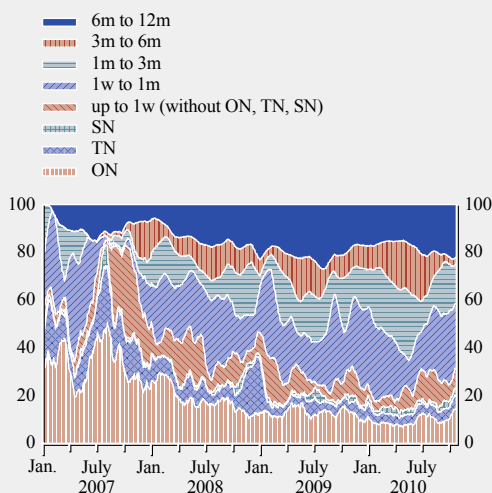
(in EUR billions, 20-day moving average)



Source: Eurex Repo.

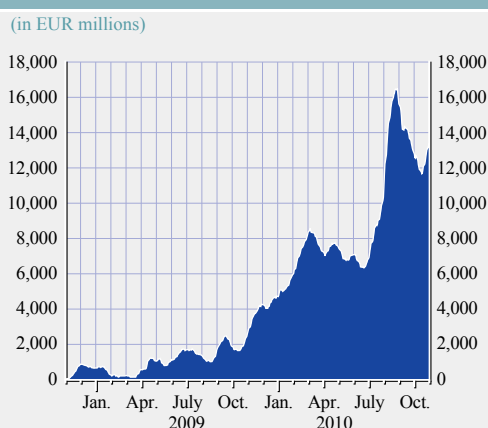
Chart B Euro GC Pooling outstanding volumes by maturities (ECB Basket and ECB EXTENDED Basket)

(percentages, 20-day weighted average)



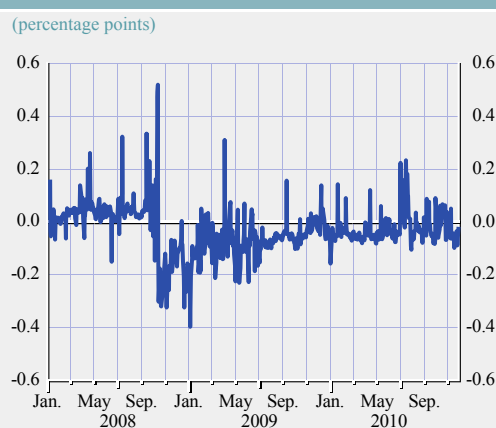
Source: Eurex Repo.

Chart C Euro GC Pooling ECB EXTended Basket: outstanding volume



Source: Eurex Repo.

Chart D Spread of GC Pooling EUR Overnight Index/EONIA



Sources: Eurex Repo and EBF.

low repo rates in the last quarter of 2009 and the first quarter of 2010, activity in the broader EXTended Basket developed very favourably (see Chart C) as it offered market participants the possibility of slightly more attractive interest rates. The relatively higher quality and liquidity of the collateral included in the standard GC Pooling ECB Basket has remained more attractive to market participants.

This relative preference for the standard GC Pooling ECB Basket was illustrated by the significant decrease in volumes in the EXTended Basket during the second quarter of 2010, when severe market tensions and uncertainty relating to the euro-area sovereign crisis affected financial markets. Importantly, the definition of banks' internal risk control measures plays a significant role in influencing a bank's decision on whether to use the broader EXTended Basket or the regular GC Pooling ECB Basket. Since mid-July 2010 volumes in the EXTended Basket – mainly with maturities between overnight and one month – have again increased and reached a new peak. This may reflect a return to more stable money market conditions after the severe tensions of May and June 2010.

In 2009, Eurex Repo began publishing – also via news and data providers such as Bloomberg and Reuters – the GC Pooling EUR Overnight Index, which has so far served as a good indicator for conditions in the shortest maturity in the secured market. As information on the volumes and interest rates effectively traded in the secured market is scarce, the index helps to shed light on a rather opaque market. For the first time, the index makes available a volume-weighted average of all interest rates from overnight transactions in the GC Pooling ECB basket concluded on a particular day. As the data go back to 2007, it shows that the spread between the GC Pooling Overnight interest rate and EONIA became negative and widened when the Eurosystem started the full allotment policy in October 2008 (see Chart D). This may indicate an increase in the perceived value of high-quality and highly liquid collateral. Moreover, when the exceptionally large first 12-month tender matured on 1 July 2010, high demand for liquidity in the overnight market led to increasing rates and volumes in the secured market. The GC Pooling EUR Overnight Index could be a starting point for the establishment of a euro-secured O/N market reference rate.

4.3 MARKET STRUCTURE

Feedback from the qualitative section of the survey again shows a slight deterioration in market efficiency compared with the previous year. Whereas last year about 40% of market participants deemed the secured market to be significantly to extremely efficient, in 2010 only about 30% of respondents held this positive view. Less efficiency could be the consequence of an increased intermediation by the Eurosystem (in particular with the 12-month tenders) and a higher degree of market concentration among those institutions that were not damaged by the recent financial crisis. Overall, market liquidity in 2010 was unchanged compared to the previous year and no improvement was made.

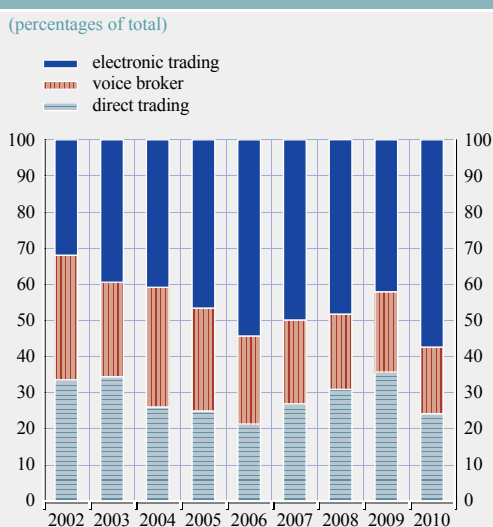
With regard to the trading structure in 2010 (Chart 17), the share of transactions in the secured market conducted via electronic trading platforms increased strongly from 45% in 2009 to 58% in 2010, and remained the highest of all market segments surveyed. This could be explained by the popularity of general collateral (GC) repos, which are a standardised product

and can easily be traded electronically. The leading platforms in Europe – in alphabetical order Eurex Repo (see Box 5), ICAP BrokerTec, and MTS – benefited from new participants.

A geographical breakdown of the origin of the collateral used in overall activity in the secured market reveals an increase in the share of collateral issued by entities located in the euro area. The same data also shows a decline in the share of ‘national collateral’ or collateral issued in the same country as the counterparty providing the collateral (Charts 18 and 19).

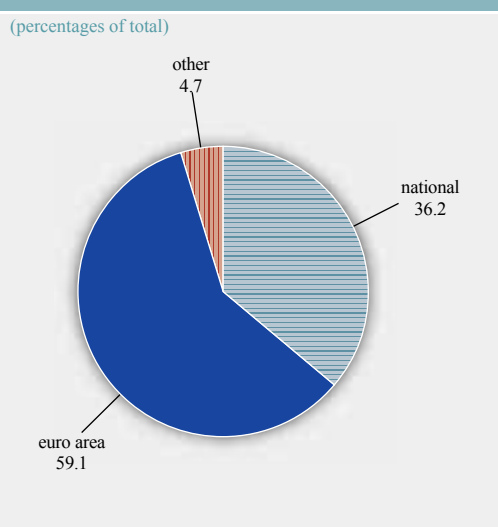
The relatively large share of euro-area collateral (which corresponds to that of 2008, before the Lehman default) indicates that the repo market is well integrated across the euro area, something which was also facilitated by the use of international central securities depositories (ICSDs), such as Clearstream and Euroclear, and CCPs, such as Eurex Clearing, LCH. Clearnet S.A. and Cassa di Compensazione e Garanzia (CC&G). Nonetheless, according to market participants, the persistence of serious inter-connectivity problems between national

Chart 17 Trading structure of secured transactions



Note: The panel comprised 105 credit institutions.

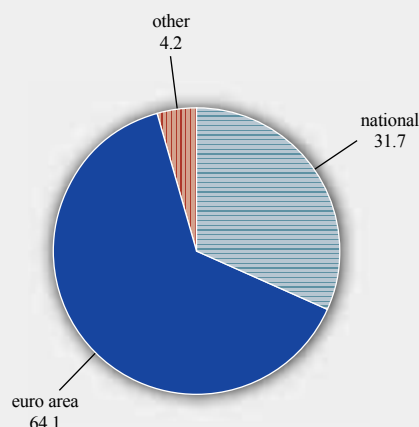
Chart 18 Geographical collateral breakdown for bilateral repos in 2009



Note: The panel comprised 172 credit institutions.

Chart 19 Geographical collateral breakdown for bilateral repos in 2010

(percentages of total)



Note: The panel comprised 172 credit institutions.

central securities depositories (CSDs) and ICSDs continue to obstruct the efficient transfer of securities across borders and to limit market integration.¹⁰

The intensification of the so-called “sovereign debt crisis” in the second quarter of 2010 reportedly also had important implications for repo transactions which used collateral made-up of debt from those euro-area governments that were the most affected by the markets’ concerns

about fiscal sustainability and debt default. According to survey participants, many banks showed increased aversion to lending to banks from jurisdictions afflicted by “sovereign risk concerns” against collateral made-up of their own government’s debt. This was because they considered these transactions to entail a “double risk” or “two highly correlated risks” which defeated the whole purpose of reducing the risk of default by lending against secure collateral. These concerns reached their height in May and June 2010 and may therefore be reflected in the decline in the share of “national” collateral in 2010 compared to the previous year as shown by the full panel data collected in the survey.

As regards market concentration, the level of concentration of both reverse repos and repos among a limited number of counterparties declined slightly in 2010 compared with 2009. In the second quarter of 2010, the largest five banks accounted for 38% of total turnover, compared with 41% in 2009. The top ten banks’ share of turnover also declined slightly from 60% in 2009 to 58% in 2010. However, the level of concentration remained high.

¹⁰ On this issue see, for example, the July 2009 European repo market white paper by the International Capital Market Association (ICMA).

Box 6

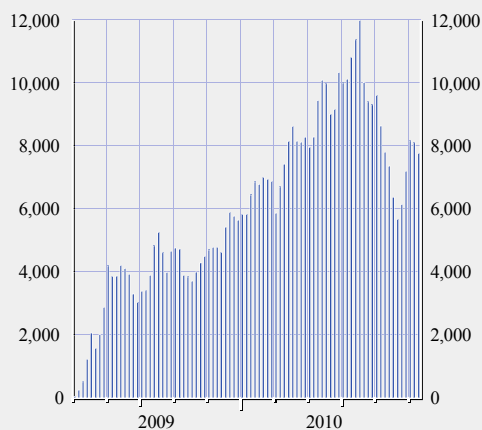
THE ITALIAN COLLATERALISED INTERBANK MARKET OR MIC: AN EXAMPLE OF INNOVATION IN TRADING MODELS IN THE INTERBANK MARKET FOLLOWING THE FINANCIAL MARKET TURMOIL

Following the dramatic decrease in volumes transacted in the interbank market and the rise of risk premia as a result of the financial turmoil, a new segment of the e-MID market called the MIC (which stands for Collateralised Interbank Market in Italian) was launched in February 2009. Initially it was envisaged that the MIC would be active only until December 2009, but its operations were eventually extended until December 2010.

The MIC introduced an innovative trading model allowing participating banks to benefit from collateralisation of deals, anonymity of trades, and credit risk protection while negotiating euro-denominated interbank deposits with maturities ranging from one week up to one

Chart A MIC Outstanding volumes

(millions of EUR)



Source: Banca d'Italia.

Chart B Weighted average duration of outstanding deposits

(days)



Source: Banca d'Italia.

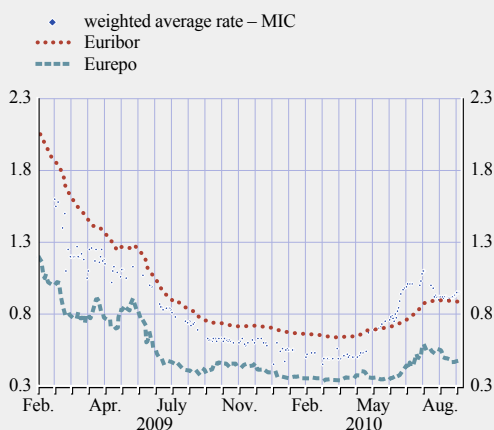
year. Eligible collateral encompassed assets eligible for Eurosystem refinancing operations, liabilities backed by euro-area governments' guarantees, shares and convertible bonds issued by listed companies, other financial instruments denominated in currencies other than the euro and credit claims.

The anonymity of bilateral trades was made possible by the role performed by the Bank of Italy as a facilitator of the deals. The Bank of Italy was responsible for evaluating the collateral provided by participating banks, ensuring the prompt settlement of transactions in the event of default of a participating bank and taking care of collateral realisation. If the value of the realised collateral were to be insufficient to cover a default, all participating banks would be urged mutually to share the resulting loss up to 10% of the value of the collateral deposited by each of them. Both qualitative and quantitative limits were also introduced in order to foster a large participation by banks in the MIC and to avoid excessive risk concentration.

Since its launch, the MIC has seen a large increase in both total volumes transacted (outstanding deposits reached €12 billion in May 2010) and the maturity of outstanding deposits (up to 100 days) – see Charts A and B. The MIC has 56 participating banks, 53 of which are Italian and three which belong to foreign groups. The participation of foreign banks is conditional on the establishment of a bilateral agreement between the Bank of Italy and the relevant National Central Bank.

Chart C Comparison between MIC rates, Euribor and Eurepo

(rates; 3 months maturity)



Sources: MIC and EBF.

The market value of the collateral deposited by participating banks reached €19 billion and most of the securities posted as collateral were ABS (up to 70% of the total). More than 95% of the collateral posted in the guarantee scheme was eligible for Eurosystem operations.

For deposits of an equal maturity, interest rates negotiated in the MIC have generally been lower than those on uncollateralised deposits (EURIBOR) and higher than those on GC repos (EUREPO), due to the lower quality of the underlying collateral in the MIC compared to government bonds (see Chart C).

In October 2010 the new MIC started with a new guarantee scheme provided by the CC&G (the main central counterparty in Italy) and post trade facilities offered by Monte Titoli (the main central securities depository in Italy). The new MIC is a fully private entity, offering greater accessibility for non-Italian banks and a narrower list of eligible collateral than the “old” MIC.

4.4 TRIPARTY REPOS

Turnover in the triparty repo business also grew, increasing by 26% on the previous year for the constant panel of 105 banks.¹¹ This can be seen as a positive sign – and indeed a surprising one according to some banks – in terms of recovery of the interbank market given that triparty repos usually involve repo transactions between creditworthy counterparties against relatively lower-rated and illiquid collateral (e.g. corporate bonds or ABS). One effect of the crisis, however, has been that the collateral employed in triparty transactions has shifted in favour of the higher-rated and non-corporate collateral categories (see Box 7). Besides, triparty agents have become more attractive for counterparties who have problems in pricing collateral.

Although the growth rates of the volume of triparty reverse repo transactions (cash lending) and repos (cash borrowing) were similar, the volume of the latter was about six times higher than the former. This may

reflect the fact that some smaller European commercial banks which used to be typical cash lenders are currently keeping out of this business. The share of triparty repos

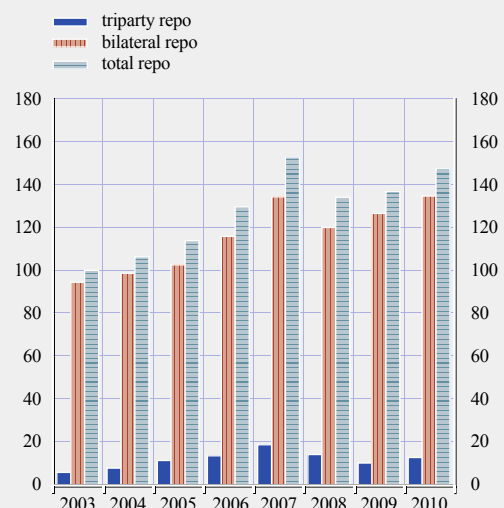
¹¹ A triparty repo is a repo that involves a third party, usually a custodian bank or an international central securities depository (ICSD) acting as an agent for both the collateral taker and the collateral provider. These two parties outsource their back office and part of the middle office functions to the triparty agent, who handles the settlement as well as collateral management during the life of the trade.

Table 2 Concentration of triparty repo activity in Q2 2010

(percentages)		
	Reverse repo	Repo
Top 5 banks	72.1	74.6
Top 10 banks	94.4	94.1
Top 20 banks	100.0	99.9

Chart 20 Average daily turnover in triparty, bilateral and total repos from 2003 to 2010

(index: total repo volume in Q2 2003 = 100)



Note: The total repo volume in Q2 2003 is taken as the base = 100. Panel of 105 banks.

in the overall secured market increased to 9.0% in 2010, from 7.0% in 2009 (Chart 20), still below the 2008 figure (11% before the Lehman default). It should be pointed out that the triparty repo business in the euro area is less developed than that in the United States, where triparty repos represent 50% of the total domestic repo market.

Table 2 shows the concentration levels for the triparty repos, indicating a high degree

of concentration with the top ten banks accounting for a very large share of the market.

Triparty repos were mainly conducted in the “overnight up to one week” maturity bucket with a strong – although slightly decreasing – focus on overnight maturity. However, the 2010 survey also showed more activity by cash lenders in longer maturities such as six months to one year.

Box 7

MAIN QUALITATIVE EVOLUTION IN THE TRIPARTY REPO BUSINESS

During the financial turmoil, the use of triparty repo changed significantly. Market participants became more restrictive with the collateral eligible in triparty repo contracts and shifted towards securities of relatively higher credit quality as a result of “flight to quality” considerations. Data on outstanding volumes of triparty repo provided by the ICSDs¹ – Euroclear Bank and Clearstream Banking Luxembourg – indicate that the use of structured securities as collateral in triparty repo contracts declined considerably from 15% of the total in June 2008 to 3% in June 2010. Meanwhile, the share of sovereign debt in triparty repo collateral rose from 41% in June 2008 to 55% of the total in June 2010 (see Chart A). Although covered bonds remain relatively less used in triparty repo contracts, their share grew from 2% in June 2008 to 4% in June 2010. The June 2010 ICMA European repo survey² shows a smaller increase (from 47% in June 2009 to 48% in June 2010 in the share of the total triparty collateral pool accounted for by sovereign³ bonds). The ICMA survey also shows that the share of structured securities fell significantly over the same period from 6% to 2% and that the share of covered bonds rose slightly from 5% to 6%.

ICSD data also show that the share of AAA-rated securities grew from 52% in June 2008 to 59% in June 2010 at the expense of the share of A and BBB-rated issues which declined from 8% to 6% (see Chart B). In the ICMA repo survey, the share of AAA-rated⁴ collateral in outstanding triparty repo rose from 50% in June 2009 to 55% in June 2010. According to this survey, however, the share of BBB-rated⁵ securities used in triparty repo rose from 5% in June 2009 to 7% in June 2010 after having recorded a decline in 2008.

Overall, triparty repo volumes evolved in line with the overall European repo market over this period of financial stress. Some cash providers in triparty repo, in particular commercial banks, stopped their (bilateral and triparty) repo activity due to balance sheet deleveraging constraints or became cash takers in these contracts. Typical cash takers such as investment banks also reduced their proprietary trading activities.

1 See Box 5 of the Euro Money Market Study 2006, p. 24, for the central role played by ICSDs in triparty repo turnover in the euro area.

2 See Annex 2 Comparison of the European Repo Council Survey and the ECB survey on Euro interbank Money Market activity.

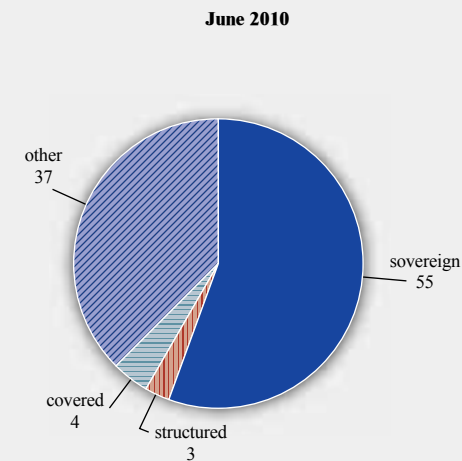
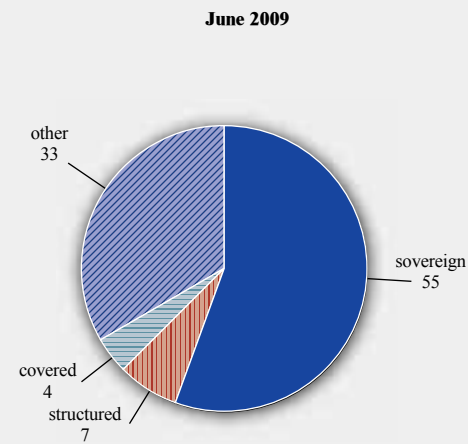
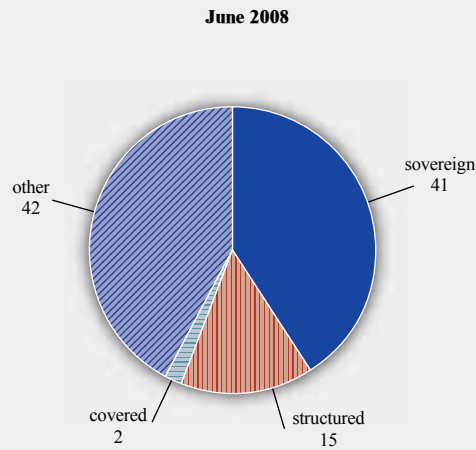
3 This category regroups the categories of government securities, public agencies and sub-national governments in the ICMA repo survey.

4 A1/P1-rated securities were merged in the AAA category.

5 A2/P2-rated securities were added to the BBB category.

Chart A Evolution of bilateral tri-party repo outstanding according to the type of issuer

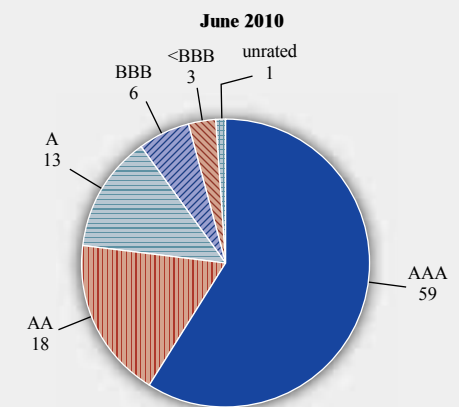
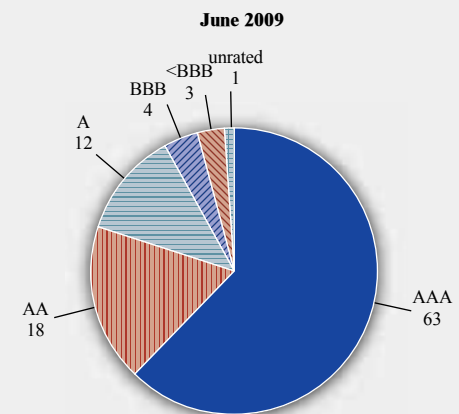
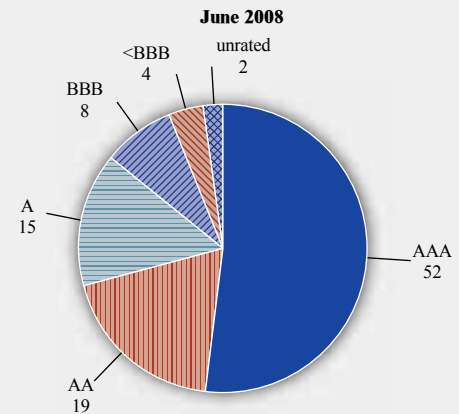
(percentage shares)



Source: Euroclear Bank and Clearstream Banking Luxembourg. Euro GC Pooling have been excluded from the Clearstream Luxembourg figures. The other category regroupes agencies and corporates bonds.

Chart B Evolution of bilateral tri-party repo outstanding according to the rating of the collateral

(percentage shares)



Source: Euroclear Bank and Clearstream Banking Luxembourg. Euro GC Pooling have been excluded from the Clearstream Luxembourg figures.

5 DEVELOPMENTS IN THE OVER-THE-COUNTER (OTC) DERIVATIVES MARKETS

5.1 TURNOVER ANALYSIS

This section includes turnover data on the following euro-denominated OTC derivatives market segments: the interest rate swap market, comprising overnight interest rate swaps (OIS), also known as EONIA swaps and other interest rate swaps (other IRS); forward rate agreements (FRAs); and derivatives instruments linked to the foreign exchange market, comprising foreign exchange swaps (FX swaps) and cross-currency swaps (Xccy swaps).

Compared to the high level of turnover already registered in 2008, transaction volumes reported in the OTC derivatives market were remarkably stable in 2009 for the constant panel of 105 credit institutions. In 2010, however, turnover fell back to levels similar to those registered in 2007. Compared to the previous year, in 2010 activity in the derivatives market as a whole declined by 7%. The main contributors to this decline were the OIS segment (-19%), followed by the other IRS (-11%) and FRA (-10%) segments. Turnover in the OIS, FRA and other IRS segments fell as market expectations of changes in interest rates declined in an environment characterised by the persistence of ample liquidity conditions and an uncertain economic outlook.

In 2010 activity in FRAs and other IRS surpassed that in OIS after a steep fall in turnover in the latter. The volume of Xccy swaps only decreased moderately (-4%). In contrast, activity in FX swaps increased by 3%. As a result, measured by volume, the FX swaps market reinforced its position as the most important OTC derivatives segment by far, accounting for 22% of the overall euro money market turnover.

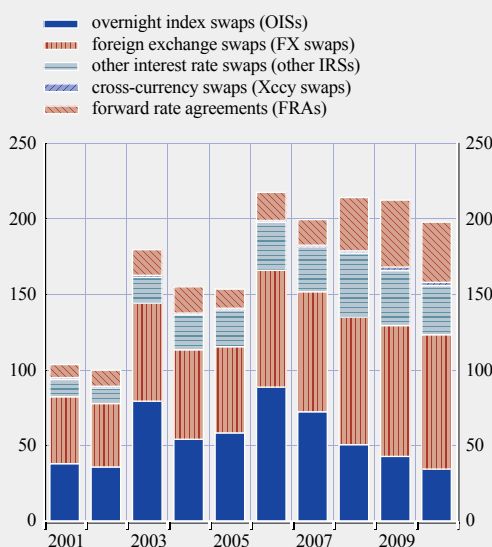
In the second quarter of 2010, the daily average turnover of EONIA swaps fell by 19% compared to 2009. This represented the largest decline in turnover reported for any individual money market segment covered in this year's study and

is the fourth consecutive year in which activity in this segment has contracted. The OIS market has suffered from lower liquidity since the start of the financial market turmoil in 2007, partly on account of the reduction in the number of active market makers. Less hedging activity was also a contributory factor in the lower turnover recently as a result of the decline in unsecured borrowing and the greater stability of short-term rates.

The other IRS segment has recorded a steady decline from its 2008 peak (-14% in 2009 and -11% in 2010). Curve positioning trades (e.g. IRS receiving EURIBOR 3-month against paying EURIBOR 6-month) were less popular in an environment where no major rate changes were expected in the third and fourth quarters of 2010. Many banks decreased their market activity as they deleveraged. Survey participants also mentioned higher uncertainty regarding the future path of EURIBOR rates because since the crisis EURIBOR rates have also included higher liquidity and credit risk premia than before the crisis, when interest rate expectations were at the

Chart 21 Average daily turnover in the various OTC derivatives markets

(index: OTC derivatives volume in 2002 = 100)



Note: The panel comprised 85 credit institutions in 2001 and 105 credit institutions thereafter.

root of the bulk of EURIBOR rate developments. In addition, some participants felt that the fact that the 3-month EURIBOR rate was also less correlated with other short-term rates like EONIA (which was mainly driven by developments in ECB operations and the consequent changes in surplus liquidity conditions) during the second quarter of 2010 than in the same period in 2009 contributed to the lower interest because banks were using EURIBOR-based IRSs as an instrument for hedging interest-rate risk.

The volume of the FRA market continued to expand in 2009 (+26%) but consolidated in 2010 (-10%). FRAs still represent 15% of global OTC derivatives turnover. The FRA segment has suffered from both lower hedging needs, as expectations of interest rate changes were low in the period under review, and less activity in proprietary trading.

The FX swaps market was the only OTC derivatives market to grow (+3%) both in 2009 and 2010. Some survey participants reported that they made increasing use of this instrument to fund USD assets at a time when the pricing of the USD Term Auction Facility was made more expensive in order to better reflect the facility's character as a funding backstop.

Turnover in the cross-currency swaps segment continued to expand strongly in 2009 (+59%) but consolidated in 2010 (-4%). This evolution was partly linked to the issuance activity in different currencies as flight to quality flows limited the possibility for smaller corporate issuers to gain access to the US-dollar or euro bond markets. Overall turnover in this segment remained very modest (1.1% of the total OTC derivatives market) as it is a rather specific and more complex market. Once bonds in foreign currencies were sold from banks' portfolios, the Xccy swaps hedging the bonds were also unwound.

5.2 MATURITY ANALYSIS

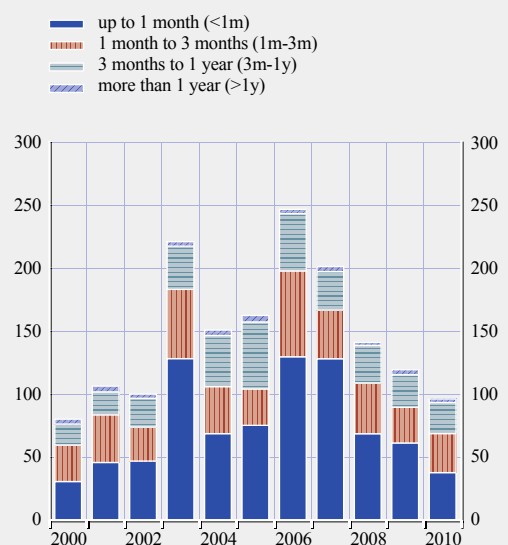
The most significant decline in OIS turnover took place in the "up to one month" maturity bracket, i.e. within the minimum reserve

maintenance period. Contracts expiring in one month or less decreased in 2009 but most significantly in 2010, when they lost 42% of turnover. The abundant liquidity conditions after the first 1-year longer-term refinancing operation (LTRO) reduced hedging needs for periods up to one month. The ECB maintained a fixed-rate, full-allotment policy in its main refinancing operations and in the operations with a duration covering the whole of each new maintenance period. Maturities between one and three months and three months to one year remained broadly stable compared to 2009. It may seem puzzling that turnover in the one to three months maturity bracket remained stable and did not decrease, but it should be borne in mind that the decision on fixed-rate, full-allotment LTROs only came on 2 September 2010, after the period covered by the survey, while in Q2 2010 the market was still uncertain about the possibility of a return to variable rate tenders in these operations.

With regard to the maturity-weighted distribution of OIS turnover, a different picture emerges, with stability in the shorter maturity

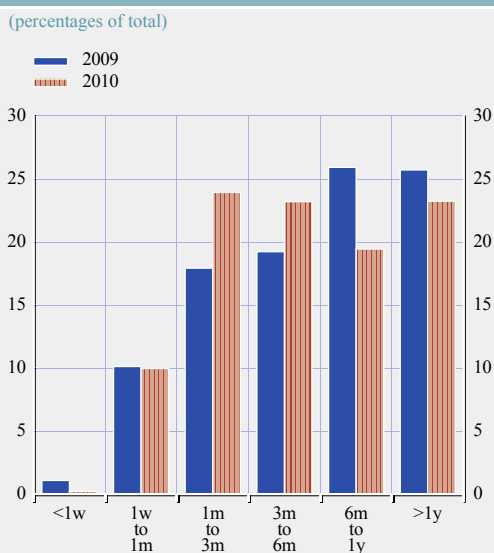
Chart 22 Average daily turnover in the OIS segment

(index: OIS volume in 2002 = 100)



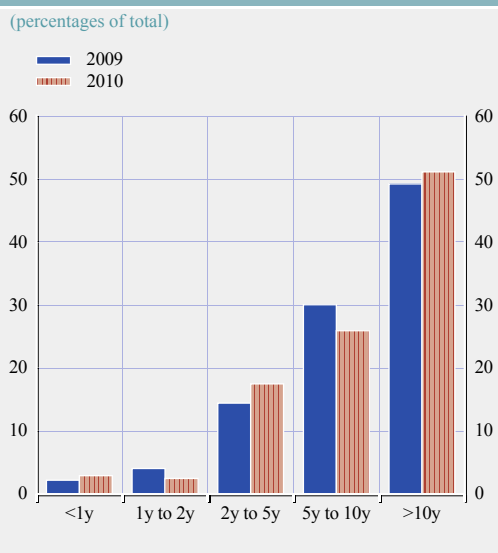
Note: The panel comprised 85 credit institutions in 2000 and 2001 and 105 credit institutions thereafter.

Chart 23 Maturity-weighted breakdown for average daily turnover in the OIS segment



Note: The panel comprised 172 credit institutions.

Chart 25 Maturity-weighted breakdown for average daily turnover in the other IRS segment

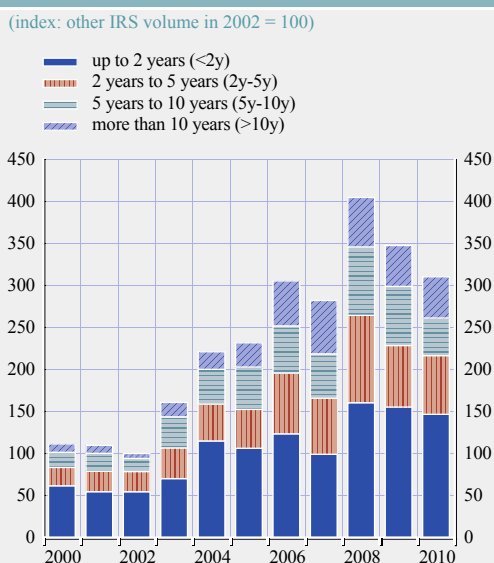


Note: The panel comprised 172 credit institutions.

bucket (one week to one month) between 2009 and 2010 but higher turnover in intermediate maturities (one month to three months and three months to one year). Approximately 90% of the

maturity-weighted OIS turnover has a maturity longer than one month.

Chart 24 Average daily turnover in the other IRS segment



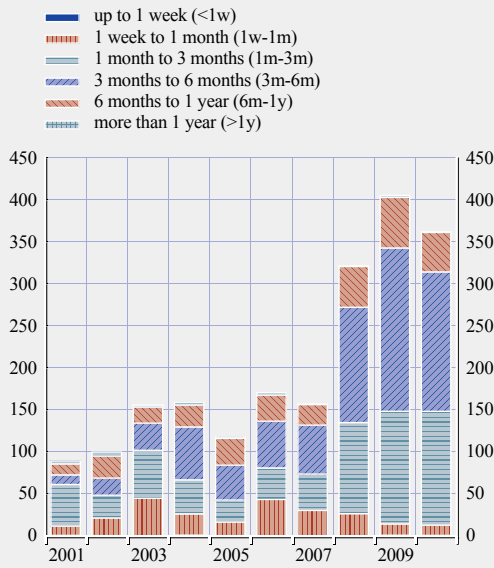
Note: The panel comprised 85 credit institutions in 2001 and 105 credit institutions thereafter.

Turnover in the other IRS market segment decreased by 14% in 2009 and by 11% in 2010, falling to slightly above the 2006 level. Considering the evolution during the last two years, two to five year and five to ten year maturities have recorded the biggest drop in activity. A smaller decrease in turnover was recorded in the up to two years and more than ten years' maturities compared to 2009. The significant decline in turnover was probably due to lower curve positioning trades, e.g. buying 2-year IRS and simultaneously selling 5-year IRS as lower interest rate volatility dampened arbitrage deals from the hedge funds community. Lower proprietary trading due to capital constraints may also have limited turnover in the other IRS segment.

The maturity-weighted turnover in the other IRS segment illustrates the high market share of the longest IRS. The more than ten years' maturity bucket accounted for half of the total volume of other IRS in 2010. One explanation for the greater importance of longer-maturity IRS is the

Chart 26 Average daily turnover in the FRA segment

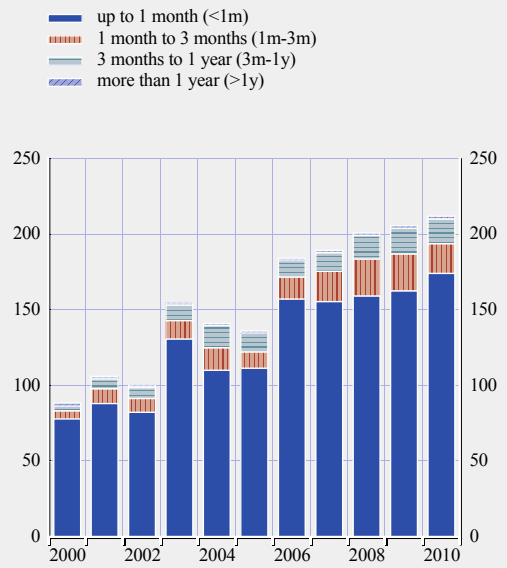
(index: FRA volume in 2002 = 100)



Note: The panel comprised 85 credit institutions in 2001 and 105 credit institutions thereafter.

Chart 28 Average daily turnover in the FX swap segment

(index: FX swap volume in 2002 = 100)

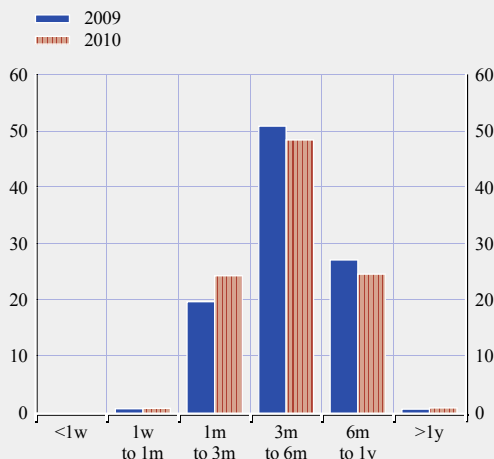


Note: The panel comprised 85 credit institutions in 2001 and 105 credit institutions thereafter.

fact that for maturities over ten years asset and liability management hedging is not possible via futures. Pension funds and insurance companies are able to manage the very long duration of their liabilities through long-dated IRS.

Chart 27 Maturity-weighted breakdown for average daily turnover in the FRA segment

(percentages of total)



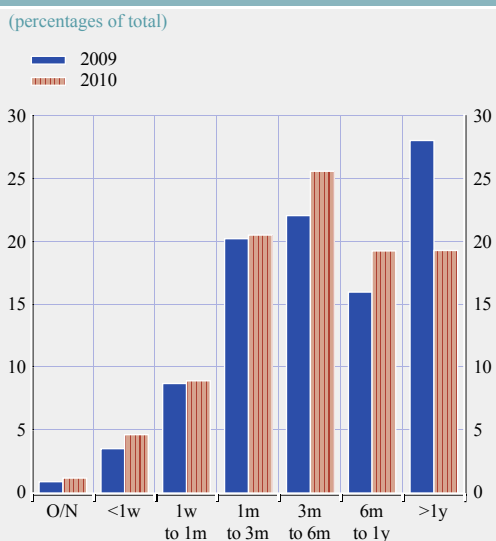
Note: The panel comprised 172 credit institutions.

As regards the long-term evolution of FRAs, the most striking element is that they were less used as banks saw a reduced need to protect themselves against future adverse movement in interest rates because they had deleveraged their balance sheet. Another noticeable point is the steady rise in the over one month and up to six months maturity buckets compared to 2008. The more stable EURIBOR environment yielded more activity in FRAs in this maturity bucket. Maturity over six months and up to one year remained broadly stable during the same period.

The maturity-weighted data show a slight shortening of FRA maturities. However, FRAs with a maturity longer than three months still represent 70% of the total activity in this market segment.

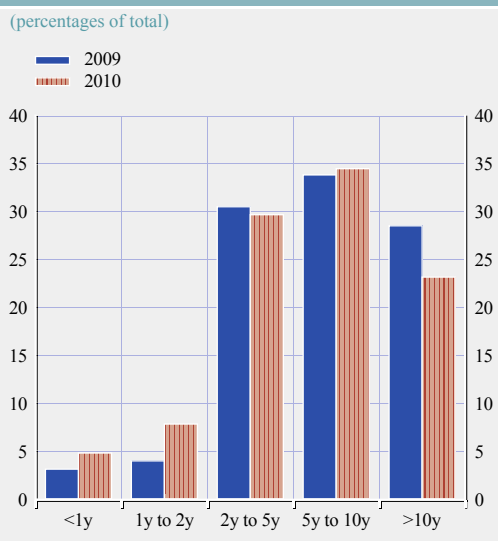
As regards FX swaps, maturities of up to one month explain most of the increase in turnover for this segment. The over one month and up to three months maturity bucket lost 2.4% in 2010 compared to 2009. On the one hand, liquidity in FX swaps is much larger in very short maturities

Chart 29 Maturity-weighted breakdown for average daily turnover in the FX swap segment



Note: The panel comprised 172 credit institutions.

Chart 31 Maturity-weighted breakdown for average daily turnover in the Xccy swap segment

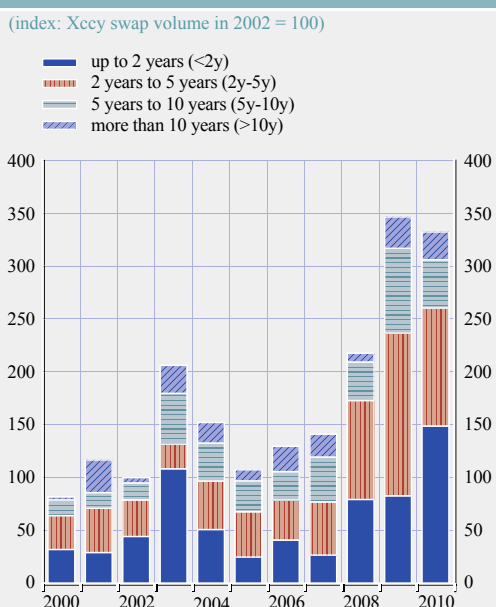


Note: The panel comprised 172 credit institutions.

with the lowest bid-and-ask spread. On the other hand, it became more difficult for European banks to issue certificates of deposits in US dollars. To circumvent this problem, European banks issued

certificates of deposits in euro and converted the proceeds into USD via short-term FX swaps. Longer maturities remained relatively stable.

Chart 30 Average daily turnover in the Xccy swap segment



Note: The panel comprised 85 credit institutions in 2001 and 105 credit institutions thereafter.

With regard to the maturity-weighted breakdown, Chart 29 shows that (with the exception of transactions with a maturity of more than one year) transactions with maturities longer than three months increased their relative share of the total.

After having grown substantially in 2009, turnover in cross-currency swaps declined slightly in 2010, mainly in the two medium-maturity buckets (two to five and five to ten years). While turnover in maturities longer than ten years declined in 2010 compared to 2009, turnover for this specific maturity remained significantly higher than in 2008. Although some counterparties indicated that the limited access to USD funding boosted activity in cross-currency swaps, this particular market remains very limited in size.

The maturity-weighted evolution indicates a slightly shortened maturity profile for Xccy swaps between 2009 and 2010. In fact, in maturity-weighted terms, the weight of maturity segments between two and ten years was relatively stable.

5.3 MARKET STRUCTURE

With regard to the efficiency of the various OTC derivative market segments, the OIS segment has the lowest share of respondents who say that market efficiency was limited in 2010 (0%), followed by other IRS (10%) and FRAs (13%). For FX swaps and Xccy swaps, reporting banks were on average less positive, with 31% and 46% of them respectively reporting that the market is efficient only to a limited extent. In terms of the percentage of banks reporting that these markets are extremely efficient, the ranking is the same, except that FX swaps climb above FRAs, while OIS remain in pole position (9%), closely followed by other IRS (9%), FX Swaps (5%) and FRAs (4%).

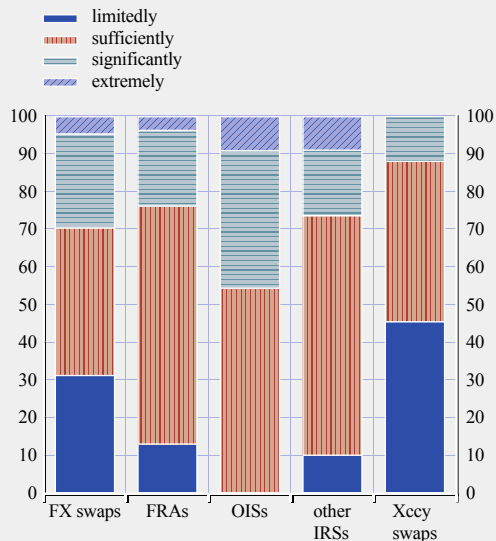
Most participating banks found that liquidity (Chart 33) in all OTC derivatives had either worsened or remained unchanged compared to the same period in 2009. In the OIS segment, 26% of the banks said liquidity had worsened, while 30% and 6% respectively said liquidity had improved slightly or significantly. Liquidity in other IRS did not deteriorate further in 2010

compared to 2009 and specially when compared to two years ago. Indeed, 2008 was the year in which participating banks reported liquidity conditions to have worsened the most for other IRS. In the other IRS segment, 22% of banks said that liquidity had worsened in 2010 while 9% and 1% respectively found it had actually improved slightly or significantly. In FX swaps, liquidity has diminished for 37% of reporting banks, while 31% and 11% said it was either slightly or significantly better in 2010. FRAs suffered from lower liquidity for 42% of the banks while 10% disagreed. The Xccy swaps market is the market with most negative sentiment from participants: 77% considered that its liquidity had worsened.

The results of the geographical counterparty analysis (Chart 34) show that in 2010 the share of OTC transaction volumes traded with euro-area counterparties decreased slightly compared with 2008. Trades between domestic counterparties also decreased in comparison with 2008, except in the other IRS segment. The share of transactions concluded with non-domestic, non-euro-area counterparties rose.

Chart 32 Is the euro market (for the different segments) in your opinion efficient?

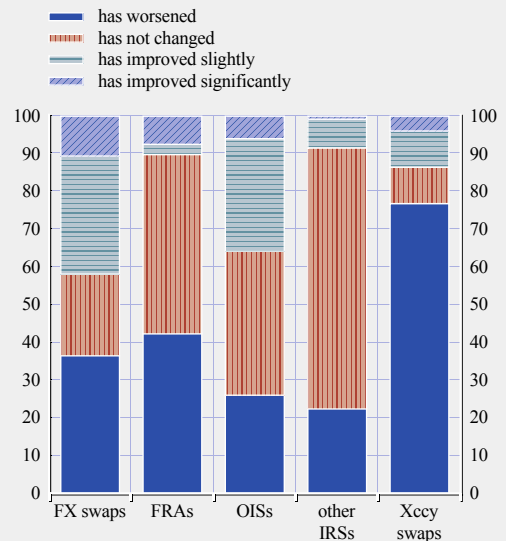
(percentages of total)



Note: The panel comprised 172 credit institutions.

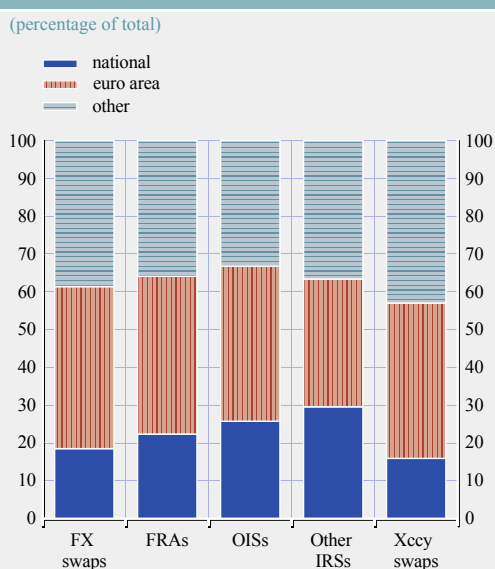
Chart 33 Has the market liquidity in the euro money market changed with respect to last year?

(percentages of total)



Note: The panel comprised 172 credit institutions.

Chart 34 Counterparty structure of various money market segments in 2010



Note: The panel comprised 172 credit institutions.

As for the trading structure, the share of activity in the OTC derivatives market (Table 3) concluded directly with counterparties generally declined compared to 2008, with the notable exception of FX swaps. Transactions concluded via voice broker still account for a large part of transactions but also lost market share, except in the FRA and FX-swap segments. Transactions in OIS (49%), Xccy swaps (47%) and FRAs (58%) were mainly conducted through voice brokers, while direct dealing with counterparties is predominantly used for Xccy swaps (46%), other IRS (40%), FX swaps (37%) and OIS (35%). Electronic trading gained in importance in all market segments apart from FX swaps. It was used more than in 2008 in other IRS (29%), OIS (16%), and Xccy swaps (6%). Other IRS (29%) and FX swaps (25%) still remain the

Table 3 Execution of transactions with counterparties in 2010

(in percentage)

	Direct	via Voice Broker	via Electronic Broker
OIS	35	49	16
Other IRS	40	31	29
FRAs	23	58	18
FX Swaps	37	38	25
Xccy Swaps	46	47	6

Note: The panel comprised 172 credit institutions.

most traded OTC derivatives instruments on electronic platforms.

In terms of concentration (Table 4), the data show that activity in euro OTC derivatives remains very concentrated, particularly in the FRA, other IRS and cross-currency swap segments. In most OTC derivative segments, with the exception of other IRS and FX swaps, the degree of market concentration increased in 2010 in comparison with 2008.

6 THE SHORT-TERM INTEREST RATE FUTURES AND OPTIONS MARKETS

Volatility in euro short-term interest rates, as measured by the implied volatility derived from options on 3-month EURIBOR future contracts rose sharply in October 2008 (Chart 35) after the collapse of Lehman Brothers.¹² This indicator of volatility, however, only actually peaked in May 2010 when concerns about sovereign debt in the euro area were also at their most serious. Since then, short-term interest rate volatility has

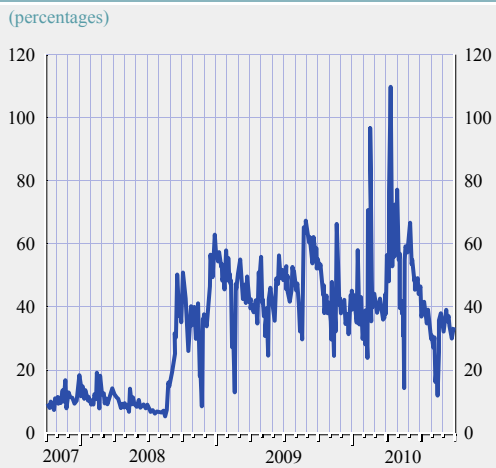
¹² Lehman Brothers filed for bankruptcy on 14 September 2008. This prime brokerage was one of the largest derivatives players globally.

Table 4 Concentration for OTC derivatives in Q2 2010

	OIS	Other IRS	FRAs	FX swaps	Xccy swaps
Top 5 banks	43	63	50	45	65
Top 10 banks	68	79	75	62	81
Top 20 banks	90	91	94	79	95

Source: ECB money market survey 2010.
Note: The panel comprised 172 credit institutions.

Chart 35 Implied volatility on 3-month EURIBOR rate



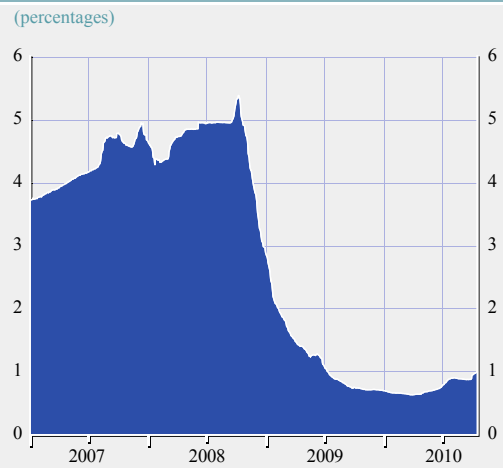
Source: Reuters.

declined but remains at levels higher than those seen before the 2008 Lehman default.

Euro short-term interest rates levels, as measured by 3-month EURIBOR rates, declined during 2009 to an unprecedented low following further ECB interest rate cut decisions and the ample liquidity conditions that resulted from the introduction of further liquidity support measures, such as the three 1-year LTROs (see Chapter 2). The 3-month EURIBOR rate fell from 2.89% at the end of 2008 to 0.70% at the end of 2009 and then fell further to as low as 0.63% at the end of March 2010 (Chart 36). Since then EURIBOR rates have followed a rising trend as the surplus liquidity environment in the interbank market has declined in line with less recourse by banks to Eurosystem liquidity-providing operations. The 3-month EURIBOR rate reached the 1% level again in October 2010.

In this environment turnover in the markets for euro interest-rate futures declined in 2009 although in euro interest-rate option markets it held up much better and even continued increasing in 2009 (Chart 37). In the case of EURIBOR futures, the decline in turnover in 2009 was particularly significant because it broke an uninterrupted upward trend in turnover that began in 2000. The latest monthly data available

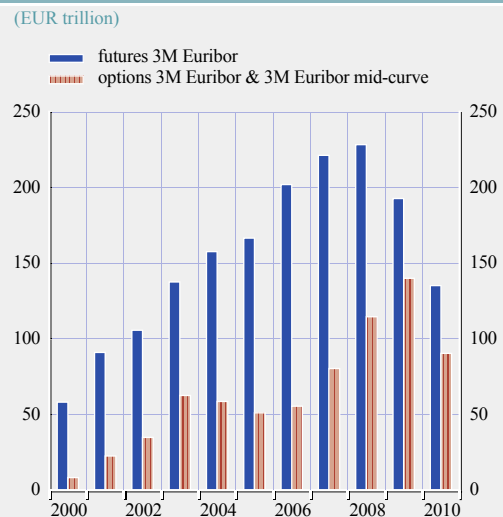
Chart 36 Evolution of 3-month EURIBOR rate



Source: EBF.

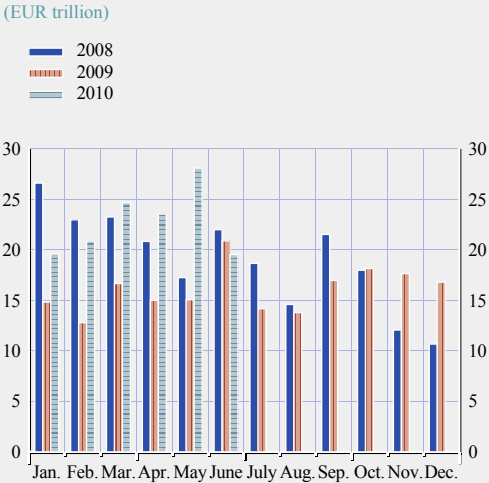
for 2010, however, shows that turnover volumes are recovering strongly this year and, if current trends continue, 2010 turnover may even surpass the peak level reached in 2008 (Chart 38). The volume of Euribor futures traded continued to dominate overall trading in short-term interest-rate futures trading on the Euronext.Liffe exchange and accounted for 64% of total turnover in 2009.

Chart 37 3-month EURIBOR futures and options



Sources: Euronext.Liffe. Data until June 2010. Volume in trillions.

Chart 38 EURIBOR futures – monthly volumes

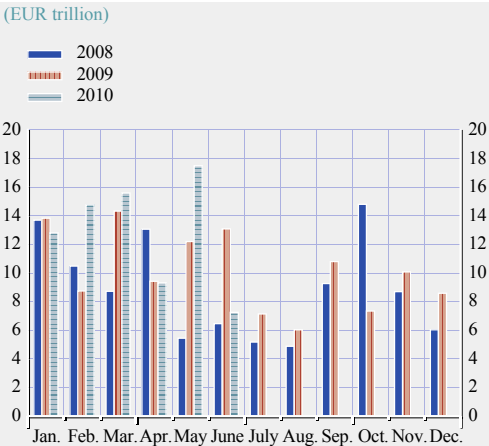


Source: Euronext.Liffe. Data until June 2010.

The latest monthly data also show that turnover in 3-month Euribor options and 3-month Euribor mid-curve options¹³ has continued to increase this year (Chart 39). The fact that there is greater volatility on short-term interest rates may explain the growing interest in using this instrument.

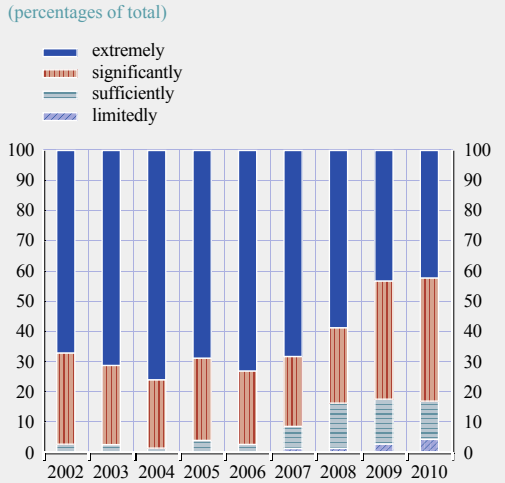
The trends described above are also consistent with the data available from the Bank of International Settlements (BIS). According to

Chart 39 EURIBOR options – monthly volumes



Source: Euronext.Liffe. Data until June 2010.

Chart 40 Is the futures segment in your opinion efficient?



Note: The panel comprised 105 credit institutions.

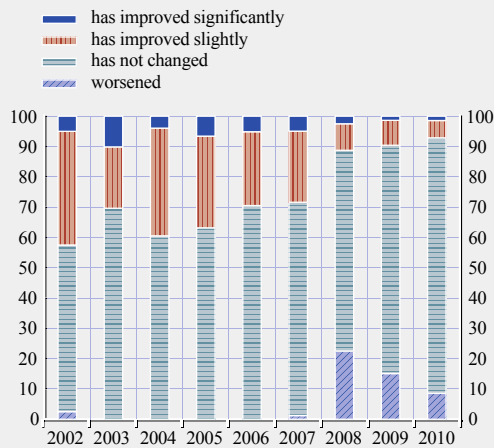
the BIS data for exchange-traded interest-rate derivatives, the notional principal amount traded in interest-rate futures and options in Europe fell by 23% and 2.1% respectively between 2008 and 2009. However, these two segments have experienced a recovery this year and BIS data shows that turnover in interest-rate futures and options grew by 40% and 16.1% respectively in the first half of 2010 compared to the same period in 2009. A similar pattern is evident if one looks at the number of contracts rather than at volumes. In 2009 the number of futures and options contracts had declined by 22.7% and 5% respectively compared to 2008. In the first half of 2010, however, the number of contracts traded rose by 36% and 17% respectively compared to the same period in 2009.

In the qualitative part of this year's survey the futures market continues to be assessed by most respondents as extremely (42%) and significantly (41%) efficient (Chart 40). However, there is a very slight increase in the share of those

13 A 1-year mid-curve option on a 3-month EURIBOR future implies at expiration a futures delivery month one year later than the "standard" option on 3-month EURIBOR futures. This means that if those options expire on the same date they will be delivered with futures one year distant; the mid-curve option delivers a longer dated futures contract.

Chart 41 Has the market liquidity in the futures market changed with respect to last year?

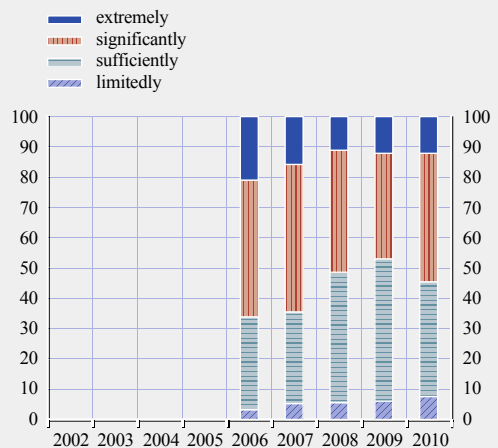
(percentages of total)



Note: The panel comprised 105 credit institutions.

Chart 42 Is the options segment in your opinion efficient?

(percentages of total)



Note: The panel comprised 105 credit institutions.

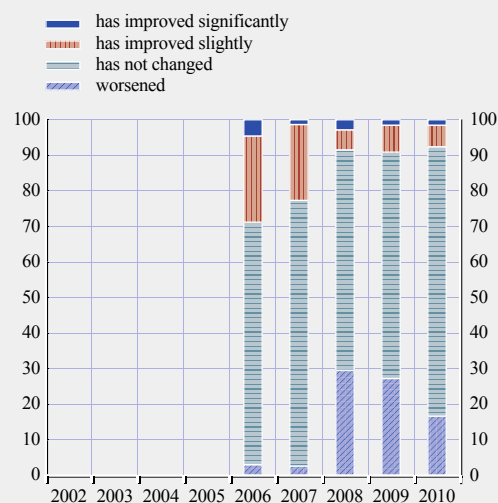
that qualify efficiency as “limited” for both 2009 and 2010 (3% and 4%, respectively). 89% of respondents reported improved or unchanged liquidity conditions in the futures market in 2010 (Chart 41). In 2008, 23% of the respondents considered that liquidity conditions had worsened, but in 2009 and 2010 the share of respondents expressing this view decreased (to 15% and 9% respectively), which points to an improvement in the overall perception of market liquidity. The options market continues to be assessed mostly as sufficiently or significantly efficient (Chart 42). The opinions on the negative side have risen slightly in 2010, as the share of respondents who consider that the market was “limitedly efficient” increased from 6% to 7%. However, in 2010 this share was outweighed by the 12% share of participants who expressed the view that this market was “extremely efficient”.

As regards the perception of liquidity conditions in the options market, the share of those who reported that liquidity had worsened continued to decrease from the 2008 peak (27%), to 16% in 2010 (Chart 43). The decline in the share of participants with this view was offset by an increase in the share of those who consider

that liquidity “has not changed” (75% in 2010). Despite this positive evolution, the share of those that say that liquidity “has worsened” is still far above the levels of 2-4% observed in 2006 and 2007.

Chart 43 Has the market liquidity in the options market changed with respect to last year?

(percentages of total)



Note: The panel comprised 105 credit institutions.

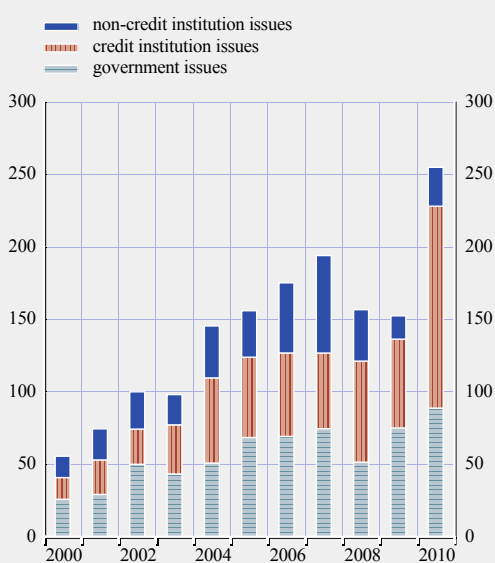
7 THE SHORT-TERM SECURITIES MARKET

7.1 TURNOVER ANALYSIS IN THE SECONDARY MARKET

In 2010 there was a strong recovery in the secondary market turnover volumes of short-term debt securities issued by credit institutions (Chart 44). A strong increase in turnover (67%) was also observed for securities issued by non-credit institutions (i.e. securities issued by corporations) even though the share of that segment in the total secondary market turnover of short-term securities (around 10% of the total in 2010) still remains small. In contrast, the trend in secondary market turnover in government issues increased comparatively slowly, by 18% taking into account the constant panel. Survey participants reported that the temporary acceptance as collateral by the ECB of paper issued by credit institutions and traded on the non-regulated markets helped improve conditions in the secondary market for short-term paper.

Chart 44 Average daily turnover in outright secondary market transactions for short-term securities

(index: outright transactions volume in 2002 = 100)



Note: The panel comprised 85 credit institutions in 2000 and 2001 and 105 credit institutions thereafter.

It is important to note that despite the overall increase in secondary market turnover for short-term securities, market participants reported that there were important differences in developments across different euro-area jurisdictions. Some survey participants, for example, reported that liquidity in so-called “peripheral” euro-area paper was significantly worse in 2010 than it was in 2009 and that even the market for German government bonds became very illiquid after the strong demand for them during the “flight to quality” flows of April and May 2010. According to these same market participants, short-term government bills from France and the Netherlands remained the most liquid but the market was still very sensitive to market shocks during the period covered by the survey in 2010.

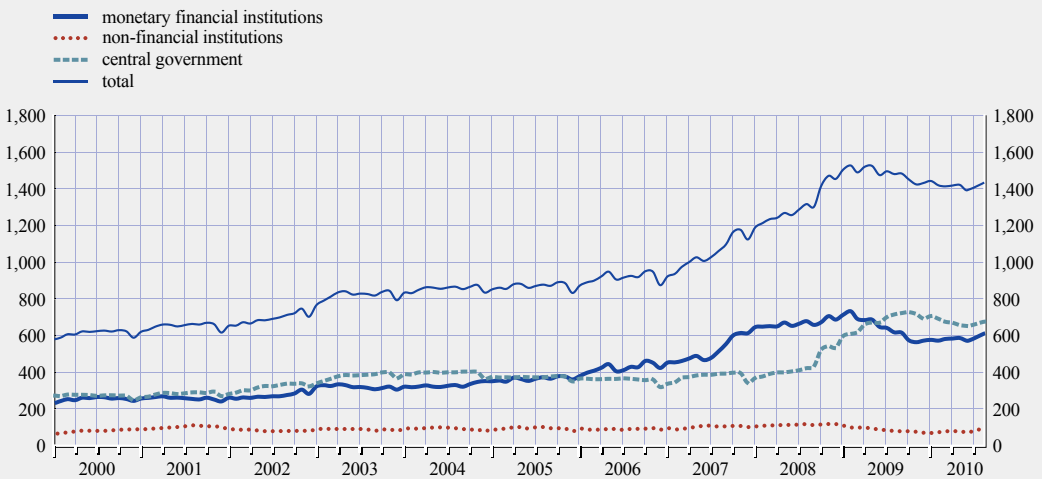
7.2 OUTSTANDING AMOUNTS AND ISSUANCE

According to ECB monthly statistical data on securities issuance, the outstanding nominal amounts of euro-denominated short-term securities issued by euro-area residents decreased slightly from €1,525 billion in May 2009 to €1,435 billion in August 2010 (Chart 45).

The gradual decline in the total outstanding volumes of short-term securities issued by euro-area residents since May 2009 can be attributed mainly to a decline in the amounts of securities issued by monetary financial institutions (MFI). The largest contribution to the €90 billion decrease in the total outstanding amount of debt that occurred between May 2009 and August 2010 came from MFI debt. This category of debt still accounted for around half of the total stock of outstanding short-term debt in 2010. The outstanding amount of MFI debt declined from €687 billion to €591 billion over the same period, although the pace of decline for this segment has been slower in 2010 than it was two years ago. The trend is the same for the outstanding amounts of short-term securities issued by non-financial corporations, which also decreased, even if the total outstanding amounts remain relatively small (€72 billion).

Chart 45 Outstanding amounts of euro-denominated short-term securities by issuing sector since January 2000

(EUR billions)



Source: ECB.

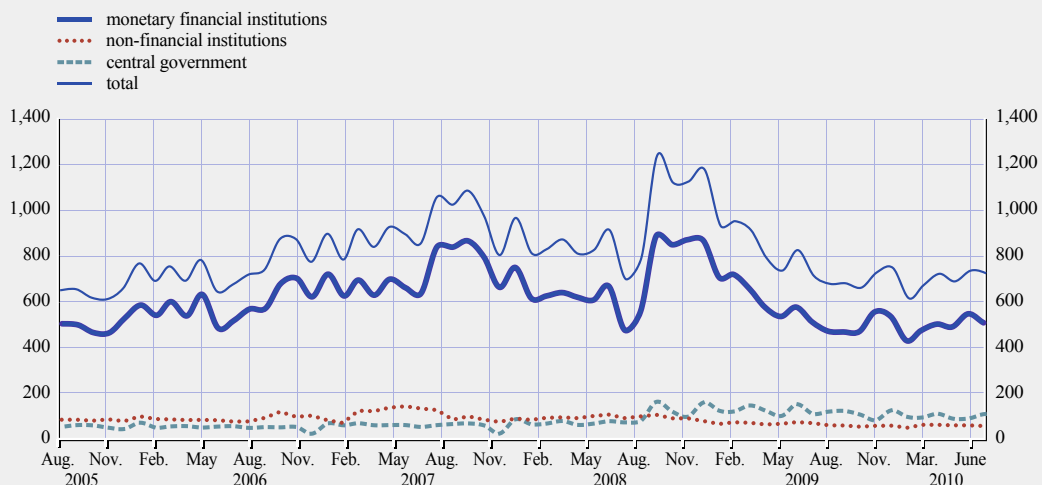
According to ECB statistics, developments in the gross issuance volumes of short-term securities exhibited some volatility (Chart 46). Issuance volumes decreased by more than 45% to €678 billion between October 2008 and August 2010.

If the expansion of ECB-eligible collateral gave an immediate boost to certain segments of

the market (e.g. the STEP market, see Box 8), these statistics seem to indicate that the positive impact on the euro short-term securities market as a whole did not last long. Indeed, the ECB's decision to broaden the list of eligible collateral temporarily, combined with a number of other supportive measures taken by European governments in favour of their domestic banking sector, seem to have had the most impact on

Chart 46 Gross issuance of euro-denominated short-term securities by issuing sector since August 2005

(EUR billions)



Source: ECB.

issuance volumes around the fourth quarter of 2008 and first quarter of 2009.

As regards short-term debt instruments issued by credit institutions, the decision by the ECB to accept, as collateral for refinancing with the Eurosystem, certificates of deposit which are not listed in a regulated market but are traded on certain non-regulated markets has boosted this specific market segment (see Box 9 on the certificates of deposits (CD) market).

A slow decline in the issuance of central government securities was observed after a peak in 2008 and 2009 as a result of European rescue plans in support of the banking industry. The boosting effect was observable during 2009 when issuance remained at high levels of up to €160 billion. Since the beginning of 2010 issuance volumes have declined even if they remain higher than before the crisis. Since early 2010 monthly issuance volumes have been in the range of €100 billion to €125 billion. The declining trend in government issuances can be linked to

the more restrictive budget policies in Europe and the shift to longer-maturity issuances by governments. Nevertheless, central government issuance activity remains at very high levels and in terms of total outstanding amounts was comparable to the amounts outstanding for MFIs in 2010, whereas in 2008 outstanding government short-term securities represented only about half of the MFI total.

Issuance by non-financial corporations declined. Levels of issuance were around €50 billion in 2010, whereas they had been above €100 billion in 2008. Even though the amounts are smaller than in other sectors this trend may reflect a financial environment that still remains unstable for corporations.

Issuance activity in the short-term securities market also declined in 2010. Nevertheless, there were signs of a reversal in the largest segment (i.e. the MFI segment) in June and July 2010. If that trend were maintained, it would lend support to the view that the post-crisis recovery of the interbank market is consolidating.

Box 8

THE SHORT-TERM EUROPEAN PAPER (STEP) INITIATIVE

Implementation

The STEP initiative, steered by the STEP Market Committee under the auspices of the European Banking Federation (EBF) and the Financial Markets Association (ACI), promotes the integration and development of a pan-European market for short-term paper. To this end, it has defined a uniform set of market standards and practices, which are set out in the STEP Market Convention and can be applied to issuance programmes on existing markets and instruments (such as euro commercial paper (ECP) or French commercial paper (TCN)).¹ This uniform set of market standards and practices targets all European markets for short-term paper, i.e. for notes with a maturity at issuance of up to (and including) one year. It is intended to enhance market depth and increase diversification opportunities for both financial and non-financial issuers and for investors.

More specifically, the STEP Market Convention sets out (i) the criteria which short-term paper programmes must fulfil in order to be STEP compliant, and (ii) the procedures for granting and withdrawing the STEP label. The STEP criteria and requirements relate to (a) the disclosure

¹ See also Box 9 on the French Certificate of Deposit Market.

of certain information, (b) the format for documentation (the so-called STEP information package), (c) the settlement of the notes, and (d) the provision of data for production and publication of STEP market statistics. It must be underlined that a STEP label does not relate to the creditworthiness of issuers, the accuracy of the information provided or the liquidity of the assets. Hence, it should not be regarded as a kind of rating assessment.

The Eurosystem, has acted as a catalyst for the STEP Initiative since its origin in 2001, facilitating interaction among market participants and contributing to the preparation of the STEP Market Convention and the raising of public awareness of the project. In July 2004, the Eurosystem agreed to be involved in the STEP labelling process during a transitional phase – while ultimate responsibility for granting and withdrawing the STEP label remained with the STEP Secretariat – and the ECB agreed to produce and publish STEP market statistics on a permanent basis. The contribution by the Eurosystem to the labelling process was discontinued in July 2010 and the STEP Secretariat is now in sole charge.

The remainder of this box presents the development of the STEP initiative from its origin to the summer of 2010, and assesses to which extent it has achieved its objectives.

Market development

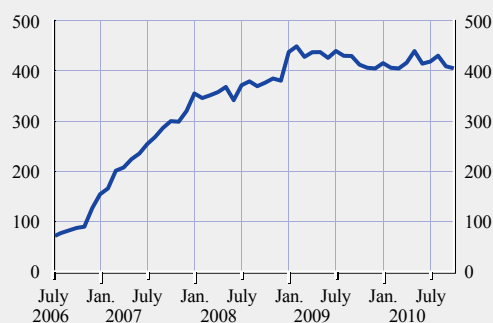
The STEP initiative has proved to be successful from a market perspective.

Since it went live in 2006, the outstanding stock of STEP-labelled programmes has grown from approximately €70-80 billion to around €405 billion (see Chart A), and since late 2008 the annual growth rate has coincided with that of overall short-term debt issuances, suggesting that it kept pace with the broader short-term debt market (see Chart B). Out of the 168 programmes currently active, the median size is €5 billion, the whole range being between €100 million and €70 billion.

STEP-labelled securities went through the financial market turmoil relatively unscathed compared with similar assets. The share of STEP-labelled securities has expanded substantially

Chart A Outstanding amount of STEP-labelled commercial paper

(EUR billions, monthly data)



Source: ECB.

Chart B Growth rates of STEP programmes and short-term debts

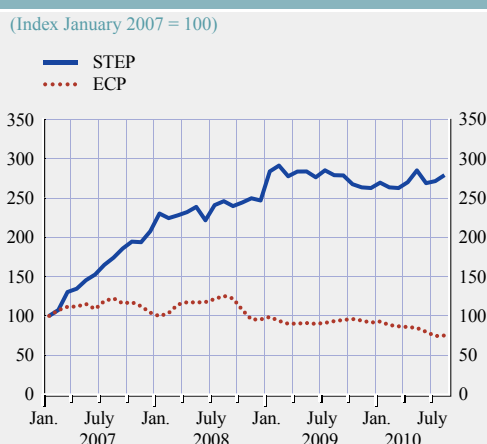
(percentage year-on-year change)



Source: ECB.

since 2006 and developed more dynamically during the turmoil, compared with specific euro-denominated commercial-paper market segments such as ECP, as shown in Chart C. The growth of STEP securities over recent years has shifted the balance between the volume of this kind of commercial paper and the volume of ECP. In January 2007, the outstanding amount of STEP was around €150 billion while ECP was above €500 billion. In August 2010, the difference, measured in euro, was in favour of STEP securities and came to about €25 billion. It should be noted that STEP can and does include ECP and that these have contributed to the growth of STEP securities.

Chart C Growth in STEP and ECP outstanding amount



Sources: ECB and Dealogic; ECB calculations.

The improvement in the quality of the market in which STEP securities are exchanged, which is also related to the STEP market standards and practices mentioned above, has allowed the Eurosystem to accept this market as a non-regulated market for collateral purposes in credit operations. The STEP market indeed fulfils the criteria of accessibility, transparency and safety that are set out in the General Documentation on the Eurosystem monetary policy instruments and procedures² as being necessary for a non-regulated market to be accepted by the Eurosystem for collateral purposes. Such acceptance further helped the growth of the STEP market. The decision of the Governing Council of the ECB in October 2008 to temporarily expand the list of assets eligible as collateral in Eurosystem credit operations and to include STEP-labelled paper issued by credit institutions, i.e. certificates of deposits, lent additional weight to this factor.³ Together with most other measures taken in October 2008 to temporarily broaden the eligible collateral, this particular measure will be discontinued at the end of 2010. However, this discontinuation is not expected to jeopardise the steady development of the STEP market.

In terms of instruments, the STEP-labelled programmes encompass commercial paper (CP), euro commercial paper (ECP) and certificates of deposits (CD). The issuers are mainly monetary financial institutions (MFIs), which account for around 90% of all issuances.⁴ Euro denominated paper dominates the programmes with approximately 78% of the total outstanding amount, although programmes denominated in USD and GBP also have significant shares, of about 15% and 5% respectively; the trend since September 2009, when the time series started, has been slightly upwards.

In terms of maturity, the main bucket is between 10 and 41 days, which together with the 41 to 100 days bucket constitutes around 70% of the total outstanding amount in euro. This short maturity explains why STEP programmes are used only to a limited degree as collateral with the Eurosystem. In addition, these assets are typically purchased and held to maturity by investors that are not Eurosystem counterparties, e.g. money market funds. Furthermore,

² "The implementation of monetary policy in the euro area" (November 2008), page 36.

³ See also Box 1 on the ECB's non-standard measures and the financial crisis.

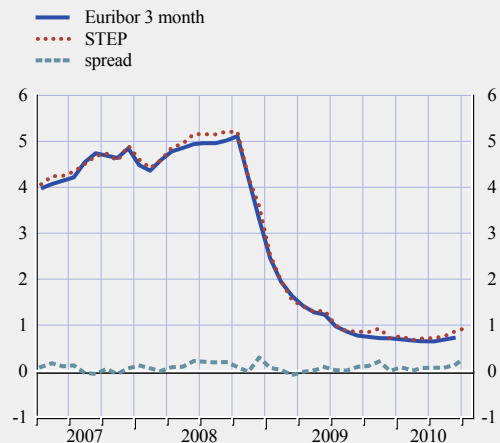
⁴ More information on STEP and its individual programmes can be found on the STEP market website www.stepmarket.org and, for outstanding amounts, on the webpage of the ECB: <http://www.ecb.europa.eu/stats/money/step/html/index.en.html>.

STEP programmes in general have a high credit rating, 97% of them having been assigned the highest rating.

The ECB has published daily STEP yield statistics on its webpage since April 2007. These encompass annualised yields on euro-denominated STEP-labelled zero coupon issues, referring to the primary market interest rates originally agreed between an issuer and an investor. The issue yields are very close to the Euribor rates, as a comparison between the 3-month Euribor and the yield on STEP-labelled securities with an original maturity between 101 and 200 days shows (see Chart D). Since the start of the series, the spreads have never widened above 0.3% per annum, and have sometimes been negative.

Chart D STEP yields for the MFI sector as issuer

(all ratings, 101-200 maturity; percentages per annum)



Source: ECB.

The publication of the daily yields and spreads on new issues forms part of the overall statistics provided by the ECB and published on its website.⁵ Moreover, since the end of November 2009, the ECB has published daily statistics on aggregated outstanding amounts and new issues, broken down by sector, maturity, rating and currency denomination. Since September 2010 the ECB has also published the outstanding amounts – and currency breakdown – by issuance programme. This is useful for investors in assessing their concentration risk, i.e. how large their exposures to a specific programme is compared to the programme's overall size.

Concluding remarks

The STEP initiative was designed and implemented to unite market standards and practices in the short-term commercial paper market. It supports financial integration, standardisation and a broadening of the investor base. Given the development of the STEP market since it went live in 2006, and in particular the increased volumes of STEP-labelled securities issued, and compared with the non-STEP short-term paper markets, the STEP initiative has indeed been successful in fostering the integration of the short-term paper market in Europe. The current outstanding amount of STEP-labelled programmes of around €405 billion also points to increased liquidity. It is being used by both financial and non-financial corporations and the issuers comprise both large and complex banking groups and smaller entities across the EU. All these developments reflect the fundamental role STEP short-term paper plays as a funding and investment tool at the short end of the yield curve.

Market standards have converged, underlining the important role that harmonised requirements at the euro-area level can play in fostering market integration. This has also been reinforced by the need to fulfil the Eurosystem's criteria for the eligibility of collateral.

The STEP market and its label have developed into a self-certified money-market segment which no longer needs the Eurosystem to support the labelling process. Even though the Eurosystem as a whole

⁵ See <http://www.ecb.int/stats/money/step/html/index.en.html>

is stepping down from its involvement in the STEP labelling exercise, some Eurosystem members will continue to play an active role in it. In particular, the Banque de France, in line with its national laws and in its regulatory capacity, will continue to be involved in the STEP labelling process.

Finally, the ECB will continue producing and publishing STEP market statistics as a vital feature for the transparency of this market. Moreover, the STEP statistics may be used by the Eurosystem not only for statistical purposes, but also to contribute to the implementation of monetary policy and for the analysis of financial stability in the euro area.

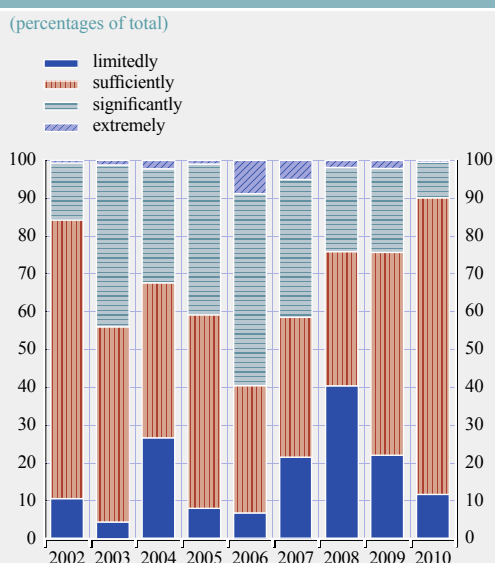
7.3 MARKET STRUCTURE

The qualitative feedback from the questionnaire indicates that market participants perceived the short-term securities market to have declined somewhat in overall efficiency (Chart 47). In 2010 only 10% considered this market to be either “extremely” or “significantly” efficient, which is not only a lower share than in the previous year, but also represents the lowest share of respondents with this view since the start of the survey. The vast majority of respondents (90%) deemed the market to be either “limitedly” (12%) or “sufficiently” (78%) efficient which reveals a certain fall-back since last year’s survey in the efficiency of this market as perceived by the respondents.

The decline in the share of respondents that perceive liquidity conditions to have improved “slightly” or “significantly” from 50% in 2009 to 15% in 2010 (Chart 48) may seem somewhat paradoxical in a context where market confidence has been restored, at least partially. Indeed, in 2010 80% of respondents considered liquidity conditions to have remained unchanged (60%) or even to have worsened (20%), which is a significant setback compared to 2009, when the panel was evenly split between those holding an optimistic stance and those who were more pessimistic about liquidity conditions.

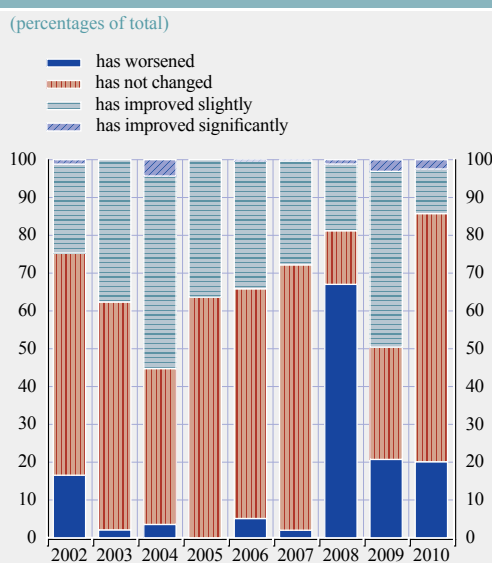
The geographical distribution of counterparties (Chart 49) was largely more international in 2010 than in the previous year, although the main

Chart 47 Opinion concerning the efficiency of the short-term securities market



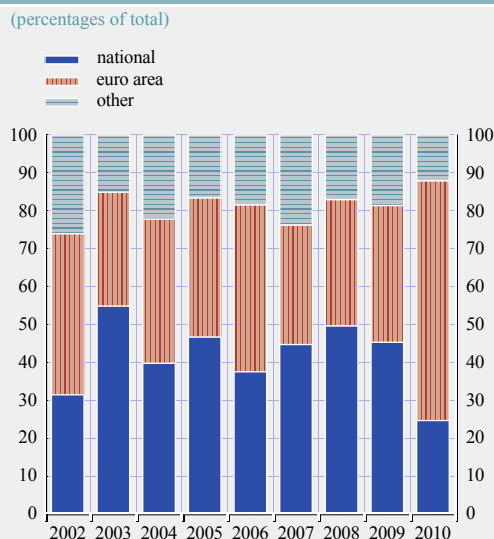
Note: The panel comprised 105 credit institutions.

Chart 48 Opinion concerning the liquidity of the short-term securities market



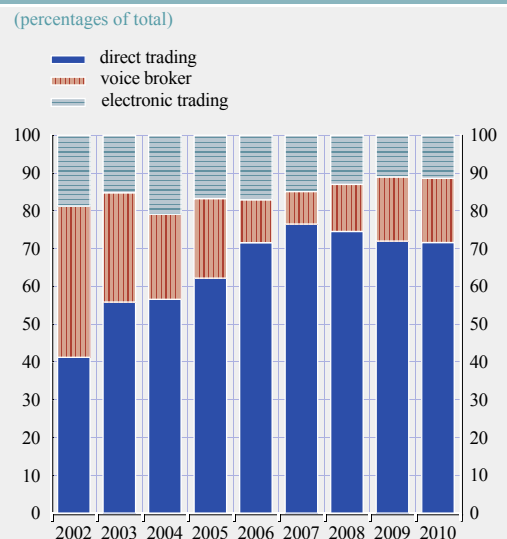
Note: The panel comprised 105 credit institutions.

Chart 49 Geographical distribution of the counterparties in the short-term securities market



Note: The panel comprised 105 credit institutions.

Chart 50 Trading structure of short-term securities transactions



Note: The panel comprised 105 credit institutions.

concentration was still in the euro area. When comparing this with the situation in 2008, it is worth noting that the decline in domestic transactions has been offset by the increase in cross-border transactions within the euro area. The share of domestic turnover declined significantly, from 50% in 2008 to 25% in 2010, while the volume traded with euro-area non-domestic counterparties increased from 32% in 2008 to 63% in 2010. In turn, transactions with the rest of the world shrank from 24% in 2007 to 12% in 2010.

In terms of trading mode (Chart 50), the share of electronic trading (at 11%) remained at its lowest level since the beginning of the survey. That level is almost half that of 2004 though comparable to 2009. The ongoing financial market turbulence coincided with a decline in the relative share of direct trading, from 78% in 2008 to a still dominant share of 72%. Most of this decline was offset by an increase in the share of trading taking place through voice brokers, from 13% in 2008 to 17% in 2010.

Box 9

THE FRENCH CERTIFICATE OF DEPOSIT MARKET: INTERNATIONAL COMPARISON AND CHARACTERISTICS

With an outstanding amount of certificates of deposit (CDs) issued by credit institutions of around €381 billion in July 2010, the French CD market ranks first in Europe, ahead of the euro commercial paper (ECP) London-based market (€250 billion issued by credit institutions), but behind the US commercial paper (USCP) market (\$535 billion or €419 billion issued by the financial sector). Despite the eruption of the financial market crisis in August 2007 and the negative general market shock represented by the default of Lehman Brothers in September 2008, the outstanding amount of CDs issued in France expanded from just €324 billion in July 2007 to

a peak of more than €460 billion in February 2009 (Chart A). Outstanding CD volumes, however, suffered a noticeable decline after mid-2009 and only began to expand again from February 2010 onwards.

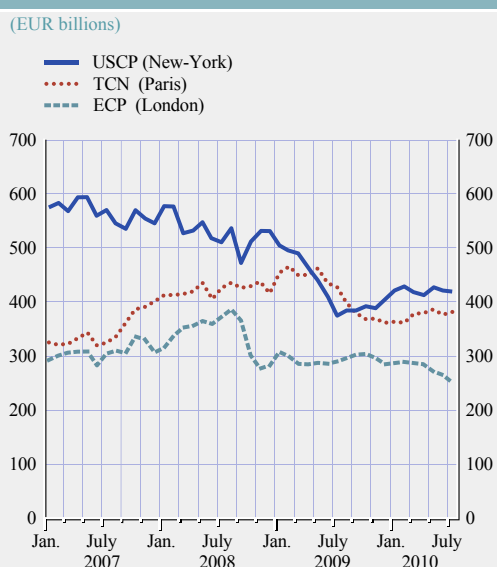
One of the policy measures that may have helped the French CD market weather relatively well the period of financial market turmoil between August 2007 and the end of 2008 was the temporary expansion by the ECB in October 2008 of the range of CDs that are considered to be eligible collateral in its liquidity-providing operations. These measures in particular gave a boost to issuances labelled in the short-term European paper (STEP) market (see Box 8). In contrast, one of the factors that may help explain the decline in outstanding amounts of CDs after May 2009 is the abundant liquidity conditions that ensued after the ECB allotted a record amount of cash in its first 1-year LTRO in June 2009. Another reason

might be the weak demand for CDs from money-market mutual funds (one of the main investors in this kind of instrument) due to the very low interest rate environment. Despite this temporary setback, it is important to note that even after the considerable decline in volumes seen between May 2009 and February 2010, the outstanding size of the French CD market never shrank back to its pre-crisis levels. If one compares this to those segments of the USCP and ECP markets composed of short-term paper issued only by financial institutions, it is clear that neither the USCP financials nor the ECP financials (with outstanding volumes today of €419 and €250 billion respectively) are in the same situation (Chart A). The USCP financials market weathered the August 2007 episode of the crisis relatively well and outstanding amounts of CP in this market fluctuated around a monthly average volume of around €556 billion (\$796 billion) between January 2007 and August 2008. The bankruptcy of Lehman in September 2008, however, led to a much sharper and persistent fall in the outstanding amounts of short-term paper in the USCP financials market (between August and September 2008 volumes fell by 16% in dollar terms and 12% in euro terms) than in the ECP financials market (5% decline in euro terms over the same period) or French CD (2% decline in euro terms over the same period) markets (Chart A). Interestingly, while the outstanding volumes of short-term paper in the French CD market began to grow again in 2010 (they have expanded by 5% during the first seven months of 2010), volumes in both the ECP and the USCP financials markets were never able to reverse their post-Lehman downward trend and have continued to decline in 2010.

Main characteristics of the French CD market.

With 200 active issuers, the market is rather concentrated, the top ten issuers – Banque Nationale de Paris-Paribas, Société Générale, Natixis, BPCE, CASA, CA-CIB, Dexia, Crédit Foncier, BFCM and ING Bank NV representing 50% of the total CD segment. More than 93% of the outstanding amount is rated A-1+/F1+/P-1 and A-1/F1, the best possible credit rating

Chart A Outstanding amount of short-term debt securities issued by financial institutions

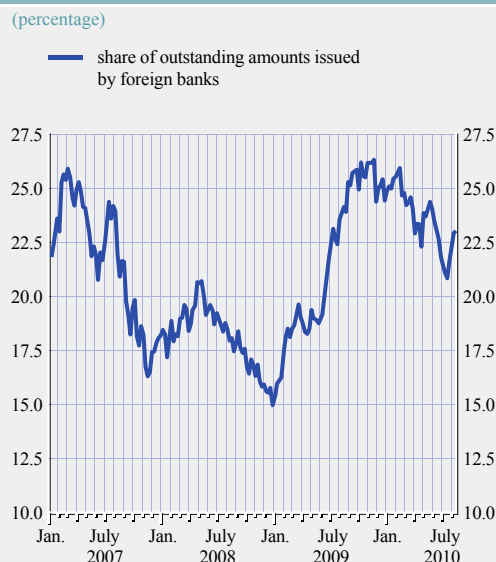


Sources: Federal Reserve, Banque de France, CPWare.

for short-term paper. The market is also characterised by its attractiveness for foreign banks.¹

The share of issuers who are not resident in France in the total outstanding amount (Chart B) stood at 15% at the end of 2008 and is currently 23%. The following banks are the main contributors to this increase: ING Bank NV, BBVA, RBS, Jyske Bank and Unicredit, Lloyds TSB, ABN Amro Bank NV and Intesa Sanpaolo. The eligibility of French CD as collateral for Eurosystem refinancing operations and the supervised nature of the market (Banque de France is responsible for ensuring that the issuers comply with the issuance conditions and publishes information related to issuers as well as statistics on the market) help explain why foreign issuers reinforced their position in the French CD market.

Chart B Percentage of outstanding amounts issued by foreign institutions in the French CD market



Source: Banque de France.

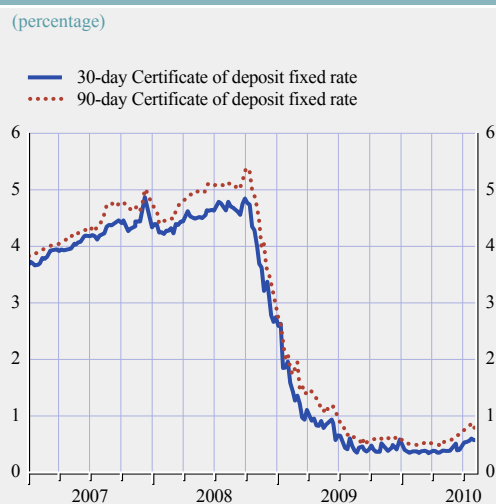
Interest rate dynamics: a downward trend has been recorded since October 2008.

Since October 2008 the average interest rates on CDs with a maturity of one month and three months have declined by 391 and 397 basis points respectively (Chart C).

This decline in the interest rate paid by short-term paper was, of course, related to the reduction in central bank policy rates since 2008. In the context of parallel and partly coordinated interest rate decisions by various central banks, the drop in the rate of French titre de créances négociable (TCN) reflected similar movements in major commercial paper markets.

The financial crisis seems to have caused only a temporary shortening of the average maturities of the CDs issued in the French market and today both the initial maturity of new CD issues and the residual maturity of outstanding CDs are higher than in the period immediately before the crisis (Chart D). In terms of original maturity of issuance, the average maturity was 14 days in 2007 before the financial crisis began

Chart C Average interest rates on CDs



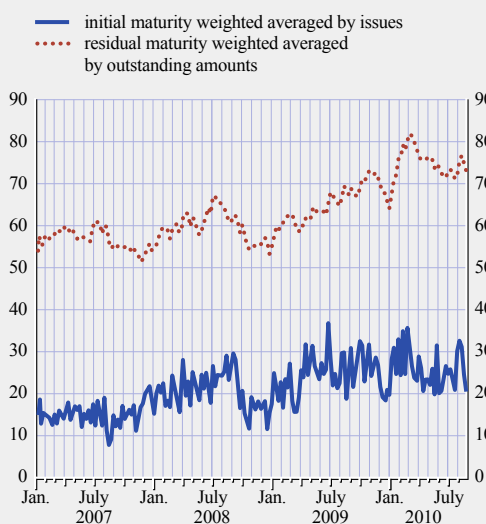
Source: Banque de France.

¹ Foreign credit institutions as well as resident ones but with foreign capital.

in August of that year. This measure of average maturity declined to 8 days in the second half of August when the first effects of the crisis became apparent but began to lengthen again soon afterwards and reached a peak of 30 days just before the default of Lehman brothers in mid-September 2008. The after-shock of the Lehman default in September 2008 may also help explain the significant decline in the maturity at issuance that occurred between September and December 2008 (Chart D). The initial maturity of issuance, however, was also able to post a strong recovery from this second shock in the first half of 2009. Since mid-2009, the initial maturity of issuance has fluctuated between 20 and 35 days, which is higher than the range seen in 2007 before the crisis began. As regards the residual maturity of the outstanding amount of CDs, it decreased from around 60 days before September 2007 to as low as 52 days towards the end of 2007. The residual maturity recovered in the first half of 2008 and increased to as high as 67 days in July of that year, but the market turmoil that followed the collapse of Lehman Brothers caused the residual maturity to retreat again to around 53 days by the end of 2008. Since then, however, the residual maturity has posted a very significant increase and, having reached a peak of 80 days in February 2010, today it fluctuates within a range of 70 to 75 days.

Chart D Maturity on CD transactions

(average maturity at issuance; average maturity weighted by outstanding amounts in number of days)



Source: Banque de France.

8 CROSS-MARKET SEGMENT ANALYSIS

8.1 TURNOVER ANALYSIS

Against the background of the ongoing financial market crisis, rising tensions related to concerns about the sovereign debt of some euro-area countries, and the surplus liquidity environment in the interbank market, aggregate turnover in the euro money market declined for a third consecutive year, albeit at a slower pace.

In the second quarter of 2010, overall turnover in the euro money market was 3% lower than in the second quarter of 2009 (Chart 51) and reached its lowest level since 2005. Despite the decrease in the aggregated turnover, the secured and foreign exchange (FX) swaps markets showed some resilience and recorded year-on-year

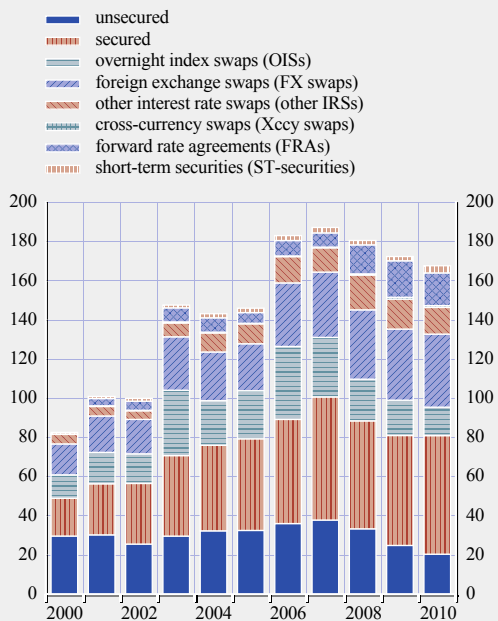
increases of 8% and 3%, respectively. On the other hand, the most pronounced decline in activity took place in the overnight interest rate swap (OIS) and unsecured segments, where turnover contracted by 19% and 18%, respectively.

The secured market remained the largest segment of the euro money market and even strengthened its leading position, accounting for 36% of overall turnover in the second quarter of 2010 (33% in the second quarter of 2009). The increase in secured-market turnover (Chart 52) may partly be explained by the shift away from unsecured trading driven by the stronger aversion to counterparty credit risk (see Chapter 3).

In that context, this survey also showed further evidence that the market increasingly perceives

Chart 51 Aggregated average daily turnover of the euro money market

(index: aggregated average daily turnover volume in 2002 = 100)



Note: The panel comprised 85 credit institutions in 2000 and 2001 and 105 credit institutions thereafter.

Chart 52 Average daily turnover in various money market segments

(index: unsecured transaction volume in 2002 = 100)



Note: The panel comprised 85 credit institutions in 2000 and 2001 and 105 credit institutions thereafter.

the benefits of having transactions cleared by Central Counterparties (CCPs). Indeed, the share of transactions in total secured activity that were cleared by CCPs rose from 41% in 2009 to 45% this year. The attractiveness of resorting to these intermediaries is that CCPs act as a firewall against the propagation of default shocks, and therefore help mitigate contagion risks and spillover effects.

Activity in the unsecured market contracted for the third year in a row and reached its lowest level since the inception of the Euro Money Market Survey (Chart 52). The decrease in turnover in the unsecured market may be explained by the following factors. Firstly, the market shifted towards secured trading. Secondly, there may have been a crowding-out effect stemming from the increased intermediation role of the Eurosystem (see Box 10). Thirdly, the pressure on banks to preserve capital has led them to avoid lending unsecured cash because this kind of lending

carries one of the highest regulatory risk weights. Finally, liquidity regulations in some countries require banks to hold large liquidity buffers (see Box 3), and given that part of those buffers is made up of cash they deposit with central banks they no longer lend that cash out in the interbank market.¹⁴ In spite of the decrease in turnover, the unsecured market remained the third largest segment of the euro money market, accounting for 12% of overall turnover.

Turnover in the over-the-counter (OTC) derivatives market continued to decrease, recording a year-on-year decline of 7% (Chart 53). With the exception of FX swaps, activity in all the remaining OTC derivatives decreased, and the strongest declines were in OIS (-19%) and other interest rate swaps (IRS)

¹⁴ The narrowing of the corridor between the minimum MRO bid rate and the ECB deposit facility rate to 75 bps in 2009 from the previous 100 bps corridor may also have reduced the incentives of some banks to lend their cash in the interbank market instead of placing it overnight at the ECB.

(-11%). The decrease in turnover in the OIS segment may be related to the lower activity in the unsecured market and the low volatility of EONIA in this period and consequently to the reduced need for hedging short-term interest-rate risk. On the other hand, the increase in FX swaps turnover may partly be explained by the fact that this instrument has become an important cash funding tool for banks needing to fund their USD-denominated assets. Moreover, banks tried to diversify their counterparty risk exposure, and this instrument is relatively secure. As a result, the FX swaps' share in euro money market turnover increased to 22% in 2010, reinforcing its second place in terms of overall turnover.

Activity in the short-term securities market (Chart 53) showed a large increase (+67%), which may mainly be explained by the increased interest by investors in this kind of instrument after the ECB temporarily accepted certain types of short-term securities issued by credit institutions as eligible collateral in its operations in October 2008. However, short-term securities remain the second smallest segment of the

euro money market (surpassing only the 0.5% share of the cross-currency swaps segment), accounting for just 2% of overall turnover.

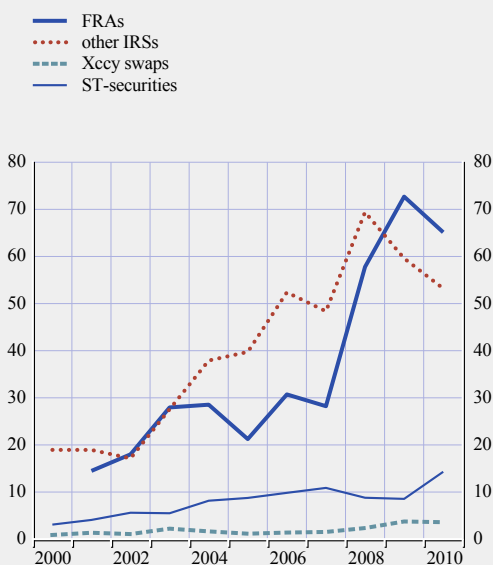
8.2 MATURITY ANALYSIS

Concentration on short-term maturities remained very strong (Chart 54), especially in the unsecured, secured and FX swaps segments. Moreover, since the outbreak of the financial market turmoil, a further shortening of the maturities traded has been observed in those segments. The shift of part of the turnover towards shorter maturities reflects the greater weight attached to counterparty credit risk in trading activities, which led banks to reduce their medium and long-term exposures in the interbank market.

Against this backdrop, the weight of transactions in the unsecured, secured and FX swaps segments in maturities of up to one week increased to 92%, 91% and 69% respectively in the second quarter of 2010. The shortening of the maturities traded was more pronounced in

Chart 53 Average daily turnover in various money market segments

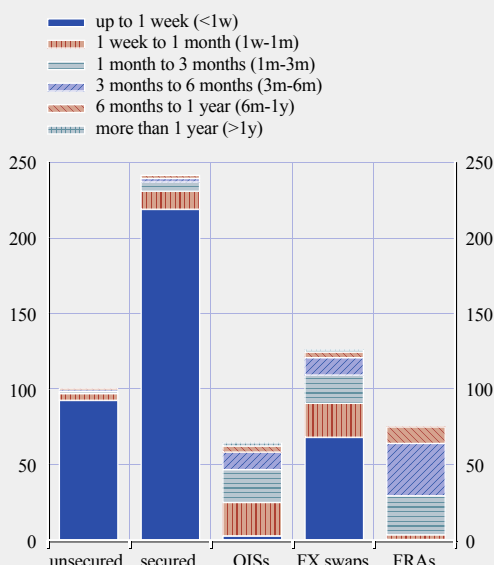
(index: unsecured transaction volume in 2002 = 100)



Note: The panel comprised 85 credit institutions in 2000 and 2001 and 105 credit institutions thereafter.

Chart 54 Maturity breakdown for various money market segments in 2010

(index: unsecured volume = 100)



Note: The panel comprised 172 credit institutions.

the secured and FX swaps segments, where the overall increase in turnover was mainly driven by a higher activity in shorter maturities. In the unsecured segment, the increase of the weight of trading in maturities of up to one week was mainly a consequence of the considerable decrease in turnover in longer maturities, as the fall in activity in this segment was observed across almost all maturity buckets.

An impressive change in terms of the maturity profile took place in the OIS segment, where the 80% drop in activity in the “up to one week” maturity bucket (which drove the overall decrease in turnover), led to a strong increase of the weight of transactions in longer maturities. Consequently, in the second quarter of 2010, the weight of the turnover in the maturity bucket “up to one week” as a proportion of total turnover decreased by 13 percentage points to just 4%. The very ample interbank liquidity conditions which prevailed after the first 1-year LTRO in June 2009 kept EONIA anchored at relatively low and stable levels and this reduced the hedging needs for periods of up to one month during the second quarter of 2010. This situation changed with the decline in the surplus liquidity environment immediately after the expiry of the first 1-year LTRO in July 2010 which has since resulted in a relatively more volatile EONIA. According to some market participants it has also led to an increase in OIS turnover for short maturities (see Section 5).

In both the other IRS and cross-currency swaps segments, survey data reveal that the trend of recent years’ trend, in particular since 2007, towards a shortening of the maturities traded has been maintained. Indeed, in the second quarter of 2010 the share of turnover accounted for by maturities of up to two years increased to 47% in the other IRS segment, and to 43% in the cross-currency swaps segment.

As for the forward-rate agreements (FRA) segment, the turnover maturity profile continues to mirror the medium-term nature of this type of instrument, as transactions in maturities of between one and six months accounted for

80% of the total in the second quarter of 2010, remaining almost unchanged from the same period of 2009.

8.3 MARKET STRUCTURE

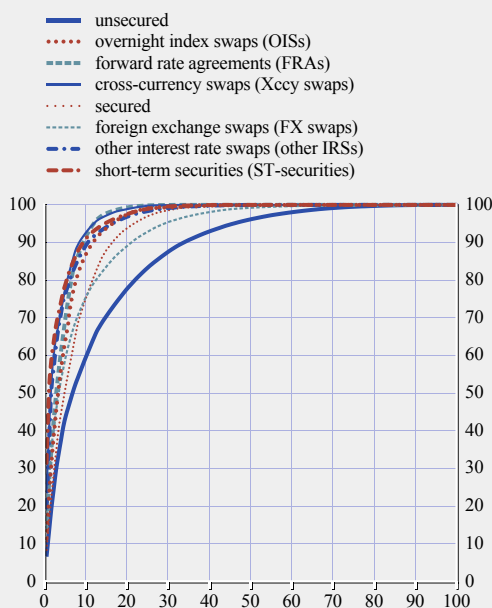
In 2010 turnover concentration among market participants increased in several market segments. This may reflect the important re-structuring that has taken place in the European banking industry as a result of the crisis and the significant reduction in the balance sheets and market-making activity of many banking institutions. It may also suggest that the reinforced mistrust regarding the creditworthiness of counterparties and the increased concerns about the sustainability of sovereign debt in some euro-area countries led to the closing or reduction of many credit lines, contributing to a reduction in the number of active players in some market segments. The market share of the top 20 credit institutions increased in the unsecured market, in some of the OTC derivatives segments (OIS and other IRS) and in the short-term securities segment. Conversely, the remaining OTC derivatives showed a slight decrease in concentration, which may signal that a few more players were attracted to these segments due to the better conditions in these instruments for currencies other than the euro. For the secured market the concentration was broadly unchanged.

The unsecured market remained the least concentrated segment, followed by the FX swaps and the secured market segments, with the share of the top 20 banks in these segments being 64%, 79% and 80% respectively. Cross-currency swaps and FRAs remained the most concentrated segments, with concentration ratios for the top 20 institutions of 95% and 94% respectively (Chart 55).

The analysis of the geographical counterparty structure reveals that the bulk of business continues to be carried out with counterparties from the euro area in all segments except other IRS and cross-currency swaps. Even so, the share of transactions with counterparties from the

Chart 55 Lorenz curve: concentration of activity in various market segments in 2010

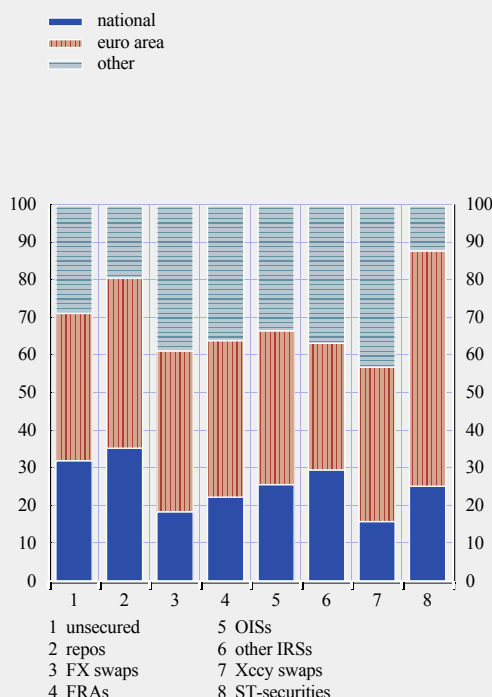
(x-axis: percentage of market participants; y-axis: percentage of activity)



Note: The panel comprised 172 credit institutions.

Chart 56 Counterparty structure of various money market segments in 2010

(percentages of total)



Note: The panel comprised 172 credit institutions.

euro area decreased in all segments except the secured, the cross-currency swaps and the short-term securities markets. The increase in the share of transactions carried out with counterparties from the euro area in the secured segment might be related to the increase in the proportion of transactions cleared by CCPs, which are reported under the euro-area category.

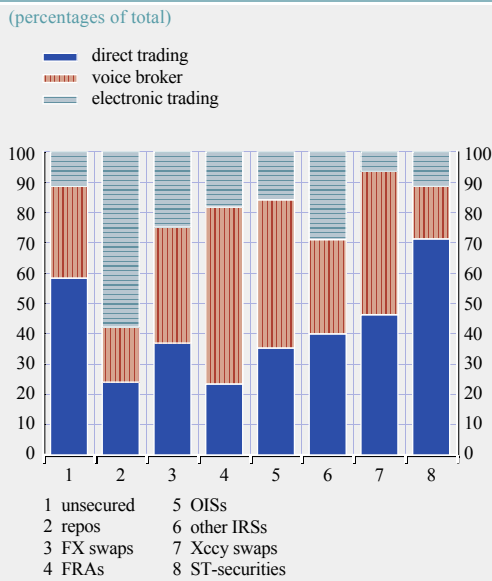
As for cross-border trading, the share of transactions with counterparties outside the euro area increased only in the unsecured market (Chart 56) and in the OIS and FX swaps segments. Nevertheless, in the unsecured segment this share is still relatively modest (29%), as it is in the secured market (19%) and the short-term securities segment (12%).

The proportion of business carried out with counterparties from the same country decreased in the unsecured market and in the

FX swaps and short-term securities segments, the latter changing most significantly in terms of geographical structure (down from 46% to 25%, in favour of the increase in trade with euro-area counterparties). In most of the OTC derivatives segments the share of trading with “national” counterparties increased. In the unsecured and secured markets this share remains comparatively high (32% and 35% respectively).

The ongoing financial market turbulence had an impact on the way institutions execute transactions with their counterparties (Chart 57) and this differed across the segments. The share of electronic trading increased in all segments except for FRAs. The most relevant increase was recorded in the secured segment (mostly at the expense of direct trading), which might be related to the rise in transactions cleared by CCPs as a means of managing credit risk.

Chart 57 Trading structure of various money market segments in 2010



Note: The panel comprised 172 credit institutions.

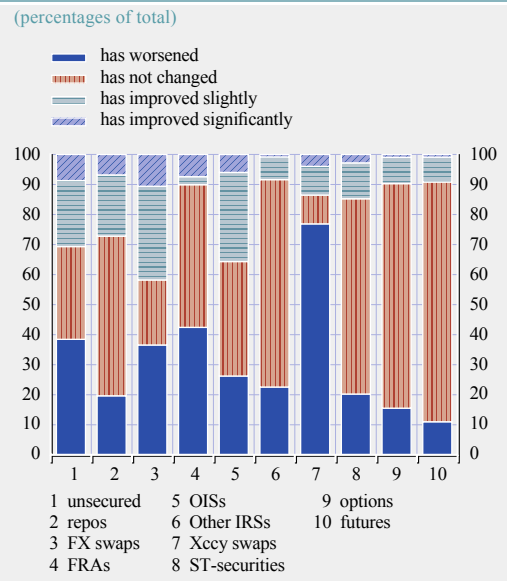
Indeed, electronic trading accounted for almost 58% of activity in the secured market. In the remaining segments, and in spite of the increase recorded, electronic trading remained the least favoured way of carrying out business.

In the unsecured, FX swaps and FRA segments the share of direct trading increased. Direct trading still remained the favourite way to exchange liquidity in the unsecured, short-term securities and other IRS segments, accounting for more than half of the turnover in the first two and for almost 40% in the latter.

In turn, the proportion of deals traded through voice brokers decreased in all but the cross-currency swaps and FRA segments, mostly in favour of electronic trading. Nevertheless, voice broker deals continue to be the most common way of conducting business concerning the majority of OTC derivatives (shares of 49%, 38%, 47% and 58% for OIS, FX swaps, cross-currency swaps and other IRS respectively).

The qualitative part of the study showed that a majority of respondents still believe that

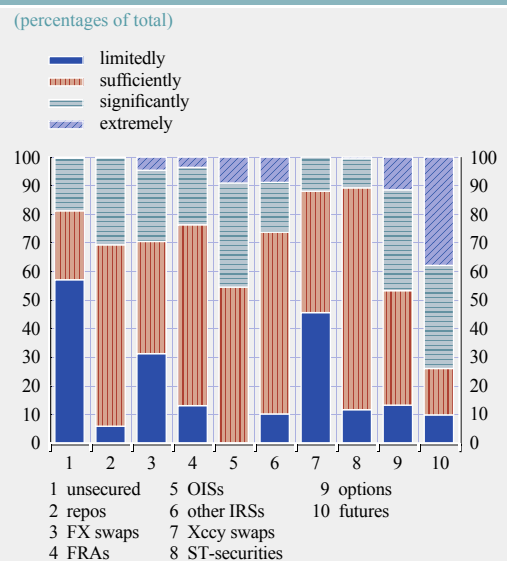
Chart 58 Has the market liquidity in the euro money market changed in comparison with last year?



Note: The panel comprised 172 credit institutions.

liquidity conditions have not improved in any of the market segments (Chart 58). In the unsecured, FX swaps and cross-currency swaps segments most participants consider

Chart 59 Is the euro market (for the different segments) in your opinion efficient?



Note: The panel comprised 172 credit institutions.

that liquidity conditions have deteriorated in 2010 compared to 2009. In the secured, OIS, other IRS, FRA, short-term securities, futures and options segments most market participants report that liquidity conditions have not changed in 2010.

Turning to questions related to market efficiency, survey responses showed a continuing loss of efficiency in most market segments (Chart 59).

Responses pointing to the limited efficiency of the euro money market were more pronounced in the unsecured, FX swaps and cross-currency swaps segments. Indeed, 57% of survey participants perceived the efficiency in the unsecured segment as “limited” in 2010, compared to 53% in 2009. The short-term interest rate futures and options segments remained the most efficient money market segments.

Box 10

AN ANALYSIS OF THE IMPACT OF THE INTERMEDIATION ROLE OF THE EUROSISTEM ON MONEY MARKET ACTIVITY DURING THE FINANCIAL CRISIS

Since the onset of the financial turmoil, greater uncertainty regarding banks’ own liquidity positions and increased concerns about the creditworthiness of their counterparties have led banks to hoard liquidity.

As interbank liquidity became very scarce for maturities beyond one week and almost dried up at the longer end of the money market interest rate curve, the interbank money market’s redistribution mechanism for central bank money was severely impaired. This prompted the Eurosystem to assume a stronger intermediation role, in order to maintain control over short-term money market rates and ensure the continued access of banks to liquidity.

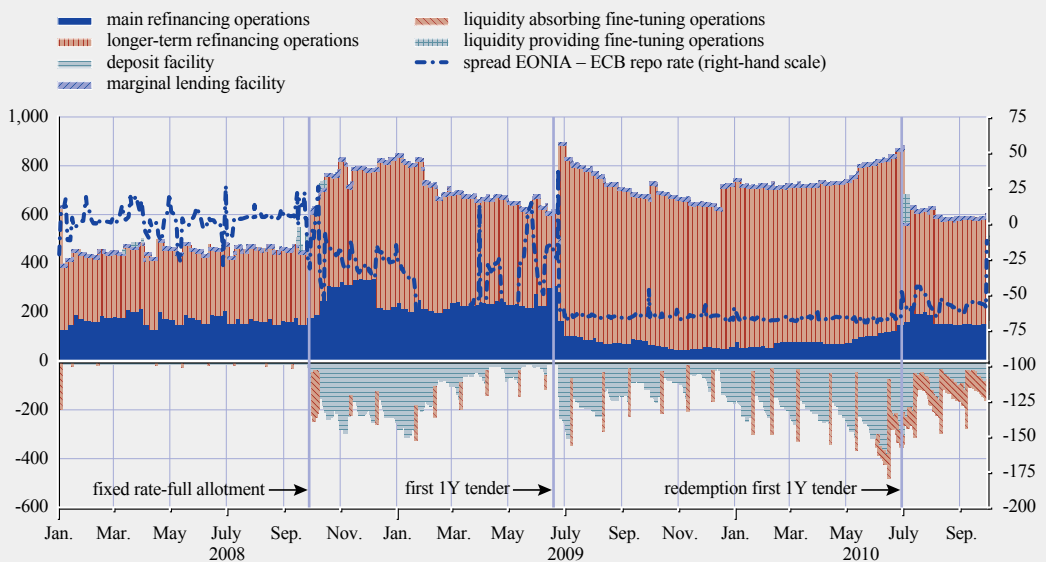
In response to the financial turmoil, the objective of the Eurosystem’s liquidity policy was to support the refinancing of banks so that the monetary policy transmission mechanism could continue to work effectively. The switch to a full allotment policy in all liquidity-providing open market operations, one of the non-standard monetary policy measures introduced by the ECB (see Box 1), led to a significant increase in Eurosystem refinancing amounts (which almost doubled after October 2008), as banks themselves (rather than the ECB) determined the amount of liquidity supplied by the central bank (Chart A).

The unprecedented increase in Eurosystem refinancing volumes led the euro-area banking system to an environment of excess liquidity and pushed money market interest rates down. At the same time, however, the stronger intermediation role of the Eurosystem and the low level of interest rates to some extent also crowded out interbank activity. This was because, as the level of rates is driven lower by the surplus liquidity environment, the closer market rates are to the rates paid by the ECB on its overnight deposit facility the less incentive banks have to take on some additional credit risk by lending their cash to other banks rather than leaving it as deposit to the ECB through the deposit facility with no credit risk.

The trade-off between the extent of the Eurosystem’s financial intermediation and interbank market activity was particularly evident in the overnight segment of the euro money market because of the pivotal role it plays in banks’ short-term liquidity management. This trade-off

Chart A Outstanding monetary policy operations

(left hand scale: EUR billion; right hand scale: basis points)



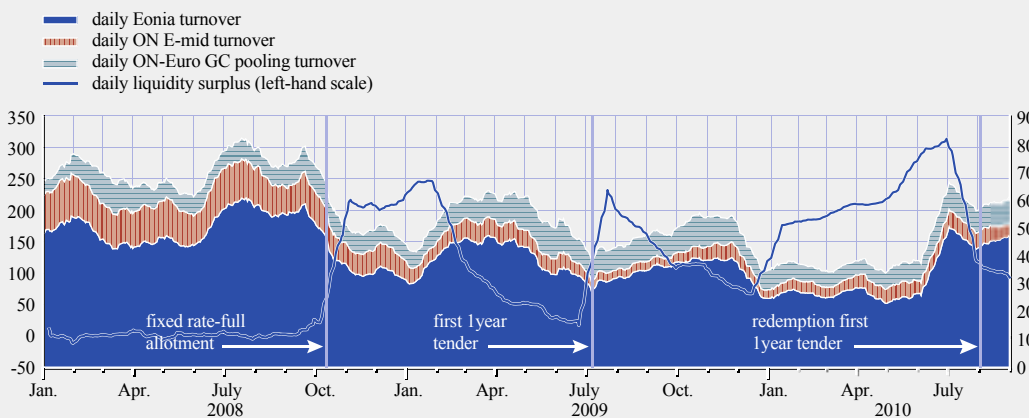
Sources: European Central Bank and Reuters.
 Note: The EONIA series excludes the last day of the reserve maintenance period.

can also be found in longer maturities, as is confirmed by the decrease in turnover disclosed in the Euro Money Market Survey. As regards overnight activity, some signs of crowding out in both the secured and the unsecured market segments were evident following the adoption of the fixed-rate, full-allotment procedure, and these signs were reinforced after the allotment of the first 1-year LTRO. In 2008, until the introduction of the fixed-rate, full-allotment procedure, the EONIA average daily turnover was around €51 billion and between that date and the allotment of the first 1-year LTRO the daily turnover fell to €40 billion. Then, in the period between the 1-year LTRO and its maturity on 1 July 2010, the daily EONIA turnover declined further to around €30 billion. The gradual decline in the daily liquidity surplus after 1 July 2010 led to an increase in both the EONIA rates and in the EONIA average daily turnover, to around €46 billion. The reduction of the liquidity surplus in a full fixed-rate, full-allotment environment – in which banks and not the Eurosystem decide the amount of liquidity needed by the banking system – may be interpreted as a signal that conditions are improving as regards banks’ access to funding through the interbank market. The higher money market interest rates and consequently the higher opportunity cost of hoarding liquidity, in a context of an unchanged deposit facility rate, may also have been a key driver of the increasing money market activity. A similar pattern involving the inverse relationship between excess liquidity and overnight money market activity can also be observed in the turnover of overnight unsecured transactions on the Italian e-MID platform.

Although the greater weight attached to credit risk in trading decisions contributed to a shift towards secured transactions – particularly before the first 1-year LTRO – signs of the crowding-out effect stemming from increased Eurosystem intermediation were also visible in overnight secured activity. Indeed, the average daily turnover in the overnight segment of Euro GC Pooling decreased by around 10% after the first 1-year LTRO and has only recovered since the maturity of this operation (see Box 5).

Chart B Daily liquidity surplus and overnight turnovers

(EUR billions; all series are 20-day moving averages)



Sources: European Central Bank, Bloomberg and Reuters.

An analysis of the data (Chart B) confirms the existence of a clear negative relationship between the Eurosystem daily liquidity surplus (measured by the difference between credit institutions' current accounts and their reserve requirements plus the net recourse to the standing facilities, excluding the last day of the reserve maintenance period) and a composite indicator of overnight money market activity (made up of the sum of EONIA, e-MID and Euro GC Pooling overnight turnovers), i.e. when the daily liquidity surplus increases, the overnight activity tends to decrease. Indeed, in the period from the beginning of 2008 to September 2010 these two variables exhibited a negative correlation coefficient of 0.74. In the same period, and using the daily recourse to the deposit facility as a simple measure of the daily liquidity surplus, a correlation of -0.72 can be seen with the composite indicator of overnight money market activity. A scatter plot (Chart C) of the composite overnight activity indicator and the daily liquidity surplus shows that the lowest market turnovers were associated with the highest levels of liquidity surplus and were observed over the period when the intermediation role of the Eurosystem was at exceptionally high levels, i.e. the period when the first 1-year operation was outstanding.

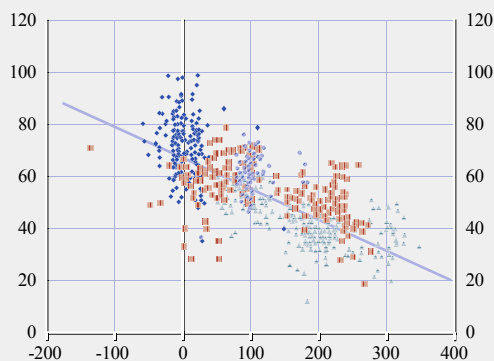
Furthermore, as the stronger intermediation role of the Eurosystem in an environment of high counterparty credit risk concerns might be conducive towards a less active management of liquidity by credit institutions through the interbank market, lower credit risk exposure among banks would also be expected. Against this background, developments in certain

Chart C Scatter plot of daily liquidity surplus and overnight turnovers

(EUR billions)

x-axis: daily liquidity surplus
y-axis: sum of daily EONIA, e-MID and ON-GC Pooling turnover

- ◆ from January to October 2008
- from October 2008 to the first 1-year LTRO
- ▲ from the first 1-year LTRO to its redemption
- since the redemption of the first 1-year LTRO

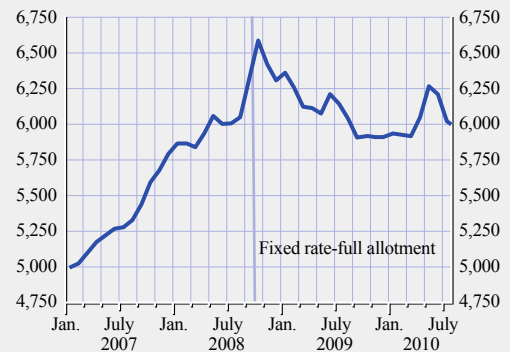


Source: European Central Bank, Bloomberg and Reuters.

balance sheet items of euro-area monetary financial institutions (MFIs), such as deposits from euro area resident MFIs, or loans granted to euro area MFIs, may provide additional information on interbank activity trends. Since theoretically the amounts of these two balance sheet items should balance, it is enough to focus on one of them to detect an interesting pattern. Indeed, looking for instance at the developments of euro-area MFIs' loans to other euro-area MFIs (excluding the Eurosystem) it is possible to observe a strong decrease in this balance sheet item in the aftermath of Lehman Brothers' bankruptcy and the adoption of the fixed-rate, full-allotment policy (Chart D). This finding may provide additional empirical evidence on the crowding-out effect between the strong intermediation role of the Eurosystem and interbank market dynamics. It supports the view that to the extent that financial market conditions indicate that extraordinary liquidity measures may no longer be needed to safeguard a smooth implementation and transmission of monetary policy, and no significant market segmentation exists, maintaining such measures may distort the overall functioning of money markets.

Chart D Loans of euro area MFIs to other euro area MFIs excluding the Eurosystem

(outstanding amounts, EUR billions)



Source: European Central Bank – Aggregated balance sheet of euro area MFIs (excluding the Eurosystem).

ANNEX I

TECHNICAL ANNEX

SCOPE OF THE STUDY

In this eighth ECB euro money market study, banks were invited to provide data about their interbank activity during the second quarters of 2009 and 2010, 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 2010 study.

Banks report interbank activity if this activity is booked in their own entity. Intra-group flows derived from intra-group operations are excluded from the 2010 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 derivatives 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 used 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 was 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 2010 survey also collected

information about the efficiency of the futures and options markets and changes in their liquidity.

The location of the counterparties with which reporting banks conducted transactions during the second quarter of 2010 were broken down in the qualitative survey by geographical location of the counterparty: national, euro area, and other. “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 16 euro-area countries taking part in the survey; if the reporting bank is located in the euro area, “euro area” refers to counterparties located in the other euro-area countries. “Other” 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 other. The split between bilateral and triparty repos in the secured markets has only been reported since 2004 (with figures for 2003 as well). Furthermore, activity cleared through CCPs as a sub-segment of the secured market has only been reported since 2009.

The 2010 study covers different kinds of swap transactions.

- Overnight indexed swaps (OIS) are financial operations calculated on the basis of an exchange of a fixed rate agreed at the onset

of the swap, and a floating-rate leg linked to a daily overnight rate reference during the period of the swap. At the maturity of the swap, the two parties exchange a net payment based on the difference between the interest accrued at the agreed fixed rate and the interest accrued at the compounded floating rate (geometric average), multiplied by the notional amount. In the euro money market the most widely recognised overnight index is the EONIA (Euro OverNight Index Average). Banks were also asked to provide the percentage of their average daily OIS turnover not indexed to the EONIA.

- Foreign exchange (FX) 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) also agreed at the time of the contract (the long leg). Both spot/forward and forward/forward swaps fall into this category. FX swaps are only reported if one of the two currencies exchanged was the euro. Furthermore, and to avoid double-counting, only the leg in euro is 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 was 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. Treasury 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 average of daily outright transactions. Outright transactions are defined as a sale or purchase of short-term securities on the interbank secondary market. Short-term securities are broadly defined 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 issuance by the panel bank.

REVISION OF THE COMPOSITION OF THE CONSTANT PANEL

To compare the findings with those of previous studies and to analyse long-term trends in the euro money market, a constant panel of banks for each segment has been used for all previous money market studies dating back to 2002. In the 2006 study, however, 29 banks were added to the panel to improve the representative nature of the sample. In 2009, as result of mergers among counterparties, the constant panel comprised 105 institutions.

In order to smooth out the impact of the inclusion of new banks in the panel and to enable a comparison of long-term trends, the turnover of the extended panel in 2002 was re-indexed to the turnover reported in 2002 from the initial constant panel (using the chain-linking approach). The base year for the study is 2002.

The number of banks in the constant panel is the same for all money market segments, even if some of these banks only started operating in a particular market segment after 2000.

ANNEX 2

A COMPARISON OF THE ICMA EUROPEAN REPO COUNCIL SURVEY AND THE ECB SURVEY ON EURO INTERBANK MONEY MARKET ACTIVITY

ANNEX 2

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

	ICMA 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	13 European countries, North America and Japan.	25 EU countries (those countries which were Member States of the EU before 1 January 2007, except Denmark and Estonia) and Switzerland.
Number of respondents	52 institutions, at the June 2010 survey.	175 institutions, for the total panel. 105 institutions, for the constant panel.
Type of institution	All financial institutions (e.g. including national debt and other public agencies). Transactions with all counterparties except central banks.	Credit institutions only. 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; CHF; other. The total figure is broken down into: cross-currency; other (same currency).	EUR only.
Maturities	Measures remaining term to maturity. Aggregates one-day transactions. 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 12 months; over 12 months; forward-forwards.	Measures original term to maturity. 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; 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.

A comparison of the ICMA European Repo Council survey and the ECB survey on euro interbank money market activity (cont'd)

	ICMA ERC survey	ECB survey
Counterparties	<p>The total figure is broken down into: direct; via voice broker; via ATS. Each category is further broken down into: domestic; cross-border; anonymous. ATS is also further broken down into: anonymous via a CCP.</p>	<p>The total figure is broken down into: domestic; euro area; other.</p> <hr/> <p>The total figure is broken down into: direct; via voice broker; via ATS (“electronic broker”).</p>
Type of transaction	<p>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.</p> <p>The total figure is broken down into: classic repo; documented sell/buy-backs; undocumented sell/buy-backs.</p> <p>Each sub-category is broken down into repo and reverse repo.</p> <p>The total figure is broken down into: fixed rate; floating rate; open.</p> <p>The total figure is broken down into: triparty repo; other (delivery & hold-in-custody). Triparty repo is further broken down into: fixed-term; open.</p>	<p>All types of repo and securities lending against cash collateral.</p> <p>Each sub-category is broken down into repo and reverse repo, except for analysis of: location of counterparty; type of counterparty.</p> <p>Each maturity band is further broken down into: floating rate (“indexed”); other (fixed rate and open). There are therefore 9 maturity/rate sub-categories.</p> <p>The total figure is broken down into: bilateral repo; triparty repo. Bilateral repo is broken down into: non-CCP repo transactions; CCP repo transactions.</p>

ANNEX 3

GLOSSARY

Automated trading system (ATS): a 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. a 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: the differential prevailing on the market between the bid price and the offered price.

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

Cassa di Compensazione e Garanzia (CC&G): a central counterparty property of the London Stock Exchange Group. Its activity comes under the supervision of Banca d'Italia.

Central counterparty (CCP): a legal entity that acts as an intermediary between the parties to a securities trade and which interposes itself as the buyer to every seller and as the seller to every buyer.

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.

Clearstream: Clearstream Banking Frankfurt is the German central securities depository (CSD). Clearstream Banking Luxembourg (CBL) is an international central securities depository (ICSD) based in Luxembourg. Both are owned by Deutsche Börse.

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.

Efficient market: a market where the price is the unbiased estimate of the true value of the investment, based on existing information.

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

e-MID: an electronic broker market for interbank deposits, run by e-MID S.p.A Milan.

e-MID MIC: an electronic broker market for collateralised interbank deposits, run by e-MID S.p.A Milan.

Eurepo: the benchmark rate of the large euro repo market that has emerged since 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 the former receives from the latter in exchange Eurepo General Collateral (GC) as collateral. Eurepo is supported by the European Banking Federation (EBF) and the European Repo Council (ERC).

Eurex: the German/Swiss futures and options market.

Eurex Repo: a major electronic repo market platform provider. Among other things, it offers a cash-driven repo market trading product called Euro GC Pooling.

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 42 prime banks.

Euroclear: the world's largest settlement system for domestic and international securities transactions. It is an international central securities depository (ICSD) and also acts as the central securities depository (CSD) for Belgian, Dutch, French, Irish and British securities.

Euro GC Pooling: cash-driven general collateral segment of the electronic trading platform Eurex Repo, offering short-term collateralised funding possibilities and efficient collateral management.

Euro overnight index average (EONIA): the overnight rate computed as the euro 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 42 prime banks.

Euronext: the company born out of the merger of the Amsterdam, Brussels and Paris exchanges on 22 September 2000. In 2007 it merged with the New York stock exchange (NYSE) to create NYSE Euronext.

Euronext.liffe: short for the 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. In the euro money market survey banks are 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: an 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 homogeneous features, is widely accepted.

ICMA European Repo Council (ERC): is a representative body for the Repo industry. Its objectives include the codification of best market practices and monitoring the functioning of the repo market. The ICMA ERC publishes a semi-annual survey on the repo market (for further information see Annex 2).

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 settles international securities or cross-border transactions in domestic securities.

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

LCH.Clearent: is an important clearing house operating in a variety of market segments (especially IRS, repo, fixed-income securities, futures and options). It was born from the merger between London Clearing House and the French-based Clearent SA.

Liquid (market): the three aspects of liquidity are: tightness in bid-ask spreads, depth, and resiliency. Liquidity is characterised by the ability to conduct transactions 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 the 2010 ECB euro money market study have been plotted above the equality line, instead of below it (which is the more standard 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 any participant that provides quotes).

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

MEFFCEAR: is a Spanish CCP for repo and fixed-income securities trades. It is controlled by Bolsas y Mercados Españoles (BME).

Monetary financial institutions (MFIs): these are the financial institutions that comprise 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.

Monte Titoli: the Italian central security depository.

MTS: MTS is an electronic fixed-income trading market, owned by the London Stock Exchange Group, with over 500 counterparties and average daily turnover exceeding €85 billion, including the repo segment.

Option: the right to sell or buy a security in exchange. “American” options can be executed on any date between their purchase and their expiry date. “European” options are executed only on the expiry date.

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. It involves paying or receiving a fixed cash flow on the one hand, and paying or receiving a variable rate cash flow on the other.

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 allows cash to be temporarily exchanged for securities for a predetermined period. Various legal arrangements exist to perform this basic economic function (repo agreements, reverse repo agreements, sell/buybacks and securities lending). All forms of repos entail a change in ownership.

Reserve maintenance period: this is the period over which compliance with the reserve requirements is calculated. Maintenance periods begin on the settlement day of the first main refinancing operation following the meeting of the ECB’s Governing Council at which the monthly

assessment of the monetary policy stance is pre-scheduled. They normally end on the day preceding the corresponding settlement day in the following month.

Reserve requirement: the requirement that institutions must 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. A reverse repo is thus 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 on the primary market.

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

Spot/next (day): this expression is used by traders when a transaction is settled two business days after today and matures on the following business day.

STEP (Short-term European Paper): the STEP market is a non-regulated market recognised for collateral purposes by the Eurosystem. On 9 June 2006, Euribor ACI and Euribor FBE adopted the STEP Market Convention. The Convention requires issuers to put in place any arrangements with the securities settlement systems, the issuing and paying agents, the dealers, the arrangers or any other relevant entity that are necessary to provide the eligible data provider with complete and accurate data for the production of statistics by the ECB.

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

TARGET2 (Trans-European Automated Real-time Gross settlement Express Transfer system): TARGET2 is the RTGS payment system for the euro. It is used for the settlement of central bank operations, large-value euro interbank transfers and other euro payments. It provides real-time processing, settlement in central bank money and immediate finality.

TCN (Titres de Créances Négociables): are money market securities. Under French regulations, the term refers to the following three asset classes:

1. certificates of deposit.
2. treasury bills.
3. medium-term notes.

Tomorrow/next (day): this expression is used by traders when a transaction is settled on the next business day after today and matures on the following business day.

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

Triparty 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

CREDIT INSTITUTIONS PARTICIPATING IN THE 2010 EURO MONEY MARKET SURVEY

AT	Allgemeine Sparkasse Oberösterreich Bank AG	DK	Danske Bank A/S
AT	Erste Group Bank AG	ES	Banco Bilbao Vizcaya Argentaria S.A. (BBVA)
AT	Oberbank AG	ES	Banco Cooperativo Español S.A.
AT	Österreichische Volksbanken-AG	ES	Banco de Sabadell S.A.
AT	Raiffeisen Zentralbank Österreich AG	ES	Banco Español de Crédito S.A.
AT	Raiffeisenlandesbank Niederösterreich-Wien AG	ES	Banco Pastor S.A.
AT	Raiffeisen-Landesbank Steiermark AG	ES	Banco Popular Español S.A.
AT	UniCredit Bank Austria AG	ES	Banco Santander S.A.
AT	UniCredit CAIB AG	ES	Bankinter S.A.
BE	Dexia Banque Belgique	ES	Barclays Bank S.A.
BE	Fortis Banque	ES	Caixa d'Estalvis de Catalunya
BE	KBC Bank NV	ES	Caja de Ahorros del Mediterráneo
BG	BNP Paribas S.A.	ES	Caja de Ahorros y M.P. de Madrid
BG	DSK Bank	ES	Caja de Ahorros y Pensiones de Barcelona
BG	Eurobank EFG Bulgaria	ES	Confederación Española de Cajas de Ahorros
BG	United Bulgarian Bank	ES	ING Direct, N.V. S.E
CH	UBS AG	FI	Nordea Bank Finland Abp
CY	Bank of Cyprus Public Company Ltd	FI	Pohjola Pankki Oyj
CY	Hellenic Bank Public Company Ltd	FR	BNP Paribas
CY	Marfin Popular Bank Public Co Ltd	FR	BPCE
CZ	ABN AMRO Bank N.V.	FR	BRED – Banque Populaire
CZ	Česká spořitelna, a. s.	FR	Crédit Agricole CIB
CZ	Československá obchodní banka, a. s.	FR	Crédit Agricole S.A.
CZ	Citibank Europe plc	FR	Crédit Industriel et Commercial – CIC
CZ	HSBC Bank plc	FR	HSBC France
CZ	ING Bank N.V.	FR	Natixis
CZ	Komerční banka, a. s.	FR	Société Générale
CZ	UniCredit Bank Czech Republic a. s.	GB	Abbey National Treasury Services plc
DE	Bayerische Landesbank	GB	Banco do Brasil SA
DE	BHF-BANK AG	GB	Banco Espirito Santo SA
DE	Commerzbank AG	GB	Barclays Bank plc
DE	DekaBank Deutsche Girozentrale	GB	BNP Paribas
DE	Deutsche Bank AG	GB	Calyon
DE	Deutsche Postbank AG	GB	Citibank NA
DE	DZ BANK AG Deutsche Zentral-Genossenschaftsbank	GB	Credit Suisse
DE	Hamburger Sparkasse AG	GB	Deutsche Bank AG
DE	HSH Nordbank AG	GB	Goldman Sachs International Bank
DE	Landesbank Baden-Württemberg	GB	HSBC Bank plc
DE	Landesbank Berlin AG	GB	JP Morgan Chase Bank
DE	Landesbank Hessen-Thüringen Girozentrale	GB	Lloyds TSB Bank plc
DE	Landwirtschaftliche Rentenbank	GB	Merrill Lynch International Bank Limited
DE	SEB AG	GB	Standard Bank plc
DE	UniCredit Bank AG	GB	The Royal Bank of Scotland N.V.
DE	WestLB AG	GB	The Royal Bank of Scotland plc
DE	WGZ BANK AG	GR	Alpha Bank S.A.

GR	ATE Bank S.A.	PL	Bank Handlowy w Warszawie S.A.
GR	BNP Paribas	PL	Bank Polska Kasa Opieki S.A. (Bank Pekao S.A.)
GR	EFG Eurobank Ergasias S.A.	PL	Bank Zachodni WBK S.A.
GR	Emporiki Bank of Greece S.A.	PL	Deutsche Bank Polska S.A.
GR	HSBC Bank plc	PL	Getin Noble Bank S.A.
GR	National Bank of Greece S.A.	PL	ING Bank Śląski S.A.
GR	Piraeus Bank S.A.	PL	Invest-Bank S.A.
HU	ING Bank N.V. Magyarországi Fióktelepe	PL	Kredyt Bank S.A.
HU	K & H Bank Zrt.	PL	Powszechna Kasa Oszczędności Bank Polski S.A. (PKO BP)
HU	UniCredit Bank Hungary Zrt.	PL	Raiffeisen Bank Polska S.A.
IE	Allied Irish Banks plc	PL	Societe Generale S.A. Oddział w Polsce
IE	DePfa-Bank plc	PT	Banco BPI SA
IE	Irish Life & Permanent plc	PT	Banco Comercial Português SA
IE	Rabobank Ireland plc	PT	Banco do Brasil AG – Sucursal em Portugal
IE	The Governor and Company of the Bank of Ireland	PT	Banco Espírito Santo SA
IE	UniCredit Bank Ireland plc	PT	Banco Finantia SA
IT	Banca IMI Spa	PT	Banco Itaú Europa SA
IT	Banca Monte dei Paschi di Siena Spa	PT	Banco Santander Totta SA
IT	Banca Nazionale del Lavoro Spa (BNL)	PT	BANIF – Banco Internacional do Funchal SA
IT	BNP Paribas S.A.	PT	Barclays Bank plc
IT	Dexia Crediop Spa	PT	BPN – Banco Português de Negócios SA
IT	Intesa Sanpaolo Spa	PT	Caixa Central – Caixa Central de Crédito Agrícola Mútuo, CRL
IT	UniCredit Spa	PT	Caixa Económica Montepio Geral
LT	AB bankas SNORAS	PT	Caixa Geral de Depósitos SA
LT	AB SEB bankas	PT	Deutsche Bank (Portugal) SA
LT	Swedbank, AB	RO	Banca Comerciala Romana S.A.
LU	Banque et Caisse d'Epargne de l'Etat, Luxembourg	RO	BRD – Groupe Societe Generale S.A.
LU	KBL European Private Bankers S.A.	RO	RBS Bank (Romania) S.A.
LU	UniCredit Luxembourg S.A.	SE	Skandinaviska Enskilda Banken AB (publ) (SEB)
LV	Parex banka	SE	Svenska Handelsbanken AB (publ)
LV	Rietumu Banka	SE	Swedbank AB (publ)
LV	SEB banka	SI	Abanka Vipa D.D.
LV	Swedbank	SI	Nova Ljubljanska Banka d.d., Ljubljana
MT	Bank of Valletta plc	SI	UniCredit Banka Slovenija d.d.
MT	BAWAG Malta Bank Ltd	SK	Československá obchodná banka, a.s.
MT	HSBC Bank Malta plc	SK	Slovenská sporiteľňa, a.s.
MT	Volksbank Malta Ltd	SK	Všeobecná úverová banka, a.s. (VUB)
NL	ABN AMRO Bank N.V.		
NL	Bank Nederlandse Gemeenten N.V.		
NL	Coöperatieve Centrale Raiffeisen- Boerenleenbank B.A. (Rabobank)		
NL	F. van Lanschot Bankiers N.V.		
NL	ING Bank N.V.		
NL	The Royal Bank of Scotland N.V.		
PL	Bank BPH S.A.		
PL	Bank Gospodarstwa Krajowego		

ANNEX 5

COORDINATION OF THE 2010 ECB EURO MONEY MARKET STUDY

The 2010 ECB euro money market study was conducted by a working group comprising staff members from the ECB and NCBs which reported to the ESCB's Market Operations Committee.

