EUROPEAN CENTRAL BANK

EUROSYSTEM

Financial Integration in Europe

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Preface

The ECB's annual report on financial integration in Europe contributes to the advancement of the European financial integration process by analysing its development and the related policies. For the ECB, the market for a given set of financial instruments and/or services is fully integrated if all potential market participants with the same relevant characteristics (1) face a single set of rules when they decide to deal with those financial instruments and/or services; (2) have equal access to the above-mentioned set of financial instruments and/or services; and (3) are treated equally when they are active in the market.[1]

The Eurosystem has a keen interest in the integration and efficient functioning of the financial system in Europe, especially in the euro area, as reflected in the Eurosystem's mission statement. Financial integration fosters a smooth and balanced transmission of monetary policy throughout the euro area. In addition, it is relevant for financial stability and is among the reasons behind the Eurosystem's task of promoting well-functioning payment systems. Without prejudice to price stability, the Eurosystem also supports the objective of completing the EU Single Market, of which financial integration is a key aspect.

In September 2005 the ECB published a first set of indicators of financial integration and an accompanying report assessing the state of euro area financial integration. Since then the work on financial integration has evolved and has resulted in the publication of a yearly report.

[1] L. Baele et al. (ECB), Measuring financial integration in the euro area, ECB Occasional Paper, No 14, April 2004,

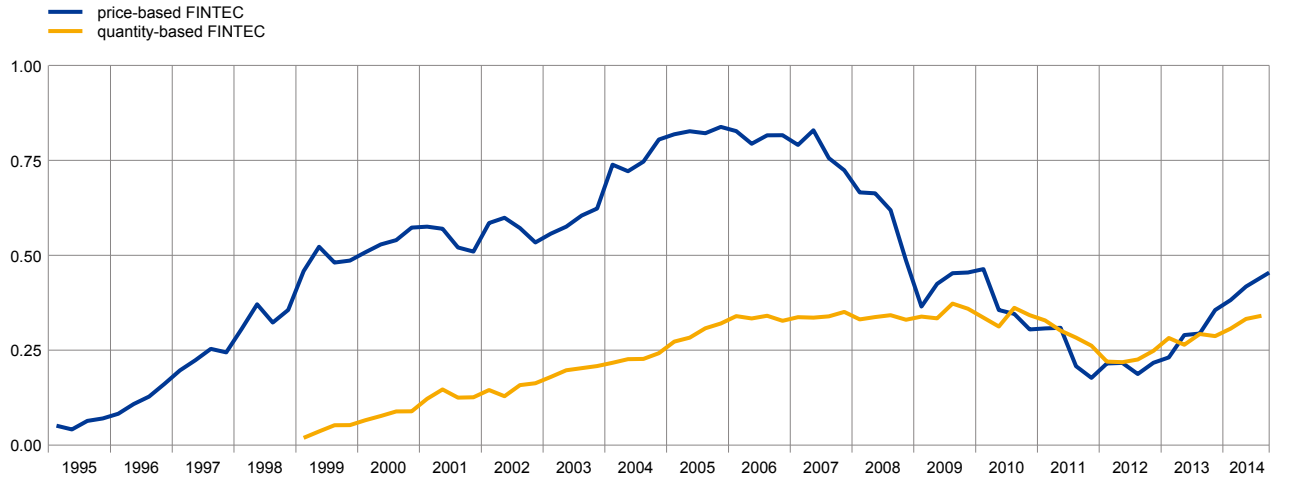
Key messages

Overall assessment of financial integration

- The process of improvement in the degree of financial integration in the euro area which has started with the announcement of the Banking Union and the outright monetary transaction (OMT) framework in 2012, has continued in 2014 reaching a level comparable to the one before the sovereign debt crisis. This is shown by the price-based and the quantity-based FINTEC, the new composite indicators of financial integration developed by the ECB in order to offer an overview of the state of financial integration in the euro area. Apart from equity markets, where the most recent developments have shown some volatility, financial integration in money, bond and banking markets consistently shows a sustained increase.

Chart 1

Price-based and Quantity-based Financial Integration Composites (FINTECs)



Source: ECB and ECB calculations.
Notes: The price-based FINTEC aggregates ten indicators covering the period from the first quarter of 1995 to the fourth quarter of 2014, and the quantity-based FINTEC aggregates five indicators available from the first quarter of 1999 to the third quarter of 2014. The FINTEC is bounded between zero (full fragmentation) and one (full integration). Increases in the FINTEC signal higher financial integration. For a detailed description of the FINTEC and its input data, see the Statistical Annex.

- Looking forward, the overall improvement in financial integration is expected to continue also as a consequence of the monetary policy actions taken by the ECB to restore the bank intermediation channel as well as of the effective implementation of the Banking Union (Single Supervisory and Resolution Mechanisms) which should have positive effects especially on banking integration. At the same time, it will be important to monitor closely the process of increasing financial integration also in light of the past experience before the financial crisis.

Money markets

- In money markets, financial integration continued its increase from 2013 at a gradual pace in 2014.

- The level of excess liquidity continued declining in 2014, partially owing to lower precautionary cash buffers, reflecting a structural improvement in money market integration.
- The structural improvement in money market integration spurred an improvement in price-based indicators: cross country standard deviations of cash lending rates declined.
- Quantity-based indicators signal lower money market fragmentation, with money market turnover having increased broadly.

Bond markets

- In 2014, euro area bond market (i.e. for sovereigns, non-financial corporates and banks) fragmentation receded further.
- Price indicators on the sovereign bond market suggest only limited – if any – remaining market segmentation. Quantity-based indicators point to continued fragmentation of the euro area sovereign bond market, with some indications of a trend reversal towards reduced fragmentation.
- Euro area corporate bond market developments regarding segmentation have mirrored those seen in the government bond markets.

Equity markets

- In equity markets the picture is quite mixed. The improvement in equity market integration is less clear than the case for money, bond and banking markets.
- In terms of price-based indicators, distressed and non-distressed countries show different degrees in financial integration. The group of distressed countries showed a sustained decline in segmentation in 2014, which decreases the gap with non-distressed countries where no significant change can be seen in the past year.
- Quantity-based indicators show a relatively stable level of intra-euro area cross-border equity holdings, with an increasing diversification of equity holdings outside the euro area at the expense of domestic equity holdings which may have some benefits for financial stability.

Banking markets

- Financial integration of euro area banking markets improved mildly during 2014. Nevertheless, the level of integration remains lower than before the financial crisis.
- Non-standard policy measures, adopted by the ECB to counter risks to price stability in a zero lower bound environment, have provided some temporary relief in a fragmented credit intermediation environment where monetary policy signals are not evenly transmitted to all parts of the euro area economy.
- Steps taken towards a Banking Union, in particular the establishment of the Single Supervisory Mechanism and the Single Resolution Mechanism, are all important developments towards the goal of restoring efficient credit flows to the real economy and reducing residual impairments in the transmission mechanism (further benefits of the Banking Union are provided in Special Feature B).

Overview

Chapter 1 summarises recent developments in the financial integration of four key financial market segments, notably money, bond, equity and banking markets in the euro area. The key findings are included in the key messages. It includes a new section on the FINTEC developments at the beginning of Chapter 1 (further explanations can be found in the Statistical Annex).

Chapter 2 deals with further progress in the implementation of Banking Union, in particular the launch of the SSM and progress towards the establishment of the SRM. In addition, it describes the latest developments in setting up the macro-prudential framework in the EU and its impact on financial integration.

Chapter 3 provides an overview of the main activities that the Eurosystem has pursued in 2014 and early 2015 with a view to advancing financial integration in the euro area. In this context, new information is given on AnaCredit, the Analytical Credit Dataset, which will start in early-2018. The AnaCredit project is related to the definition of an ESCB comprehensive and granular dataset on loans and credit risk meeting several central banking purposes.

Special Feature A, entitled "*Developments in euro area bank funding conditions and retail rates*", reviews developments in bank funding conditions and their relevance to financial integration, drawing on part of the infrastructure the ECB is currently building at the micro-data level.

Special Feature B, entitled "*Banking Union and Financial Integration*", summarises the expected benefits of the Banking Union on financial integration and missing elements to achieve a fully-fledged Banking Union which can promote financial integration. The Special Feature ends with an overview on the Capital Markets Union (CMU) initiative of the European Commission, which can further enhance financial integration in EU capital markets.

Special Feature C, entitled "*The financial sector in the new national accounts framework*", takes a look at the financial sector's size, structure, geographical distribution, and contribution to value added in the EU, by using the new national accounts results based on ESA 2010.

The **Statistical Annex** comprises details on the calculation of the FINTEC and its sub-indices. The Statistical Annex further includes a set of 33 standard indicators. For each financial integration indicator, an explanation describes how it is technically derived and the main messages it conveys in term of developments in financial integration. Some of the indicators are also used to describe recent financial integration developments in Chapter 1. Finally, the Statistical Annex gives an explanation how the euro area countries have been included into the groups of distressed and non-distressed countries. If not mentioned otherwise, in 2014, distressed countries are Cyprus, Greece, Ireland, Italy, Latvia, Lithuania, Portugal, Slovenia and Spain, whereas non-distressed countries are Austria, Belgium, Estonia, Finland, France, Germany, Luxembourg, Malta, the Netherlands and Slovakia. The composition and the labelling of the country groups will be reviewed in the course of 2015. Any change can only be incorporated in the next financial integration report in 2016.

Chapter 1
Recent developments in financial integration in the euro area

Overall, financial integration in the euro area has made good progress in 2014. As measured by the new price- and quantity-based FINTEC, financial integration in the euro area reached a level similar to the one before the sovereign debt crisis. The two composite indicators consist of standard indicators covering all four (money, bond, equity and banking) market segments and thus reflect the overall development of financial integration. Looking at each market segment separately, the price-based sub-indices of the FINTEC show that apart from equity markets, where the most recent developments have shown some volatility, the level of financial integration in the money, bond and banking markets have substantially increased. The improvement of financial integration was promoted by the prospect of the establishment of the Banking Union and non-standard monetary policy actions taken by the ECB. The effective implementation of the Banking Union is now key to generate high quality of financial integration, which would enable to maximise the expected benefits of integration while limiting the potential negative side effects of financial fragmentation in a crisis situation.

1 Introduction

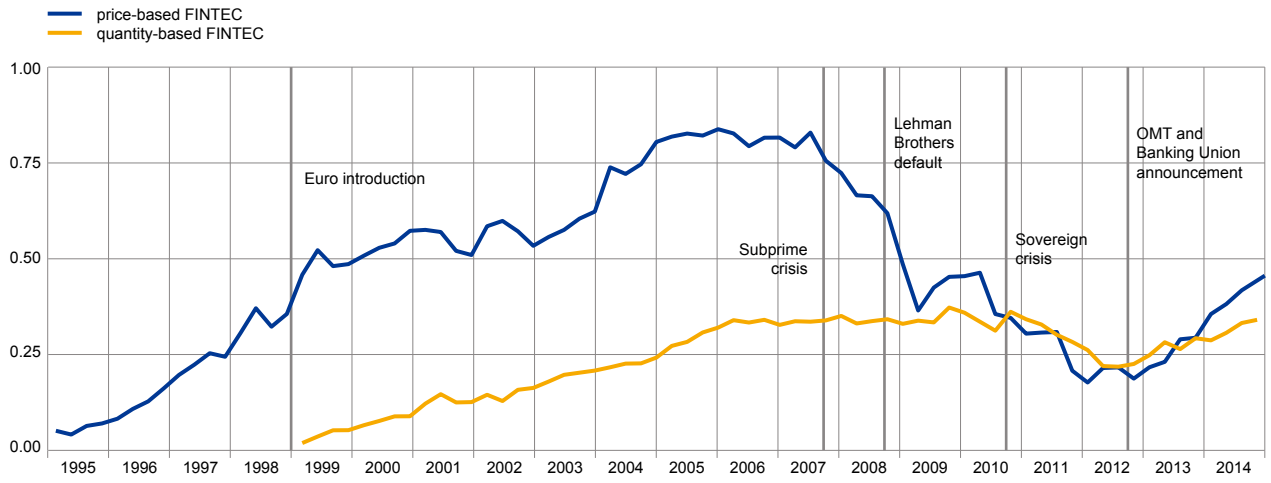
This chapter reviews the main developments regarding financial integration in the euro area during 2014. It focuses on the four most important segments of the financial markets, namely the money, bond, equity and banking markets. The analysis is based on a number of indicators that can capture the financial integration perspective. For this reason, some indicators illustrate financial market development by means of a country grouping – distressed and non-distressed country groups – which is based on long-term sovereign interest rates for bonds with a remaining maturity of approximately ten years. The current methodology of the country groupings is further described in the Statistical Annex. In addition, it is important to note that some indicators do not necessarily reflect solely market fragmentation, but also credit or liquidity risks, for example in the sovereign or corporate bond markets.

2 Overall assessment

In order to offer a comprehensive overview of the state of financial integration in the euro area across different market segments, the ECB has recently developed price- and quantity-based composite indicators of financial integration (FINTECs). Using a unified approach, both indicators aggregate the information from a selection of existing indicators that cover the four financial market segments of interest.

Chart 2

Price- and quantity-based FINTECs



Source: ECB.
Notes: The acronym FINTEC stands for FINancial INTEgration Composite. The price-based FINTEC aggregates ten indicators covering the period first quarter 1995 – fourth quarter 2014, and the quantity-based FINTEC aggregates five indicators available from the first quarter of 1999 to the third quarter of 2014. For a detailed description of the FINTEC and its input data, see the Statistical Annex.

The price- and quantity-based FINTECs are constructed in a multi-layered structure. In a first step, the raw indicators of financial integration are homogenised and then aggregated into sub-indices for each market segment. These sub-indices measure financial integration in the respective market and can be interpreted independently. In a second step, they are weighted on the basis of their relative market size and then further aggregated into the composite indicators. Higher values of the indicators signal higher financial integration, with the value of one indicating a state of full integration.

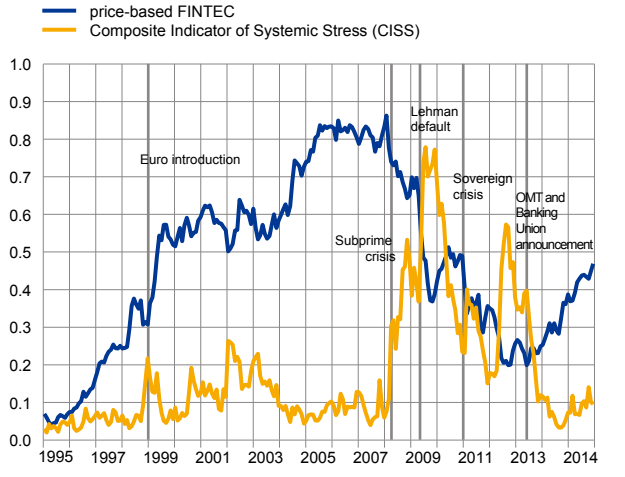
As illustrated in Chart 2, the long-term trends in financial integration captured by the price- and quantity-based FINTECs are easily associated with certain events that had a major influence on the European financial system. Since the EMU was well anticipated in market participants' asset pricing and portfolio behaviour, a period of increasing integration had already started well before the introduction of the euro. Steadily increasing throughout the early 2000s, the level of financial integration reached its peak around the beginning of the subprime crisis in 2007, which marked a key turning point. Since then, European financial markets have fragmented considerably, spurred by the turmoil surrounding the Lehman Brothers default and the subsequent sovereign debt crisis in the euro area.

When comparing both indicators, one can observe that the price-based FINTEC displays a higher volatility than the quantity-based FINTEC, which is likely due to prices reacting quickly to new information while portfolio flows are normally of a rather sluggish nature as they are additionally influenced by structural and legal factors. This differential behaviour is best observed in the period after 2007, when the sharp drop in the price-based indicator coincides with a rather stable level of financial integration from a quantity perspective. Both indicators can be regarded as complements and together offer a comprehensive picture of financial integration.

The more recent developments in Chart 2 indicate that the mild recovery in the degree of financial integration, which seems to have started with the agreement between the Heads of State and Government to create the Banking Union in June 2012 and the announcement of the ECB's Outright Monetary Transactions programme, continued in 2014. The latest data suggest that financial integration recovered to a level comparable to the one before the start of the European sovereign debt crisis in 2011. This development is driven by three out of the four sub-indices composing the price-based FINTEC. Apart from equity markets, where the most recent developments have shown some volatility, financial integration in money, bond and banking markets consistently shows a sustained increase.

Chart 3

Price-based FINTEC and financial stress



Sources: ECB and ECB calculations.
Notes: For a detailed description of the FINTEC and its input data, see the Statistical Annex.

Chart 3 contrasts the evolution of financial integration, measured by the price-based FINTEC, and financial stress, measured by the ECB's composite indicator of systemic stress (CISS).[2] Over the first part of the sample, until the start of the subprime crisis, the two series do not seem to share a common trend. While financial integration steadily improved over that time period, financial stress hovered around a more or less flat path. It should be highlighted, however, that the CISS is a contemporaneous (and not an early warning) indicator of systemic financial stress, and thus it is not able to show those vulnerabilities in the financial system (such as financial imbalances) which were emerging in the pre-crisis period. This pattern changed abruptly with the start of the financial crisis. The rapid surges in financial stress around the Lehman default in September 2008 and at the height of the sovereign debt crisis in the summer of 2011 were accompanied by a strong trend towards financial fragmentation. It is striking that this process of decreasing financial integration also continued in periods when financial stress partially recovered from its worst states. It took until the two policy announcements mentioned above for financial integration to assume a path of sustained but still partial recovery.

Finally, a few reservations have to be expressed concerning the interpretation of the two variants of the FINTEC. The price-based FINTEC relies on indicators which measure the degree of price dispersion across euro area countries. The law of one price claims that if two assets constitute perfect substitutes, they should bear the same price irrespective of the residency of the issuer. However, in reality it is difficult to control for all other factors – apart from those which can be attributed to a lack of financial integration – which may affect the prices of two similar assets issued in different jurisdictions. For instance, the dispersion between government bond yields is one of the input series of the price-based FINTEC. It is clear that the stronger yield dispersion observed during the crisis reflects to a large extent emerging differences in the pricing of liquidity risk and credit risk, as well as redenomination risk, and not so much factors limiting per se the cross-border trading of assets. That said, the

[2] The CISS has been developed by Hollo, D., Kremer M. and Lo Duca M. (2012), "CISS – A Composite Indicator of Systemic Stress in the Financial System", *ECB Working Paper No. 1426*.

price-based FINTEC measures financial integration in a broader sense, also taking into account the degree of convergence in the domestic risk factors impacting asset prices. In a similar vein, developments in the quantity-based FINTEC can also be driven by factors unrelated to financial integration in a pure sense.

3 Money markets

The improvement in money market financial integration that began in 2013 continued at a gradual pace in 2014. This improvement is reflected in the sustained but declining level of excess liquidity, and has to be seen against the background of additional non-standard monetary policy measures by the Eurosystem. First, the level of excess liquidity continued to decline in 2014, partially owing to lower demand by banks for precautionary cash buffers because banks in stressed countries had better market access. Second, the Eurosystem facilitated the normalisation process with additional monetary policy measures, in particular its forward guidance and two cuts in official rates that brought the deposit facility rate to -20 basis points, adding further monetary policy accommodation. The targeted longer-term refinancing operations (TLTROs) of 2014, conducted in September and December, and the new asset purchase programmes for ABS (ABSPP) and Covered Bonds (CBPP3) helped keep money market rates contained, while promoting lending to the real economy and lifting funding constraints. The structural improvement in money market integration spurred an improvement in price-based indicators: cross country standard deviations of cash lending rates declined, and money market volatility dropped. Also, quantity-based indicators signal lower money market fragmentation, with money market turnover having increased broadly.

Continuing its trend of the previous year, excess liquidity declined in 2014, primarily on the back of early repayments of 3-year longer-term refinancing operations (Chart 4). Specifically, the average repayments in 2014 were at €6.7 billion compared to €6.6 billion in the previous year[3]. At the end of 2014, counterparties had repaid €780.7 billion out of €990.7 billion borrowed in the 3-year LTROs.[4] As was seen in the previous year, the steady repayment corresponded to counterparties reducing their need for central bank reserves and taking advantage of improved market access to reduce reliance on Eurosystem refinancing. The counterparties that enlarged their market-based funding most were also among the largest repayers. Another group of counterparties replaced the 3-year LTROs with other Eurosystem funding, such as the weekly main refinancing operations for a more flexible cash management, or with the TLTROs because of their longer maturity. Taking into consideration the important role of repayments, the motives for repayment, and the limited effect of other liquidity-absorbing factors, the decline in excess liquidity can largely be attributed to the improvement in euro area money market integration.[5] In 2015, however,

[3] Weekly average excluding the first initial repayment option.

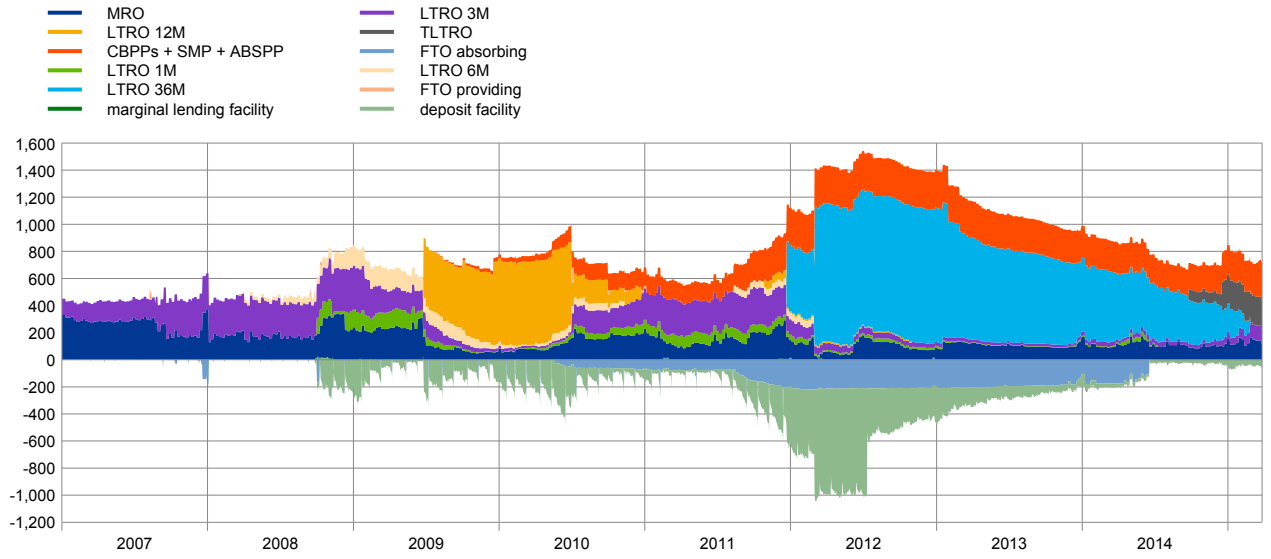
[4] Early repayments may have been partially driven by a substitution effect from the TLTRO.

[5] Of course, other factors might also be relevant for early repayments, such as banks' deleveraging process or the introduction of the negative deposit facility rate, which caused banks to optimise their liquidity management.

Chart 4

Eurosystem balance sheet

(EUR billion)



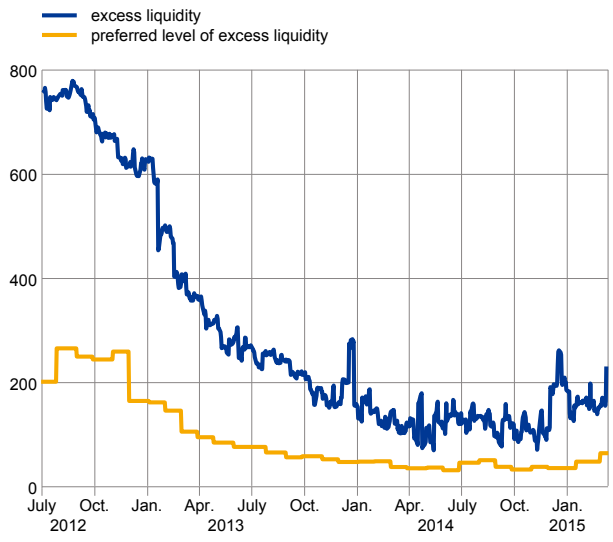
Source: ECB.

excess liquidity is expected to rise again for different reasons, namely banks opting to participate in the next TLTROs and the implementation of the expanded asset purchase programme by the Eurosystem.

Chart 5

Preferred excess liquidity

(EUR billion)



Source: ECB, ECB calculations.

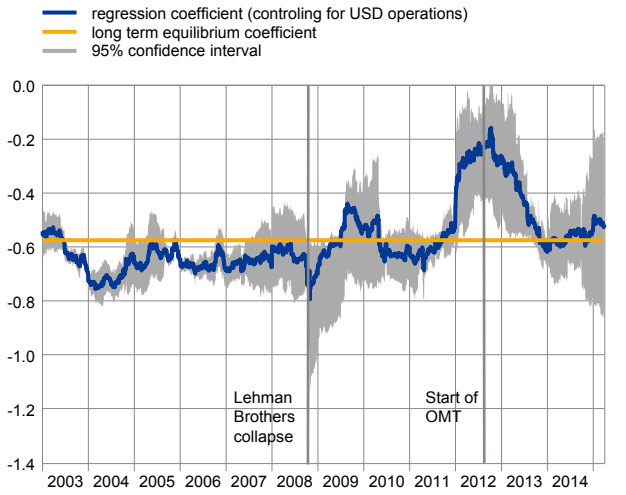
Excess liquidity thus declined until it was closer to the relatively low and stable level of preferred excess liquidity.[6] This preference for excess liquidity implies a lower boundary to excess liquidity. Determinants for this so-called preferred excess liquidity could be market fragmentation, as well as precautionary risk cash buffers against illiquidity risk. Chart 5 shows the development of the level of preferred excess liquidity since the middle of 2012. It is evident that the level of preferred excess liquidity has declined from its peak level in the second half of 2012. Because of the determinants mentioned above, the reduction in preferred excess liquidity reflects the improvement in euro area money markets. Still, preferred excess liquidity is positive, at around €50 billion. If money markets continue to normalise, with market integration improving, the level of preferred excess liquidity can be expected to shrink further. However, the liquidity injected by Eurosystem asset purchases is

[6] Preferred excess liquidity is based on the previous excess reserve pattern of individual counterparties. It is the sum of the minimum excess reserves within a maintenance period of all Eurosystem counterparties. If the individual minimum level of excess reserves is positive for all days of one maintenance period, it is assumed that the counterparty needs or wants to hold excess reserves for every day, even when there is potentially sufficient aggregate liquidity in the euro area banking sector. The sum of these minimum levels of excess reserves forms the level of preferred excess liquidity.

not dependent on bank demand for liquidity and our measure of preferred liquidity will be biased upward in the future.

At the same time, the Eurosystem's intermediation role decreased compared with the previous year (Chart 4). In a functional money market, (central bank) reserves are lent by banks with a liquidity surplus to banks with a liquidity deficit. The "offset coefficient" can be employed to measure how smooth liquidity flows across countries.[7] Chart 6 presents the estimated offset coefficient capturing how the market manages to offset domestic liquidity shocks over time. The long-term equilibrium coefficient for the euro area over the period from 2003 to February 2015 is estimated to be -0.57, meaning that on average every €1 in domestic liquidity shock (i.e. liquidity outflow) is offset by a 57 cent inflow from the rest of the Eurosystem on the same day. The rest (43%) is absorbed either by counterparties' liquidity buffers or via higher recourse to the Eurosystem. In March 2015, the estimated coefficient (at -0.50) stood close to its long-term average, and significantly below the high of -0.2 reached prior to the OMT announcement. However, the offset coefficient has remained above its longer-term average, suggesting that some friction is still present in the re-allocation of funds. At the beginning of 2014 and 2015, there were minor technical increases in the offset coefficient, mainly due to Latvia and Lithuania joining as new euro area countries as of 2014 and 2015, respectively.[8] Overall, the trend in the offset coefficient during 2014 signals that the functioning of the Eurosystem's intermediation role is broadly unchanged.

Chart 6
Offset coefficient



Source: ECB.

Numerous other monetary policy measures affected the euro area money markets: on 5 June 2014, the ECB introduced a negative deposit facility interest rate when it decreased the interest rate on the deposit facility by 10 basis points to -0.10%. In addition, the Governing Council decided to suspend the weekly fine-tuning operation for sterilising the liquidity injected under the Securities Markets Programme in June 2014. Also, in line with the ECB's forward guidance, it was decided to continue fixed rate tender procedures with full allotment for as long as necessary, and at least until the end of the reserve maintenance period ending in December 2016. The interest rate on the deposit facility was lowered by an additional 10 basis points, to -0.20% on 4 September 2014.

Furthermore, the ECB announced monetary policy measures to enhance the functioning of the monetary policy transmission mechanism: on 5 June 2014, a series

[7] See Veyrune, R., Liaudinskas, K. and Z. Sprokel (2014), "Geographical Segmentation of the Euro Area Money Market: a Liquidity Flow Approach", *Financial Integration in Europe*, European Central Bank, Frankfurt am Main, Germany, pp. 65-84.

[8] Latvia and Lithuania could only be included in the rolling regression estimation once all observations encompassed data for Latvia and Lithuania and the data of other euro area countries already reflected their adoption of the euro.

of targeted longer-term refinancing operations (TLTROs) maturing in September 2018 were announced, aiming at improving bank lending to the euro area non-financial private sector. The take-up in the first three operations was €82.6 billion in September, €129.8 billion in December, and € 97.8 billion in March 2015. The ECB also announced outright purchase programmes of asset-backed securities and covered bonds: these will last at least two years – the Covered Bonds purchase programme started in October, and the ABS programme started in November 2014. In January 2015, the ECB announced the expanded asset purchase programme including bonds issued by euro area central governments, agencies and European institutions.

Price-based indicators

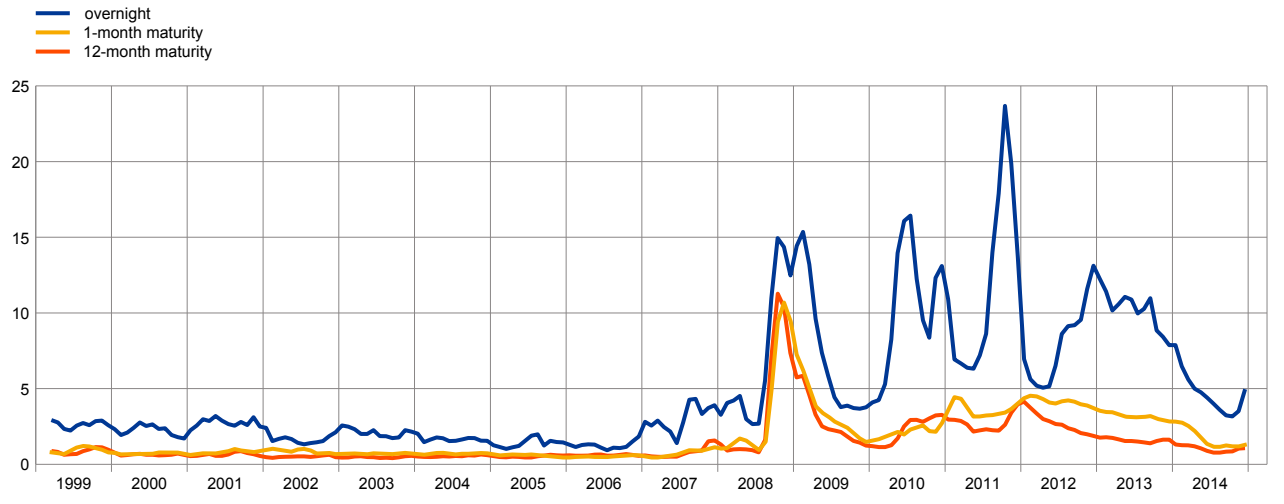
The improvement in euro area money market integration is most apparent in price-based indicators. Most strikingly, the cross-country standard deviation of unsecured interbank rates declined substantially, reaching their lowest level since 2010. Furthermore, while excess liquidity overall fell throughout 2014, the volatility of money market rates remained markedly low. Better integration helped to lower the adverse impact of low excess liquidity on volatility in 2014.

Most notably, the cross-country standard deviation of unsecured interbank overnight lending rates declined significantly in 2014 (Chart 7).[9] During the global financial crisis and particularly the euro area sovereign crisis, interest rate dispersion in the euro area money market had risen as a result of these financial market tensions. Consequently, cross-country standard deviation in money market rates had risen significantly amid substantial fluctuations over time. In contrast, during 2014, rate dispersion was largely contained and fell continuously, as market access and market conditions improved for

Chart 7

Cross-country standard deviation of average unsecured interbank lending rates across euro area countries

61-day moving average; basis points



Source: EBF-Euribor and ECB calculations.
Notes: Cut-off date: 31/12/2014.

[9] As a good price-based measure of financial integration, this variable goes into the FINTEC as a money market component.

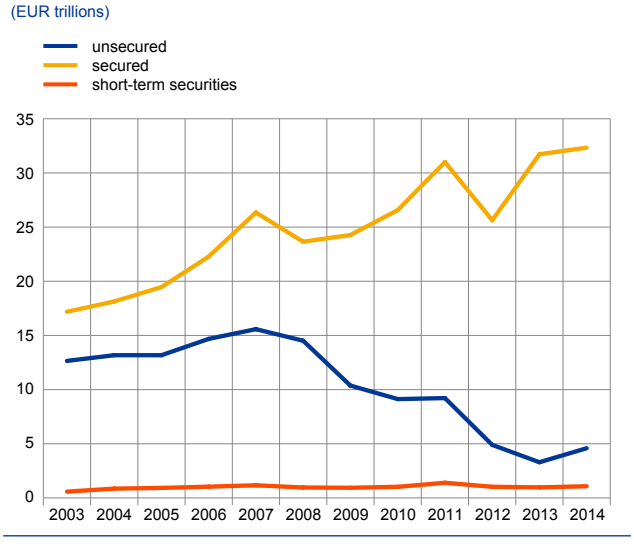
banks that had previously faced severe tensions. While the decline in rate dispersion was evident across maturities, the most pronounced decline occurred in the overnight market.[10] However, rate dispersion has not yet reverted to pre-crisis levels. Chart 7 presents evidence only for the unsecured money market, but comparable developments took place in the secured segment of the money market as well.[11]

Quantity-based indicators

Finally, also quantity-based indicators point towards a slight improvement of euro area integration during 2014. Trading volumes overall increased in 2014, suggesting that money markets functioned better. The Euro Money Market Survey, conducted for the second quarter 2014 showed that the turnover of the unsecured market, which had been decreasing since 2007, rose from €3.3 trillion to €4.6 trillion in 2014 (Chart 8). The turnover of the secured market, which remains by far the most active segment of the money market, also increased during 2014. For example, the volume of repo trades using Spanish collateral and cleared through international CCPs rose considerably during the second semester of 2014 (+60% from May to October 2014). These trades were mostly concluded between Spanish banks and euro area / international banks, supporting the view that Spanish repo market usage was becoming less domestic. The conditions for derivative markets were more mixed in 2014, with several segments remaining broadly stable (Chart 9). For short-term securities, the trend was also moderate: STEP data confirmed a slight increase in issuance, but the trend remains in line with the levels observed in past years.

Chart 8

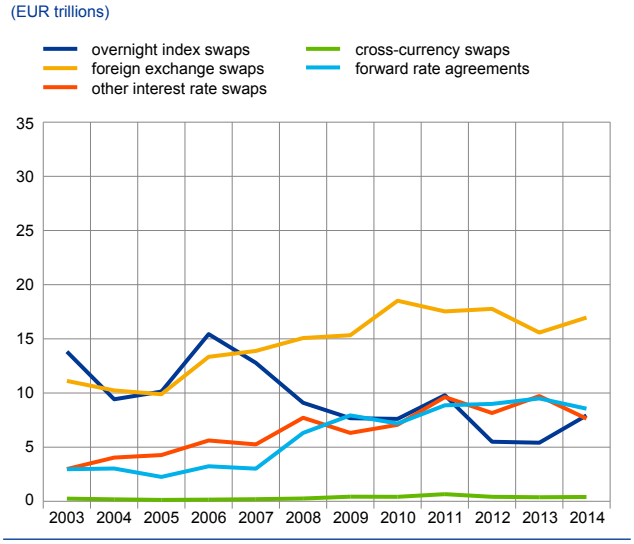
Cumulative volumes in cash money market



Source: ECB Money Market Survey 2014.

Chart 9

Cumulative volumes in derivative money markets



Source: ECB Money Market Survey 2014.

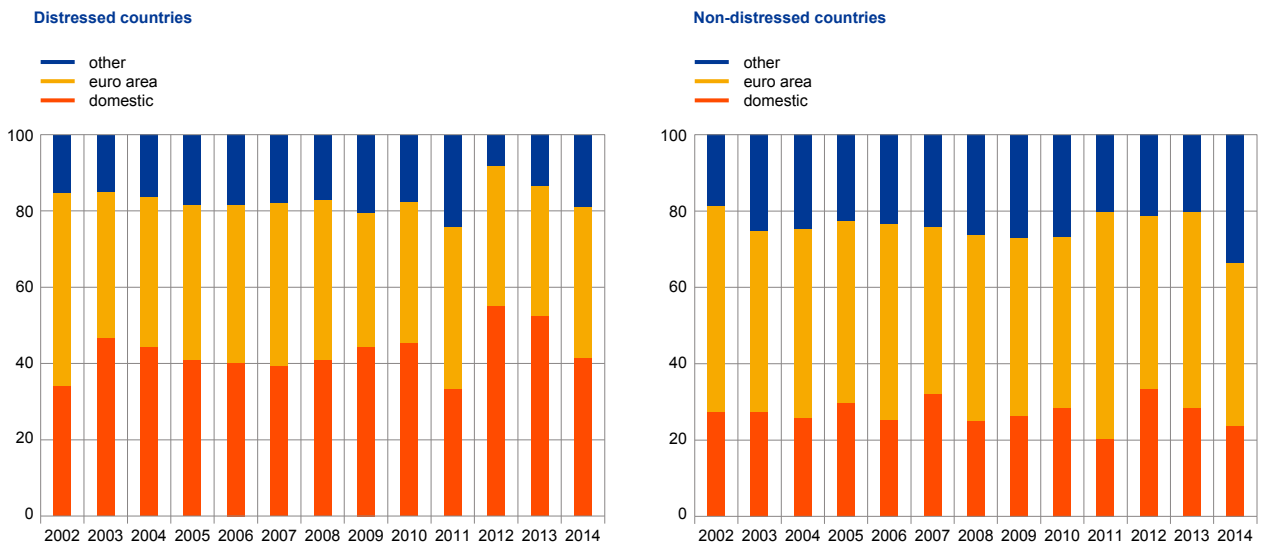
[10] While the EONIA rate is a transaction-based benchmark rate, EURIBOR rates are quote-based. This might hamper the comparison across maturities.

[11] However, the market microstructure might be different between different market segments and, thus, lead to different results.

Chart 10

Geographical counterparty breakdown for secured and unsecured transactions

(percentage of total transactions)



Source: ECB Money Market Survey 2014.

The higher money market activity is related to the decrease in excess liquidity. Banks from distressed countries confirmed that 3-year LTRO repayments were both a consequence of improved market access and an important factor in their increased market activity, supported by stabilising rating outlooks and some improved credit ratings. The suspension of the SMP sterilisation operation may have further supported higher money market turnover because it effectively removed the possibility of depositing cash at the Eurosystem at a positive rate.

The geographical breakdown of counterparties of money market transactions reveals a more complex picture. While the overall volumes of transactions increased, the volume of transactions between euro area countries remained stable compared to 2013. For non-distressed countries, the share of non-euro area counterparties increased, while the share of domestic counterparties remained broadly stable (Chart 10). Meanwhile, the distressed countries, which overall saw their transaction volumes decrease, did not clearly benefit from a noticeable increase in transactions with the euro area counterparties. To sum up, the geographical breakdown of money market transactions shows the positive sign that market participants are less reliant on domestic funding sources, but there is no further sign of intra-euro area integration.

Using TARGET2 payment data to analyse money market transactions

Despite their fundamental importance, relatively little is known about actual transactions in interbank markets since, for the most part, banks trade short-term debt over the counter. Hence, information about the functioning of euro interbank markets has relied on limited data from electronic trading platforms, or on surveys.

Chart 11

Share of cross-border overnight money market transactions identified in TARGET2

(percentage)

Source: TARGET2 money market transactions, based on ECB methodology refined in 2013.
Notes: Intra-group transactions were excluded; if transactions have a zero interest rate, they are not identified as a loan.

One method of obtaining detailed and comprehensive data on unsecured overnight interbank loan transactions is to use data from payment systems to reconstruct the unsecured overnight interbank loans that are responsible for the observed payments. When banks trade liquidity in central bank money, the comprehensive data from payment systems that settle in central bank money can be used to identify overnight interbank transactions. Examining the TARGET2 payment data in their entirety makes it possible to monitor euro area-wide developments. Since the underlying information is at the level of individual transactions, it can be aggregated at different levels to examine specific questions.

Chart 11 shows that the share of cross-border unsecured overnight interbank activity declined after the Lehman Brothers bankruptcy in September 2008. It then recovered gradually before declining markedly during the intensification of the sovereign debt crisis. This suggests that not only did the unsecured overnight euro area money market shrink, it also fragmented. However, recent data also show that the situation started to improve again shortly after the ECB announcement of the outright monetary transaction (OMT) framework. In 2014, the cross-border share returned to the levels it had reached before the start of the sovereign debt crisis.

4 Bond markets

In 2014 euro area bond market (i.e. for sovereigns, non-financial corporates and banks) fragmentation receded further. This was the result of several factors. First, the disparity in economic sentiment across euro area countries declined further, driven by the implementation of structural reforms in distressed countries and the progresses on euro area architecture reform.[12] Second, the ECB's decisions on further monetary policy measures underpinned confidence throughout 2014. Third, also across other major currency areas, the monetary policy stance was still accommodative overall, and this contributed to a search for yield in higher-risk assets. This drove the sovereign spreads of several countries lower and may have contributed to a reduced fragmentation of the European sovereign debt market.

Sovereign bond markets

Overall, euro area sovereign bond markets showed a limited degree of remaining fragmentation in 2014.

[12] In particular, in November 2014 the European Central Bank took over direct supervisory powers over the largest euro area banks.

In order to illustrate the degree of remaining sovereign bond market segmentation, the following section first considers pricing deviations across euro area bonds. Further, it assesses how far these deviations can be explained by differences in actual risk and related premia, which should not be seen as signs of market segmentation.[13] Thereafter, evidence from quantities, i.e. secondary and primary market turnover as well as cross-border holdings, is considered.

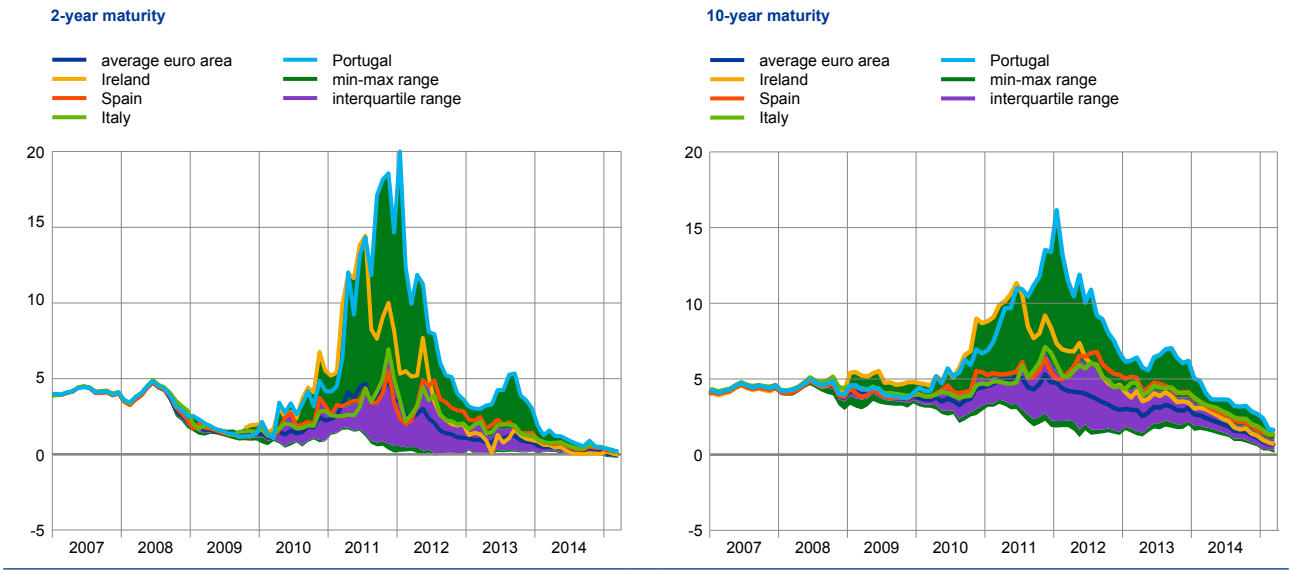
Price-based indicators of sovereign bond markets

Chart 12 depicts the dispersion of euro area sovereign bond yields at the ten-year and two-year maturities, as characterised by the median, the interquartile range (i.e. the range between the third and the first quartile), and the range between the highest and the lowest yield. The data for some countries with higher yields and the euro area average are also shown in the graph.

Chart 12

Dispersion of euro area sovereign bond yields

(percentage points)



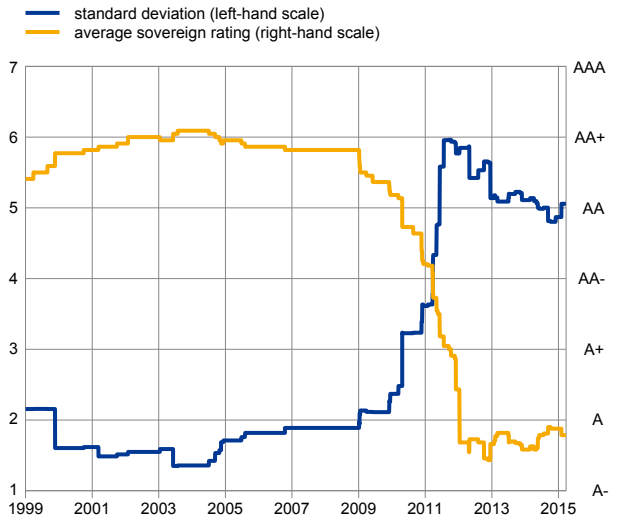
Sources: Thomson Reuters and ECB.
Note: The data used are based on euro area country composition as in 2011. The yields for Greece, Cyprus, Estonia, Luxembourg, Malta and Slovenia are excluded owing to infrequent observations or a lack of observations.

In 2009 a pronounced divergence in yields emerged when market participants began to perceive a tangible credit risk for some euro area sovereigns. Some sovereign bond yields, which had already been elevated due to country-specific fiscal and

[13] For instance, Battistini, Pagano and Simonelli (2013) found that dispersion of sovereign yields purged from risk premia points towards more limited market segmentation than shown by conventional measures.

Chart 13

Sovereign debt rating developments and dispersion in the euro area



Sources: Thomson Reuters and ECB.
Note: The chart shows Standard & Poor's ratings for long-term sovereign debt. The right-hand scale represents the simple average rating expressed as letter grades. The left-hand scale represents the standard deviation of ratings expressed as numerical notches.

Chart 14

Spreads between agency bonds and sovereign bonds for Germany and France at five-year maturity

(5-day moving averages of daily data; basis points)

Sources: Thomson Reuters and ECB.
Note: Zero-coupon spreads between agency and government bond yields.

macro risks, became additionally influenced by self-reinforcing premia related to market fragmentation and perceived risks of redenomination[14] (i.e. perceived risk of a euro area break-up). The size of these self-reinforcing premia and the related divergence in government bond yields declined markedly after the announcement of OMT in 2012 to a level of insignificance in 2014. The cross-country differences kept declining in 2013 and 2014, but remained higher than in the period 2000-2009. This may to some extent reflect remaining market segmentation, but could also be driven by continued differences in economic and fiscal outlook across countries.

In this context, Chart 13 shows that the euro area sovereign ratings continue to have a relatively low average level and a large dispersion compared with the period before 2009. Moreover, although the average euro area sovereign rating increased slightly and dispersion fell during 2013, these indicators did not show any further significant improvement in 2014.

Similar conclusions emerge when considering credit default swap (CDS) premia on sovereigns (Charts S15 and S20 in the Statistical Annex).

The price differential between euro area sovereign bonds, however, is not only driven by differences in credit risk premia, but also by differences in market liquidity. In particular during crisis times, the price on more liquid assets, notably German government bonds, is significantly higher than that on less liquid assets. The premium on liquid assets can be quantified from the spread between sovereign and agency bonds,[15] which bear the same credit risk and only differ in terms of liquidity. Such quantification is illustrated in Chart 14 using French and German bonds. The chart shows that the liquidity premium declined further in 2014 and remains much lower than during the crisis. The decline in the liquidity premium is another factor contributing to the reduction in sovereign bond spreads illustrated above.

[14] Estimation of the premia relating to the risk of redenomination of a given euro-denominated asset into a devalued legacy currency is challenging. Under certain assumptions, some gauges can be obtained from differences between domestic and USD-denominated CDS premia.

[15] Government-guaranteed agency yields are constant-maturity yields of estimated curves for the German agency KfW, (Kreditanstalt für Wiederaufbau) and for France Caisse d'Amortissement de la Dette Sociale. As the bonds issued by KfW (CADES) are fully guaranteed by the state, their credit risk is equal to that of the government bonds. For more details, see Ejsing/Grothe/Grothe (2012), ECB WP 1440.

Quantity-based indicators of sovereign bond markets

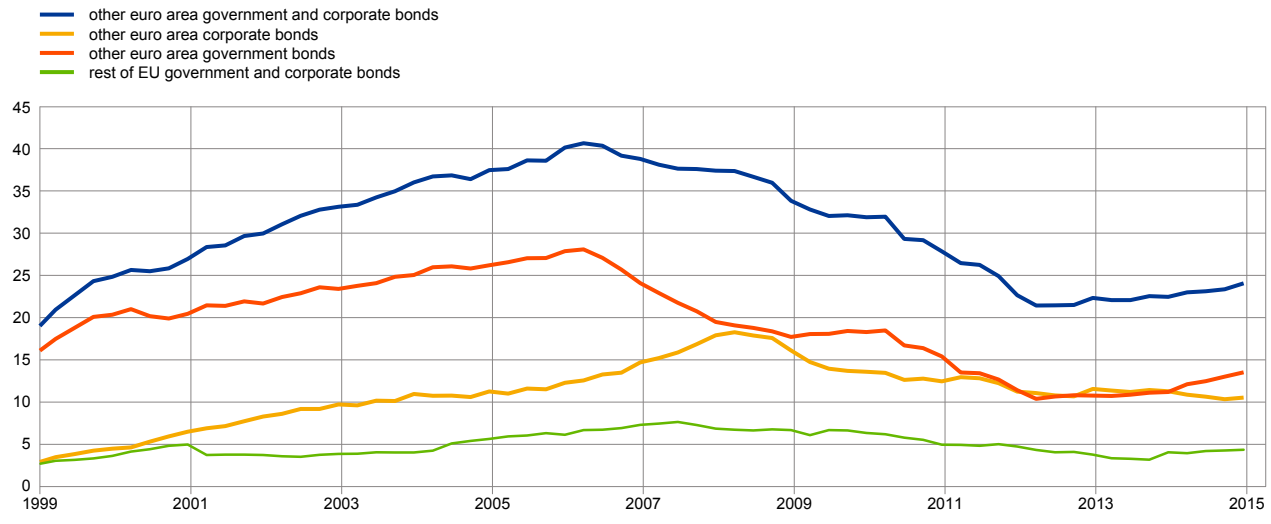
Further information on the integration of sovereign bond markets can be obtained from cross-border holdings of government bonds. An element pointing to some remaining fragmentation of euro area sovereign bond markets is the continued low share of euro area MFI cross-border holdings (i.e. non-domestic but within euro area) of government bonds (Chart 15). However, while this share had been steadily declining since 2006, it stabilised and even slightly increased in 2013-2014. While the initial decline in 2006 was mainly due to portfolio reallocations from euro area sovereign bonds into bonds issued outside the euro area, the decline over the last three years was led by increases in MFI holdings of domestic government securities. Such increases were also observed for countries where the holdings of domestic government bonds were already at high levels before the crisis. The elevated levels in banks' exposure to risks from domestic sovereign bonds are one important dimension of the tight bank-sovereign linkages (Chart S20 in the Statistical Annex) that operate in both directions: improvements/worsening in the perception of sovereign risk translate into banks.

Overall, the quantity-based indicators point to continued fragmentation of the euro area sovereign bond market. However, the recent stabilisation in the cross-border holdings of government bonds may indicate a trend reversal towards reduced fragmentation. This would be consistent with the positive reading of the price indicators.

Chart 15

Share of MFI cross-border holdings of debt securities issued by euro area and EU corporates and sovereigns

(percentage of total holdings, exclusive the Eurosystem)



Source: ECB.
Note: Outstanding amounts are classified by the residency of the issuer. Eurosystem holdings are excluded.

Corporate bond markets

Corporate bond markets are closely related to government bond markets, because government bond prices are typically used as a benchmark for the pricing of corporate bonds. As a result, the developments with regard to segmentation in euro area corporate bond market have mirrored those seen in the government bond markets.

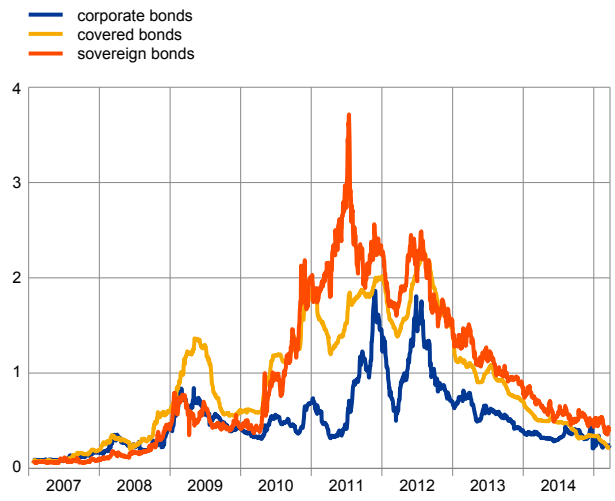
To illustrate the degree of corporate bond market segmentation, the following part first reviews price-based indicators, including a model-based analysis. Thereafter, evidence from quantity-based indicators (i.e. issuance of debt securities by banks and NFCs) is considered.

Price-based indicators of corporate bond markets

Chart 16

Cross-country dispersion in bond yields among non-financial corporations and banks in the euro area

(daily data; standard deviation, percentage points)



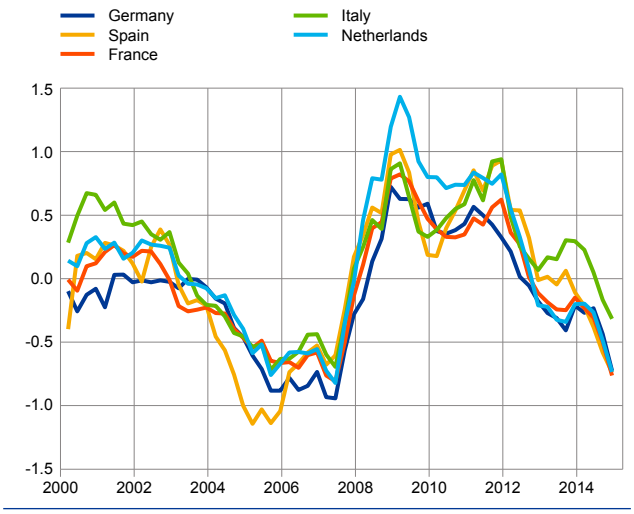
Sources: Thomson Reuters and ECB calculations.
Note: The chart shows standard deviations for Barclay's country indices for corporate bonds (issued by non-financial corporations), IBOXX country indices for covered bonds (issued by banks) and country 10-year benchmark government bonds yields. Due to data availability, data only include observations for Germany, Portugal, Spain, Finland, France Italy, the Netherlands, Ireland and Austria.

As illustrated in Chart 16, the cross-country dispersion of corporate bond yields, for both covered bank bonds and bonds issued by NFCs, has moved rather closely in step with the cross-country dispersion in government bond yields. In particular, Chart 16 shows that the cross-country dispersion in corporate bond yields declined substantially and in tandem with the dispersion of government bond yields in the second half of 2012, following the ECB's announcement on OMT. Most recently, the dispersion stabilised at low levels that are comparable with those observed before the outbreak of the sovereign debt crisis, but higher than the levels prevailing in 2007 and 2008.

The degree of segmentation can be measured by the importance of country dummies – relative to other factors – in the pricing of individual corporate bonds. In this respect, Chart 17 displays a model-based estimation of time-varying country fixed effects in the pricing of corporate bonds. The country loadings had become significantly positive during the financial and sovereign debt crises, but declined somewhat in the most recent years, implying a reduction in the segmentation of the market. Also, as shown in Chart 18, the dispersion among country factors declined recently for both financial and non-financial sectors, down from the levels observed in 2012 and 2013. Still, for the financial sector, it remains above the level observed in years 2001-2007, which may suggest some remaining segmentation. However, it may also to some extent reflect a dispersion in macro-economic fundamentals.

Chart 17

Country fixed effects in the corporate bond market

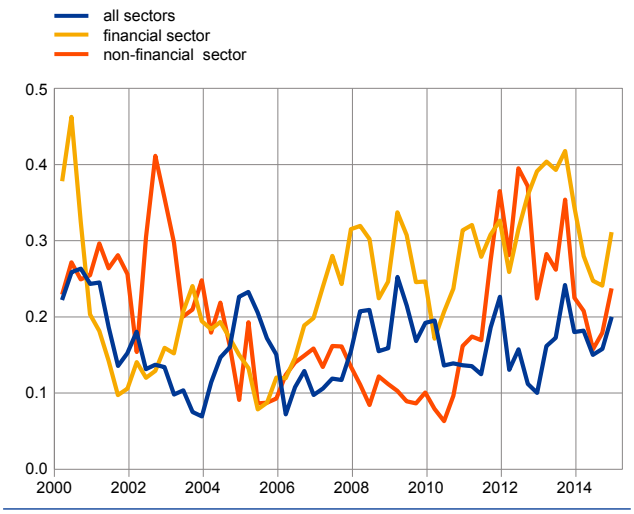


Sources: Merrill Lynch Global Index and ECB calculations.
Note. The chart shows the difference between time-varying country-specific fixed effects and the euro area average of country fixed effects. The model is based on individual corporate bond data and includes control variables for credit risk, liquidity risk and other term premia. In addition, the model captures time-varying country-specific fixed effects.

Chart 18

Dispersion of country fixed effects in financial and non-financial sectors

(percentages)

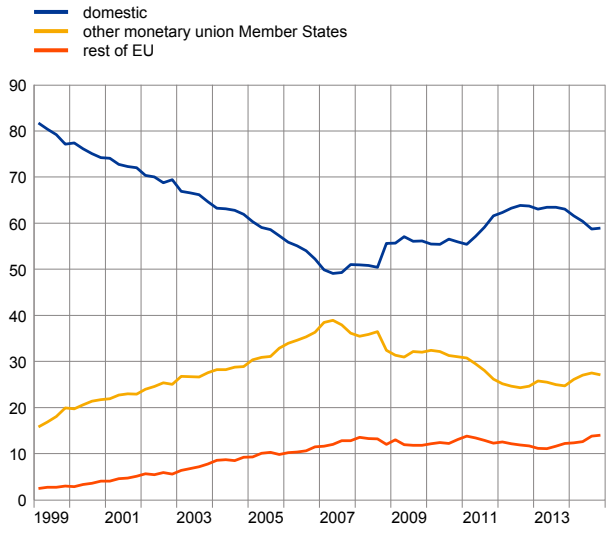


Sources: Merrill Lynch Global Index and ECB calculations.
Notes: The chart shows the dispersion (standard deviation) of the time-varying country-specific fixed effects for five countries presented in Chart 17. The model specification is in the note to Chart 17.

Chart 19

Share of euro area MFI holdings of debt securities issued by MFIs by residency of the issuers

(percentage of total holdings, excl. Eurosystem)



Source: ECB.
Note: Outstanding amounts are classified by the residency of the issuer. Eurosystem holdings are excluded.

Quantity-based indicators of corporate bond markets

Corporate bond market integration can also be analysed using cross-border MFI holdings of corporate bonds and issuance of corporate bonds across sectors and countries.

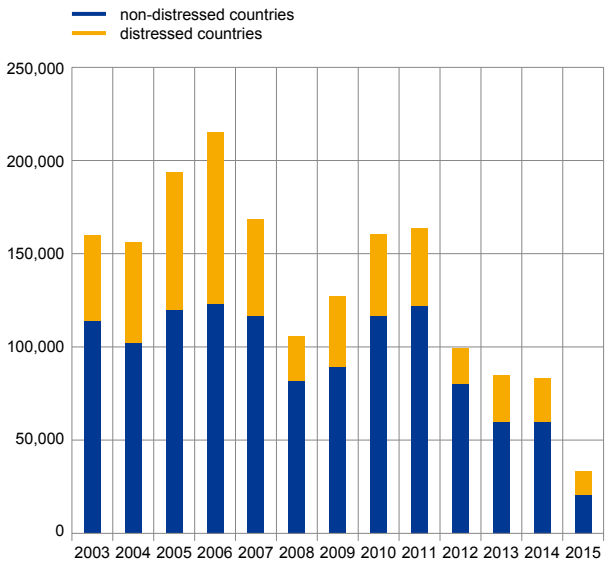
The share of cross-border holdings of EU corporate debt out of total holdings of corporate debt securities has stabilised at a rather low level when considering the period since 2012, as has the share of cross-border EU sovereign bonds (Chart 16 in the government bond section). Regarding securities issued by MFIs (Chart 19), euro area MFIs have tended to decrease their relative share of securities issued by other euro area MFIs since the onset of the crisis. This has mirrored the upward trend of the share of MFIs securities issued domestically. However, in 2014, these two opposite trends reversed to some extent, indicating that the degree of segmentation has started to recede.

Since 2012 the market for covered bank bonds in the euro area has been characterised by low primary market activity (Chart 20). This is related to many factors, not all of which necessarily reflect market segmentation. The various factors

Chart 20

Volume of covered bank bond issuance at the country level

(EUR millions)



Sources: Dealogic DCM Analytics and ECB calculations.
Notes: Based on data available until March 2015. Retained and self-funded deals are not included. Euro area member states with a very small issuance are not shown.

include risk perception, the impact of new regulation, deleveraging in view of weak credit demand, and the Eurosystem providing longer-term funding via refinancing operations. Accounting for the volume of maturing covered bonds, net issuance has been negative since 2011, meaning a continuous decline in the stock of outstanding covered bonds.

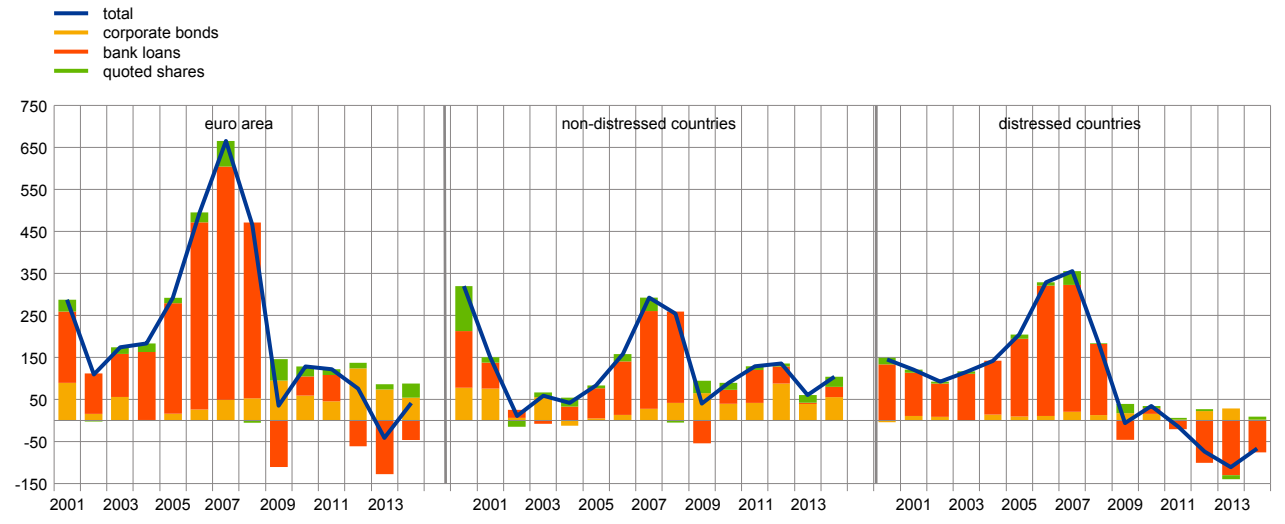
Regarding the net issuance of corporate bonds by non-financial corporations,[16] a notable increase was observed at the aggregate euro area level (Chart 21) in 2014, in particular in the high-yield segment. In fact, this increase was sufficient to offset the decline in the net flow of bank loans that has also been observed at the aggregate level. However, this development masks significant differences across countries. In particular, the positive net issuance of corporate bonds is concentrated in the non-distressed countries, where there has been no decrease in the net flow of bank loans. In contrast, there has been a strong decrease in the net flow of bank loans in distressed countries, where the net issuance of corporate bonds is only moderately positive.

Overall, both price- and quantity-based indicators show that corporate bond market fragmentation persisted in 2014, but diminished slightly.

Chart 21

NFCs' debt security, bank loans and quoted share issuance

(EUR billions; annual sums)



Sources: ECB.
Notes: The observations for 2014 provide the volumes observed up to December 2014

[16] This statistic, however, does not include debt securities issued by NFCs via ad hoc conduits, mainly established in a few selected countries (e.g. Luxembourg, Spain and the Netherlands)

5 Equity markets

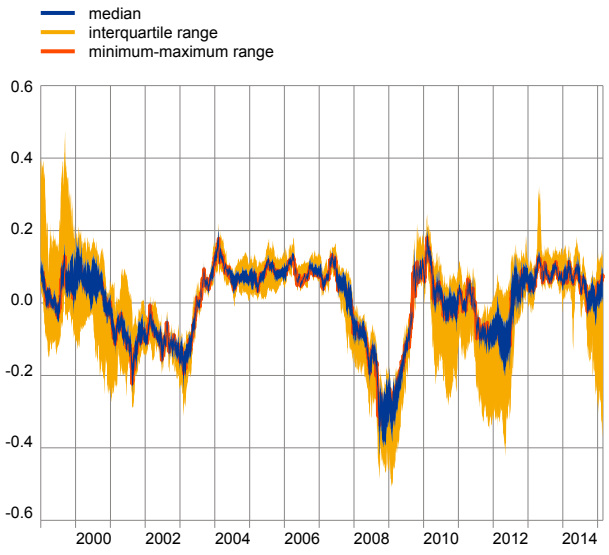
The degree of cross-country heterogeneity in stock market returns declined somewhat further in 2014. As mentioned in the previous section on bond markets, this may be related to less disparity in economic sentiment across euro area countries, progress on structural reforms, the ECB's further policy measures, and global liquidity conditions that increased investors' search for yield and supported demand for higher-risk assets.

The reduced cross-country heterogeneity in stock market returns is consistent with some relative improvements in other price-based indicators and the levelling off in the negative trend of quantity-based indicators of stock market integration. The following section looks first at price-based indicators and then at quantity-based indicators.

Chart 22

Equity market index returns in the euro area

(in percentage per annum)



Sources: Thomson Reuters and ECB calculations.
Notes: The chart represents the minimum, maximum, interquartile range and median for equity market index returns. Countries considered are Austria, Belgium, Ireland, Italy, Finland, France, Germany, Greece, Netherlands, Portugal and Spain.

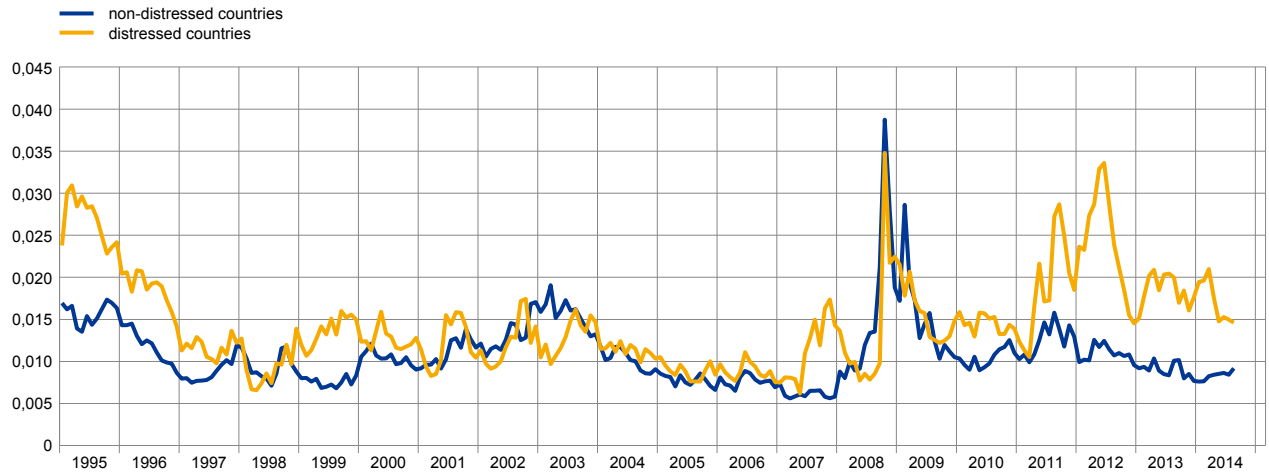
Price-based indicators

Chart 22 shows the dispersion of euro area stock market index returns, as characterised by the interquartile range (i.e. the range between the third and the first quartile) and the range between the highest and the lowest index return in the period from 1999 to 2014. While the introduction of the euro was followed by a period of convergence of stock market returns, heterogeneity in stock market returns started to increase in 2008, and then increased even more significantly in 2010-2012 following the start of the euro area sovereign debt crisis. However, since the OMT announcement in September 2012, heterogeneity has declined substantially, and in 2013 and 2014 it almost reached pre-crisis levels, before increasing somewhat towards the end of the review period. However, heterogeneity in stock market returns is only a first rough measure of market integration. After all, divergence in stock market returns would only be a reflection of segmentation when stock indices with similar risk characteristics show different performances. The following considers other indicators.

A first indicator presented in Chart 23 measures the degree of heterogeneity in the valuation of the main industries between each of the two country groups (distressed or non-distressed) and the euro area average. A larger value indicates a higher level of divergence among the countries, while a zero value implies full integration. From this chart, it can be seen that until 2011, distressed and non-distressed countries

Chart 23

Equity market divergence between distressed and nondistressed countries

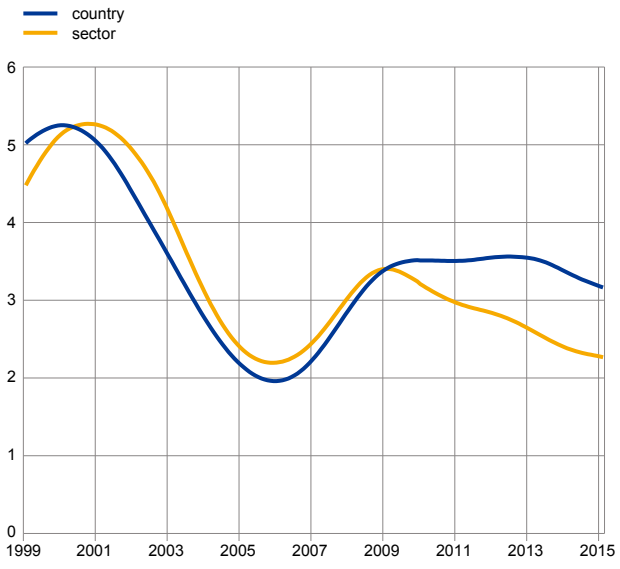


Sources: Thomson Reuters and ECB calculations.
Note: For technical details on the calculation of this indicator, see notes to Chart S22 in the Statistical Annex. The country groupings are further described in the Statistical Annex.

Chart 24

Country and sector dispersions in euro area equity returns

(percentages)



Sources: Thomson Reuters and ECB calculations.
Notes: The cross sectional dispersions are smoothed with a three-month moving average. In Chart S16 of the Statistical Annex, the same dispersions are filtered using the Hodrick-Prescott smoothing technique. For more details on the calculation of this indicator, see notes to Chart S16 in the Statistical Annex.

presented a similar degree of segmentation, both being particularly strongly affected by the Lehman Brothers crisis. However, since 2011, while market segmentation for non-distressed countries has, according to this indicator, fluctuated around the long-term average, market segmentation for distressed countries reacted strongly to the euro area crisis, peaking in May 2012 at a level close to that observed during the Lehman Brothers episode. However, after the announcement of OMT in 2012, the index for distressed countries declined substantially. In 2014 it still remained above its long-term average and notably above the index value of the non-distressed countries.

A second indicator presents the dispersion in equity returns across sectors and across countries in the euro area.[17] Chart S16 in the Statistical Annex shows a long-term perspective to highlight the fact that since 2010 the gap between cross-country and cross-sector dispersions has significantly increased to levels comparable with pre-EMU levels, a period characterised by a low level of stock market integration and a strong dominance of country

[17] The first indicator shows how a group of countries can diverge from its average in terms of expected earnings yield, while the second indicator compares the divergence between sector dispersion and country dispersion at the euro area level.

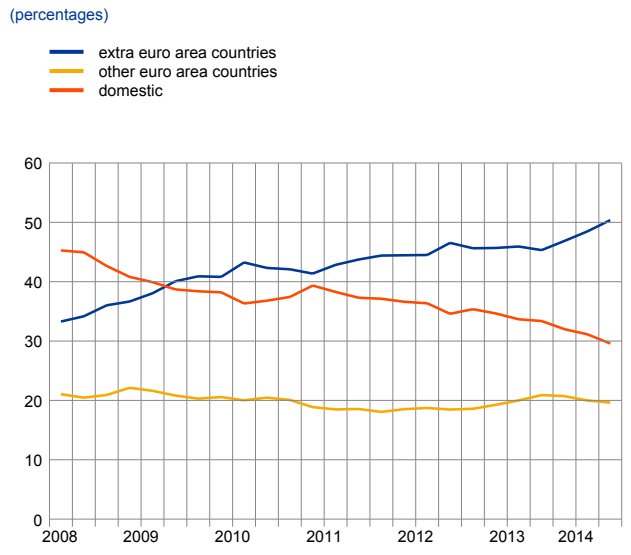
factors.[18] However, when zooming in on the latest developments of this indicator (Chart 24), it is still evident that the situation improved somewhat in 2014, with country dispersion declining toward lower levels.

Quantity-based indicators

Quantity-based indicators such as cross-border holdings of equity issued by euro area residents and the development of equity fund assets also provide evidence on the state of equity market integration. The percentage of euro area financial institutions' cross-border holdings of equity issued in other euro area countries has been stable in the recent years, even during the period of euro area sovereign debt crisis (Chart 25). At the same time, euro area financial institutions further diversified their holdings away from domestic shares into international non-euro area assets. Such a growing diversification of holdings, while not detrimental to euro area financial integration, might be beneficial in terms of financial stability. A broader and longer dataset shows a continuous increase of equity issued by euro area residents and held by residents of other euro area countries, which additionally suggests growing integration in this market throughout the past 15 years (Chart 26).

Chart 25

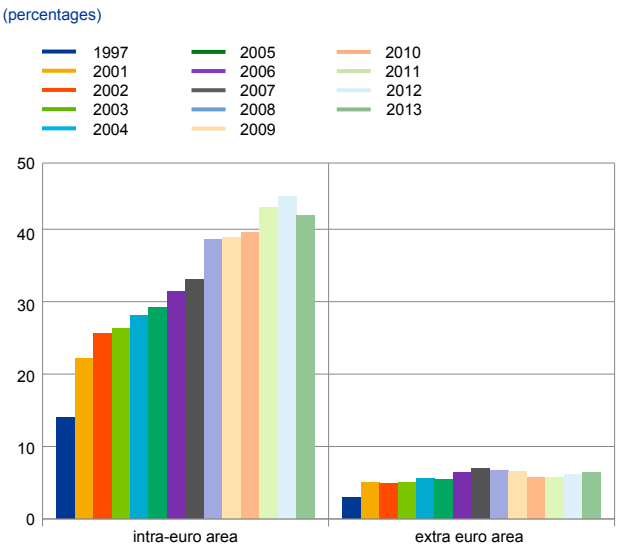
Euro area financial institutions' holdings of equity issued in the same country, in other euro area countries and the rest of the world



Source: ECB.
Notes: Financial institutions comprise MFIs, ICPFs (Insurance Corporations and Pension Funds) and investment funds. Investment fund holdings comprise only quoted shares. Data for investment funds only start with Q4 2008. The numbers do not include data of ICPFs for Q4.

Chart 26

Cross-border holdings of equity issued by euro area residents



Sources: IMF, Thomson Reuters and ECB calculations.
Notes: Intra-euro area is defined as the share of equity issued by euro area residents and held by residents of other euro area countries (excluding central banks). The sample includes 12 euro area countries. Extra-euro area is defined as the share of euro area equity held by non-euro area residents of the euro area (excluding central banks). Last observation: 2013.

[18] While Chart S16 in the Statistical Annex focuses on long-term trends with a long time span (1973-2014), Chart 24 focuses more on short-term developments with a shorter time span (1999-2014) and a different smoothing technique.

6 Banking markets

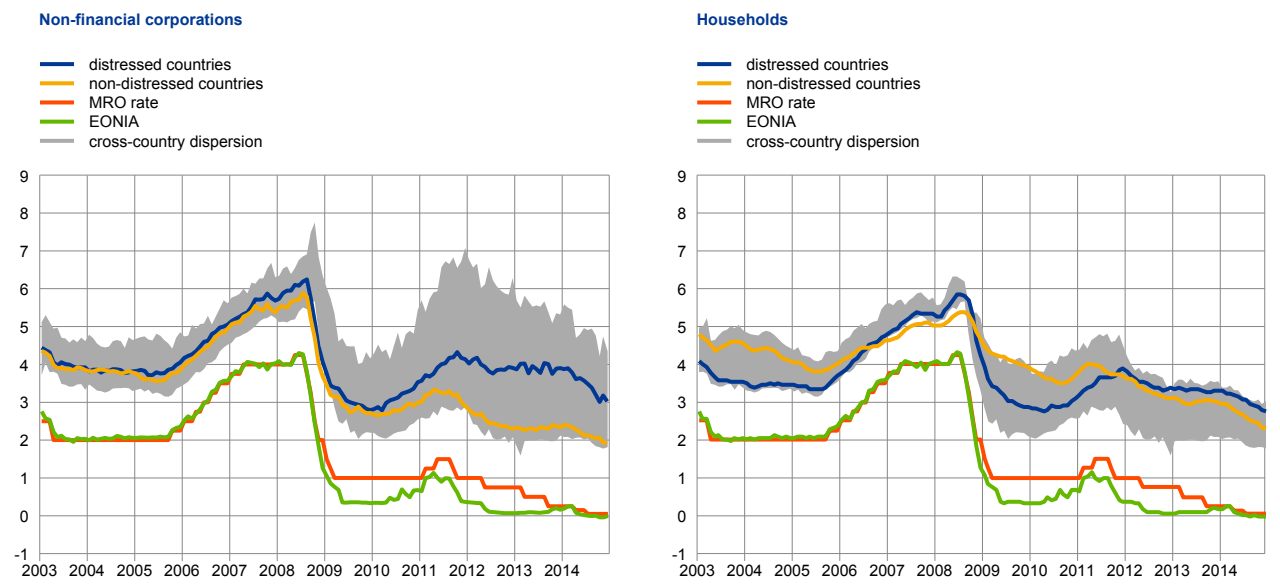
The financial integration of euro area banking markets improved mildly during 2014 with regard to lending activity and gathering deposits. Cross-border activity moderately resumed. Nevertheless, the level of integration remains lower than before the financial crisis, which may reflect financial fragmentation as well as cross-country differences in the riskiness of banks and borrowers. The wedge between the borrowing costs paid by non-financial corporations (NFCs) – particularly small and medium-sized enterprises (SMEs) – in distressed and non-distressed countries has narrowed, but has not yet returned to pre-crisis levels, suggesting prevailing fragmentation.

Under full financial integration, banking markets would efficiently allocate resources to the most productive investment opportunities across the euro area, without frictions in the flow of funds across borders. Full integration would imply that, if investment prospects were identical across euro area countries (in terms of profitability, riskiness and institutional environment), the supply of credit would cross borders until the cost of funding the marginal investment is equalised in every country. The cross-country differentials that we currently observe – in lending rates, volumes of new loans and credit standards – may signal constraints on the free flow of credit or genuine heterogeneity in business environments and investment opportunities. Purging the effect of the latter, by accounting for factors that affect the demand for credit, gives a better view of the link between rate differentials and constraints that impair financial integration and the free flow of credit supply.

Chart 27

Composite indicators of the cost of borrowing from MFIs

(percentages per annum)



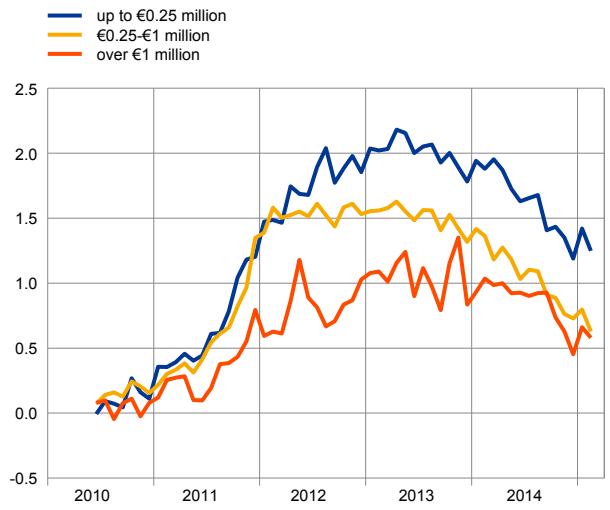
Sources: ECB and ECB calculations.
Notes: The indicator is computed by aggregation of short and long-term rates, using 24-month moving averages of new business volumes as weights. Distressed countries are ES, GR, IE, IT and PT. Non-distressed countries are AT, BE, DE, FI, FR, LU and NL. Within each country group, national rates are aggregated using 24-month moving averages of new business volumes as weights. At the beginning of the sample, weights are fixed at the first computable value. The cross-country dispersion displays the min-max range after trimming the two extreme values.

In a fragmented credit intermediation environment, the monetary policy transmission mechanism may be hampered: dysfunctional markets prevent the ECB's policy rate from transmitting its monetary policy signal evenly to all parts of the euro area economy. As a temporary relief, the ECB has adopted non-standard policy measures such as (fixed-rate) full-allotment liquidity provision, expansion of the list of eligible collateral, longer-term liquidity provision (including Targeted Long-Term Refinancing Operations), liquidity provision in foreign currencies, securities markets programme, outright monetary transactions and a number of asset purchase programmes. These actions have been designed to support the effective transmission of interest rate decisions to the wider euro area economy and have improved financing conditions and credit flows, in a context of dysfunctional developments in some segments of the financial system. In the long run, confidence in the banking sector must be reinforced and the vicious sovereign-bank nexus broken. The steps taken towards a Banking Union, in particular the establishment of a Single Supervisory Mechanism, a Single Resolution Mechanism and a Single Resolution Fund, as well as the enforcement of a single rulebook, all represent important progress towards the goal of restoring efficient credit flows to the real economy and efficient cross-border credit flows so as to lower bank lending rates in distressed countries.

Chart 28

Composite rates on small, medium and large bank loans: spread between distressed and non-distressed countries

(percentages per annum)



Sources: ECB and ECB calculations.
Notes: Based on a fixed sample of 10 countries. Distressed countries are ES, IE, IT and PT. Non-distressed countries are AT, BE, DE,FI, FR and NL. No data are available for GR and LU. Within each country group, national rates are aggregated using 24-month moving averages of new business volumes as weights. At the beginning of the sample, weights are fixed at the first computable value.

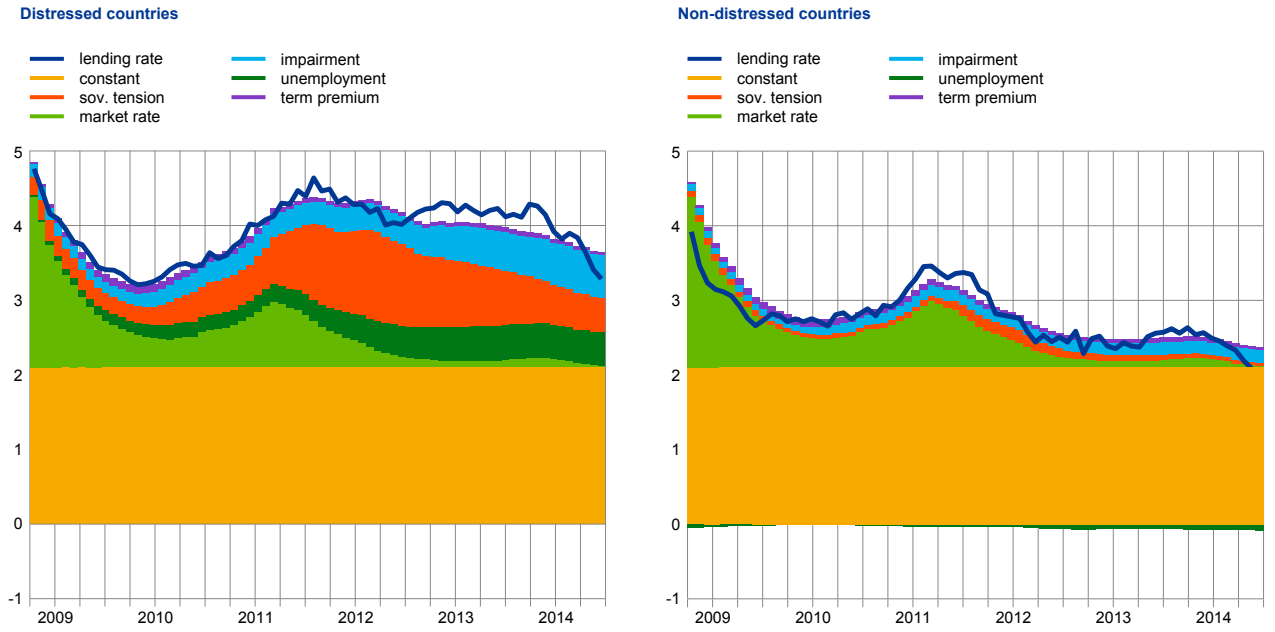
Price-based indicators

Composite indicators of the cost of borrowing for NFCs and households, based on a new methodology described in the August 2013 ECB Monthly Bulletin, are used to assess the divergence of borrowing rates across the euro area. Trends are depicted in Chart 27: since the onset of the financial crisis, borrowing costs have progressively diverged between distressed and non-distressed countries, particularly for NFCs.

A closer look at bank lending rates to NFCs by class of loan size reveals that the divergence has affected small loans to a larger extent than large loans. ECB statistics allow to separate data by loan size (up to €0.25 million; between €0.25 and €1 million; over €1 million). Chart 28 shows that rates in distressed and non-distressed countries have diverged more and more persistently for small loans than for other classes of size. As small loans are typically used by SMEs, the cross-country dispersion in rates appears to have affected these companies even more than larger firms. SMEs play an important role in many distressed euro area countries, hence the high interest rates charged on their loans may signal obstacles to economic recovery. Thus, a number of policy initiatives have been established – or expanded at the country and European levels – to promote SME financing.

Chart 29

Historical decomposition of composite lending rates to NFCs



Sources: ECB (IBSI) and ECB calculations.
Note: Decomposition based on pooled regressions for MFIs in the euro area. The dependent variable in Charts 1 and 2 is the composite lending rate which includes rates on loans to NFCs with an initial rate fixation of up to 1 year, of over 1 and up to 5 years, of over 5 years; rates on overdrafts, revolving credit and credit lines are excluded. Two lags of the dependent variable, the 3-month OIS, the spread between domestic sovereign and the one on German sovereign bonds with a 10 year maturity, a proxy for the term premium, the unemployment rate demeaned by its pre-crisis average (the period between January 2006 and December 2007), and the bank-specific share of impaired loans in total loans are included as regressors. The estimation uses the Arellano-Bond GMM estimator, using between 2 and 4 lags of the dependent variable as instruments. Presented are the cross-sectional medians for rates on loans to NFC charged by MFIs located in distressed countries (left-hand scale) and in non-distressed countries (right-hand scale).

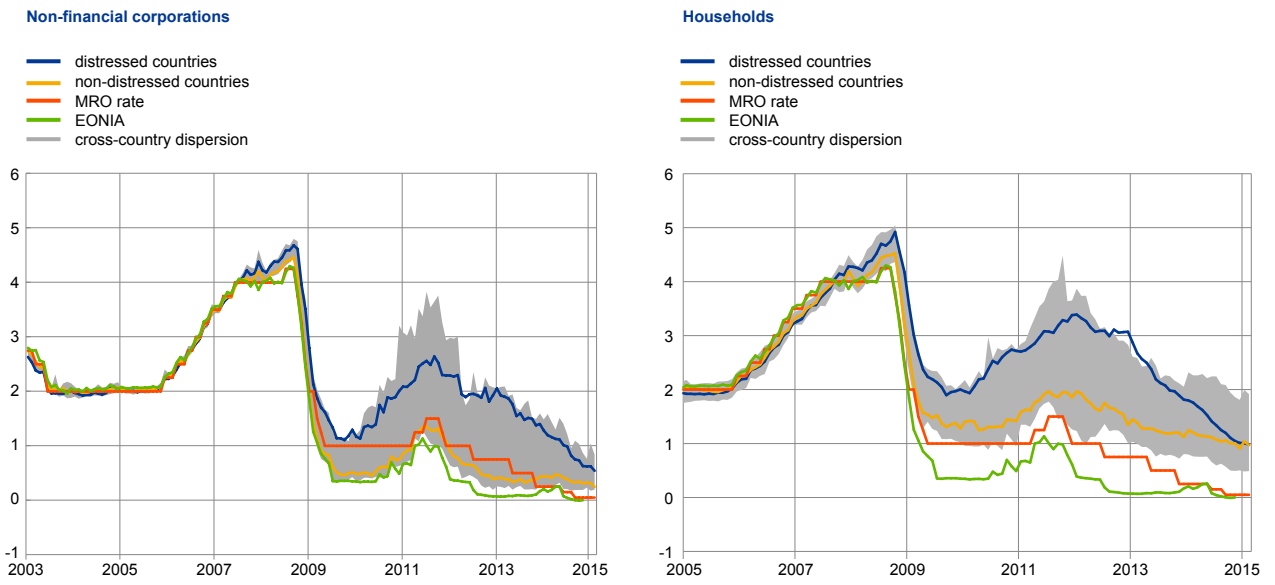
Taking into account factors that have independently affected the demand for credit, the higher loan rates paid by firms in distressed countries are only partially explained by a lack of financial integration impairing the transmission of credit flows across borders. Chart 29, based on micro-level regression analysis, displays a historical decomposition of lending rates. Over time – especially after the sovereign debt crisis of 2012 – lending rates in distressed countries have been increasingly affected by factors related to business conditions, i.e. to credit demand. These factors are captured by the unemployment rate, as a proxy for the risk premium connected to the business cycle. Sovereign spreads, capturing the effect of financial fragmentation and impairment of cross-border credit supply flows, explain much of the increase in rates during the crisis of 2012 but decreased in importance during 2013 and 2014. The share of impaired loans, which captures supply side factors once demand factors are accounted for – i.e. banks' balance sheet impairment and inability to supply new loans – has gradually and continuously increased over time. Once the contribution of demand factors is netted out, differences in lending rates between distressed and non-distressed countries look less pronounced, painting a less gloomy picture of the current state of financial integration in the banking sector.

Chart 30 illustrates the development of interest rates on MFI deposits for non-financial corporations and households. They closely followed the ECB MRO rate before the outbreak of the financial crisis. After that, the deposit rates, both for non-financial corporations and households in both country groups, diverged from MRO

Chart 30

Composite rates on deposits with agreed maturity

(percentages per annum)



Sources: ECB and ECB calculations.
Notes: Distressed countries are ES, GR, IE, IT and PT. Non-distressed countries are AT, BE, DE, FI, FR, LU and NL. Within each country group, national rates are aggregated using 24-month moving averages of new business volumes as weights. At the beginning of the sample, weights are fixed at the first computable value. The cross-country dispersion displays the min-max range after trimming the two extreme values.

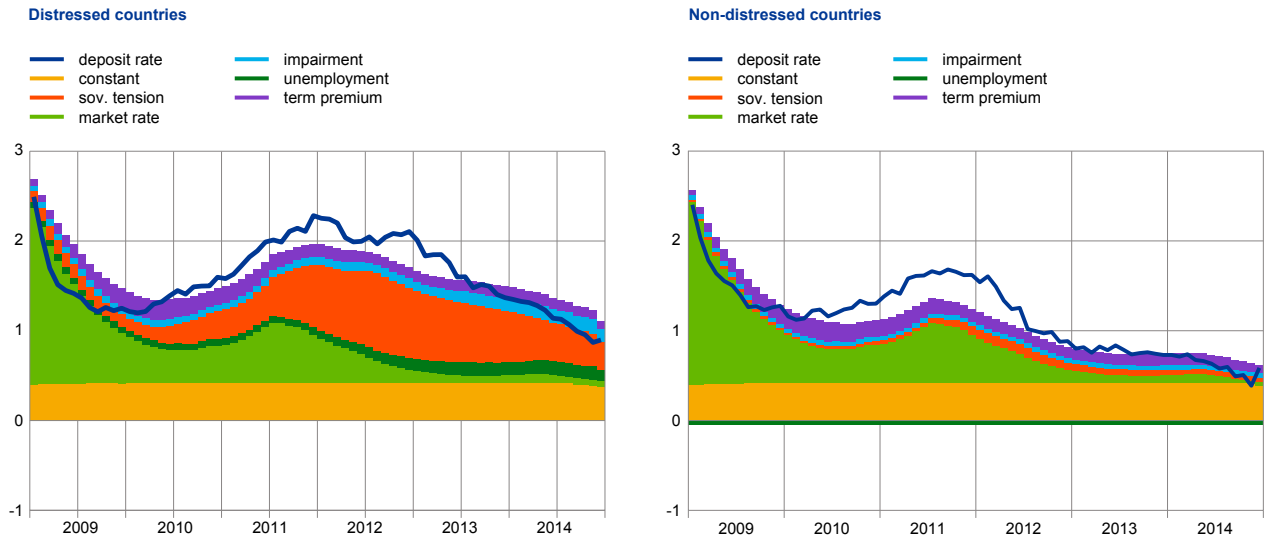
rates. Interest rates rose more in distressed countries than in non-distressed ones. This disconnection hints at impaired funding market access for distressed country MFIs, which have to offer higher interest rates in order to ensure the necessary funding. The latest data show that the spread in the deposit rates between country groups has disappeared in the household sector and narrowed to a large extent in the NFC sector, suggesting an easing of funding conditions. An application of the same decomposition used above, for lending rates, illustrates (Chart 31) that much of the difference between deposit rates in distressed and non-distressed countries could be attributed to sovereign spreads, reflecting competition among stressed banks to access deposits as a source of funding during a period in which wholesale markets have become less accessible.

The conditions faced by banks in wholesale funding markets play a significant role in the supply of lending to the real economy. Chart 32 illustrates the evolution of investment grade bank bond yields since 2007. The outbreak of the financial crisis, with peaks associated with the failure of Lehman Brothers and the sovereign debt crisis, translated into two episodes of large increases in the level and dispersion of yields across euro area banks, often linked with higher dispersions across countries related to the sovereign-bank nexus. In a more recent period, against the background of non-standard monetary policy measures and steps towards the Banking Union, there has been a significant convergence towards lower levels and lower dispersion across banks and countries, even though part of the decrease in stressed country yields in Chart 33 can be attributed to a reduction in the number of banks with investment grade ratings.

Chart 31

Historical decomposition of composite deposit rates

(percentages per annum)

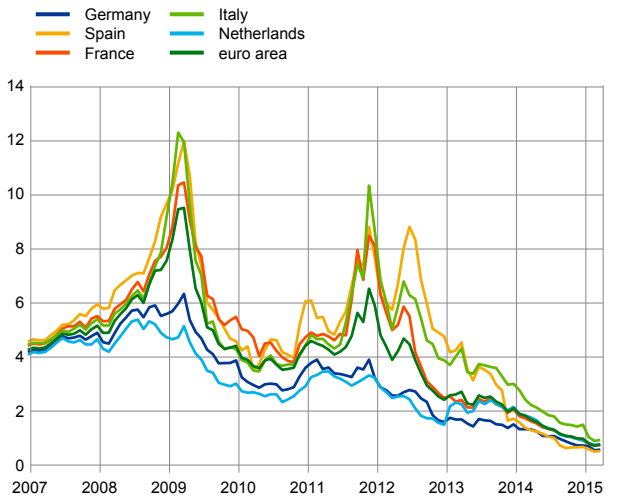


Sources: ECB (IBSI) and ECB calculations.
Notes: Decomposition based on pooled regressions for MFIs in the euro area. The dependent variable is the composite deposit rate which includes rates on new business deposits placed by households and non-financial corporations with an agreed maturity up to 1 year, over 1 and up to 2 years, over 2 years; rates on overnight deposits are excluded. Two lags of the dependent variable, the 3-month OIS, the spread between domestic sovereign and the respective euro area average, the unemployment rate demeaned by its pre-crisis average (the period between January 2006 and December 2007), and the bank-specific share of impaired loans in total loans are included as regressors. The estimation uses the Arellano-Bond GMM estimator, using between 2 and 4 lags of the dependent variable as instruments. Presented are the cross-sectional medians for rates on deposits of MFIs located in distressed countries (left-hand scale) and in non-distressed countries (right-hand scale).

Chart 32

Investment grade bank bond yields

(percentages per annum)



Sources: Merrill Lynch Global Index and ECB calculations.

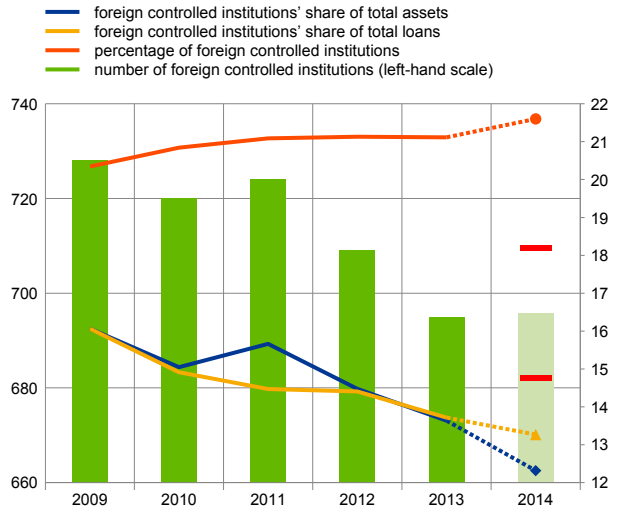
Quantity-based indicators

Banks can provide cross-border credit either locally, through their affiliates, or via direct cross-border loans. Growing euro area business activity through one of these channels would signal that banking markets are well integrated and that benefits from efficient allocation of savings to the best investment opportunities are being fully exploited. Contraction of cross border lending can either signal frictions in the integration of financial markets or differential developments of profitable investment opportunities across countries. As mentioned in the previous section, only after taking into account exogenous factors that affect the latter one can make statements about the former. Benefits of integrated markets, but also potential costs, are described in detail in the Financial Integration Report 2012.

Chart 33

Non-domestic euro area affiliates in the euro area

(total numbers - left-hand scale; percentages - right-hand scale)



Source: ECB (CBD).
Notes: 2014 figures are estimated on the basis of preliminary data (for a subsample of large banks) available for 2014-H1. Red marks around the estimated number of institutions represent a confidence band: the lower mark is the minimum possible final figure (end of year figures for the full sample cannot be lower than first semester figures based on a subsample) the upper mark is conventionally chosen at equal distance from the estimate. Estimates are based on past ratios between annual and biannual figures. The forthcoming ratio is predicted on the basis of an exponentially weighted average of past values, with smoothing factor set to the level that minimizes the sum of squared residuals for all predicted ratios and for all four series.

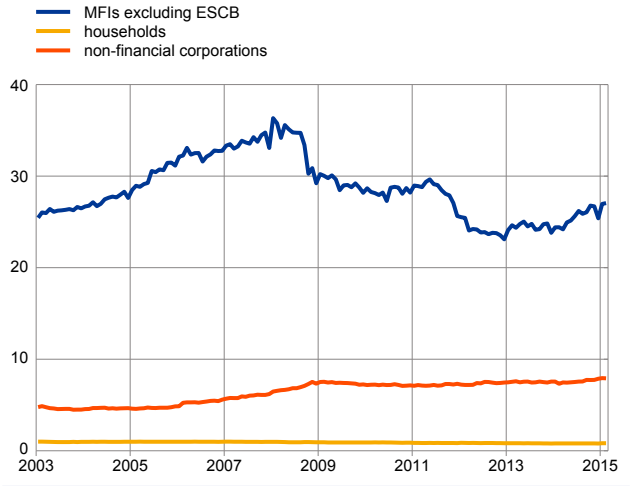
The total number of foreign (non-domestic euro area) affiliates in euro area countries has been steadily declining after 2011. The decrease is in line with the general trend of reduction of bank affiliates. At the same time, their share of both total assets and total loans have declined, reaching levels below 14% in 2013 (Chart 33) as compared to almost 17% in 2009. Preliminary estimates based on data for the first semester of 2014 point towards a halt in the decline of foreign controlled institutions, while their shares of assets and loans are expected to continue to decline. These euro area aggregate statistics hide a large cross-country heterogeneity. Large countries mainly have shares below 10%; most of the small countries have shares of more than 80%. The development of the dispersion of total assets of foreign branches and subsidiaries of euro area banks across euro area countries is depicted in Chart S27 of the Statistical Annex.

Cross-border bank lending has followed similar developments. The share of cross-border interbank loans to total loans decreased following the Lehman crisis: from over 35% to less than 25% (Chart 34). There have been signs of a mild recovery in the past year, particularly in the past half-year. Cross-border loans to households, as a share of total household loans, are negligible and remain at around 1%. The share of cross-border loans to non-financial corporations, which account for almost 8% of all loans to non-financial corporations, stopped growing after the Lehman crisis and has remained constant ever since. The last few months have witnessed very timid signs of recovery. Cross-border lending to the real economy has remained limited partly because non-price lending conditions have remained fragmented, especially for mortgage markets. The Banking Union should improve the poor integration of banking services, through convergence in the cost of capital; however, mortgage markets will require an additional common set of rules, beyond those of the SSM and SRM, regarding the use of collateral, the litigation process, and the central credit registry.

Chart 34

Share of cross-border loans in the euro area, by sector

(percentages per annum)



Notes: Cross-border loans include loans to other euro area Member States for all maturities and currencies. Interbank loans do not include Central Bank loans.

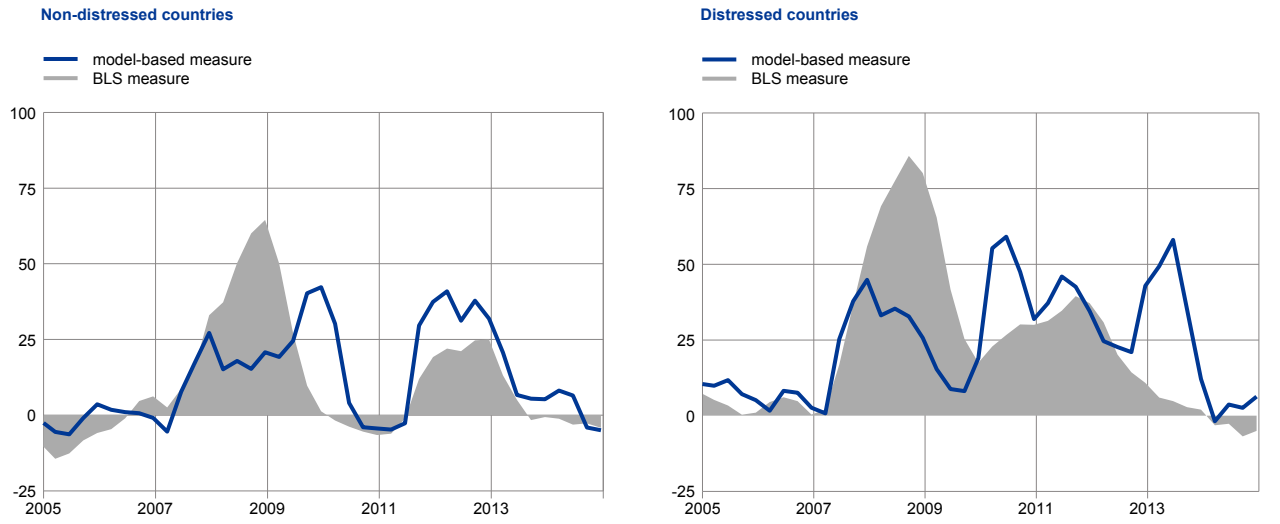
In order to account for the exogenous factors that have affected the demand for credit, so as to identify the lack of integration stemming purely from the credit-supply side, it is instructive to analyse the credit constraints reported in the Bank Lending Survey (BLS) as tightening of credit standards. Following the methodology outlined in Altavilla, Darracq and Nicoletti

(2014), the percentage of banks reporting a net tightening are restated by taking into account bank-specific loan demand factors, country-level macroeconomic conditions (actual and expected) and area-level riskiness of non-financial corporations and monetary policy conditions. Raw and model-based indicators of credit constraint tightening are reported in Chart 35. Despite the apparent abrupt tightening of banks' credit standards during the onset of the Lehman crisis of 2008, much of the tightening of standards was demand driven in both distressed and non-distressed economies. On the contrary, during the sovereign crisis of 2012 the tightening due to supply constraints was even more severe than depicted by the BLS aggregate figure in both distressed and non-distressed countries. The duration of the grip on credit has been different though, as the worsening of standards driven by supply constraints has lasted much longer in the distressed countries. At the same time, some signs of easing have begun to appear since early 2014.

Chart 35

Tightening of credit standards

(net percentage changes)



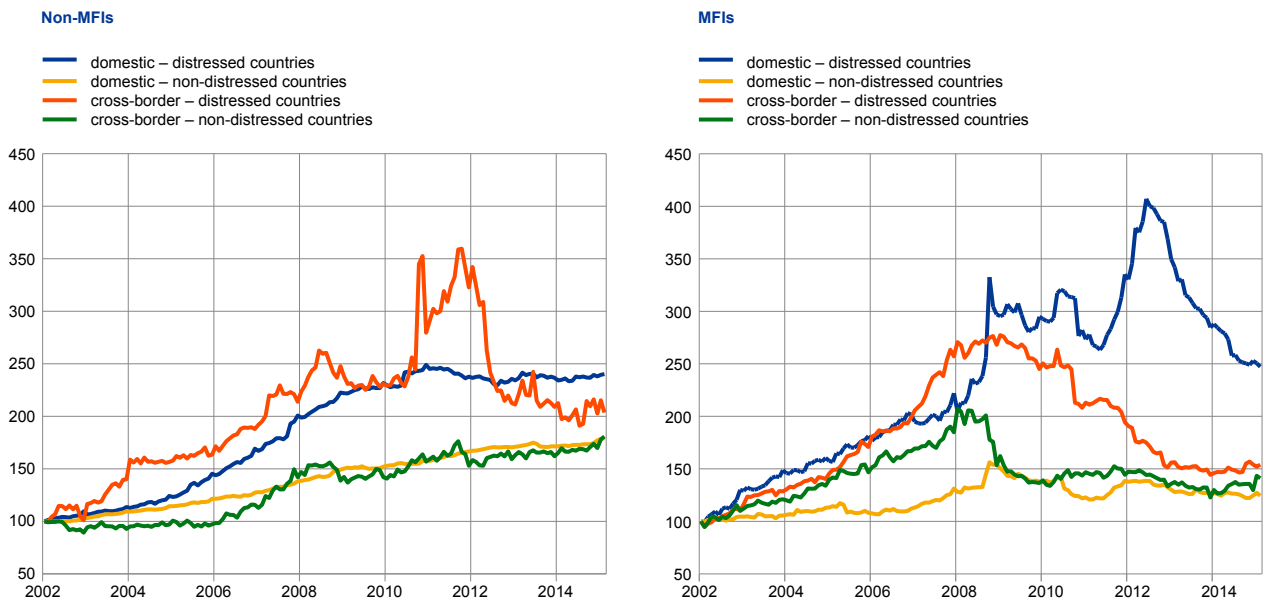
Sources: ECB (BLS) and ECB calculations.
Notes: Net percentage of banks reporting "tightening of credit standards in the previous quarter" in the ECB's Bank Lending Survey (BLS). "BLS measure" is the sum of positive survey responses, net of the negative and neutral. "Model-based measure" rescales the former measure to control for demand factors, using an inverse propensity score method based on a probit model estimated on pooled BLS data. Calculations based on the methodology of Altavilla, Darracq, Nicoletti (2014). Individual BLS responses are rescaled using an inverse propensity score method, based on a probit model estimated on pooled BLS data. Latest observation: Q4 2014.

On the liability side of euro area banks' balance sheets, deposits are the primary source of funding – over 50%. Since 2002, domestic deposits by non-MFIs have increased more in distressed countries than in non-distressed countries (Chart 36). In both areas, the ratio between domestic and cross-country deposits has remained fairly stable, except during the sovereign crisis period, when the "flight to quality" temporarily pushed deposits from distressed to non-distressed countries. The fluctuation of cross-border deposits is higher due to lower volumes: as of January 2014, they accounted for only 3% of total non-MFI deposits in distressed countries and 7% in non-distressed countries. A different pattern has emerged in deposits to MFIs: up to the outbreak of the Lehman crisis, cross-border deposits had grown in tandem in the two areas. After Lehman, interbank markets witnessed an abrupt reversal, with the foreign deposits of distressed countries apparently returning

Chart 36

Deposits across euro area countries

(January 2002 = 100)



Source: ECB (BSI).
Notes: Distressed countries are IE, GR, ES, IT and PT. Non-distressed countries are BE, DE, FR, LU, NL, AT and FI.

to home institutions and covering up for the funding deficit left by the sudden retrenchment of foreign deposits of non-distressed countries' banks. However, the sudden increase of home deposits in distressed countries during the period 2012-2013 was most likely intra-group transactions for passing the liquidity received from the Eurosystem, rather than true retrenchment.

Retail payments

Retail payment services traditionally belong to the banking business. They have long been associated with the deposit-taking and credit-granting activities carried out by banks, and have been increasingly considered a commodity. However, as in other sectors of the market, banks face more and more competition from new "non-bank" entrants.[19, 20] On the one hand, changes in market practices and regulations have broken the necessary tie between banks and payment services, with non-banks playing an increasingly important role. On the other hand, especially in light of the competition from non-banks, retail payment services are attracting ever more attention from banks themselves: they are both a source of reliable and regular revenues and a factor in customer retention and cross-selling.

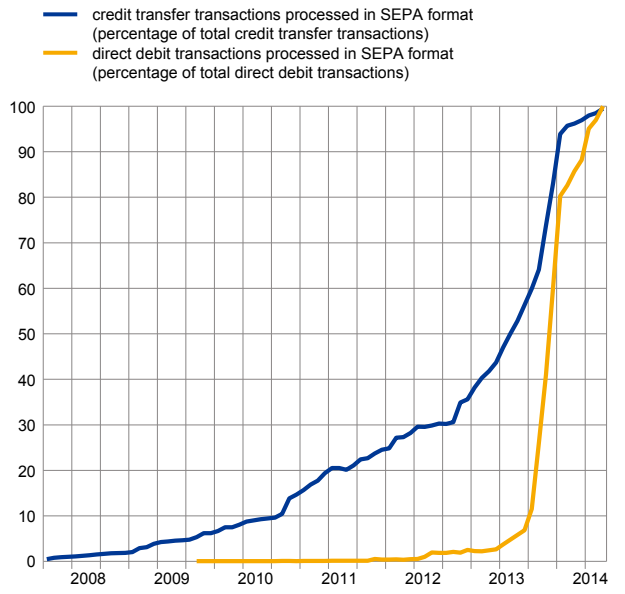
[19] This formed the subject of a report produced by the CPMI (Committee on Payments and Market Infrastructures), with the ECB's contribution (CPMI, "Non-banks in retail payments", September 2014).

[20] It should be noted that so far, it has been difficult to precisely quantify the share of the retail payments market taken by non-banks, due to a lack of granular data. Enhanced statistics on transactions processed by non-banks will be available after the implementation of the new requirements and methodology for ECB payments statistics in June 2015, covering reporting year 2014 (see Chapter III).

Chart 37

Credit transfer and direct debit transactions processed in SEPA format in the euro area

(percentage)



Source: ECB.

A blend of self-regulatory and regulatory initiatives has affected the European retail payments market, bringing about not only increased competition, but also deeper integration. As payments support the real economy and are essential to full participation in social life, a more efficient and cohesive retail payments market contributes to achieving the goals of the single market more broadly and to lowering barriers to cross-border activities.

A milestone in this direction was reached on 1 August 2014, when common standards for credit transfers and direct debits successfully replaced corresponding national standards in the euro area. Since then, consumers have been able to use a single euro bank account for credit transfers and direct debits with any counterparty in the area, with higher levels of protection. Businesses can more easily expand across national borders and optimise the way they make and receive payments.

The implementation of the Single Euro Payments Area (SEPA) is progressing and by 31 October 2016, credit transfers and direct debits in euro in non-euro area EU countries will have migrated to common standards as well. Moreover, such harmonised instruments provide a basis for integrated innovative payment solutions to develop.

SEPA migration in the euro area was characterised by a “big bang” style, i.e. the majority of the migration happened in the months directly preceding the regulated end-date (Chart 37). This in turn led to some market uncertainty about whether migration was actually taking place, and led the European Commission to introduce a six-month grace period until 1 August 2014 (see Chapter 3, Section 1).

Supporting migration to SEPA instruments, integration has progressed in the market of retail payment infrastructures as well, although at a relatively slow pace. Initiatives have been carried out towards the provision of clearing and settlement services beyond national borders, with pan-European reach. The expectation is that links between infrastructures and further cooperative undertakings will continue to develop and shape the market, in line with the Eurosystem’s expectation for growing integration.

Chapter 2
Further progress in the implementation of Banking Union

Progress towards establishing the Banking Union has been made very rapidly in 2014. Just over two years since the European Council decided to establish the Banking Union, the ECB and National Competent Authorities have completed the comprehensive assessment exercise, and the ECB assumed responsibility for banking supervision on 4 November 2014. The Single Supervisory Mechanism (SSM) and the Single Resolution Mechanism (SRM) are essential pillars for a more robust and resilient framework to help prevent future financial crisis, and to intervene and ultimately resolve banks if needed. This will help significantly to contribute to the integration of European financial markets. Hand-in-hand with institutional developments, the Capital Requirements Directive and Regulation introduced on 1 January 2014 a broad set of macro-prudential policy instruments for national designated authorities and the ECB, which have shared responsibility in macro-prudential supervision. These new tools will help to address systemic risk in a timely and adequate manner. The ECB is therefore well equipped to conduct micro-and macro-prudential supervision within the SSM.

1 The launch of the Single Supervisory Mechanism – a milestone in ECB history

On 4 November 2014 the ECB assumed responsibility for the supervision of euro area banks, following a year-long preparatory phase which included an in-depth examination of the resilience and balance sheets of the biggest banks in the euro area. The ECB will directly supervise 120 significant banking groups, which represent 82% (by assets) of the euro area banking sector. For the remaining 3,500 banks, the ECB will set and monitor supervisory standards and work closely with the national competent authorities on the supervision of these banks. At any time, the ECB can decide to directly supervise any one of these banks to ensure that high supervisory standards are applied consistently.

1.1 The ECB's preparatory work

The year 2014 was one of the most challenging in the history of the ECB. Multiple legal acts were adopted and came into force in 2014, including the SSM Framework Regulation governing the supervisory cooperation between the ECB and the national competent authorities (NCA), the Rules of Procedure of the Supervisory Board (SB), the Decision on the establishment of an Administrative Board of Review (which was appointed in early September 2014) and its operating rules, and the Regulation that establishes the Mediation Panel and its rules of procedure. The ECB also adopted the Regulation on supervisory fees, which was published on 30 October 2014.

In September 2014, the ECB published the list of significant supervised entities and the list of less significant institutions, both based on mid-2014 data provided by the NCAs. Also in September, the Governing Council adopted the Decision on the implementation of separation between the monetary policy and supervision functions. As part of the implementation, the Decision also establishes the modalities for information exchange between the two functions, which will depend primarily on the confidentiality status of the information. Confidentiality safeguards include Executive Board approval for sharing certain information and Executive Board authority to resolve potential conflicts between the two functions. In line with the Inter-institutional Agreement, the ECB informed the European Parliament about the main elements of the ethics rules. The final adoption of these rules by the ECB decision-making bodies took place in mid-November.

Following the January 2014 version, the Supervisory Manual has been further refined, and the "Guide to banking supervision" was published on 30 September 2014 on the ECB website. The Guide informs the supervised entities and the broader public about the key goals and features of the SSM supervisory model. One of the main goals of the SSM is to create a truly level playing field among its members. In order to achieve that, the fragmentation among national banking sectors within the SSM needs to be addressed. Of particular concern are the national discretions over transitional arrangements that introduce variation in the current definition of capital used across banks and countries.

Further harmonisation of supervisory practices, to ensure coherent and consistent application of the Single Rule Book across the SSM, will be a crucial component of achieving further financial integration.

The Regulation on supervisory reporting has been published for consultation and is expected to be approved in early 2015. It will set uniform rules for supervisory reporting by supervised entities, irrespective of which accounting standards they operate under (IFRS or National GAAP). At the same time, the specificity of less significant institutions will be recognised, establishing simplified reporting requirements and an extended implementation timeline.

1.2 The comprehensive assessment

The public disclosure of the results of the comprehensive assessment on 26 October 2014 was a major milestone in the establishment of the new supervisory regime in the euro area. The conduct of this exercise has created a solid and credible basis for future cooperation with National Competent Authorities, which is a key element for an effective supervision of the SSM and for financial integration in Europe. In total, 130 banks participated in the exercise. They hold assets worth €22 trillion, accounting for over 80% of total banking assets in the euro area. Under the oversight of the ECB, over 6,000 experts from National Competent Authorities and third parties contributed to the comprehensive assessment. The exercise has substantially increased transparency on the underlying quality of the banks' assets. A detailed review was performed for over 800 specific portfolios. More than 119,000 borrowers were analysed in depth. The exercise made banks

comparable across national borders through the uniform application of a detailed methodology, including a harmonised definition of non-performing exposures. The asset quality review (AQR) resulted in an aggregate gross impact of 47.5 billion euro on participating banks' asset carrying values as of 31 December 2013. These adjustments originated primarily from accrual accounted assets, particularly adjustments to specific provisions on non-retail exposures. In total, 136 billion euro of new non-performing exposures were identified. When the AQR is combined with the adverse scenario of the stress test, the comprehensive assessment results in a theoretical capital depletion of €263 billion over a three-year horizon.

The comprehensive assessment identified a capital shortfall of €24.6 billion across 25 participating banks, at end-2013. However, 12 banks have already covered the shortfall through issuance of new capital in 2014. The remaining banks[21] with capital shortfalls presented capital plans by end 2014. The comprehensive assessment has given the SSM extensive granular information that it will use to push ahead with effective supervision in the years to come. Furthermore, a considerable amount of information has also been released to the public. This degree of transparency is an important element of enhancing investor confidence in the European banking system.

1.3 Looking ahead

After an extensive preparatory phase, the ECB has taken up supervision. The ECB now has a unique opportunity to develop a truly European culture of supervision, building on the best practices of supervisors from across the euro area. European-level banking supervision will improve and strengthen financial integration by ensuring a level playing field in the supervisory requirements to be met by banks. The single supervisor will harmonise technical approaches to supervision, which will reduce compliance costs for banks and increase comparability across borders. Every bank that is part of the SSM will be supervised according to a single supervisory model and use the same data reporting template. These approaches will ensure high quality supervisory standards and a harmonised and consistent implementation of prudential regulations. Furthermore, centralised supervision under the aegis of the ECB will credibly address long-standing home-host coordination problems by bringing simplification, efficiency and clarity between home and host supervisors regarding the consolidated supervision of cross-border banking groups operating in the euro area. In the longer run, bilateral home-host cooperation between the SSM and supervisory authorities from non-participating Member States will also be based on Memoranda of Understanding, or MoUs. These MoUs will be key instruments in setting up a good framework for efficient and fruitful cooperation. Thus, centralised supervision will take a pan-EU perspective and contribute to financial stability within and outside the euro area. The creation of the SSM is a major undertaking by the EU. Less than two years after the European Commission proposed the establishment of the SSM, the ECB is well prepared to deliver on its tasks.

21 These include two banks which are implementing restructuring plans agreed with the European Commission, under which one bank would have a zero shortfall and the other would have a small shortfall.

2 The necessary prerequisite – establishment of the Single Resolution Mechanism[22]

As of 1 January 2015, the SSM is complemented by an integrated European resolution system, i.e. a Single Resolution Mechanism[23] (SRM) for all countries participating in the SSM. The levels of responsibility and decision making for supervision and resolution have become aligned with the establishment of the SRM. By overcoming the institutional fragmentation of supervision and resolution, and by harmonising the underlying legal frameworks, financial integration across the euro area can be restored.

The SRM, with a single decision maker and a single resolution fund across participating Member States, will help reduce further the link between banks and their sovereigns, and therefore also help open up the market for bank debt across Europe. At the height of the recent financial crisis, quantity-based indicators pointed to a significant fragmentation of euro area banks' secured and unsecured funding markets based on their geographic origin. As a result, banks located in peripheral countries continued to lose market funding, while those in some other countries gained it and managed to issue bank debt at attractive yield levels. This heterogeneity was due to both sovereign risk and different creditor expectations regarding the consequences of potential bank failures in those jurisdictions. With the new resolution tools, especially the new bail-in rules, which are being introduced to the whole EU via the Bank Recovery and Resolution Directive (BRRD) and specified for the euro area via the SRM Regulation, buyers of bank debt will have a more homogenous set of expectations for how their claims will be treated in a potential crisis, no matter in which Member State the bank is located. Clearer information on potential exposure to losses makes investment decisions easier. As a result, any potential re-fragmentation due to future crises can also be limited.

2.1 Progress in the Single Resolution Board

The SRM is built on the national resolution authorities established by the BRRD, with a Single Resolution Board (SRB) at its centre. The SRB is a fully independent agency of the European Union financed by contributions from the banking sector. It has a Chair, a Vice-Chair and four further permanent members and may involve as the case may be the European Commission, the EU Council, the ECB and the national resolution authorities of the participating Member States. The SRB may invite other observers but whereas the Commission and the ECB have the status of a permanent observer their participation as observers will be on an ad hoc basis.

22 The main features of the SRM, including its key elements, are described in Chapter 2 of the 2014 ECB report on financial integration in Europe. This section therefore focuses on recent developments and next steps. While the preparatory work including the operation of the SRB and the preparation of resolution plans and resolvability assessments apply from 1 January 2015, the SRM Regulation will be applicable only from 1 January 2016 as regards the resolution powers.

23 Regulation (EU) No 806/2014 of the European Parliament and of the Council of 15 July 2014 establishing uniform rules and a uniform procedure for the resolution of credit institutions and certain investment firms in the framework of a Single Resolution Mechanism and a Single Resolution Fund, and amending Regulation (EU) No 1093/2010, was published in the Official Journal of the European Union on 30 July 2014 and entered into force on 19 August 2014.

The Commission has been responsible for the establishment and initial operation of the SRB, for which a dedicated Task Force was established in May 2014. In 2014, the Task Force completed many of the necessary preparatory tasks, including the appointment of the SRB's management, the recruitment of key staff, the implementation of systems, rules and procedures, the sourcing of accommodation and the collection of the first bank contributions to fund the SRB's administrative expenditure. A Commission official was designated to act as interim Chair of the SRB to allow for the exercise of some administrative duties, such as budgetary and human resources functions, assigned to the Chair.

After the European Parliament gave its approval on the Commission's proposal for the six permanent members of the SRB on 15 December, the Council, acting by qualified majority, backed the implementing decisions to appoint the Chair, the Vice-Chair and the other four SRB Members. The permanent members of the SRB are: Ms Elke König (Chair; DE), Mr Timo Löyttyniemi (Vice-Chair, FI), Mr Mauro Grande (Strategy and Coordination Director, IT), Mr Antonio Carrascosa (Resolution Planning Directors, ES), Ms Joanne Kellermann (NL) and Mr Dominique Laboureix (FR). The Chair, Vice-Chair and SRB Members are appointed for a limited term; the Chair initially for a period of three years, renewable once for another five years; and the Vice-Chair and the other SRB Members for a period of five years, non-renewable.

The SRB became operational 1 January 2015, but until 1 January 2016 the SRB will mainly work on the elaboration of resolution plans in cooperation with the national resolution authorities, including the assessment of resolvability with possible application of measures to remove possible obstacles for resolvability, as well as the determination of the minimum requirement for own funds and eligible liabilities (MREL) for bail-in. The SRB will only be fully operational on 1 January 2016, when the Single Resolution Fund (SRF) is established. At this stage, the SRB will have full access to the set of resolution powers endowed by the SRM Regulation, including the management of the SRF.

2.2 Progress of the Single Resolution Fund

The second element of the SRM will be the establishment of the Single Resolution Fund (SRF) in January 2016. The SRF will initially consist of national compartments, but liability will gradually be mutualised over time. Only after an eight-year transitional period, the national compartments will be merged into a single, fully mutualised fund. As the use of national financial resources does not fall within the scope of EU law, this process has been mapped out in an intergovernmental agreement (IGA) between the Member States.

The IGA therefore covers: (i) the transfer of the contributions raised by the national resolution authorities to the national compartments; (ii) the progressive mutualisation of the funds available in the national compartments; (iii) the order by which financial resources are mobilised to fund resolution from the compartments and other sources; (iv) the replenishment of the compartments if needed; and (v) temporary lending among national compartments, if needed. In addition, the IGA restates the bail-in conditionality in order to use the SRF as set out by the SRM Regulation.

It also includes provisions concerning the possible participation of the non-euro area Member States in the SRM, as well as a commitment of the participating Member States to reimburse the Member States that are not participating in SSM/SRM if there is any use of the general budget of the Union because of the SRM.[24]

For eight years, the banks will contribute to reach the target size of the SRF, which is set at 1% of the covered deposits of all banks in Member States participating in the Banking Union. The precise amount that an individual bank must contribute is determined by a Commission delegated act, adopted 21 October 2014, and a Council implementing regulation, adopted 19 December 2014.

The Commission delegated act specifies detailed rules for how to calculate the contributions of banks to the resolution funds established under the Bank Recovery and Resolution Directive (BRRD). The individual contribution will be based on: (i) a flat contribution, which is based on the relative size of an institution's liabilities (excluding own funds and covered deposits); and (ii) a risk-adjustment, in accordance with the relative risk posed by each institution and the importance of the institution to the financial system or economy of Member States, while taking into account the principle of proportionality. For the risk-adjustment, the delegated act includes a number of risk indicators against which the risk level of each institution will be assessed.[25]

Under the SRM Regulation, the SRB is required to calculate each year the individual contributions to the SRF by applying the method in the Commission delegated act and the specifications provided for in the Council implementing act. The establishment of the SRF will entail a shift from a national to a European target level for the resolution fund, which has the implication that Member States' banking sectors will annually contribute more or less to the SRF than they did to the national resolution fund under the BRRD in 2015. In order to prevent abrupt changes, the Council implementing regulation provides for an adjustment mechanism to mitigate these effects during the transitional period. This is accomplished by way of a non-linear phasing-in of the contributions calculated on the basis of a single target level and a non-linear phasing-out of the contributions calculated on the basis of national target levels in accordance the BRRD, as follows:

Table 1
Title

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
BRRD fee	60	40	33.3	26.7	20	13.3	6.7	0
SRM fee	40	60	66.7	73.3	80	86.7	93.3	100

24 The IGA was signed by all Member States, except the UK and Sweden, on 21 May 2014. The ratification of the IGA by national parliaments is expected to be completed during 2015, given that the delegated act for the bank contributions to the national resolution funds under the Bank Recovery and Resolution Directive and the implementing regulation for the bank contributions to the SRF under the SRM Regulation have both been adopted.

25 The delegated act applies the principle of proportionality by providing for a special lump-sum regime for small banks, i.e. they will not pay risk-adjusted fees but lump-sum fees depending on their size. For the initial eight-year period, banks that do not qualify as small banks but have total assets equal to or less than €3 billion would have to contribute a lump sum of €50,000 for the first €300 million of their BRRD liability base, whilst contributing according to the risk-adjusted method for the BRRD liability base above the €300m threshold.

During the initial period, under normal circumstances, the SRB shall allow the use of irrevocable payment commitments upon request from an institution. The use of irrevocable payment commitments should be allocated evenly among those institutions requesting it. The allocated irrevocable payment commitments shall not be less than 15 % of the total payment obligations of the institution. Also, when calculating the annual contributions of each institution, the SRB shall ensure that, in any given year, the sum of those irrevocable payment commitments does not exceed 30% of the total amount of annual contributions raised for the SRF. However, recourse to irrevocable payment commitments should in no manner affect the financial capacity and the liquidity of the SRF. These payment commitments should be fully backed by collateral in the form of low-risk assets unencumbered by any third-party rights, at the free disposal of and earmarked for the exclusive use by the SRB for the purposes of the SRF.

Ensuring effective and sufficient financing of the SRF is of paramount importance to the credibility of the SRM. Given that there may arise situations in which the SRF lacks sufficient means and the ex post contributions to be raised in order to cover the necessary additional amounts are not immediately accessible, the ways and means for handling such situations need to be developed.

The SRM Regulation specifies that the capacity of the SRB to contract alternative funding means for the SRF should be enhanced in a manner that optimises the cost of funding and preserves the reputation of the SRF. The SRB shall take the necessary steps in cooperation with the participating Member States to develop the appropriate methods and modalities permitting the enhancement of the borrowing capacity of the SRF, to be in place when the SRF is established. Concrete and meaningful steps are needed this year to make progress in this field.

Further, a common backstop to the SRF will be developed before the end of the transitional period of the SRF. Such a backstop will also facilitate borrowings by the SRF. Meanwhile, in order to ensure continuous sufficient financing during the transitional period, the IGA specifies that the Member States concerned by a particular resolution action should provide bridge financing from national sources or, if needed, the European Stability Mechanism (“ESM”) in line with agreed procedures. Non-euro area Member States participating in the Banking Union concerned by a particular resolution action should provide bridge financing from national sources. Alternatively, if needed, they will have access to the EU’s medium-term facility for Balance of Payment (BoP) assistance, provided that the existing eligibility criteria are met. The economic policy conditionality attached to macroeconomic adjustment programmes under the BoP facility will be expected to properly reflect the key vulnerabilities of the beneficiary Member State. This is true of Member States regardless of whether or not they participate in the Banking Union. Member States participating in the Banking Union will ensure that the Member States not participating in the Banking Union will not bear any additional costs that could be specifically derived from the participation of EU Member States in the Banking Union, including those not in the euro area receiving BoP assistance. Overall,

these arrangements in the transition period will ensure equivalent treatment across Member States participating in the Banking Union and respect a level playing field with non-participating Member States.

2.3 Cooperation between the SSM and the SRM

The cooperation within the Banking Union is a key priority. Accordingly, the EU crisis management framework creates a duty to cooperate between supervisory and resolution authorities for the performance of their respective tasks. In that respect, the interaction between the SSM (ECB/NCAs) on one hand and the SRM (SRB/NRAs) on the other is structured around three main pillars: complementary institutional role, mutual cooperation, strong coordination.

From an institutional perspective, it is worth noting that supervision and resolution are two building blocks of Banking Union whose application at the same level is regarded as mutually dependent. In this regard, the SRM is imbricated to the process of harmonization in the field of prudential supervision, brought about by the establishment of the EBA, the single rule book on prudential supervision, and, in the participating Member States, the establishment of a SSM to which the application of Union prudential supervision rules is entrusted.

To operationalize the complementary role, the SSM and the SRM will need to cooperate closely in order to ensure that the overall supervisory and resolution framework and the possible overlaps are effectively managed. On one hand, the SSM as a competent authority is required to cooperate closely with the SRM in view of recovery planning, implementation of early intervention measures and assessment of failing or likely to fail. On the other hand, the SRM should cooperate with the SSM in the performance of its tasks relating to resolution planning, and assessment of resolvability as well as implementation of resolution measures. Such cooperation requirements consist namely of information providing obligations and also of a consultative role as well as agreement seeking.

For the purposes of the cooperation to be achieved, a smooth coordination between both mechanisms is needed. In this respect, the ECB has designated the Vice-Chair of the Supervisory Board, Sabine Lautenschläger, to be the permanent observer in the meetings of executive sessions and plenary sessions of the SRB. The representatives of the ECB shall be entitled to participate in the debates and shall have access to all documents. In the same vein, the ECB may invite the Chair of the SRB to participate as an observer in the Supervisory Board of the ECB.

Prior to the SRB becoming operational, the ECB and the Task Force for the preparation of the SRB (TF/SRB) have been cooperating, in particular in view of leveraging on the ECB experience in operationalising the SSM. In this respect, the ECB has already started cooperation with the SRB on a number of issues (including information sharing for the determination of institutions under the direct authority of the SRB) and participates in the Working Groups created for the preparation of the SRB work.

2.4 Deposit Guarantee Schemes

A remaining element of the Banking Union would be the establishment of a common single deposit guarantee fund. A first step was taken in this direction with the entering into force of the Directive on Deposit Guarantee Schemes (DGSD) in July 2014, which is to be transposed by Member States into national law by July 2015. The DGSD ensures that deposits in all Member States continue to be guaranteed in the amount of €100,000 per depositor and bank, with higher coverage for deposits related to certain transactions (e.g. real estate transactions and payment of insurance benefits). The DGSD also ensures faster payouts by establishing specific repayment deadlines that will gradually shorten from 20 to 7 working days by 2023. For the period until 2023, if the DGS cannot make the repayment amounts available within 7 working days, a mechanism must be put in place that gives depositors access to an amount sufficient to cover cost-of-living expenditures. With the introduction of harmonised depositor preference in insolvency and resolution, covered depositors will be preferred over all other unsecured creditors, thereby also protecting the DGS where it is subrogated to depositors' claims.

The DGSD stipulates new thresholds for the financing of the DGS, notably by requiring a significant level of ex ante funding (0.8% of covered deposits) to be built up by 2024 at the latest. A maximum of 30% of the funding could be made up of payment commitments. Where justified, a target level of 0.5% of covered deposits may be permissible for highly concentrated banking systems. Regular risk-based contributions from the DGS members should be set at a level taking into account the business cycle and potential procyclical effects.

In case of insufficient ex ante funds, the DGS must collect ex post contributions from the banking sector. Such extraordinary contributions should not exceed 0.5% of covered deposits per year, unless exceptional circumstances are present. As a last resort, the DGS may have access to alternative funding arrangements, such as loans from public or private third parties. The DGSD also establishes a voluntary mechanism of mutual borrowing between DGSs from different EU countries.

3 The EU macro-prudential framework

3.1 Setting up macro-prudential supervision in the EU

The global financial crisis revealed shortcomings in the functioning of the internal market and laid bare deficiencies in the regulatory and supervisory framework in some parts of the European Union (EU). In addition, the crisis also showed how risks were allowed to build up because of the lack of an appropriate macro-prudential oversight, including with respect to the inter-linkages between broader macroeconomic developments and the financial system. A High Level Group, chaired by Mr Jacques de Larosière and created to frame the EU response to the global financial crisis, concluded, among other things, that supervisory arrangements should not only concentrate on the supervision of individual firms but also place emphasis on the stability of the financial system as whole.[26] Building on the recommendations

26 Report by the High Level Group on Financial Supervision in the EU (2009).

of the de Larosière Report, a first step in the creation of the European macro-prudential framework was taken with the creation of the European Systemic Risk Board (ESRB).[27] The task of providing analytical, statistical, administrative and logistical support to the ESRB was conferred upon the European Central Bank (ECB).[28]

Since then, the European macro-prudential framework has developed further. EU legislation commonly referred to as the Capital Requirements Directive (CRD IV)[29] and the Capital Requirements Regulation (CRR),[30] containing stronger prudential requirements, has introduced a range of macro-prudential tools that are available to all national designated authorities. In addition, with the adoption of the regulation establishing the Single Supervisory Mechanism (SSM),[31] to complement the ECB's micro-prudential responsibilities, the central bank has also been given direct macro-prudential powers for banking sectors in the SSM countries, which it shares with the national designated authorities.

Taken together, the introduction of a macro-prudential toolkit, the establishment of the SSM and the Single Resolution Mechanism (SRM) have significantly strengthened prudential and crisis-management capabilities at the EU level.

3.2 The EU macro-prudential toolkit

Hand-in-hand with institutional developments, EU legislation has introduced a broad set of macro-prudential policy instruments, which are available to macro- and micro-prudential supervisors. Macro-prudential tools for credit institutions and investment firms in the EU are governed by the CRD IV and the CRR, which transposed new global regulatory standards agreed by the Basel Committee (so-called Basel III), and entered into force from the beginning of 2014.

The CRD IV introduces several capital buffers to address potential systemic risks. The countercyclical capital buffer (CCB) is designed to increase resilience and mitigate pro-cyclicality in the banking sector by building-up capital buffers in the upturn and supporting the sustainable provision of credit to the economy during a downturn. The systemic risk buffer (SRB) can be used to prevent and mitigate a broad range of structural systemic risks, subject to coordination requirements that depend on the buffer level. The global systemically important institutions (G-SII)

27 Regulation (EU) No 1092/2010 of the European Parliament and of the Council of 24/11/2010 on European Union macro-prudential oversight of the financial system and establishing a European Systemic Risk Board.

28 Council Regulation (EU) No 1096/2010 of 17/11/2010 conferring specific tasks upon the European Central Bank concerning the functioning of the European Systemic Risk Board.

29 Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC, OJ L 176, 27.6.2013, p. 338.

30 Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012, OJ L 176, 27.6.2013, p. 1.

31 Council Regulation (EU) No 1024/2013 of 15 October 2013 conferring specific tasks on the European Central Bank concerning policies relating to the prudential supervision of credit institutions.

buffer is a mandatory capital buffer for banks identified as systemically important at the global level. In a similar manner, the other systemically important institutions (O-SII) buffer enables authorities to impose capital charges on domestically important institutions. The CCB application becomes mandatory from 2016 (although the buffer rate could be set at 0%); G-SII and O-SII buffers also apply from 2016. In addition, the CRD IV provides for the possibility of using Pillar 2 measures for macro-prudential purposes, e.g. in cases where a specific bank or a set of banks with similar risk profiles are contributing to systemic risks.

Complementing the buffer framework, the CRR includes, in Article 458, a selection of "national flexibility measures" which allow national authorities to impose stricter prudential requirements in specific areas to address systemic risks. The list of possible measures include the level of own funds, large exposure limits, public disclosure requirements, the level of the capital conservation buffer, liquidity requirements, risk weights for the residential and commercial property sectors, and measures for intra-financial sector exposures. The use of these instruments is subject to detailed criteria, and notification or approval processes. Additionally, the CRR provides some instruments related to real estate exposures, including risk weights.

Finally, the CRR empowers the European Commission to impose stricter prudential requirements to address risks affecting all Member States.

This framework has introduced a wide range of tools that are available for use by the designated macro-prudential authorities to address various systemic risks. It provides a basis for the implementation of macro-prudential policy measures in the EU, while at the same time respecting the European single rulebook and harmonised micro-prudential requirements.

3.3 Interplay between the ECB, the national authorities and the SSM

According to the SSM Regulation, the ECB may, if deemed necessary, take macro-prudential actions concerning credit institutions established in participating member states. The ECB can set higher requirements for capital buffers than applied by national designated authorities and apply more stringent measures specified in EU law aimed at addressing systemic or macro-prudential risks.

In order to ensure a level playing field, and preserve the single market, measures taken by the ECB or national authorities are subject to a cooperation requirement and coordination procedure, specified in the SSM regulation. Specifically, national authorities are required to notify the ECB before taking a decision to apply macro-prudential measures and have to duly consider the ECB opinion, to be provided within a given timeframe. Comparable requirements also apply when the ECB on its own initiative applies tighter measures than set by national authorities. The SSM Framework Regulation[32] provides further details on cooperation and information

32 Regulation of the ECB of 16 April 2014 establishing the framework for cooperation within the Single Supervisory Mechanism between the ECB and national competent authorities and with national designated authorities (SSM Framework Regulation) (ECB/2014/17), OJ L 141, 14.5.2014, p. 51.

exchange between the ECB and national authorities.

Such arrangement provides several benefits from the EU financial integration perspective, as it helps to overcome potential inaction bias and ensure that warranted policy actions are carried out. The design of the ECB risk analysis and decision-making processes also reflects the importance of the coordination between the ECB and national designated authorities. The Governing Council is the decision-making body on macro-prudential policy action, as provided for in the SSM regulation. In addition, regular joint meetings of the Governing Council will be held with the Supervisory Board of the SSM to assess the financial stability situation in the euro area and in individual member countries.

3.4 The work of the ESRB

The ESRB is the relevant EU-wide body in macro-prudential matters. Its objective is to contribute to the prevention and mitigation of systemic risks to financial stability and ensure the smooth functioning of the entire financial system. It provides a forum for central banks, policymakers and supervisors to discuss systemic risks, both in individual countries and at the EU level, and desirable actions to address these risks. Reflecting its broad focus and wide-ranging membership, the ESRB is not endowed with decision-making powers, but with soft policy tools, i.e. the ability to issue warnings where systemic risks are deemed to be significant and powers to recommend remedial action in response to the risks identified.

The ESRB's activities have been focused on building and maintaining a coherent EU-wide system of national macro-prudential frameworks. To this end, the ESRB has issued recommendations to clearly define the macro-prudential mandate of national authorities[33] and intermediate financial stability objectives, and also to make available a set of macro-prudential instruments for each intermediate objective.[34]

3.5 Cross-border integration and coordination

The use of macro-prudential measures at the level of individual Member States is, in general, likely to have implications for financial stability and financial integration in the EU. On the one hand, when applying measures to mitigate systemic risks in a specific Member State, authorities also limit the likelihood of risks spreading to other countries. Thus, the use of appropriate macro-prudential policies to contain risks and smooth individual financial cycles helps to support financial stability and financial sector integration in the EU as whole.

On the other hand, given the interconnectedness of banking systems in the EU, individual policy measures without appropriate coordination can result in sub-optimal

33 Recommendation of the ESRB of 22 December 2011 on the macro-prudential mandate of national authorities (ESRB/2011/3), OJ 2012/C 41/01.

34 Recommendation of the ESRB of 4 April 2013 on intermediate objectives and instruments of macro-prudential policy (ESRB/2013/1), OJ 2013/C 170/01.

transmission of policy effects and a risk of regulatory leakage. An obvious example is a case where macro-prudential decisions target only banks within one jurisdiction and do not account for cross-border credit provision. Furthermore, in some cases, individual measures could have undesired cross-border spillover effects. To avoid these side effects and to ensure the full effectiveness of policy measures, it is important to apply measures in a coordinated way and to mitigate potential negative spillover effects.

The EU macro-prudential framework addresses these considerations. First, the CRD introduces mandatory reciprocity for certain instruments, e.g. for a countercyclical buffer rate up to 2.5%. In line with the Basel framework, this contributes to a level playing field between domestic and foreign banks by ensuring that the measure applies to all exposures in a given country regardless of the country of origin of the bank. The reciprocity is mostly voluntary for other instruments, but in some cases Member States may ask the ESRB to issue a recommendation to one or more Member States which do not recognise the measures.

Second, to ensure a coordinated approach for national macro-prudential measures, the CRD IV/CRR impose several requirements that have to be met before the use of certain instruments (e.g. Article 458 CRR indicates that a measure may only be used if the macro-prudential authority can establish that the measure is necessary, effective and proportionate. It also has to be shown that other available measures cannot adequately address the systemic risk). Although experience in the use of these arrangements is so far limited, there are indications that there may be scope to reduce the complexity of these procedures and streamline them.

3.6 Way forward

Admittedly, the use of macro-prudential instruments in the EU is still in the early stages, and improving both the toolkit and decision-making framework remains an ongoing process. To this end, the European Commission has already carried out a review of the European System of Financial Supervision (ESFS) and initiated, in consultation with the European Banking Authority (EBA) and the ESRB, a review of the macro-prudential framework provided by the CRD IV and CRR.

Chapter 3
Eurosystem activities for financial integration

The Eurosystem distinguishes between four types of activity through which it contributes to the enhancement of financial integration: (i) advising on the legislative and regulatory framework for the financial system and direct rule-making; (ii) acting as a catalyst for private sector activities by facilitating collective action; (iii) enhancing knowledge, raising awareness and monitoring the state of European financial integration; and (iv) providing central bank services that also foster European financial integration. The following sections provide an overview of the Eurosystem's contributions in these areas, focusing on the initiatives pursued during 2014.

1 Advising on the legislative and regulatory framework for the financial system

While the Eurosystem considers financial integration to be first and foremost a market-driven process, the legislative and regulatory framework for the financial system clearly plays an important facilitating role. A harmonised EU legislative and regulatory framework removes national barriers to financial integration, supports cross-border access and competition, and fosters cross-border financial transactions.

Against this background and in line with their advisory and regulatory functions,[35] the ECB and the Eurosystem monitor and actively contribute to the development of the EU legislative and regulatory framework.

More specifically, the ECB and the Eurosystem provide input for strategic policy deliberations, such as on the overall EU financial services policy or on the further development of the EU framework for financial regulation and supervision. Examples of such input are the publication of Eurosystem position papers on the websites of the ECB and NCBs, and informal discussions with the regulatory and supervisory committees. Furthermore, the ECB and the Eurosystem provide both formal opinions and informal input for EU and national legislation in the area of financial services. The ECB may also contribute to ex post evaluation of regulatory measures.

35 According to the Treaty and the Protocol on the Statute of the European System of Central Banks and of the European Central Bank, the ECB must be consulted, within its field of competence, on any proposed Union act or any draft legislative provision proposed by national authorities. Such proposed Union acts include implementing and delegated acts adopted by the Commission on the basis of Articles 290 and 291 of the Treaty, and also in cases where they endorse technical standards developed by the European Supervisory Authorities in accordance with the relevant Union legislation. Furthermore, the ECB has the right to issue regulations in certain areas, for example in the field of payment systems and statistics.

EU supervisory arrangements

The EU largely completed implementation of the main G20 commitments over the course of 2014. This includes the implementation of the Basel III framework through the Capital Requirements Directive and Regulation (CRD IV/CRR), applicable since 1 January 2014, which will deliver a stable and transparent banking sector working for the interests of the real economy. The EU has also implemented the OTC derivatives recommendations through the European Market Infrastructure Regulation (EMIR) and the revision of the Markets in Financial Instruments Directive and Regulation (MIFID/MIFIR). The Deposit Guarantee Scheme Directive (DGSD) and the new framework for the recovery and resolution of banks (in line with the Financial Stability Board *Key Attributes*), the so-called EU Banking Recovery and Resolution Directive (BRRD), and the Single Resolution Mechanism (SRM), all entered into force in 2014. At the end of January 2014, the European Commission put forward a proposal for a regulation on banking structural reform[36] (BSR Regulation) to address remaining risks posed by "too-big-to-fail" banks, and a proposal for a regulation on enhancing the transparency of securities financing transactions (SFT Regulation), which will implement some of the G20-FSB shadow banking system recommendations.

EU legal framework for retail payments

Integration initiatives on the retail payments market and especially the realisation of the Single Euro Payments Area (SEPA) have relied on a harmonised EU legal framework. This is constituted by a series of EU legal acts, among which Regulation (EU) 260/2012 that established the end dates for migration to the common SEPA standards for credit transfers and direct debits in euro (so-called SEPA migration end-date regulation).[37] The EU legislators amended the Regulation in early February 2014 to introduce a "grace period" allowing payment service providers to continue processing payment transactions in national formats until 1 August 2014, extending the original deadline of 1 February 2014 for migration in the euro area.[38]

In force since 2007, the Payment Services Directive (PSD)[39] is currently being reviewed in order to take account of changes in the market as regards competing players, business models, technologies, users' habits and needs. An agreement on the new text was reached at the European Council level (General Approach) during the Coreper meeting at the beginning of December 2014. The review of the PSD was undertaken together with the proposal for a Regulation on the interchange fees

36 ECB Opinion published on 21 November: http://www.ecb.europa.eu/ecb/legal/pdf/en_con_2014_83_f_sign.pdf

37 Regulation (EU) No 260/2012 of the European Parliament and of the Council of 14 March 2012 establishing technical and business requirements for credit transfers and direct debits in euro and amending Regulation (EC) No 924/2009, OJ L 92, 30.03.2012, pp. 22-37.

38 Regulation (EU) No 248/2014 of the European Parliament and of the Council of 26 February 2014 amending Regulation (EU) No 260/2012 as regards the migration to Union-wide credit transfers and direct debits, OJ L 84, 20.3.2014, p. 1–3.

39 Directive 2007/64/EC of the European Parliament and of the Council of 13 November 2007 on payment services in the internal market, amending Directives 97/7/EC, 2002/65/EC, 2005/60/EC and 2006/48/EC and repealing Directive 97/5/EC, OJ L 319, 5.12.2007, p. 1-36.

for card-based payment transactions, on which the European Parliament and the Council reached a political agreement in mid-December, confirmed by the European Parliament's adoption, 10 March 2015. In 2014, another important legal act was adopted, i.e. a directive on the transparency and comparability of payment account fees, payment account switching, and access to a basic payment account (the Payment Account Directive, or PAD).[40] In the same year, the European Commission undertook preparatory works for the review of the E-Money Directive (2009/110/EC),[41] starting with a legal and economic impact study, to which the ECB contributed in to the area of payment statistics.

Review of the regulatory framework for payment statistics

Data published until 9 September 2014 were collected according to Guideline ECB/2007/9 of 1 August 2007 on monetary, financial institutions and markets statistics.[42] As from 2015, for data covering 2014, a new methodology is being implemented on the basis of the revised Guideline[43] and a new ECB Regulation.[44] The new methodology aims at increased data quality and reliability, consistency and harmonisation across countries. It takes account of the changes brought about by the implementation of the SEPA and the relevant European legislation.

EU legal framework for central securities depositories

The Regulation "on improving securities settlement in the European Union and on central securities depositories (CSDs)" (also referred to as Central Securities Depository Regulation, or CSDR) was adopted by the European Parliament and Council of the EU in April and July 2014 respectively and entered into force on 17 September 2014. The CSDR harmonises timing and discipline of securities settlement in the EU and creates, for the first time at the European level, a common authorisation, supervision and regulatory framework for CSDs.

The CSDR mandates ESMA and EBA to draft regulatory technical standards in close cooperation with the members of the ESCB, and to submit them to the Commission by 18 June 2015. They are expected to enter into force by early 2016. EU CSDs will then have six months to apply for (re)authorisation under the CSDR.

40 Directive 2014/92/EU of the European Parliament and of the Council of 23 July 2014 on the comparability of fees related to payment accounts, payment account switching and access to payment accounts with basic features, OJ L 257, 28.8.2014, pp. 214-246.

41 Directive 2009/110/EC of the European Parliament and of the Council of 16 September 2009 on the taking up, pursuit and prudential supervision of the business of electronic money institutions, amending Directives 2005/60/EC and 2006/48/EC and repealing Directive 2000/46/EC, OJ L 267, 10.10.2009, p. 7-17.

42 OJ L 341, 27.12.2007, p. 1.

43 Guideline of the ECB of 4 April 2014 on monetary and financial statistics (recast) (ECB/2014/15).

44 Regulation (EU) No 1409/2013 of the European Central Bank of 28 November 2013 on payments statistics (ECB/2013/43), OJ L 352, 24.12.2013, pp. 18-44. NCBs of Member States whose currency is not the euro should apply the new legal framework, based on a Recommendation (ECB/2013/44), OJ C5, 9.1.2014, p.1.

The requirement with respect to shorter settlement cycles (T+2) entered into force on 1 January 2015. The majority of EU markets had already implemented the T+2 settlement requirement successfully on 6 October 2014.

The forthcoming EU legislation for recovery and resolution of financial market infrastructures

The final CPMI-IOSCO[45] and FSB[46] guidance on FMIs' recovery and resolution, respectively, was published in October 2014. The regulatory frameworks are expected to be built or adapted in accordance with this guidance. The European Commission had already initiated work on a recovery and resolution framework for financial institutions other than banks by launching a public consultation earlier. In consideration of the final CPMI-IOSCO guidance, the continuation of the EU regulatory work is foreseen. The ECB strongly supports developing effective recovery and resolution frameworks for FMIs, at the same time emphasising the importance of central banks' involvement throughout the EU legislative process.

EU legal framework for OTC Derivatives, Central Counterparties and Trade Repositories

The Regulation on OTC derivatives, central counterparties and trade repositories (also referred to as the European Market Infrastructure Regulation, or EMIR) entered into force in August 2012, and the respective regulatory technical standards in March 2013. The first central counterparty (CCP) to offer services and activities in the EU was authorised by its national competent authorities in March 2014, and by 12 December 2014, 15 EU CCPs had received authorisation. In its role as central bank of issue, the Eurosystem is represented in CCP colleges of authorities for all EU CCPs with major euro-denominated business. The ECB (SSM) and NCBs participate in CCP colleges in respect of the supervisory or oversight functions they carry out as national competent authorities for NCBs.

The authorisation of the first CCP also triggered the first notification for the clearing obligations, (i.e. as stated under Article 4 of EMIR). In October 2014, ESMA published final draft regulatory technical standards (RTS) for the central clearing of interest rate OTC derivatives to be endorsed by the European Commission. Upon entry into force of the RTS, the mandatory clearing obligation for these products will be phased in according to a timetable. Clearing members will, for example, start central clearing six months – and financial counterparties, 12 months – after the date of entry into force of the RTS.

As regards the recognition procedure for CCPs established outside the EU (so-called third country recognition under EMIR), in August 2014, ESMA updated its list of CCPs established in non-EEA countries that have applied for recognition.

45 http://www.bis.org/cpmi/publ/d121.htm

46 http://www.financialstabilityboard.org/publications/r_141015.htm

This recognition is a requirement for any EU clearing member wishing to use non-EU CCPs and to benefit from own-fund requirements under the CRDIV/CRR. Pending recognition, these CCPs can continue to provide services to EU clearing members already active at those CCPs. A precondition for recognition in accordance with EMIR is the equivalence decisions of the European Commission on third-country regulatory and enforcement regimes. In October 2014, the European Commission adopted its first equivalence decisions for the regulatory regimes of CCPs in Australia, Hong Kong, Japan and Singapore.

Trade repositories (TRs) centrally collect and maintain the records of derivatives and play a central role in enhancing the transparency of derivatives markets. There are currently six TRs authorised by ESMA under EMIR. The reporting start date for each asset class for which a TR was registered was set at 12 February 2014.

CPMI and IOSCO have conducted a detailed evaluation and a peer-review assessment (level 2 assessment) regarding whether the measures adopted in the EU, Japan and the US are complete and consistent with the Principles for financial market infrastructures (PFMIs) with respect to CCPs and TRs. The assessment concluded that EMIR and related technical standards are consistent or broadly consistent with a majority of the Principle. In some instances are more demanding, in particular in relation to financial risk aspects.[47] Supervision and oversight policies should ensure a fully consistent and complete implementation of the PFMIs.

The European Commission will carry out a review of the EMIR framework in 2015. Among other things, a more harmonised reporting to trade repositories in order to increase data quality and facilitate aggregation across TRs could be considered. Furthermore, changes in the supervisory landscape with respect to supervision of credit institutions may need to be reflected in EMIR. The Eurosystem expects to contribute to this review.

Development of an international reference data utility

The Global LEI System (GLEIS) has the objective of providing unique identification, a Legal Entity Identifier (LEI) of parties to financial transactions across the globe, to support multiple financial stability objectives, including the provision of improved risk management for financial institutions and better assessment of micro and macro prudential risks by the regulators. The establishment of the GLEIS also promotes market integration and supports higher quality and accuracy of financial data overall. And it will also reduce financial industry costs for internal reporting and risk management, and for collecting, cleaning, aggregating, and reporting data to regulators. Meanwhile, industry associations such as the Global Financial Market

47 www.bis.org/cpmi/publ/d128.pdf

Association (GFMA) demand that authorities mandate the use of the LEI to ensure its coverage reaches the critical mass that will unlock the value it offers while creating a level playing field[48].

In pursuing these objectives, the FSB Plenary in its capacity as Founder of the Global Legal Entity Identifier Foundation (GLEIF), approved in 2014 the creation of the GLEIF as a Swiss not-for-profit Foundation. The Regulatory Oversight Committee (ROC, www.leiroc.org) has played a very active role in the preparatory work to establish the Foundation and will now take on the responsibility of overseeing the GLEIF in the public interest. The FSB Plenary also endorsed the appointment of the inaugural Board of Directors of the GLEIF in line with the statutes of the GLEIF. The establishment of the GLEIF marks the completion of the establishment of the three-tier structure for the GLEIS as endorsed by FSB and the G-20 in June 2012.

Following its establishment, the Foundation, whose offices will be based in Frankfurt, has begun to take on full operational management of the Global LEI System. Under an interim system established by the ROC in 2013, 21 endorsed "pre-Local Operating Units" (pre-LOU) have assigned almost 350,000 "pre-LEI" codes to entities from nearly 190 countries, which can be used globally for regulatory reporting. And ten other pre-LOUs have been granted prefixes to support planning and development, in advance of launching operational platforms. It is expected that the transition to full GLEIF management will be completed in 2015 through the recruitment of the initial staff complement of 20+, and the finalisation of the Master Agreement that will bind LOUs into what can be likened to a global operating franchise. The GLEIF launched its website in January 2015 (www.gleif.org).

With regards to the regulatory adoption of the use of the LEI, in addition to its use for derivatives reporting in a number of countries, authorities are extending reporting requirements for the LEI, still for specific uses, to the banking sector, issuance, investment holdings for insurance and funds, and other uses; mandating so far remains fairly narrow and short of industry expectations. A list of rules, active or proposed, mandating the use of the LEI can be found on the GLEIF website (http://www.gleif.org/en/events-and-media/rulemaking).

The ROC currently develops relationship data, which will link existing LEIs, a core mission of the GLEIS. The initial pilot implementation will be on accounting relationships (immediate and ultimate parent), which will help understand group structures. Success of relationship data will require adequate coverage of entity identification through the LEI.

48 See letter from 7 Aug 2014 to the Financial Times entitled "Regulators must mandate use of the Global LEI System", signed by Ken Bentsen, CEO of the Global Financial Market Association, closing with the sentence: "…*the Financial Stability Board should urge regulators and policy makers across the globe to prioritise the use of LEIs as part of their toolkit for promoting financial stability. It's time to take this common sense effort across the finish line.*" (http://www.ft.com/intl/cms/s/0/e9a81566-167d-11e4-8210-00144feabdc0.html#ixzz3FXg33wGH)

2 Catalyst for private sector activities

While public authorities are responsible for providing an adequate framework conducive to financial integration, progress on European financial integration ultimately depends on private sector initiatives making full use of cross-border business opportunities. Competition among market players is a major driving force in this regard. In addition, progress made in the field of financial integration also depends on effective collective action, notably where heterogeneous market practices and standards need to be overcome. However, possible coordination problems may hamper such cooperative approaches among market participants. In such cases, public sector support for private sector coordination efforts may help to overcome possible difficulties.

Given its institutional characteristics, the Eurosystem is particularly well placed to play an active role as a catalyst for private sector activities in the field of European financial integration. The ECB is both a public authority with a pan-European remit and, in its capacity as the central bank of the euro area, an active market participant, with knowledge of and business contacts in the financial markets. Over the past few years, the ECB has acted as a catalyst in many fields.

In 2014 the catalytic activities of the ECB and the Eurosystem focused mainly on the following initiatives.

Retail Payments initiatives

SEPA exemplifies how integration can be successfully pursued despite the heterogeneity of starting points, as was the case with national retail payments markets in Europe regarding not only instruments and infrastructures, but also users' payment habits. The Single Euro Payments Area comprises the 28 EU Member States, plus Iceland, Norway, Liechtenstein, Monaco, Switzerland and San Marino. A major milestone was reached on 1 August 2014 when euro area countries finished the migration of their credit transfer and direct debit payments to common pan-European standards. The completion of this first phase of the migration does not mean that SEPA migration is fully achieved. First, national communities which used, in accordance with the provisions of Regulation (EU) 260/2012, waivers for their "niche products"[49] will have to comply with SEPA requirements before 1 February 2016. Second, non-euro area (EEA) SEPA countries have until 31 October 2016 to complete the migration process for their euro credit transfer and euro direct debit payments.

Already as of 1 February 2014, national standards for credit transfers and direct debits should have been dismissed and replaced according to the SEPA migration end-date regulation. However, in December 2013, the indicators calculated by the Eurosystem showed that SEPA credit transfers accounted for 73.8% of all credit transfers in the euro area, while SEPA direct debits represented 41.0%

49 Niche products are "credit transfer or direct debit transactions with a cumulative market share, based on the official payment statistics published annually by the ECB, of less than 10 % of the total number of credit transfers or direct debit transactions respectively".

(see Chart 37 in Chapter I). This delay in migration prompted the European Commission to grant a grace period of six months, during which payment services providers could continue accepting payments in the national formats (see Section 1). In order to support migration, the Eurosystem continued monitoring the process[50] and remained in close dialogue with the market players at the national and European levels.

The harmonisation and integration achieved for credit transfers and direct debits allowed the Eurosystem to focus on the third SEPA retail payment instrument, payment cards. In April 2014 the ECB published a comprehensive report on SEPA for cards,[51] conveying the continued expectation of "any card at any terminal". It called for renewed and reinforced efforts to harmonise the principles, business practices, rules, functional and security requirements aimed at standardising cards, payment terminals – including evaluation and certification processes – and message protocols. While supporting market-led initiatives, the ECB welcomed the legislative work on card market principles, business practices and rules, and, most crucially, interchange fees (see Section 1). This work is expected to greatly contribute to achieving the ECB's goal of a harmonised, competitive and innovative European card payments area.

Together, the three SEPA payment instruments (credit transfers, direct debits and cards) lay the foundation for innovations to develop. Against the background of growing demand for fast and user-friendly retail payment solutions from consumers, merchants and corporates, the ECB has analysed the relevant developments at the European and global levels. So-called instant payments have started to emerge in response to users' expectation not only that payers receive immediate payment confirmation, but also that payees have funds immediately credited on their accounts for further use.[52] However, no Europe-wide solution for instant payments denominated in euro is yet available. Acknowledging that instant payments provide a social good, the ECB's vision is that at least one solution with those features should become available to end-users, leveraging the integration already achieved, especially with the SEPA project.[53] Moreover, it is expected that instant payments may be initiated through several channels and/or devices, typically online and mobile. In fact, instant payments are currently often associated with person-to-person payments initiated with mobile devices connected to the internet (e.g. smartphones), but there is room for other kinds of payment to develop. Efforts to deliver safe and efficient instant payment and mobile payment solutions will hence be mutually reinforcing.

50 SCT and SDD migration indicators were calculated until August 2014 inclusive and are published on the ECB website.

51 ECB (2014), *Card payments in Europe – a renewed focus on SEPA for cards*, April.

52 "Instant payments" are defined as electronic retail payment solutions available 24/7/365 and resulting in the immediate or close-to-immediate interbank clearing of the transaction and crediting of the payee's account with confirmation to the payer (within seconds of payment initiation). This is irrespective of the underlying payment instrument used (credit transfer, direct debit or payment card) and of the underlying arrangements for clearing (whether bilateral interbank clearing or clearing via infrastructures) and settlement (e.g. with guarantees or in real time) that make this possible.

53 Instant payment solutions can be described as consisting of three layers: a scheme layer, i.e. the interface for the end-user to initiate a transaction according to a set of standards and rules, and underlying interbank clearing and settlement layers. Progress on each layer may be facilitated by the SEPA achievements in terms of harmonised payment instruments and integrated clearing and settlement infrastructures.

The Eurosystem notes that dialogue among all of the stakeholders involved is crucial to promoting integration and preventing the fragmentation that the SEPA initiative aims to overcome from occurring in the field of payment innovations. The Euro Retail Payments Board (ERPB) plays a strategic role in this respect. Chaired by the ECB, the ERPB replaced the SEPA Council[54] as a high-level forum where both the supply and the demand side of the retail payments industry gather to address retail payments issues, with a wide mandate, large representation[55] and strong output-driven approach. The ERPB held its first two meetings in May and December 2014 and set out to foster completion of SEPA as well as innovation. In its first meeting, the ERPB discussed and agreed on its work plan, on its stance in regards to an alternative direct debit scheme, and the use of electronic mandates for direct debits. In its second meeting it addressed issues remaining generally with the SCT and SDD schemes after the full migration to these schemes in the euro area, and made recommendations to promote the pan-European use of electronic mandates for direct debits. It also discussed the state of play in card standards implementation and supported the ongoing work in this domain. In regards to innovation related to retail payments, the ERPB agreed on the need for at least one pan-European instant payment solution in euro and invited the supply side of the industry (in close cooperation with the demand side) to assess the relevant issues. The ERPB also agreed to set up two working groups on (i) person-to-person mobile payments, and (ii) mobile and card-based contactless proximity payments.

Security has been a key factor in the success of existing and new retail payment instruments and solutions. It is also an important factor from a European integration perspective, given that diverging approaches may quickly lead to a race to the bottom, which is especially unwanted when it comes to fraud. The European forum on the security of retail payments (SecuRe Pay) was set up with these two aspects in mind.[56] The latest outcome of the SecuRe Pay work was a draft set of recommendations for the security of mobile payments the ECB published in November 2013 for public consultation, as it had previously done with two other sets of recommendations, one on the security of internet payments[57] and another on the security of payment account access services.[58] Based on the PSD2 draft released in July 2013, which proposes that the European Banking Authority (EBA) cooperate closely with the ECB to provide guidelines in the field of security of payment services (authentication, incident management and secure communication), the two institutions announced in October 2014 the way forward regarding their joint work to increase retail payments security.[59] This will involve the ECB and EBA co-chairing SecuRe Pay, which will support the European System of Central Banks and the EBA

54 The SEPA Council was a stakeholder forum, co-chaired by the ECB and the European Commission, intended to promote an integrated euro retail payments market by ensuring the proper involvement of all parties and by fostering consensus on the next steps towards the realisation of SEPA.

55 Along with members from the supply and demand sides of the industry, the ERPB features the European Commission as an observer and National Central Banks as active participants.

56 The forum is a voluntary cooperative initiative between relevant European authorities, in particular supervisors of payment service providers and overseers. It aims to promote knowledge and understanding of issues related to the security of electronic retail payment services and instruments.

57 The final version, after public consultation, was published in January 2013.

58 The final version, following the public consultation, was published in May 2014.

59 http://www.ecb.europa.eu/press/pr/date/2014/html/pr141020.en.html.

in their decision-making processes. In practice, SecuRe Pay work will be used as a basis both for developing Eurosystem security-related standards for the oversight of payment systems and retail payment instruments, and for the EBA's regulatory and supervisory requirements for payment services. In this sense, the EBA made a first step and published in December 2014 guidelines for the security of internet payments, based on the work done by SecuRe Pay.

Retail payment integration and innovation also rest on supporting clearing and settlement infrastructures. Integration initiatives in this field have made progress. In June 2014 some members of the European Automated Clearing House Association (EACHA) announced plans to deliver centralised interoperability processing and clearing services for SEPA transactions, through the establishment of a shared service centre.

In August 2014, the ECB identified two retail payment systems – STEP2-T, operated by EBA CLEARING, and CORE (FR), operated by STET, a joint initiative of six major French banks – that are now under the new ECB Regulation on oversight requirements for systemically important payment systems (SIPS). The regulation covers large-value and retail payment systems in the euro area operated by both central banks and private entities. For the sake of consistency with international practice, and to take account of the increased integration of retail payment systems in SEPA, the Eurosystem has also begun a comprehensive review of the oversight standards for euro retail payment systems that are not SIPS.

In a wider perspective, common trends in retail payments have been identified at the global level. Within the Committee on Payments and Market Infrastructures (CPMI), the ECB and some ESCB central banks have contributed to analytical works on retail payments topics. In this context, the role of non-banks in retail payment services and the relevant implications were examined in a report issued in September 2014.[60] The payment aspects of financial inclusion are currently being studied by a joint task force of the CPMI and the World Bank; a report is expected in 2015.

Structured Finance Markets

The ECB acts as a catalyst in a number of initiatives related to this market segment with the goal of reviving the European structured finance market and recognising its role as a funding channel for issuers/originators. This in turn is intended to foster the provision of loans to the economy and, consequently, long-term economic growth throughout the euro area. In particular, the ECB supports the development of sound and high-quality products that could attract a wide array of investors from the private sector with a medium to long-term investment horizon. In this vein, the ECB has played a role in some initiatives related to asset-backed securities (ABSs) and covered bonds, recognising the importance of these markets in Europe. In general, the ECB aims at supporting initiatives that increase transparency and strives to develop and support best practices in these market segments so as to promote simple, transparent and standardised assets that help increase euro area financial integration.

60 CPMI (2014), Non-banks in retail payments, September.

In this respect, the ECB published a paper jointly with the Bank of England on the impaired securitisation market in the European Union.[61] This paper, which presents possible policy options to support the emergence of a robust securitisation market, was aimed at stimulating a discussion among stakeholders by means of a public consultation. The overall tone of the responses from the public consultation, published in a separate paper,[62] was positive as regards the potential merits of defining qualifying securitisation. In terms of impediments and policy options, respondents put their greatest focus on regulation.

Furthermore, the Eurosystem ABS loan-level initiative, which aims at increasing transparency for such structures, extended its mandatory loan data reporting to transactions backed by consumer ABSs, auto loan ABSs, and leasing ABSs, and to credit card receivables in 2014. By requiring loan-by-loan data reporting in its collateral framework, the ECB has demonstrated its interest in supporting transparent and simpler ABS instruments backed by specific and homogenous pools of underlying assets so as to promote lending to households and companies throughout the euro area. In order to be eligible as collateral in Eurosystem credit operations, loan-level data for any ABS transaction must be reported to the European DataWarehouse (ED), a market-led loan level data repository. In February 2015, the ED contained information on 641 eligible ABS transactions, representing €900 billion in terms of nominal amounts outstanding.

Furthermore, the ECB acts as an observer in the Prime Collateralised Securities (PCS) initiative, which was promoted by the Association for Financial Markets in Europe (AFME) and the European Financial Services Round Table (EFR). This initiative is reflected in a label (PCS Label) with the aim of enhancing and promoting quality, transparency, simplicity and standardisation throughout the ABS market in the EU. At year-end 2014, 83 transactions were PCS compliant, with a total transaction value of €127.7.billion. The PCS promoters aim at fostering the adoption of the label in additional European jurisdictions, while maintaining current quality levels, so as to enlarge the scope of the initiative.

For covered bonds, the ECB acts as an observer in the Covered Bond Label initiative, which was developed by the European Covered Bond Council (ECBC). This initiative, which was aligned with Article 129 of the Capital Requirements Regulation (CRR) in 2013, aims at improving standards and increasing transparency in the European covered bond market, thereby fostering further integration of this market segment. In February 2015, 82 covered bond programmes, representing €1.4 trillion in terms of nominal amounts outstanding, complied with the Covered Bond Label Convention.

Finally, in September 2014, the Governing Council decided to launch a new covered bond purchase programme (CBPP3), and also to purchase a broad portfolio of simple and transparent ABSs with underlying assets consisting of claims against the euro area non-financial private sector under an ABS purchase programme (ABSPP).

61 Bank of England and European Central Bank (2014), “The case for a better functioning securitisation market in the European Union”.

62 The case for a better functioning securitisation market in the European Union: synthesis of responses (2014).

Both programmes, which started in October and November 2014, respectively, are expected to further enhance the transmission of monetary policy, facilitate credit provision to the euro area economy, generate positive spill-overs to other markets and, as a result, ease the ECB's monetary policy stance, and contribute to a return of inflation rates to levels closer to 2 %.

STEP+

The STEP+ initiative, which is carried out by the ACI – The Financial Markets Association and the European Banking Federation (EBF) aims at revitalising the unsecured European money market by enhancing the current functioning of the Short-Term European Paper (STEP) market. In March 2015, the promoters of the STEP+ initiative launched a public consultation to gauge market participants' views on the revitalisation of the unsecured European money market. The ECB acts as an observer on the STEP+ Steering Committee. The STEP initiative was originally launched in 2006, with the ECB acting as observer, to foster the integration and transparency of European short-term paper markets. In December 2014, STEP-compliant securities amounted to €396billion. ECB statistics on this market segment are available on the ECB's website[63].

3 Enhancing knowledge about the state of financial integration

The ECB is in a unique position to provide in-depth economic analysis and comprehensive statistics regarding the state of financial integration in the euro area and its development. The ECB is also able to sponsor coordinated analytical research – together with other members of the Eurosystem and academics – and can make use of its experience and knowledge as an active market participant. Enhancing knowledge and raising awareness regarding the need for European financial integration, and measuring the progress achieved in this regard, are thus a major part of the ECB's contribution to fostering financial integration.

In the course of 2013, Eurosystem efforts to enhance knowledge, raise awareness and monitor the state of financial integration focused mainly on the following initiatives.

Indicators of financial integration in the euro area

Quantitative measures of financial integration provide essential tools for monitoring the status of financial integration in Europe and the progress achieved. Since September 2005, the ECB has published statistical indicators of integration in the euro area financial markets. These price and quantity-based indicators, which are regularly reviewed and enhanced, cover the money market, the government and corporate bond markets, the equity market, and the banking sector. Market infrastructure indicators are included as well.

63 "http://www.ecb.europa.eu/stats/money/step/html/index.en.html"

Also in this issue of the report, many of these price and quantity indicators are again presented for all the euro area countries together, and then split between countries. For example they are shown with the highest, lowest and intermediate rates of long-term sovereign interest rates for bonds with a remaining maturity of approximately ten years. This provides more granular information and relevant indicators across a wide range of market segments.

The indicators are updated and published semi-annually on the ECB website. The last update was carried out in December 2014, and the next one will take place in May 2015.

ECB and European Commission joint conference on financial integration and stability

In 2014, the ECB organised the annual conference on financial integration and stability with the European Commission in Frankfurt, which was broadcast on the ECB's website. At this conference, the ECB and the European Commission reported on the latest developments in financial integration in Europe and presented their annual reports, with details on financial integration and stability. Furthermore, the financial integration perspective on the new regulatory architecture, including the SSM and the SRM, was given in keynote speeches by the ECB Vice-President, Vítor Constâncio, and the European Commissioner for Internal Market and Services, Michel Barnier. At the conference, a select group of key policymakers, financial market leaders and academics in two high-level panels discussed (i) financial integration after the experience of the financial crisis (in the EU and on a global level) and (ii) the future banking landscape in the EU. The conference was also used as an occasion to present the FINTEC indicator for the first time, which is now an ECB standard measure of financial integration as described in Chapter 1 and the Statistical Annex of this report.

The Financial Integration Conference in 2015 will be organised by the European Commission in cooperation with the ECB and will take place on 27 April in Brussels.

Statistics on the money markets

Work is underway to implement a new framework for the collection of statistics on the euro money market segments. A regulation concerning statistics on the money market was approved by the Governing Council in November 2014 (ECB/2014/48). This regulation concerns the collection of daily transaction-by-transaction data covering the main segments of the money market, namely borrowing and lending transactions in the secured and unsecured markets as well as transactions in Foreign Exchange Swaps (FX Swaps) and in euro Overnight Index Swaps. The overall dataset will be based on transaction data collected from credit institutions with other monetary financial institutions (MFIs), other financial intermediaries, insurance corporations, pension funds, central banks for investment purposes, the general government as well as wholesale transactions with non-financial corporations.

The main purpose of collecting such daily, highly timely statistics is to provide the ECB with comprehensive, detailed and harmonised statistical information on the money markets in the euro area for monetary policy analysis and operation purposes. The regular reporting of the new statistical requirements to the ECB will start with data for 1 April 2016. Due to the need to highly automate the process, the period from 1 April 2016 to 1 July 2016 will serve for reporting agents to fine-tune their processes.

Statistics on institutional investors

In 2014, the European System of Central Banks (ESCB) started to collect new statistics, the Securities Holdings Statistics (SHS), which provide granular quarterly information on holdings of securities by euro area sectors and by selected Reporting Banking Groups in the euro area, as well as information on holdings of euro area securities by non-euro area investor countries. Since these new statistics help to close the informational gap on securities holdings within the euro area and between the euro area and the rest of the world, they represent a significant improvement in data availability. In particular, as the data are collected on a security-by-security basis, the SHS provide a vast range of breakdowns on both the issuer and the holder, which are not available in other statistics. For instance, the holdings of government debt can now be monitored for any maturity breakdown or even on an individual bond level (e.g. recently issued bonds). The data collection started with 2013 Q4 end-quarter positions, and the development of new indicators for the regular monitoring of financial integration is being considered.[64]

Additionally, the ECB, together with the NCBs of the participating member states, and in most cases also the NCBs of the non-euro area countries, continued in 2014 the production of an enhanced set of statistics addressed to MFIs concerning balance sheet items and interest rates. In addition to this, the ECB also regularly publishes euro area balance sheet statistics for credit institutions (which together with money market funds constitute almost the whole of the MFI sector, excluding the Eurosystem).

Moreover, the ECB continued to publish harmonised statistics on the balance sheets of financial vehicle corporations engaged in securitisation transactions (FVCs) and on investment fund assets and liabilities. The latter consists of two separate datasets: one covering investment funds as part of the “other financial intermediaries” sector, and the other covering money market funds as part of the MFI sector.

Besides the regular publication of data, the underlying collection frameworks for monetary and financial statistics (MFS) have been adapted to reflect the new international statistical standards, notably the European System of Accounts (ESA 2010) and the Balance of Payments Manual (BPM6). These changes are relevant to keep the frameworks fit for policy-making purposes and to optimally support the new presentation of the national and euro area financial accounts and

64 For more information, see “Who holds what? New information on securities holdings”, ECB Economic Bulletin, Issue 2, March 2015 and Fache Rousová, L. and Rodríguez Caloca, A., “The use of Securities Holdings Statistics (SHS) for designing new euro area financial integration indicators”, Irving Fisher Committee on Central-Bank Statistics: Proceedings of the Seventh IFC Conference, Basel, September 2014.

balance of payments statistics, for which the MFS represent an important source of information. In particular, new regulations have been adopted in the area of MFI balance sheet and interest rate statistics, and statistics on the assets and liabilities of investment funds and FVCs. These changes reflect the revised international statistical standards, as well as new user requirements. The new data requirements cover more granular breakdowns in counterparty sectors and instrument categories. As reporting agents and NCBs need to be given enough time to prepare, reporting under these new legal acts has begun with data for the reference period December 2014, and the resulting statistics are scheduled to be published in mid-2015, when annual growth rates can be produced for the new breakdowns. To bridge the gap in the interim period, NCBs and the ECB have collected back data where possible and made estimations when using MFS in compiling the national accounts and balance of payments statistics. It is worth noting that several other initiatives are ongoing with regard to MFS, for example securities issues statistics have also been reviewed to align the breakdowns of sectors and instruments with the new standards.

Regarding insurance corporations and pension funds (ICPFs) statistics, in 2014 the ECB continued the regular publication of quarterly statistics for ICPFs in the euro area under a “short-term” approach. The statistics, derived mainly from supervisory sources, contain information on the assets and liabilities of ICPFs resident in the euro area; the main aggregates are also available separately for insurance corporations and pension funds. Based on the outcome of a merits and cost procedure, a new ECB Regulation for statistical requirements on insurance undertakings was published in the Official Journal in December 2014 (ECB/2014/50). The first data to be collected in accordance with this Regulation will refer to 2016 Q1. In order to minimise the reporting burden on insurance undertakings, the Regulation foresees, to the extent possible, the use of supervisory data sources. For this purpose, the ECB has been closely cooperating with the European Insurance and Occupational Pensions Authority (EIOPA) on the integration of statistical and new Solvency II supervisory reporting requirements and the development of a common XBRL taxonomy. The reporting requirements on pension funds are addressed in Guideline ECB/2014/15.

The regular production of these statistics contributes to a better, more harmonised measurement of activity in the financial sector as a whole, including that of non-bank financial corporations across the euro area countries, as well as in some other EU Member States. This ensures greater transparency and comparability in the assessment of developments in this sector and each sub-sector.

AnaCredit (Analytical Credit Dataset)

The recent financial crisis has highlighted that, although a wide range of data on credit are already available, more granular, frequent and flexible credit and credit risk data are considered highly relevant within the European System of Central Banks (ESCB) for monetary policy, financial stability and research analyses, as well as for the development and production of ESCB statistics. Such granular credit and credit risk data are also critical for micro-prudential supervisory purposes.

From the input side, central credit registers (CCRs) or similar granular (loan-by-loan

or borrower-by-borrower) credit reporting systems (herein called granular-credit datasets) are considered as major data channels. CCRs are databases operated by national central banks (NCBs) containing loan-level or borrower-level information locally tailored to provide for exchange of credit information within the financial system, especially among banks, and additionally they serve to support micro-supervision analysis. Currently, there are three main uses of CCRs: (1) to enable bank supervisors to accurately assess credit risk in supervised financial institutions; (2) to support financial transactions by assisting credit institutions in the evaluation of risk; and (3) for economic analysis.

The ESCB has explored the potentials of granular-credit datasets, in particular to understand the extent to which their content may be enhanced and adapted to euro area and EU statistical, supervisory and analytical needs, i.e. to meet the above-mentioned user requirements while at the same time alleviating respondents' reporting burden and increasing transparency. In this context, several related ESCB initiatives have not only proven the analytical usefulness of such granular datasets but have also shown that, where applicable (since in some countries there is no CCR), the differences in terms of coverage, attributes and data content are often substantial, pointing to the need for (1) harmonisation in concepts and definitions and, (2) convergence in data coverage and content.

On this basis, an ESCB Task Force on Analytical Credit Datasets (herein referred to as the TF), comprising experts from both the statistical and the credit register areas, was mandated to investigate four main issues: (1) to identify a core set of information to meet main users' needs in the long term and elaborate on its scope; (2) to further analyse and consider harmonised concepts and definitions and methodological enhancements to core data, metadata and attributes; (3) to estimate the costs to be incurred by the ESCB and the reporting agents; and (4) to consider the governance, legal and confidentiality issues prevailing at the national and EU levels and prepare the appropriate legal instrument.

The TF work confirmed the very high importance placed on granular credit and credit risk data for a number of ESCB and ESRB tasks; the availability of a granular credit dataset would:

- better address a number of issues relevant to monetary policy analysis and relating to the provision of credit with a variety of counterparty breakdowns (size of firms, economic activity, undrawn credit lines, etc.) and the functioning of the transmission mechanism, especially in fragmented markets;
- play an important role in supporting the direct use of credit claims in monetary policy operations and in calibrating potential credit support measures to monitor bank lending and liquidity in the euro area money market;
- adequately calibrate the different risk control and collateral management measures of the Eurosystem, including adequate pricing, credit risk assessment and haircuts, and allow an in-depth analysis of credit claims pledged with the Eurosystem credit operations;
- support financial stability surveillance and macro-prudential analysis, as well

as quantitative risk assessment, notably in the context of macro-stress testing; a key expected benefit, also for micro-prudential supervision, will be the assessment of borrower creditworthiness (via probabilities of default) by credit institutions using an internal-ratings based approach;

- meet ever stronger and multiform statistical and analytical needs, and allow breakdowns which require agility through granular datasets;
- serve research purposes for supporting credit risk analysis across euro area countries and various other financial research work, also assessing their impact on the non-financial economy; and, last but not least,
- enable a multitude of usage options in the supervisory process (off- and on-site, including usage in risk assessment systems) and permit analysis options not otherwise covered by regular reporting, while complementing other reporting systems' information.

With a view to effectively, efficiently and flexibly supporting the achievement of the long-term objectives, the ECB Governing Council adopted on 24 February 2014 Decision ECB/2014/6 concerning the organisation of preparatory measures for the collection of micro credit data by the ESCB[65]. The Decision, which was established to provide the necessary legal basis for the preparatory work, sets out a list of measures to be implemented by all euro area countries by end-2016 concerning (a) the definition of data attributes and data transmission arrangements; (b) the elimination of data gaps due to non-existent or insufficient granular databases in some Member States; and (c) the regular monitoring of progress.

As for all new or substantially enhanced statistics, the ESCB follows a "merits and costs procedure" so as to design a cost-effective approach that best fulfils user needs while minimising the reporting burden. Such a procedure, rather similar to the impact assessments run by the European Commission, is required to support the decision-making process with a view to establishing the long-term framework. On the basis of the cost assessment carried out by NCBs and the merits assessment provided by user Committees and other potential users, a concrete proposal for requirements addressed to reporting agents was elaborated; this includes the intent for a stepwise (three stages) implementation of data attributes and coverage of lenders and borrowers (sectors and reporting thresholds). The first stage is expected to make available a significant dataset on credit granted by credit institutions to legal entities (and possibly individual anonymised households' mortgage loans) by end-2017, while the two subsequent steps are expected to further increase the availability of information, in particular from other lenders.

4 Central bank services that foster integration

The Eurosystem is also a provider of central bank services that enable a harmonised

65 https://www.ecb.europa.eu/ecb/legal/pdf/oj_jol_2014_104_r_0008_en_txt.pdf

and seamless flow of funds and assets across borders. These are TARGET2, the pan-European platform for settlement of payments in euro in central bank money; TARGET2-Securities (T2S), the future platform for securities settlement in central bank money; and the Correspondent Central Banking Model for managing collateral in Eurosystem credit operations.

These services provide for a technically or operationally integrated environment that is a pre-condition for an integrated financial market. The main purpose of such services is the pursuit of the Eurosystem's basic central banking tasks; at the same time, the Eurosystem pays close attention to ensuring that such services are also conducive to deeper financial integration. An illustration of how integrated market infrastructure and harmonised rules contribute to market integration in Europe can be found in the video "Integration of market infrastructure".[66]

During 2014 the ECB and the Eurosystem focused their activities in the field of central bank services on the following areas.

TARGET2

With the creation of TARGET2, the Eurosystem made a crucial contribution to European financial integration. The first market infrastructure completely integrated and harmonised at the European level, TARGET2 has eliminated the fragmented situation that previously existed in the management of central bank liquidity and the real-time settlement of euro payments. The move to a system based on a single technical platform represented a significant step towards a more efficient, competitive, safe and fully integrated European payments landscape, offering all market participants equal conditions and services regardless of their location. Moreover, TARGET2 contributes to the further integration of the central bank liquidity management of European banks. The harmonised service level of TARGET2, offered with a single price structure, ensures a level playing field for all participants across Europe. The introduction in 2010 of an internet-based technical access to TARGET2 supported the participation of small and medium-sized banks.

At present, 24 central banks of the EU and their respective national user communities use the single shared platform of TARGET2: the 19 euro area NCBs, the ECB, and 4 NCBs from non-euro area EU Member States.

TARGET2 provides a harmonised set of cash settlement services in central bank money for all kinds of ancillary systems, such as retail payment systems, money market systems, clearing houses and securities settlement systems. The main advantage for ancillary systems is that they are able to settle their cash positions in TARGET2 via a standardised technical interface and standardised settlement procedures, thus allowing a substantial harmonisation of business practices.

The TARGET2 system functioned smoothly in 2014. The system's market share remained stable, with 91% of the total value and 61% of the total number of euro

66 Watch the video at http://www.youtube.com/watch?v=hc9ntZmB0i8&list=PL347E929CBF4A76F7&index=1.

denominated large-value and urgent payments[67] executed via TARGET2. The average daily number of payments processed by the system in 2014 was 354,263, while the average daily value was €1,931 billion. These figures position TARGET2 as one of the most important systems for large-value and time-critical payments in the world, alongside Fedwire in the United States and Continuous Linked Settlement (CLS), the international system for settling foreign exchange transactions. In 2014 the overall level of TARGET2 availability reached 100%.

Observations made with regard to the use of the harmonised and advanced TARGET2 services (payment prioritisation, liquidity reservation, sender limits, liquidity pooling, etc.) confirm that they are actively used by a wide range of participants and that they contribute to smoother transaction settlement. TARGET2 and its new features have both enabled and driven organisational changes in credit institutions that operate in several European countries, by allowing them to rationalise their back office functions and consolidate their euro liquidity management.

The Eurosystem has adopted a strategy for ISO 20022 in TARGET2 aimed at migrating to the new international ISO 20022 standard. Compliance with the new messaging standard will further foster financial integration, improving interoperability with other market infrastructures based on ISO 20022, such as T2S.

TARGET2-Securities

The development of T2S is the Eurosystem's response to the lack of integration in the infrastructure that underlies capital markets in Europe. More specifically, the T2S project was launched by the Eurosystem to address the persisting fragmentation of the securities settlement process, i.e. the transfer of securities between intermediaries. So far, this process has been based on national infrastructure, rules and market practice. By contrast, T2S will provide a single piece of market infrastructure capable of settling securities transactions in central bank money across borders, CSDs and currencies.

The deep fragmentation of the EU post-trade market today, coupled with the existence of procedures that have not yet been harmonised across national settlement systems, is a well-known issue that was studied as early as a decade ago in the reports on "Cross-border Clearing and Settlement Arrangements in the EU" issued by an expert group sponsored by the European Commission (the so-called Giovannini Reports, 2001 and 2003).[68] This fragmentation results in complexity, costs and inefficiencies, particularly in cross-border securities transactions. Ultimately, it hinders the realisation of a genuine single capital market and creates a competitive disadvantage for European capital markets.

The T2S platform will help solve this problem by delivering a horizontal securities

67 Payments, generally of very large amounts, which are mainly exchanged between banks or between participants in the financial markets and usually require urgent and timely settlement (TARGET2 glossary).

68 See Giovannini Group (2003), *Second Report on EU Clearing and Settlement Arrangements*, April, available on the European Commission website (http://ec.europa.eu).

settlement functionality that will be offered at the same price for all domestic and cross-border transactions. T2S is able to perform settlement of all securities, both debt securities and equities, in central bank money. In T2S, transactions can be settled against the euro as well as any other currency, provided that there is agreement with the respective central banks.

The T2S user testing phase started in October 2014 and is well on track. The T2S platform will go live on 22 June 2015. More information on the project status can be found at www.t2s.eu.

Twenty-four European CSDs, covering 21 European markets, and 23 NCBs will connect to the T2S platform, for securities and euro cash settlement respectively, in a four-phase migration period running from June 2015 to February 2017. As of 2018, T2S will also start settling securities transactions against Danish krone, as agreed with the Danish central bank. The high level of planned participation in T2S, including nearly 100% of the securities volumes currently settled in the euro area, will lead to significant economies of scale and lower settlement costs, and will ensure a wide reach for the efficiency benefits brought about by T2S. Other central banks and securities depositories are expected to join the platform in the future, extending the grasp of T2S to new markets and currencies.

T2S is widely recognised by institutions and market participants as a key initiative for accomplishing a single capital market in Europe, bringing down costs and generating savings as a result of the possibility of pooling liquidity, assets and collateral at the European level.

T2S is also acknowledged and supported by the securities industry because it is driving forward post-trade harmonisation in Europe in three fundamental ways: first, because of the way the platform has been designed; second, thanks to the project's efforts to ensure harmonised and efficient adaptation by national markets to the new European environment; and, finally, also as a consequence of the momentum it is creating for other initiatives in the post-trade field.

Firstly, the T2S project has been devised to avoid the replication of national specificities into the system's operational blueprint. No specific functionalities have therefore been developed in T2S to support purely national features and practice. Instead, processes have been identified that allow markets to continue to support their different needs using a basic T2S functionality. Moreover, the Eurosystem is helping CSDs and markets adapt to T2S, encouraging the reshaping of current infrastructure in order to make full use of T2S's potential in terms of integration and harmonisation of securities settlement in Europe. Participation in T2S increases the incentives to remove specificities and reach wider harmonisation in order to be more competitive in the European arena.

Secondly, harmonisation in T2S is one of the primary objectives pursued by the T2S Advisory Group, a forum comprising senior market and public authority members that advises the Eurosystem on T2S-related issues. More specifically, the T2S community of stakeholders, via the T2S Advisory Group, is working to create a single rulebook for post-trade processes across all the markets that will operate in T2S in order to ensure the safety and efficiency of cross-border settlement. Fields of work include,

among others, messaging protocols based on the ISO 20022 global standard, legal rules, operating hours and deadlines, opening days, and corporate actions processing. The objective is for all T2S markets to implement standards and market practices before connecting to T2S and to operate in a harmonised way from the outset.

The work of the T2S Advisory Group is not limited to agreeing on jointly used standards; the group also monitors the actual implementation of those standards by all concerned actors. The process is transparent and results are published annually in the T2S harmonisation progress reports, providing a detailed analysis of the status of each harmonisation activity and the compliance status of each T2S market. The latest progress report (FifthT2S Harmonisation Progress Report[69]) was published in April 2015.

A transparent reporting procedure has created considerable peer pressure and significant progress has been observed in the past few years. The effective contribution of T2S to financial market integration, and efficiency largely depends on harmonisation standards being successfully implemented across T2S markets.

Thirdly, the advent of T2S and its transformational potential have been an important factor in giving special impetus to other important initiatives that contribute to market integration in Europe. The most notable example is the CSD Regulation (CSDR), which entered into force on 17 September 2014 (see Chapter 3/Section 1). This piece of legislation goes hand in hand with T2S insofar as it breaks down national barriers for the provision of CSD services and imposes harmonisation in a number of key areas relating to settlement, such as settlement cycles and settlement discipline. In this regard, in May and June 2014 , as well as in February 2015 T2S stakeholders provided input to the European Securities and Markets Authority (ESMA) on the CSDR technical standards, especially about settlement discipline. Furthermore, they addressed to ESMA and the European Commission a set of best practice proposals regarding the introduction of the securities T+2 settlement cycle, in order to contribute to a consistent and coherent migration of T2S markets to the new standard mandated by the CSDR. These proposals contributed to ensuring a successful migration of most T2S markets to the T+2 settlement period on 6 October 2014.

More generally, the prospect of connected EU securities infrastructures via T2S has prompted market participants to further work on initiatives that support financial integration. A European forum on post-trade harmonisation, the European Post Trade Group (EPTG), was founded in 2012 precisely with the prospect of implementing EU legislation on securities market infrastructures and introducing T2S in 2015. The group was set up with the understanding that the dismantling of remaining obstacles to a safe, efficient, and competitive European post-trading landscape would require targeted cooperation between public authorities and the private sector. The EPTG is a joint initiative by private and public sectors (Commission, ECB and ESMA) and focuses on post-trade items not currently covered by other public authority initiatives (i.e. T2S, the Contact Group on Euro Securities Infrastructures (COGESI) or the

69 Available on the ECB website at www.harmonisation.t2s.eu.

CSD Regulation). These items include, among others, work on securities registration procedures and cross-border shareholder transparency, and issues related to the Commission's work on withholding tax procedures. In 2014 the group published its first annual report, available on the Commission's website.[70]

Finally, during 2014 T2S was increasingly looked at as a project worthy of study by the architects of other regional integration initiatives in the world, for example in Asia and Latin America. Europe's experience with T2S (and with SEPA) is widely recognised as an important model initiative for market integration and harmonisation, and a good example for successful cooperation between industry and authorities.

Eurosystem collateral management

Since its implementation in 1999, the correspondent central banking model (CCBM) has fostered financial market integration by enabling all euro area counterparties to use a common set of eligible marketable assets as collateral in Eurosystem credit operations, regardless of the location of the underlying assets or the counterparty. In line with the addition of non-marketable assets to the common set of eligible assets in 2007, specific procedures for the cross-border use of such assets under the CCBM were developed.

The CCBM is the main channel for the cross-border use of collateral in Eurosystem credit operations. At the end of 2014 it accounted for 53.4% of the collateral used across borders and 14.7% of the total collateral provided to the Eurosystem. In 2014, the Eurosystem implemented two major enhancements to the CCBM: On 26 May 2014, the requirement to repatriate (marketable) assets from investor CSDs to issuer CSDs before mobilisation as collateral through the CCBM was removed. On 29 September 2014, CCBM started to support tri-party collateral management services, also on a cross-border basis, for use in Eurosystem credit operations. These enhancements to the CCBM have fostered financial integration by facilitating more efficient cross-border mobilisation of collateral.

70 http://ec.europa.eu/internal_market/financial-markets/docs/clearing/eptg/20140521-annual-report-with-annexes_en.pdf.

Special Feature A
Developments in euro area banks' funding conditions and retail rates[71]

This Special Feature looks at developments in banks' funding conditions at the aggregate and the individual levels. It investigates the degree of cross-country and within-country heterogeneity in banks' funding conditions. Lastly, it explores the role that funding costs continue to play in explaining fragmentation in lending rates to NFCs and households across countries.

1 Introduction

The financial crisis, in particular the sovereign debt crisis, led to a major divergence in the funding conditions faced by banks in the euro area, often highly correlated to sovereign funding conditions. Through the introduction of non-standard monetary policy measures, the Eurosystem helped to mitigate the need for an abrupt deleveraging by banks with impaired access to wholesale funding markets. These measures also helped to contain spillovers from the sovereign debt crisis to credit and broader financial markets, leading to improved market sentiment over a wide range of assets. The steps towards the Banking Union, in particular the introduction of the Single Supervisory Mechanism and the publication of the Comprehensive Assessment results, are contributing to the sustainability of financial integration, allowing bank funding conditions to better reflect their individual characteristics and helping to break the bank-sovereign nexus. Nevertheless, differences in funding conditions and lending rates across jurisdictions remain. These are associated with institutional differences and heterogeneous economic performance, and are not only cyclical, but also structural in nature. In this regard, progress on structural reforms will be an important factor in reducing economic and financial asymmetries.

2 Developments in euro area banks' major sources of funding

Euro area banks' major sources of funding include deposits, bank bonds, money market funding and, linked to the crisis, Eurosystem funding. This section assesses developments in selected funding components at the macro level, highlighting the degree of cross-country heterogeneity. The weighting of each balance sheet item by its outstanding amount enables the construction of a composite measure of bank funding costs. Simple statistical measures can then be used to qualify the extent to which banks' composite funding costs have diverged across the euro area.[72]

[71] Authors: Krylova, E.and Boucinha, M.

[72] The cost of equity is also a relevant dimension. Its contribution to banks' funding costs is outside the scope of the analysis presented in this Special Feature.

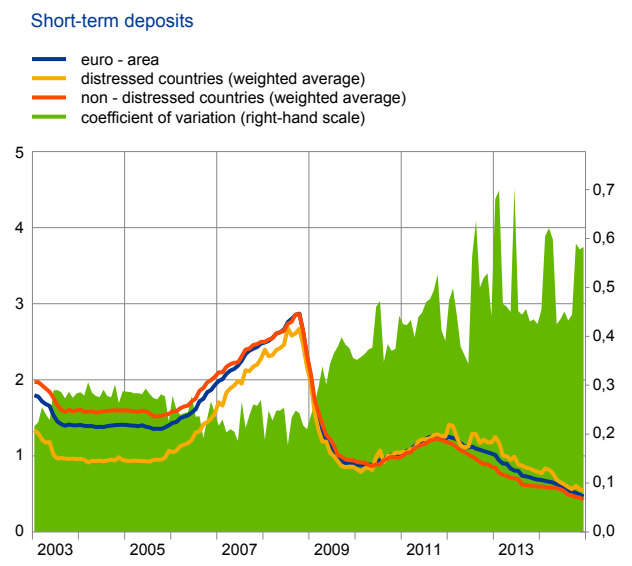
As illustrated in Chart 38, before the inception of the financial crisis there were no major differences in bank bond yields across countries, and the cost of deposits for the countries more significantly affected by the crisis was generally lower than for other countries. With respect to short-term deposits, this was partly due to a greater reliance on overnight deposits.[73] Conversely, in the case of long-term deposits, lower interest rates were observed for the countries that were to be more affected by the crisis despite the fact that they tended to exhibit a relatively higher share of deposits with an agreed maturity over 2 years, which are generally associated with higher interest rates. This could reflect differences in households' and firms' portfolio decisions, and in banks' commercial policies, all of it translating into differing degree of competition for deposits.

The financial crisis led to significant disturbances in financial markets. Increased risk aversion and uncertainty regarding the quality of banks' assets against the background of the bank-sovereign nexus, along with perceived redenomination risk, hampered the normal functioning of wholesale funding markets. This put constraints on access to money and bond markets, in terms of both price and quantity, for banks in more vulnerable countries. These developments led constrained banks to engage in increased competition for deposits, translating into a relative increase in the rates offered by banks in distressed countries and into an increase in the dispersion of deposit rates across countries. It is also important to keep in mind that during periods of low bond issuance and downward pressure on bond prices, yields observed on the secondary market are an imperfect measure of banks' actual funding costs. On the other hand, Chart 38C

Chart 38a

Cost of funding and its components

(percentages per annum)

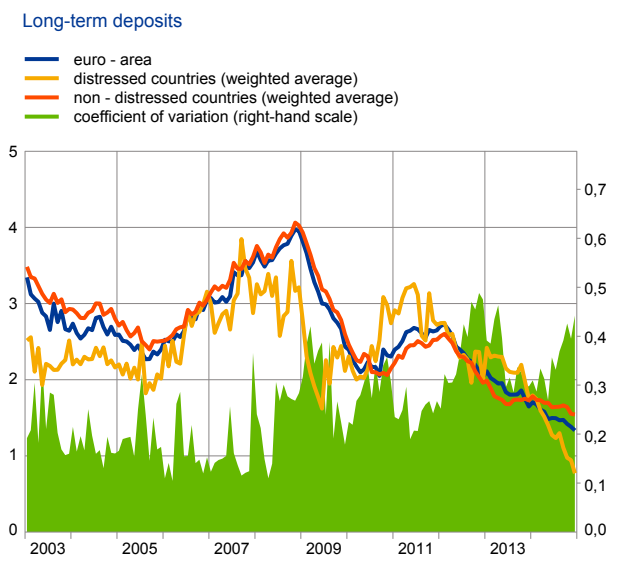


Sources: ECB and ECB calculations.
Notes: The cost of MFI deposit funding has been computed as a weighted average between new business rates on overnight deposits, deposits with agreed maturity and deposits redeemable at notice with their corresponding outstanding amount. The cross-country coefficient of variation is calculated over a fixed sample of 12 countries (distressed countries: ES, GR, IE, IT, PT; non-distressed: AT, BE, DE, FI, FR, LU, NL).

Chart 38b

Cost of funding and its components

(percentages per annum)



Sources: ECB and ECB calculations.
Notes: The cost of MFI deposit funding has been computed as a weighted average between new business rates on overnight deposits, deposits with agreed maturity and deposits redeemable at notice with their corresponding outstanding amount. The cross-country coefficient of variation is calculated over a fixed sample of 12 countries (distressed countries: ES, GR, IE, IT, PT; non-distressed: AT, BE, DE, FI, FR, LU, NL).

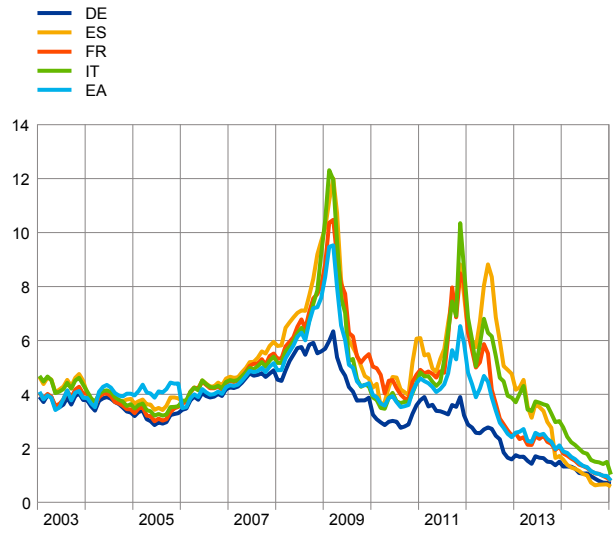
[73] Deposits included in the definition of M3 (i.e. overnight deposits, deposits with an agreed maturity up to 2 years and deposits redeemable at notice up to 3 months) are referred to as short-term deposits, whereas those not included in M3 (i.e. deposits with an agreed maturity over 2 years and deposits redeemable at notice over 3 months) are referred to as long-term deposits.

Chart 38c

Cost of funding and its components

(percentages per annum)

Unsecured bank bond yields



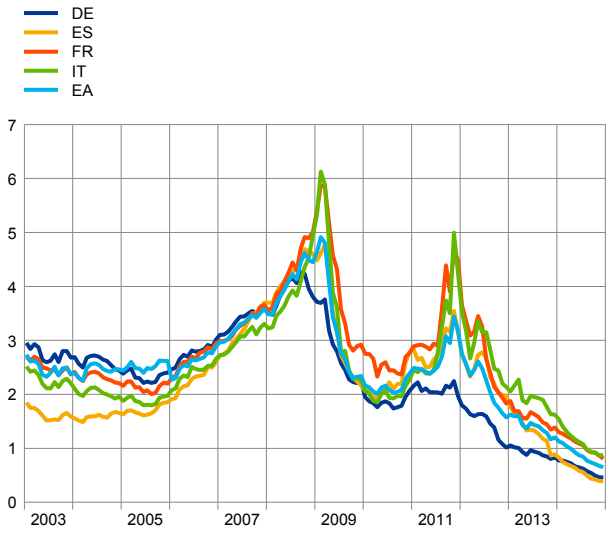
Sources: Merrill Lynch Global Index, ECB calculations.
Notes: The calculation of the cost of market-based debt financing for banks is based on the Merrill Lynch Global Index of the average yield of euro-denominated bank bonds

Chart 38d

Cost of funding and its components

(percentages per annum)

Banks' composite cost of financing (composite cost of deposit, non-secured market debt and Eurosystem funding)



Sources: ECB, Merrill Lynch Global Index and ECB calculations
Notes: Average of deposit rates on new business, cost of market debt funding and Eurosystem funding, weighed by the corresponding outstanding amounts.

only considers investment grade bonds, leading to an underestimation of funding costs, most notably in distressed countries, which were more subject to rating downgrades. Additionally, the presence of quantitative constraints on access to wholesale market funding implies that the crisis not only translated into higher funding costs for banks in distressed countries, but also into increased pressure towards deleveraging.

In the more recent period, against the background of the Eurosystem's non-standard monetary policy measures and progress towards the establishment of the Banking Union, there has been a decrease in bank funding costs and the related dispersion throughout the euro area. The more recent decrease in interest rates on deposits affected the majority of segments and maturities. Moreover, portfolio shifts into overnight deposits in an environment of low interest rates also contributed to the decrease observed in short-term deposit rates. The convergence observed in interest rates on short-term deposits across distressed and non-distressed countries was mostly driven by an approximation of interest rates on deposits with an agreed maturity. The low level of deposit rates for distressed countries could partly reflect banks being less willing to offer higher rates owing to capital and profitability constraints, as well as, in some cases, supervisory measures taken to avoid excessive competition for deposits via interest rates. It is also relevant to highlight that there is considerable dispersion in the interest rates observed within each group of countries.

Assessing heterogeneity in bank funding cost developments

This section investigates the extent to which macro-level developments in bank funding costs are driven by common shocks or by individual institutions or groups

of institutions. Whereas within-country developments are highly heterogeneous, individual bank characteristics can be used to illustrate the main drivers of these differences. For this purpose, an average funding cost indicator was computed for each bank based on a weighted average of the interest rates paid on short-term deposits, long-term deposits, bonds and Eurosystem funding.

It is widely acknowledged that perceived sovereign risk can affect market participants' assessment of bank risk. This is not only due to banks' direct exposure to domestic government bonds, but also due to the expected negative impact of a weaker sovereign on economic activity, translating into lower foreseen bank profitability and asset quality. Expected losses conditional on bank failure can also be higher for investors in banks operating in distressed countries. Furthermore, government bond yields are typically used as a benchmark for pricing bank bonds. These factors could be expected to shift the whole distribution of bank funding costs upwards in distressed countries during the more acute period of the crisis.

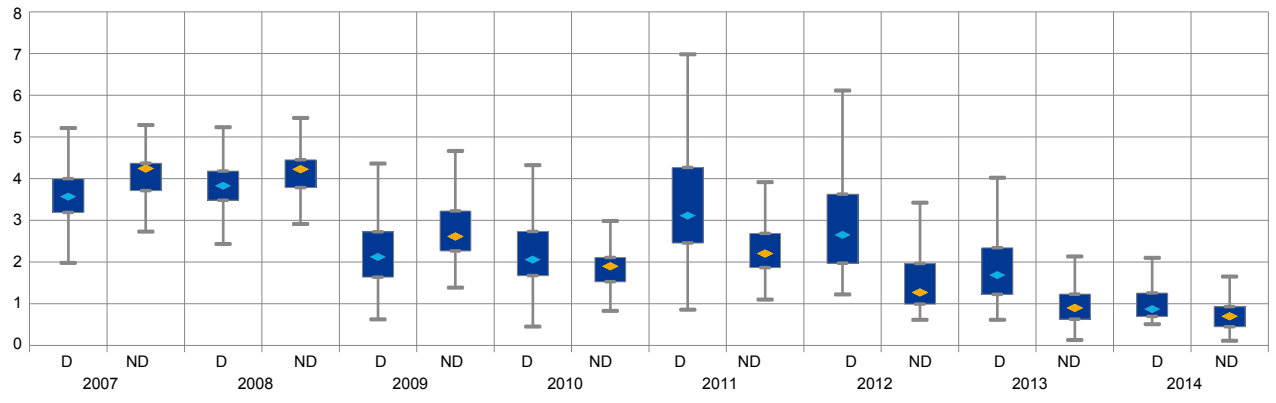
However, a higher *ex ante* perception of the risk level of banks operating in distressed countries can also lead to heightened scrutiny by their debt holders and deposit holders, which would lead to a higher dispersion of the funding costs observed for these banks. In these cases, there should also be a closer link between the funding costs of these banks and their specific characteristics than there would be for banks in non-distressed countries. While higher funding costs would be expected for banks with higher perceived risk operating in distressed jurisdictions, no major difference would be expected between the funding costs of lower-risk banks operating in distressed and non-distressed countries.

As illustrated in Chart 39, until the first quarter of 2010, the median funding cost for banks in distressed countries was lower than that for banks in non-distressed

Chart 39

Individual MFIs' average funding cost indicator – Stressed and non-stressed countries

(percentages per annum, cross-sectional distribution)



Sources: ECB and IBOXX, ECB calculations.
Notes: The cost of MFI funding is computed as a weighted average between new business rates on deposits from the non-financial private sector, secondary market yields on bonds issued and interest rates on Eurosystem funding. The weights are obtained from the corresponding outstanding amounts. The chart includes data for a sample of banks from 13 euro area countries (Distressed countries: ES, GR, IE, IT, PT and SI; non-distressed countries: AT, BE, DE, FI, FR, LU and NL). The medians are represented by diamonds, and the boxes display the interquartile range. The ends of the whiskers are set at a multiple of 1.5 of the interquartile range above the third quartile and below the first quartile (Q1). If the Minimum or Maximum values are outside this range, then they are considered outliers and not shown. S and NS refer to stressed and non-stressed banks, respectively. The starting date of the time series presented above is August 2007. Last observation: December 2014. For illustration purposes, the charts show yearly rather than monthly data.

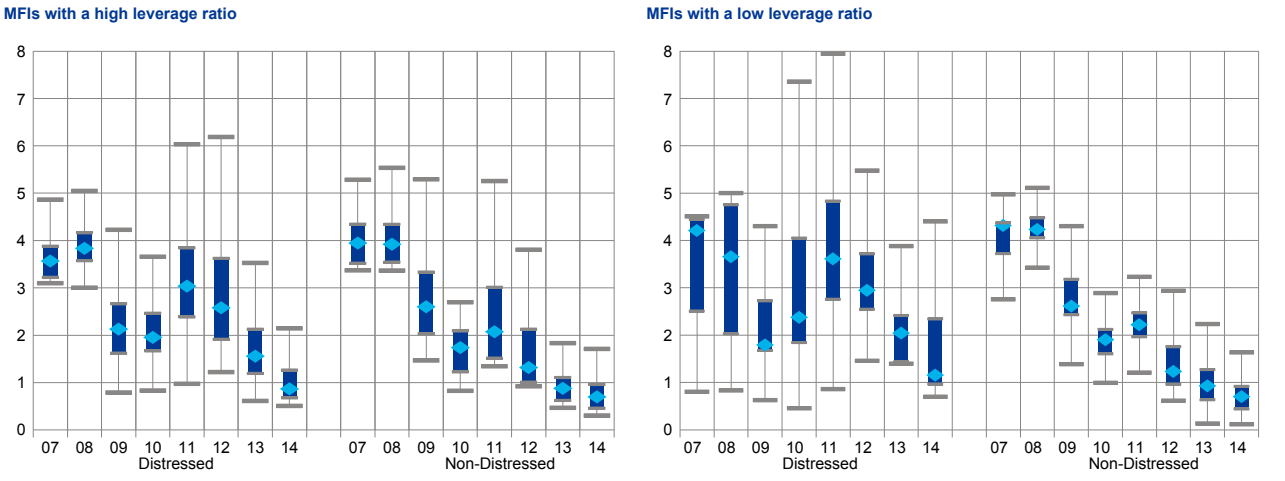
countries (by around 50 basis points on average).[74] This was mostly due to a composition effect, whereby banks in the countries more affected by the recent financial crisis tended to have a higher share of deposit funding, which is generally cheaper than wholesale market funding. Nonetheless, the dispersion was higher in distressed jurisdictions. With the emergence of the sovereign debt crisis, there was a sharp increase in funding costs for banks in distressed jurisdictions, as well as in the dispersion observed across these banks. The difference in funding costs progressively increased until the first half of 2011, and from then on remained relatively high until the first quarter of 2013, when funding costs started to converge again against the background of decreased financial market stress discussed in the previous section. Chart 39 suggests that the relative level of deposit rates in distressed and non-distressed countries could be returning to the profile observed before the crisis, even though cross-country dispersion remains significantly higher.

Chart 40 presents the distribution of funding costs across banks with high and low capitalisation (as proxied by the leverage ratio) in both distressed and non-distressed countries. In the aftermath of the financial crisis, leverage has increasingly been regarded as relevant to bank resilience. The fragility observed in some banks which, despite maintaining strong risk-based capital ratios, were highly levered, led to

Chart 40

Individual MFIs' average funding cost indicator – Leverage Ratio

(percentages per annum, cross-sectional distribution)



Sources: ECB, and IBOXX, ECB calculations.
Notes: The leverage ratio is defined as the ratio between capital and reserves and total main assets. MFIs with a leverage ratio above (below) the median observed for the sample in the corresponding period are classified as having a high (low) leverage ratio. The charts include data for a sample of banks from 13 euro area countries (Distressed countries: ES, GR, IE, IT, PT and SI; non-distressed countries: AT, BE, DE, FI, FR, LU and NL). The medians are represented by diamonds, and the boxes display the interquartile range. The ends of the whiskers are set at a multiple of 1.5 of the interquartile range above the third quartile and below the first quartile (Q1). If the Minimum or Maximum values are outside this range, then they are considered outliers and not shown. S and NS refer to stressed and non-stressed banks, respectively. The starting date of the time series presented above is August 2007. Last observation: December 2014. For illustration purposes, the charts show yearly rather than monthly data.

questions regarding the robustness and consistency of the methods used by banks to quantify risks and, as such, to compute their risk-weighted regulatory capital ratios. Furthermore, high leverage, especially when coupled with the large size of banks, could result in financial stability risks as a result of spillovers between bank and

[74] Charts 39 – 43 show yearly rather than monthly data for ease of presentation. Nonetheless, the description in the text provides additional detail in time series developments obtained from monthly data.

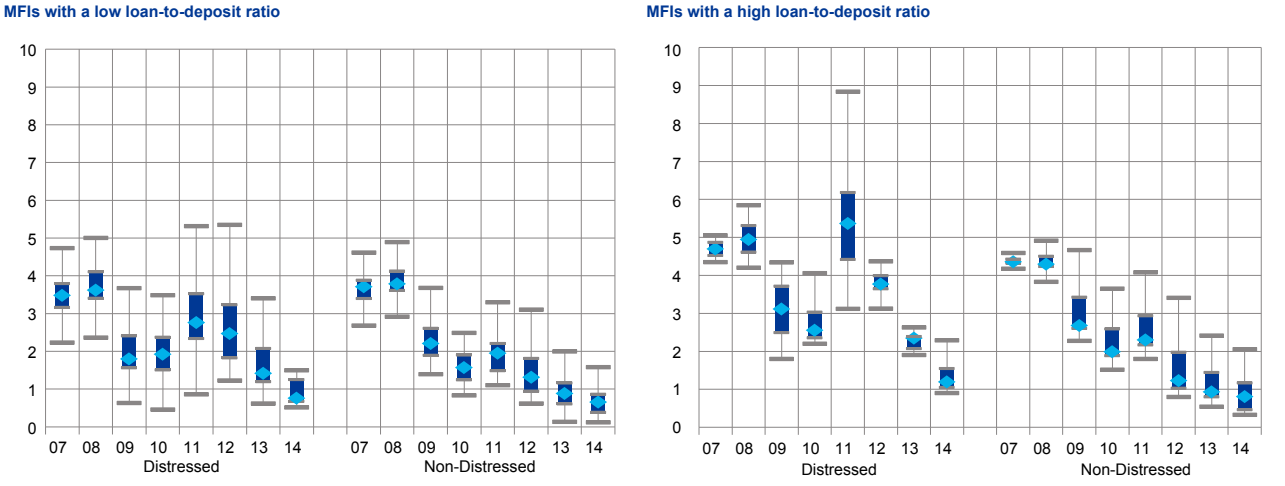
sovereign risk. Against this background, the regulatory package defined in Basel III and implemented in the European Union through the Capital Requirements Directive IV (CRDIV) and the Capital Requirements Regulation (CRR) lays the groundwork for introduction of a regulatory minimum for the leverage requirement applicable to EU banks as a binding regulatory requirement from 1 January 2018. The chart shows that in distressed countries, banks with lower capitalisation tend to have higher and more diverse funding costs, whereas in non-distressed countries this correlation is not clear, suggesting that market participants may be more sensitive to the resilience of banks with lower capitalisation. This result is robust to alternative definitions of capitalisation that consider the risk level of bank assets. However, these results must be interpreted with caution, because during the period under analysis, several banks underwent public recapitalisation.

Banks with a higher loan-to-deposit ratio tend to be more reliant on market funding. During periods of market turmoil, the price of market funding tends to increase more than that of other funding sources, such as retail deposits. Further, since banks with a higher loan-to-deposit ratio can be seen as having a relatively more fragile structural liquidity position, bond holders and depositors may apply a higher risk premium to these banks even in normal times. As illustrated in Chart 41, in distressed countries the average funding cost of banks with a higher loan-to-deposit ratio is not only relatively higher, but also presents a higher dispersion, whereas in the case of non-distressed countries this is not observed.

Chart 41

Individual MFIs' average funding cost indicator – Loan-to-Deposit Ratio

(percentages per annum, cross-sectional distribution)



Sources: ECB, and IBOXX, ECB calculations.
Notes: The loan-to-deposit ratio is defined as the ratio between loans and deposits from the non-financial private sector. MFIs with a loan-to-deposit ratio above (below) percentile 75 observed for the sample in the corresponding period are classified as having a high (low) loan-to-deposit ratio. The charts include data for a sample of banks from 13 euro area countries (Distressed countries: ES, GR, IE, IT, PT and SI; non-distressed countries: AT, BE, DE, FI, FR, LU and NL). The medians are represented by diamonds, and the boxes display the interquartile range. The ends of the whiskers are set at a multiple of 1.5 of the interquartile range above the third quartile and below the first quartile (Q1). If the Minimum or Maximum values are outside this range, then they are considered outliers and not shown. S and NS refer to stressed and non-stressed banks, respectively. The starting date of the time series presented above is August 2007. Last observation: December 2014. For illustration purposes, the charts show yearly rather than monthly data.

In terms of portfolio composition, in distressed countries, banks with a higher share of loans to the non-financial private sector tended to face lower funding costs during the period under review, while in non-distressed countries this relationship is not clear

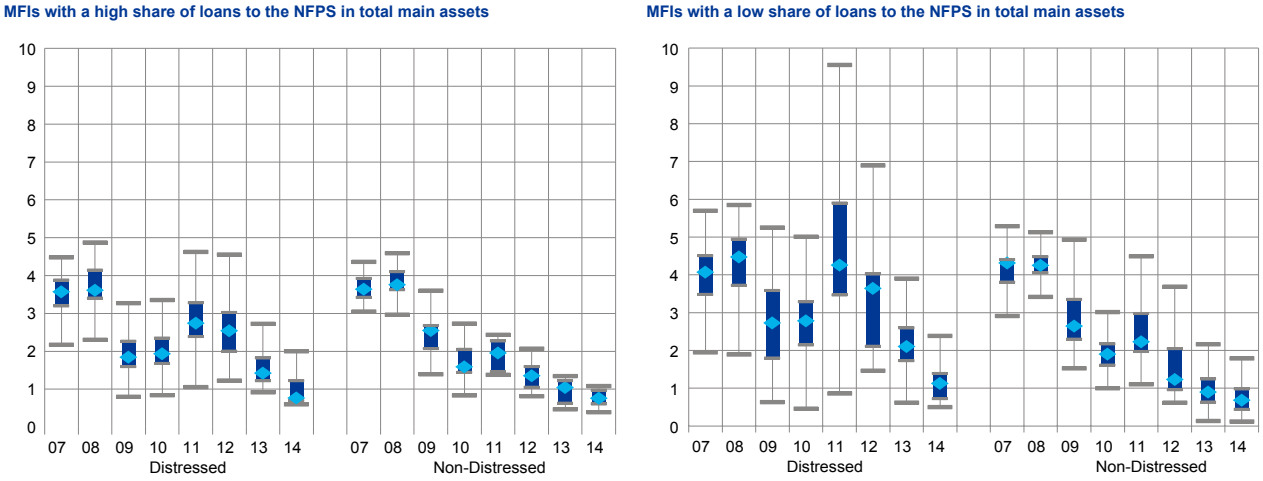
(Chart 42). This result partly reflects a composition effect whereby banks with activity more concentrated in lending to the real economy tend to fund themselves more through deposits, which are a relatively cheaper and less volatile source of funding. Nonetheless, a negative relationship between the loan-to-asset ratio and bond yields is also observed.

This section assesses developments in banks' funding costs, exploring heterogeneity at the bank level. The data is consistent with a relationship between bank-specific characteristics and funding costs, which seems to be stronger in stressed jurisdictions. Differences across countries were particularly significant in periods of more acute financial market stress, and have narrowed in the more recent period. The decrease in these differences is consistent with an increase in financial integration to the extent that bank funding costs translate into more similar funding conditions faced by the real economy across countries.

Chart 42

Individual MFIs' average funding cost indicator – Loans to the non-financial private sector

(percentages per annum, cross-sectional distribution)



Sources: ECB, and IBOXX, ECB calculations.
Notes: MFIs with a share of loans to the non-financial private sector in total main assets above (below) the median observed for the sample in the corresponding period are classified in the high (low) category. The charts include data for a sample of banks from 13 euro area countries (Distressed countries: ES, GR, IE, IT, PT and SI; non-distressed countries: AT, BE, DE, FI, FR, LU and NL). The medians are represented by diamonds, and the boxes display the interquartile range. The ends of the whiskers are set at a multiple of 1.5 of the interquartile range above the third quartile and below the first quartile (Q1). If the Minimum or Maximum values are outside this range, then they are considered outliers and not shown. S and NS refer to stressed and non-stressed banks, respectively. The starting date of the time series presented above is August 2007. Last observation: December 2014. For illustration purposes, the charts show yearly rather than monthly data.

3 The role of Eurosystem funding in normalising funding costs

As discussed in the previous sections, during the financial crisis, banks' access to wholesale funding markets was significantly impaired for a wide range of euro area banks. This translated into higher funding costs and into balance sheet constraints, creating pressure for deleveraging which could have led to a pro-cyclical contraction in lending to the non-financial private sector. The introduction of non-standard monetary policy measures during the crisis played a major role in mitigating these distortions by providing abundant liquidity at low interest rates. These measures also helped prevent the sovereign debt crisis from spilling over to credit and broader

financial markets, leading to improved market sentiment over a wide range of assets. By mitigating distortions that were more acute in distressed countries, Eurosystem funding helped decrease obstacles to financial integration.

This section presents a simple scenario that illustrates the direct impact of Eurosystem funding in bank funding costs. A funding cost relief indicator is obtained by comparing banks' average funding cost, as presented in Section 2, with a hypothetical funding cost computed based on the assupmtion that, in the absence of Eurosystem funding, banks would instead have issued new bonds at the cost they faced in the secondary market. This funding source is typically easier to adjust in the short term at prevailing market conditions whereas, despite the role of technological innovation, adjustments to the level of deposits tend to require medium to long-term investments or aggressive commercial policies.

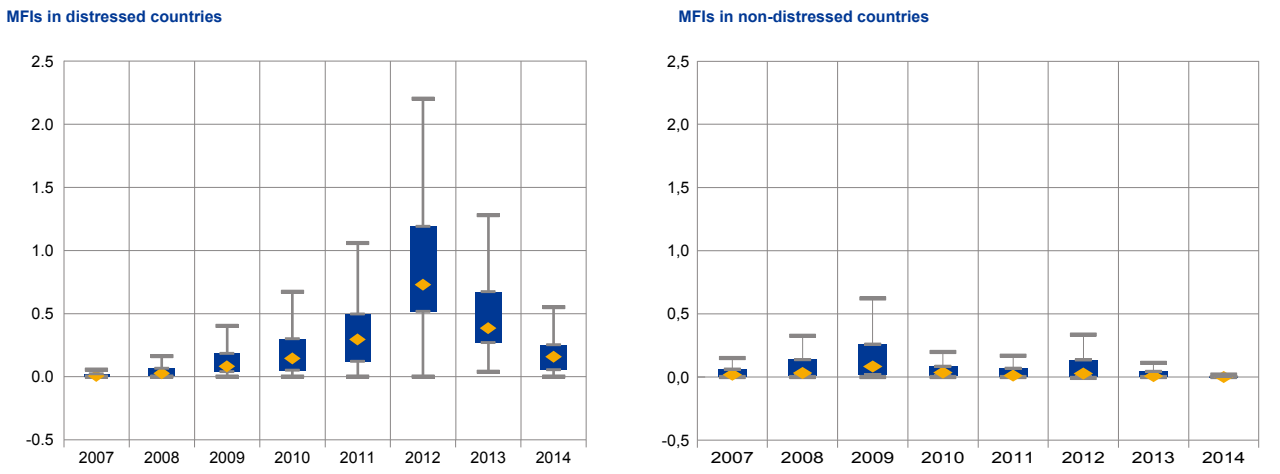
As illustrated in Chart 43, the computed funding cost relief indicator is considerably higher for distressed than for non-distressed countries. The median funding cost relief for banks located in distressed jurisdictions reached 114 basis points in July 2012 and from then on has progressively decreased, standing at 4 basis points in September 2014. The indicator showed low values for most banks in non-distressed countries, even though it clearly increased for a minority of banks in the first half of 2009 and 2012.

Hence, this indicator is consistent with the relevance of Eurosystem funding in mitigating the increase of funding costs for banks in distressed countries. This simple scenario should be regarded as a lower bound to the actual impact of Eurosystem funding, since it does not take into account quantity restrictions in bond market access or how the operations helped lower the price of other funding sources through an increase in market participants' confidence.

Chart 43

Individual MFI funding cost relief

(percentages per annum, cross-sectional distribution)



Sources: ECB, and IBOXX, ECB calculations.
Notes: The charts include data for a sample of banks from 13 euro area countries (Distressed countries: ES, GR, IE, IT, PT and SI; non-distressed countries: AT, BE, DE, FI, FR, LU and NL). The medians are represented by diamonds, and the boxes display the interquartile range. The ends of the whiskers are set at a multiple of 1.5 of the interquartile range above the third quartile and below the first quartile (Q1). If the Minimum or Maximum values are outside this range, then they are considered outliers and not shown. The starting date of the time series presented above is August 2007. Last observation: December 2014. For illustration purposes, the charts show yearly rather than monthly data.

4 Linking funding costs and lending rates

Historical accounting decomposition of bank lending rates based on a simplified loan pricing formula

Developments and differences in funding costs are largely mirrored in developments in lending rates. The financial crisis and the euro-area sovereign debt crisis have highlighted the important fragmentation in bank funding conditions for bank lending rates and lending volumes. Arnold and van Ewijk (2014)[75] explored the impact of the crisis on bank retail and deposit interest rates in the euro area and found that the heterogeneity in sovereign risk across member states accounts for a sizable part of the increase in the dispersion of various lending and deposit rates. By contrast, the impact of the increased heterogeneity in credit risk on bank retail rates was less pronounced. Darracq et al. (2014)[76] documented that the traditional policy transmission mechanism, which assumed that policy rates and market interest reference rates were the most direct determinant of retail bank lending rates, is ill-equipped to explain the increasing level of heterogeneity in bank retail lending rates during the crisis. They also highlighted the importance of the quantity and quality of bank capital, credit risk and risk perception, and fragmentation of bank funding conditions owing to tensions in the government bond market for retail bank interest rate pass-through.

One can consider the link between bank funding costs and the prices of bank retail products from a different angle. We can pragmatize how banks are pricing their loans with the following simplified formula, which includes banks' own refinancing costs, the implied credit risk and capital charge, as well as operating costs, profit margins and the competitive environment. As an indication for the accounting decomposition of composite lending rates, the simplified pricing formula can be translated into several components covering bank refinancing costs, risk spread and capital charge:

Lending rate = Bank refinancing cost (via interbank and debt markets and deposits) + Capital charge + Risk spread Operating cost (+ Other factors)

Thus, in a simplified model, banks are setting an interest rate on a loan linking it. First, they use some base market reference rate with the respective maturity, i.e. the rate at which banks can raise funds in the interbank money market. Second, on top of this rate, the banks charge and pass on to the borrower a number of spreads to recover the costs they incur in making the loan, including the banks' cost of funding through deposit and through market debt. Third, banks need to recoup their cost of equity. When a loan is created, the regulatory risk weight is positive, so the bank has to set aside some capital to back the loan. Cost of capital can be approximated by the excess return on bank equity times a coefficient of capital consumption.

[75] Arnold, I. and van Ewijk, S. (2014), "The Impact of Sovereign and Credit Risk on Interest Rate Convergence in the Euro Area", *De Nederlandsche Bank Working Paper*, N 425.

[76] Darracq et al. (2014) "The retail bank interest rate pass-through: the case of the euro area during the financial and sovereign debt crisis", *European Central Bank Occasional Paper*, N 155.

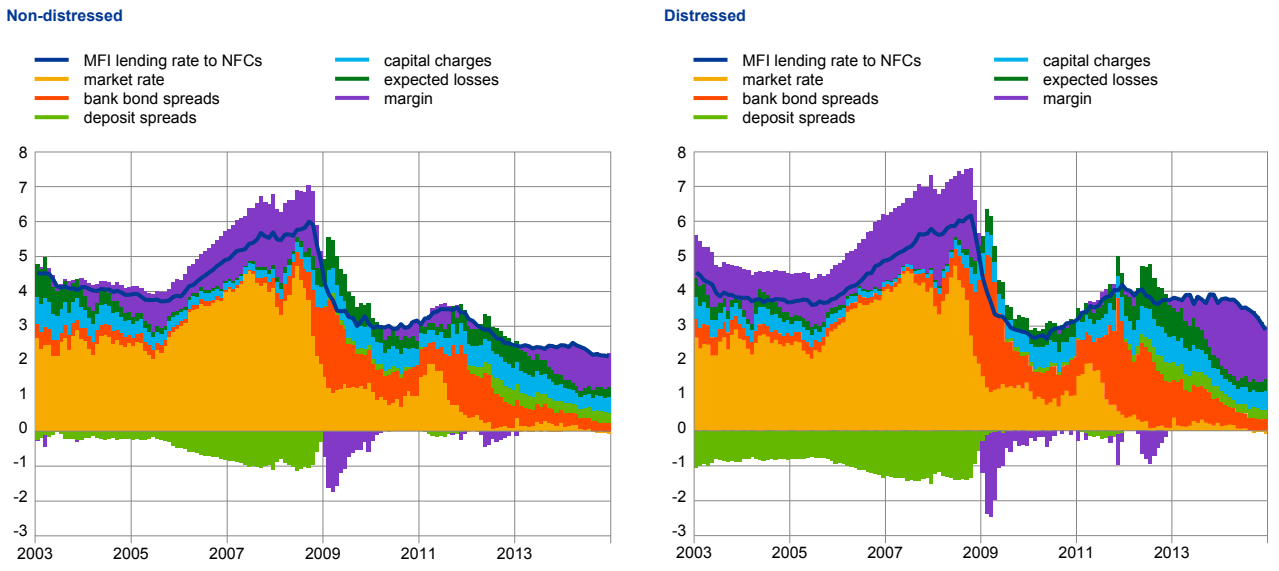
Fourth, there is a margin that banks charge for intermediation. That margin has to compensate the bank for a number of factors related to the riskiness of the borrower and generates net earnings from borrowing activity. Other factors not considered in this formula but which may influence the pricing of bank retail products include changes in demand for loans, banking sector competition and the opportunity costs of lending (most notably taking into account incentives for holding sovereign debt).

This simplified accounting decomposition of composite lending rates into different components is illustrated in Chart 44 using individual banks' data for the distressed[77] and non-distressed euro area economies, based on selected countries. However, the simplified pricing formula cannot be directly translated into single measures of bank refinancing costs, risk spreads and capital charges, although several proxies[78] are available for each. Consequently, our decomposition is only illustrative and is not robust to the choice of these proxies, which is surrounded by large uncertainty.

Chart 44

Accounting decomposition of composite cost of borrowing for NFCs

(percentage per annum)



Sources: ECB, Moody's and Merrill Lynch Global Index.
Notes: Market rate: 3-month and 2-year OIS. Deposit rate spreads: deposit rates are computed as a weighted average between overnight deposits, deposits with agreed maturity and deposits redeemable at notice, with their corresponding new business volumes. Whenever new business volumes are not available, they have been derived by assuming that the differences in the mean and in the variability between net flows and the available new business series can be applied to derive estimates of new business series from available net flows. The spreads are then calculated vis-à-vis the EURIBOR rates of the closest maturity. The share of deposits: vis-à-vis total new business retail deposits and gross issuance of long-term debt securities by MFIs (EA = 92% in Dec13). Bank bond spreads: bank bond yields are taken from the Merrill Lynch Global Financial Index and aggregated on the basis of their corresponding outstanding amounts. The spreads are then calculated vis-à-vis the swap rate of the closest maturity. The share of long-term debt securities: vis-à-vis total new business retail deposits and gross issuance of long-term debt securities by MFIs (EA = 8% in Dec13), or long-term debt securities by MFIs and total Eurosystem borrowing netted by banks' claims on the Eurosystem (EA = 6% in Dec13). Capital charges: cost of the capital required by Basel II regulations. Expected losses: LGD*PD where PD (Probability of Default) is the EDF computed by Moody's, and LGD (Loss Given Default) is fixed at 0.45 100%. Margin: constructed as the residual between lending rates and all of the above components.

[77] Decompositions for distressed and non-distressed countries are created as weighted average decompositions of individual countries based on weights corresponding to total bank asset values.

[78] The risk spread and the capital charge can be approximated by applying a regulatory standard loss given default (LGD) of 45 and by including an approximate measure for the time series of probability of default (PD). For capital cost, the risk adjusted excess return on capital (RAROC), typically in the range of 10-12%, can be applied. Thus, the risk spread is approximated by the expected default cost (=PD x LGD) and the capital charge by the implied capital requirement following the Basel II IRB approach multiplied by the excess cost of capital (RAROC). Overall, the component called margin, which is obtained as a residual, heavily relies in the hypothesis underlying the decomposition.

Despite its simplified assumptions, this illustrative accounting decomposition still gives some insights into the potential determinants of lending rate developments and the link between banks' cost of funding and lending rates. First, the impact of banks' costs of funding factors into the decomposition in terms of spreads relative to the risk-free market rate of the closest maturities. For example, the deposit spread is often negative because banks provide liquidity services to depositors. So the deposit rate is very low, and can even be lower than the OIS rate. Second, the costs of borrowing from capital markets in stressed economies (bank bond spreads) are higher than in non-distressed economies. This may be due, to a certain extent, to the fact that these banking sectors are domiciled in countries with stressed governments, so investors in bank bonds have to be compensated for the high return that they can make on sovereigns. Additionally, high sovereign bond spreads may also distort the pricing of loans by making banks charge a higher margin on loans. Loans have to compete with high-return government debt as a possible investment opportunity for the bank. Third, lending rate developments can be influenced by other factors outside of funding costs. These extra factors, are, however, left out the scope of the analysis presented here. Thus, composite corporate lending rates in distressed economies remained high in 2013 and the first half of 2014, despite the reduction in market reference rates and the sharp reduction of various cost components after the OMT announcement, reflecting deterioration in the quality of their loan books and an increase in margins. More recently, against the background of monetary policy action and, in particular, the credit easing package, lending rates have been showing a decrease in these countries.

These findings are consistent with the potential drivers of lending rates, as described in previous ECB publications: the fragmentation of banks' funding conditions owing to tensions in government bond markets, the importance of bank capital, and macroeconomic and bank risk factors, covering both the supply and the demand side of the lending process.

Adjustment of lending rates to increases in funding cost spread, as viewed through the lens of pass-through models

As stated in the Basel III accord,[79] *"A strong and resilient banking system is the foundation for sustainable economic growth, as banks are at the centre of the credit intermediation process…. The objective of the reforms is to improve the banking sector's ability to absorb shocks arising from financial and economic stress, whatever the source, thus reducing the risk of spillover from the financial sector to the real economy."* Though a broad strand of literature[80] covers how banks' balance-sheet

[79] BIS, (2010) "Basel III: A global regulatory framework for more resilient banks and banking systems", December (revised June 2011).

[80] For a recent empirical analysis of the bank lending channel, see Jiménez, G., Ongena, S., Peydró, J.and Saurina, J. (2012), "Credit Supply and Monetary Policy: Identifying the Bank Balance-Sheet Channel with Loan Applications", *American Economic Review*, Vol. 102, N 5, 2301-2326, August. A discussion and survey of earlier literature on the bank capital channel can be found in Van den Heuvel, S. J. (2002), "Does Bank Capital Matter for Monetary Transmission?", *FRBNY, Economic Policy Review*, May.

financial markets, leading to improved market sentiment over a wide range of assets. By mitigating distortions that were more acute in distressed countries, Eurosystem funding helped decrease obstacles to financial integration.

This section presents a simple scenario that illustrates the direct impact of Eurosystem funding in bank funding costs. A funding cost relief indicator is obtained by comparing banks' average funding cost, as presented in Section 2, with a hypothetical funding cost computed based on the assupmtion that, in the absence of Eurosystem funding, banks would instead have issued new bonds at the cost they faced in the secondary market. This funding source is typically easier to adjust in the short term at prevailing market conditions whereas, despite the role of technological innovation, adjustments to the level of deposits tend to require medium to long-term investments or aggressive commercial policies.

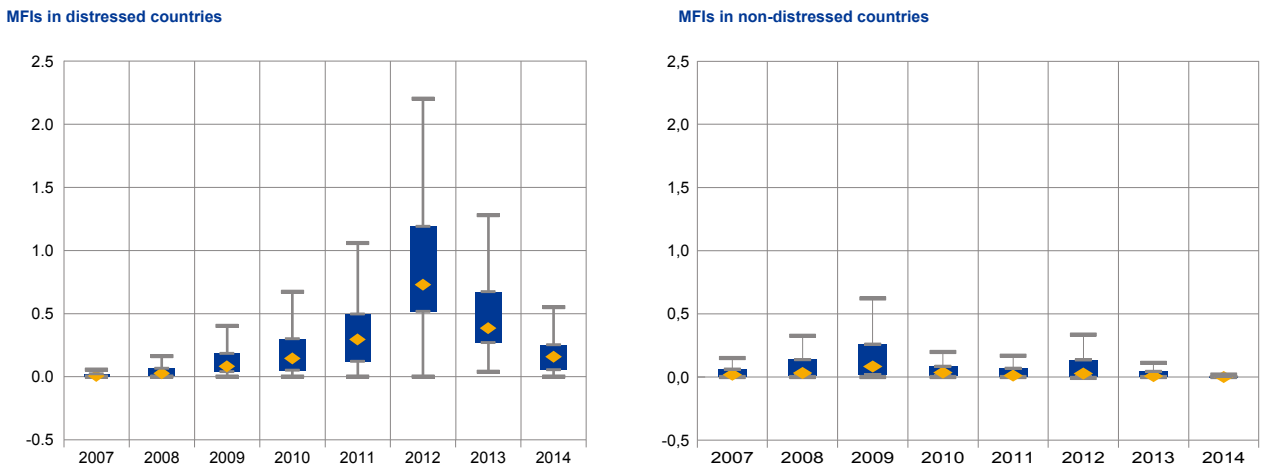
As illustrated in Chart 43, the computed funding cost relief indicator is considerably higher for distressed than for non-distressed countries. The median funding cost relief for banks located in distressed jurisdictions reached 114 basis points in July 2012 and from then on has progressively decreased, standing at 4 basis points in September 2014. The indicator showed low values for most banks in non-distressed countries, even though it clearly increased for a minority of banks in the first half of 2009 and 2012.

Hence, this indicator is consistent with the relevance of Eurosystem funding in mitigating the increase of funding costs for banks in distressed countries. This simple scenario should be regarded as a lower bound to the actual impact of Eurosystem funding, since it does not take into account quantity restrictions in bond market access or how the operations helped lower the price of other funding sources through an increase in market participants' confidence.

Chart 43

Individual MFI funding cost relief

(percentages per annum, cross-sectional distribution)



Sources: ECB, and IBOXX, ECB calculations.
Notes: The charts include data for a sample of banks from 13 euro area countries (Distressed countries: ES, GR, IE, IT, PT and SI; non-distressed countries: AT, BE, DE, FI, FR, LU and NL). The medians are represented by diamonds, and the boxes display the interquartile range. The ends of the whiskers are set at a multiple of 1.5 of the interquartile range above the third quartile and below the first quartile (Q1). If the Minimum or Maximum values are outside this range, then they are considered outliers and not shown. The starting date of the time series presented above is August 2007. Last observation: December 2014. For illustration purposes, the charts show yearly rather than monthly data.

lending rates. We estimate the particular simplified case of pass-through models,[82] which only include spread of funding costs as a risk factor for the four major European economies. Contrarily to previous ECB publications, we do not consider the pass-through process of market reference rates, but use the pass-through models to study how lending rates adjust themselves when the funding conditions increase vis-à-vis market risk-free rates of corresponding maturity.[83] Consistent with the accounting decomposition of bank lending rates based on a simplified loan pricing formula, and with previous ECB publications, where sovereign debt tensions were proxied by sovereign spreads, banks funding costs also enter our pass-through models in the form of spreads with respect to market risk-free rates. This allows us to separate the impact of changes in market reference rates from changes in funding costs. The simple pass-through models do not consider several additional factors, discussed above in our analysis, namely changes in demand for loans, the opportunity cost of lending (most notably taking into account incentives for holdings of sovereign debt), competition and deleveraging pressures. The risk profile of borrowers is to a certain extent captured by considering lending rates for big and small loans.

Chart 45 shows the result for the model for composite lending rates for NFCs and households, as well as composite corporate lending rates for small loans[84] (loans up to € 1 million) and large loans (loans over €1 million). It depicts how composite lending rates in the euro area and in distressed vs. non-distressed countries adjusted to an increase[85] in funding cost spreads. This adjustment is computed on the basis of the estimated pass-through model as an empirical response of lending rates to an increase in funding cost spread (so-called empirical impulse-response functions (IRFs)).[86] The chart provides evidence of the lagged adjustment of retail interest rates to changes in funding cost spreads. After one year, only less than 40% of changes in funding costs spreads were carried over to euro-area lending rates for corporates

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[82] We follow the methodology described in Darracq et al. (2014). The simple single equation pass-through model assumes the absence of any explanatory variables in the lending rate adjustment mechanism, except the market reference rate and the cost of funding; it is modelled by an error correction mechanism with the following structure:

$$\Delta lr_t = \sum_{k=0}^{K} \delta_k \Delta r_{t-k} + \sum_{j=1}^{J} \lambda_k \Delta lr_{t-j} + \sum_{n=1}^{N} \omega_s \Delta s_{t-n} + \alpha\left(lr_{t-1} - \beta r_{t-1} - \beta_s s_{t-1} - \mu\right) + u_t$$

lr_t denotes the composite bank lending rate; r_t is the reference market interest rate, i.e. the rate at which banks can raise funds in the interbank money market; s_t is the spread of the banks' cost of funding with respect to the 1-year swap rate. Coefficient α in the cointegrating vector (CV) represents the speed of adjustment towards the long-run equilibrium, coefficients β and β_s in the CV are the long-term equilibrium pass-through, and coefficients in front of the lags of the market reference rate and the cost of funding are the immediate pass-through.

[83] Composite lending rates are compiled by merging the lending rates for different loan maturities; moreover, in some countries variable lending interest rates indexed to money market rates are more prevalent, while in others most loans are granted with fixed rates. This requires the use of different market reference rates for pass-through models. We allow for this variability and pick up the best passing market reference rate from the set of rates, including Euribor 3-month and 12-month rates; OIS 6-month, 9-month and 12-month rates; and 1-year and 3-year swap rates. Indicators of marginal funding cost on country-specific levels are constructed on the basis of a weighting scheme, including deposit and wholesale funding (i.e. bank bonds); spreads of funding cost are measured with respect to the 1-year swap rate.

[84] Lending rates on small loans typically proxy lending rates on loans to SMEs; however, the size of a loan may also be related, to some extent, to its purpose (e.g. inventory financing, working capital, etc.) and duration.

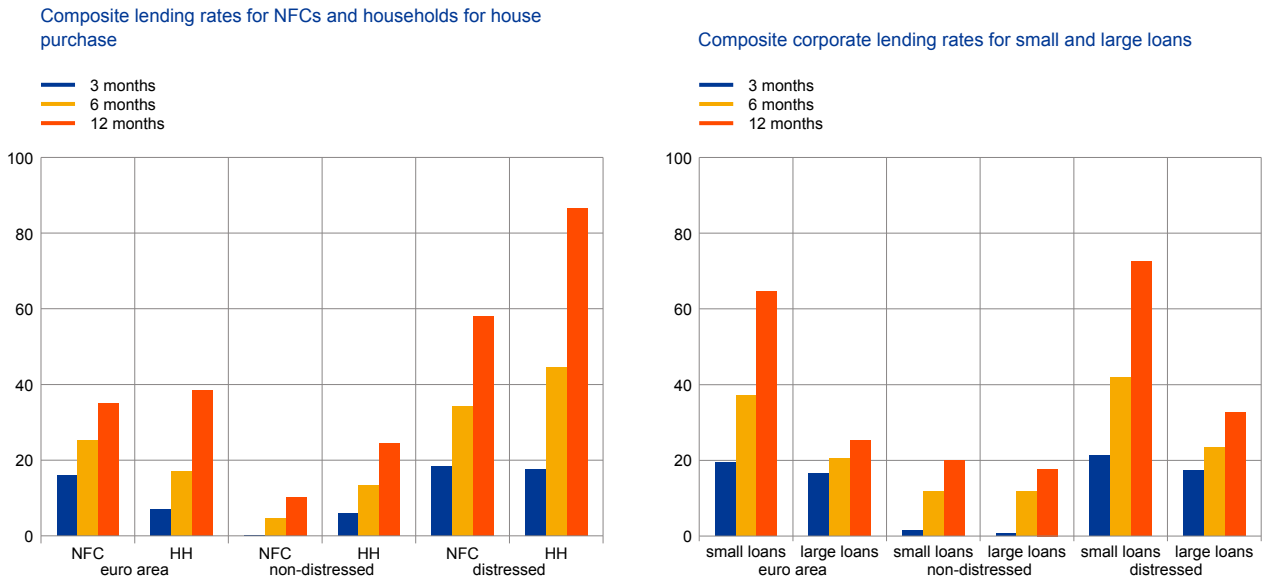
[85] Data limitations do not allow us to estimate asymmetric pass-through models, where increases and declines in funding costs could have a different absolute impact on changes in lending rates.

[86] Empirical IRFs compare the projected path of lending rate with and without an increase in funding cost spread for different time intervals.

Chart 45

Adjustment of composite lending rates for the euro area and distressed vs non-distressed countries to an increase in funding cost spreads

(percentage per annum of original increase in funding costs spread)



Source: ECB and ECB calculations.
Note: Euribor 3-month and 12-month rates; OIS 6-month, 9-month and 12-month rates; and 1-year and 3-year swap rates are used as market reference rates. Adjustment of lending rates to increases in funding costs spreads are measured as empirical IRFs, estimated on the basis of pass-through models.

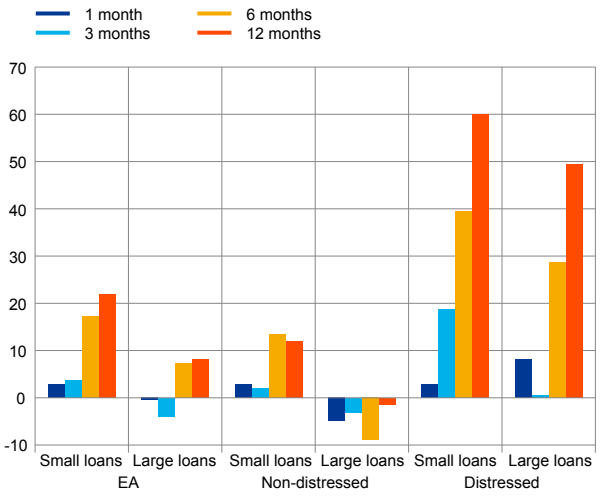
and households, respectively. Moreover, banks tend to penalise households to a greater extent than they penalise corporations; lending rates to households for housing purposes tend to increase more compared to increases in corporate lending rates in response to similar original increases in banks funding cost spreads. In line with our hypothesis, the adjustment of lending rates is smaller in less distressed countries, compared to the euro area, and is higher in distressed economies. The right-hand chart presents the corresponding results for models for corporate lending rates for small and large loans. After one year, 65% and 25% of the original size of the increase in funding cost spread were carried over to the euro-area corporate lending rates for small and large loans, respectively. Thus, our model predicts that increases in funding costs influence lending rates for small loans (which can proxy the lending rates for SMEs) to a greater extent and more intensely than they do for lending rates for large corporations. As SMEs typically have higher probabilities of default and are more dependent on bank financing than large corporations, they are more heavily penalised by banks when funding costs increase. Again, the adjustment of lending rates to increases in bank funding costs in distressed economies is higher compared to the euro area and to non-distressed countries. The adjustment of lending rates for small loans for the euro area as a whole is closer to the respective percentages of distressed countries, in line with the fact that the volume of lending for small loans is higher in distressed countries in comparison to non-distressed countries.

Similarly to Section 2, country level developments may be mirrored by less homogeneous developments for a given population of banks. To cross-check the previous findings, we perform the pass-through analysis at the level of individual bank data. We use the cost of funding indicator, constructed for individual banks

Chart 46

Median adjustment of composite corporate lending rates for small and large loans to increase in funding cost spreads (based on a sample of individual banks)

(percentage per annum of original increase in funding cost spread)



Source: ECB and ECB calculations.
Note: 3-month Euribor, 3-month, 6-month and 12-month OIS, and 1-year and 3-year swap rates are used as market reference rates. Adjustment of lending rates to increases in funding cost spreads is measured as empirical IRFs, estimated on the basis of pass-through models. Models are estimated over the period August 2007 – September 2014; however, estimation periods for individual banks depend on data availability. Median levels are reported.

(see Section 2), and composite corporate lending rates for small loans (loans up to €1 million) and large loans (loans over €1 million). Composite lending rates for large and small loans are compiled merging lending rates of different maturities, which might demand different market reference rates for pass-through models, so the results of the analysis should be treated with caution. Additionally, lending rates and cost of funding data are available for different time intervals for different banks. As highlighted in Darracq et al., (2014), the pass-through properties might differ significantly for the pre-crisis period and the financial and sovereign debt crisis periods, which might introduce additional bias in the interpretation of results. As our dataset is unbalanced, we follow the same methodology as for country-specific lending rates, namely estimating single error-correction pass-through models for each bank separately. Again, we do not consider the pass-through process of market reference rates, but use the pass-through models to study how lending rates adjust themselves when the funding conditions increase vis-à-vis market risk-free rates of corresponding maturity. Chart 46 presents results in the form of the median adjustment of lending rates to an increase in funding cost spreads (measured as empirical IRFs) for the whole sample of banks and for the banks of distressed and non-distressed countries separately.[87]

In keeping with the previous findings for the country-specific lending rates, an increase in cost of funding spread only partly carries over to lending rates and after a significant delay. At the median level, after one year, less than 25% and 10% of the original increase in funding costs transfer to the composite lending rates for small and large loans, respectively. In line with previous arguments that SMEs rely more on banks financing, have higher perceived borrower risk and are more informationally opaque than large firms, when the funding costs increase vis-à-vis market risk-free rates, banks pass on a greater portion of the increase in corporate lending rates for small loans than they do in lending rates for large loans.

In line with earlier findings and our original hypothesis, banks in distressed economies do not seem to be able to mitigate upside shocks in funding costs to the same extent as banks in non-distressed economies; therefore, lending rates adjust to a greater extent and more quickly in distressed countries than in non-distressed. Also, the disparity between lending rate adjustments on small versus large loans is more pronounced in distressed economies. Thus, after one year, respectively 60% and 49% of an increase in funding cost spreads has carried over into lending rates (measured at the median level) for small and large loans in distressed countries,

[87] Sample of 12 countries is available (distressed countries: ES, GR, IE, IT, PT; non-distressed: AT, BE, DE, FI, FR, LU, NL).

whereas these adjustments amount only to 12% of the original increase in the funding cost spread for the median level for small loans in non-distressed countries. Moreover, according to our estimates, banks in non-distressed economies tend not to pass on an increase in bank funding cost spreads (as measured at the median level) to large corporations.

Summary

This Special Feature investigates the degree of cross-country and within-country heterogeneity in bank funding conditions. It is noted that the higher level of funding costs for banks observed in distressed countries was associated with both sovereign links and greater risk perceptions for banks in distressed countries, which is likely to be accompanied by a higher level of scrutiny by market participants. The text also includes a simple scenario illustrating the significant role of Eurosystem funding in reducing bank funding costs, most notably in distressed countries. Lastly, it explores the role that funding costs continue to play in explaining dispersion in lending rates to NFCs and households across countries. It is found that higher loan rates in distressed countries not only reflect firms' higher macro-risks, but also banks' higher market funding costs. In addition, lending rates adjust more and faster to an increase in funding costs in distressed countries, as banks are less able to act as a shock absorber and shield their borrowers from the immediate impact of shocks to funding costs. Moreover, when funding costs increase, lending rates for small loans tend to be more affected than those for large loans. This disparity in responses is more pronounced in distressed economies. The findings of this feature regarding funding costs point to significant impairments to financial integration during the more acute periods of the financial and sovereign debt crisis, with an increase in integration in the more recent period, as conditions in financial markets improved.

Special Feature B
Banking Union and financial integration[88]

The completion of Banking Union is advancing following the finalisation of the Comprehensive Assessment and the taking up by the Single Supervisory Mechanism (SSM) of its supervisory responsibility on 4 November 2014, ahead of the Single Resolution Mechanism (SRM) becoming fully operational on 1 January 2016. This Special Feature provides an assessment of the main benefits of Banking Union and identifies key priorities in promoting financial integration. This means in particular backing the Single Resolution Fund (SRF) of the SRM with a credible backstop. In addition, greater European financial markets integration, also referred to as a Capital Markets Union (CMU), would benefit economic growth. A comprehensive package of measures that would contribute to a CMU should enhance confidence and ease corporations' access to capital markets.

Introduction

Since the mid-1980s, a main aim of policymakers in Europe has been to achieve more financial integration as one goal of the EU Single Market. This was meant to reap in Europe all possible benefits stemming from enhanced financial integration, including improved risk sharing and better capital allocation, which are also essential for the smooth functioning of the Economic and Monetary Union (EMU).
The availability and affordability of financial instruments beyond national borders offer the possibility of smoothing consumption in the presence of negative shocks.[89] With EMU, financial integration in the Eurozone increased significantly until the financial and the sovereign crisis reversed some of the past achievements. The crises made it clear that additional financial integration is needed to avoid a reversal of the EMU. A complete Banking Union, with its components of shared European bank supervision, bank resolution and bank deposit guarantee, would be a further step towards increased financial integration in Europe. It will act as circuit breaker, interrupting a negative downward spiral in Europe of financial fragmentation, and will thus increase the quality of financial integration. However, some of the elements needed to further improve financial integration in Europe are still missing. These elements would further integrate capital markets in Europe and make more market-sourced funding available to SMEs.

88 Authors: Maddaloni, A., Ampudia, M., Posch, M., Baumann, A., Nitze, K. Comments: Arruga Oleaga, I.,Torstensson, P., and Luedersen, M.

89 Economic theory suggests that financial integration has substantial positive effects for risk sharing (see, for example, Obstfeld M. (1994), "Risk-Taking, Global Diversification and Growth", *American Economic Review*, Vol. 84, No. 5, December, pp. 1310-1329). Although empirical evidence is not unanimous, Kose, M.A., Prasad, E.S. and Terrones, M.E. (2009), "Does Financial Globalization Promote Risk-Sharing?", *Journal of Development Economics*, Vol. 89, pp. 258-270, for example, document an increase in risk sharing following financial integration for industrial countries.

This Special Feature will first review the reasons for establishing the Banking Union and how Banking Union is expected to contribute to financial integration. It will then describe the missing elements needed for deeper financial integration, and will finally conclude with an outlook on the EU CMU project.

1 Banking Union and financial integration

1.1 The incompleteness of the EMU

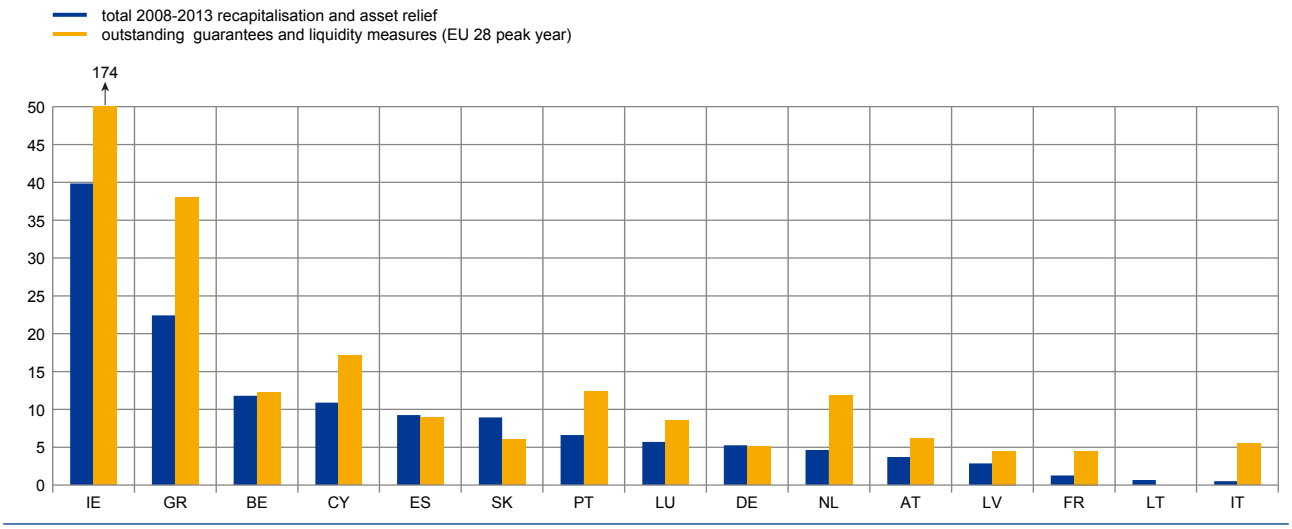
The financial crisis and the sovereign crisis revealed the incompleteness of the construction of the EMU. It is not an exaggeration to say that these deficiencies have threatened the continued existence of the Monetary Union in its previous form. Despite a common monetary policy, the responsibility for banking supervision as well as resolution powers remained at the national level. The cross-border coordination of supervision in the EU was based on colleges of supervisors and on the principles of "minimum harmonization" of supervisory standards, "mutual recognition" of national regulations as equivalent in other Member States, and "home country control", under which home jurisdictions were responsible for supervision of their banks' activities abroad through branches. At the same time, national jurisdictions were at times under pressure to promote national champions and to support the local banking models for competition reasons. This home bias of national supervision may have led to a lenient stance as to the risk behaviour of banks.

The financial crisis clearly showed that each Member State was responsible for the financial stability of its own banking system. Many jurisdictions supported

Chart 47

Total financial crisis aid amounts used by aid instrument given to financial institutions

(as a percentage of 2013 GDP; selected euro area countries)



Source: European Commission.

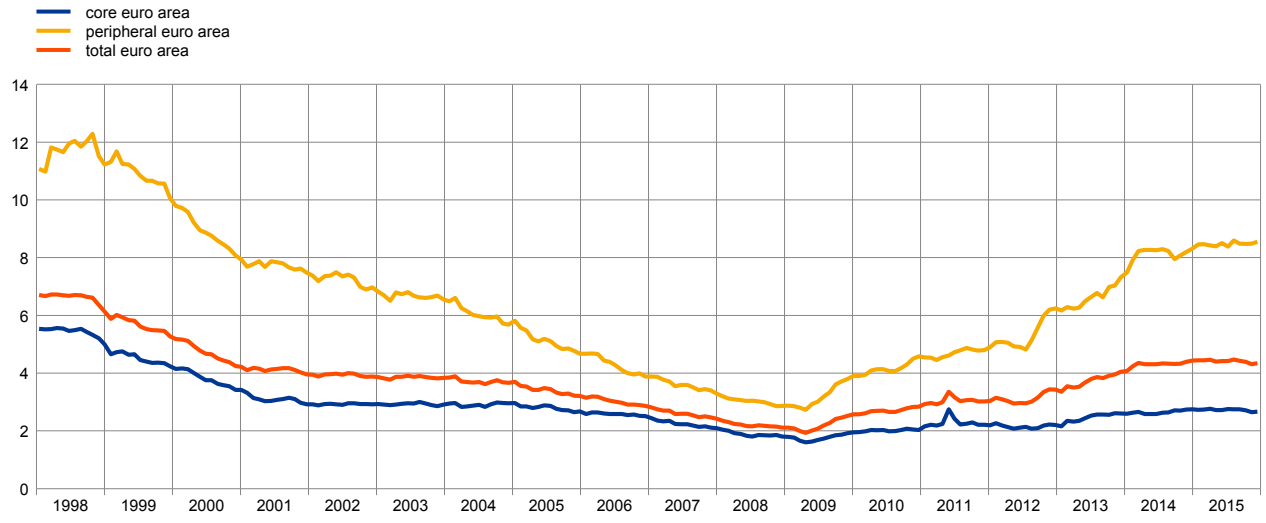
their banking sectors with capital measures or guarantees. According to the EU Commission[90], the total aid amounts granted for recapitalisation and asset relief measures for the euro area banking sector in the years 2008 – 2013 comprises €484 billions. Guarantees and other liquidity measures for banks peaked to €932 billions in the same period. Measured in percentage of the respective national GDP for 2013 (Chart 47), it is obvious that this can in turn trigger financial instability of the sovereign, also in light of insufficient national and European resolution frameworks. In some cases, the financial stability concerns of sovereigns caused a negative feedback to the domestic banking sector[91], which were often linked closely in different ways, e.g. by holding of a sizeable amount of domestic government bonds. Peripheral countries' banking sectors increased their holdings of own government bonds much more than core euro area countries (Chart 48). The increased home bias may be a result of various factors, including: possible "moral suasion" by the respective governments, "carry trade" motivations given also their low level of capitalisation,[92] and efforts to hedge redenomination risk.[93]

The strong interdependence between banks and sovereigns increased the risk of a vicious circle between them and impeded efficient lending to the real economy.[94]

Chart 48

Share of banks' holdings of own government bonds

(as a percentage of total assets for the euro area core and peripheral countries)



Source: ECB.
Notes: Peripheral euro area countries: CY, GR, IE, IT, PT, SI and ES.

90 http://ec.europa.eu/competition/state_aid/scoreboard/financial_economic_crisis_aid_en.html#tables

91 M. Fratzscher, M. Rieth: "Monetary policy, bank bailouts and the sovereign-bank risk nexus in the euro area", CEPR No. 10370; January 2015.

92 "Carry trades" are meant here in the sense that undercapitalised banks, most of which might be based in periphery countries, invest in high-yield sovereign debt that is funded by going short on low-yield debt or by borrowing from the ECB, betting on resurrection of the domestic country. See Battistini, Pagano and Simonelli (2014).

93 Banks in distressed countries invest in domestic sovereign bonds to hedge their domestic liabilities in case the home country leaves the euro area, in which case all euro-denominated assets and liabilities would be redenominated into the new national currency. See Battistini, Pagano and Simonelli (2014).

94 See Popov, A. and van Horen, N. (2014), "Exporting Sovereign Stress: Evidence from Syndicated Bank Lending During the Euro Area Sovereign Debt Crisis", *Review of Finance*, forthcoming.

Another deficiency of the EMU was that there was no circuit breaker to stop financial fragmentation. The financial and in particular the sovereign crisis – characterised by a strong reversal to home bias in many market segments – reduced the risk-sharing benefits gained in the preceding integration period and took forms which were detrimental to the smooth functioning of the monetary policy function. This experience highlights the need for mechanisms that would allow reducing the degree to which financial fragmentation spreads in crisis times.

1.2 The intended effects of the Banking Union on financial integration

Overall, the Banking Union is expected to generate more financial stability in Europe, promote confidence in the European banking sector and facilitate the transmission of monetary policy. In addition, the Banking Union provides the tools to reduce the negative effects of crises on financial integration, thus leading to an overall higher quality of financial integration.

The decision to establish a European Banking Union was announced at the European Summit in June 2012 by the European leaders. The objective was to rectify the deficiencies as described in the previous section of this Special Feature. The key points are summarised as follows.

1. The establishment of the SSM itself helps to delink individual sovereigns from their banks, as the task of bank supervision is carried out at the European level for the participating Member States. This will have several positive effects:

   (a) The SSM will apply only one approach to supervision, consisting of harmonised practices and methodologies, instead of different supervisory models across Europe. This will lead to a consistent implementation of the single rulebook and an effective enforcement of prudential requirements across the participating Member States. The SSM will be able to monitor and compare risks from individual European banks better and will have the power to address them in a timely fashion. Importantly, this will overcome the long-standing issue of home-host coordination of cross-border bank supervision between participating Member States.

   (b) With supervision at the European level, the predominance of “national bias” will diminish. Supervision strategies, such as protecting national champions or ring-fencing liquidity within national borders in crisis times, should no longer play a role. The focus will be on the health of the entire banking group and each institution will be assessed based on its own risk profile. This will help to increase the robustness and stability of the whole European banking system.

   (c) From a bank perspective, the establishment of the SSM will put banks in a position where they can achieve economies of scale, as European borders should not matter anymore with regard to the regulatory environment, simplifying cross-border activities and facilitating the most efficient

allocation of capital and liquidity. The single supervisory model of the SSM and the EU single rulebook should also lower compliance costs, as regulatory compliance functions no longer need to be duplicated in different euro area countries. Carrying out supervision centrally will likely reduce the entry costs for cross-border activity by decreasing uncertainty linked to the implementation of banking regulation. Finally, the comprehensive assessment performed as part of the establishment of the SSM has been a catalyst for repairing banks' balance sheets. Since July 2013, banks that have participated in the comprehensive assessment have undertaken various measures to strengthen their balance sheets by more than €200 billion, including €60 billion of capital increases (see table). These actions have increased confidence in the banking sector, which is a precondition for stronger recovery in credit. This will likely be especially helpful to the euro area countries that suffered most from the sovereign crisis and has the potential to level off the huge differences in bank lending rates between distressed and non-distressed countries (see Chapter 1, banking market section).

Table

Balance sheet strengthening measures of banks that took part in the comprehensive assessment

(July 2013 – August 2014)

TOTAL	€ 203 BN
Of which:	
Gross equity issuances	€ 60 BN
CoCos issuances	€ 32 BN
Internal capital generation	€ 44 BN
Asset sales and other measures	€ 67 BN

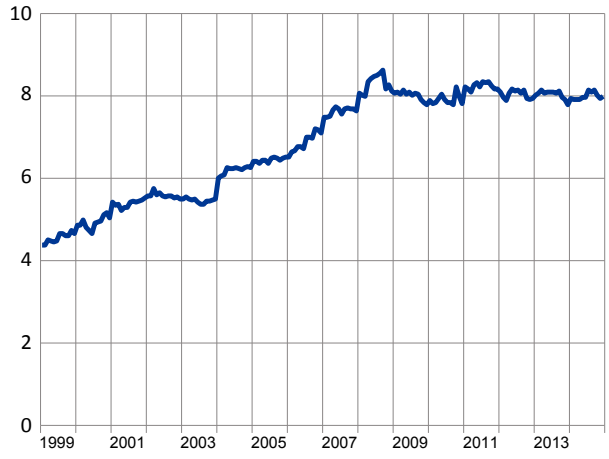
Source: National Competent Authorities (Supervisors); see presentation by V. Constâncio, D. Nouy, "Comprehensive Assessment - final results, press conference", 26 October 2014.

(d) Cross-border lending by banks to non-MFIs (see Chart 49) and to households is very low. From the demand side, households and corporates will probably be less reluctant to use cross-border funding once they realise that banks from other euro area countries are supervised by the same supervisor according to the same high standards that also rule domestic banks. At the same time, the level playing field for banks has been improved, which will bring the positive effects of more competition among banks for customers.

Chart 49

Percentage share of non-domestic loans to non-MFIs of total loans by euro area banks

(monthly data, January 1998 - December 2014, percent)



Source: ECB calculations from MFI Balance Sheet.
Notes: Non-domestic refers to other euro area countries plus other EU non-euro area countries. Total is domestic plus non-domestic.

(e) Finally, the Banking Union defines a coordination mechanism between national macro-prudential authorities and the ECB for preparing macro-prudential policy decisions. This mechanism allows macro-prudential policies to be better targeted to risks with cross-border implications and, hence, more effective than national ones.

2. Another necessary element of the Banking Union is a mechanism that will reduce the likelihood of sovereigns bailing out banks in the event of a bank failure, thus further reducing the negative link between bank and sovereign risks. Strong European supervision will certainly be the first line of defence. Further safeguards against sovereign liability have been introduced through the setting-up of the Single Resolution Mechanism (SRM), including a Single Resolution Board and a Single Resolution Fund (SRF) financed by the banking industry, as well as the introduction of a bail-in rule for bank resolution with the Bank Recovery and

Resolution Directive (BRRD) and with the adoption of the Deposit Guarantee Scheme Directive enhancing deposit guarantee schemes. So, the costs of a bank failure would be borne first and foremost by banks' shareholders and creditors (other than insured depositors), thus reducing the scope for the possible use of the public purse. Should public funds become necessary despite all these provisions, then it would ultimately be the responsibility of the home Member State to provide funding during the transition phase of the SRF. Should national funds be exhausted, a Member State may resort to the funds of the European Stability Mechanism (ESM) according to the established rules and conditions. As a measure of last resort, the ESM has been entrusted with the possibility to recapitalise banks directly if a bank fails to attract sufficient capital from private sources and if the respective Member State is unable to recapitalise it by itself. The establishment of the SSM as the first pillar of the Banking Union was a precondition for the creation of this ESM direct recapitalisation instrument (DRI).[95] This instrument would support ailing euro area banks across borders as a last resort, which helps to decouple the link between individual sovereigns and their banks. The actual need for activation of the ESM DRI in the context of a SRM with a SRF fully operational from 1 January 2016 (albeit the latter will be subject to an eight-year transition period before its full mutualisation) will need to be ascertained, especially when the SRM is equipped with an enhanced borrowing capacity.

Against this background, progress should be expected along two dimensions. The retail banking segment could become more integrated, which would result in an increase in cross-border lending and homogenisation of contract characteristics. At the same time, a more efficient banking sector as an outcome of cross-border mergers & acquisition (M&A) should bring a decrease in prices and a faster pass-through of monetary policy decisions (note that these benefits should be measured against the costs of having larger financial institutions).

Even before the crisis started, very little financial integration had been achieved with regards to retail banking. In particular, lending conditions in the mortgage market remained heterogeneous. The typical loan-to-value (LTV) ratio for a first-time homebuyer ranged from 63% in Malta to 101% in the Netherlands. In some countries such as Spain, Portugal or Finland, adjustable-rate loans were the norm, whereas banks in Belgium, Germany or France offered fixed-rate loans almost exclusively. Other characteristics, such as the most common maturity of the loans, the conditions for early repayment, the government-sponsored and private guarantee schemes, and the existence of caps for interest rates, were also very different across countries.[96]

There is no clear economic justification for such differences in the needs and preferences of households across these countries. In most cases, the differences are merely attributable to cultural and idiosyncratic specificities or supply decisions, and result in a constrained set of options for households demanding credit. Of course, the differences might partly arise from households' demand, and they could also be related to legal and institutional frameworks. These characteristics may be harder to change solely through deeper integration, but at least part of these differences should diminish.

95 The recapitalisation instrument has a maximum recapitalisation capacity of €60 billion.

96 For a detailed comparison of a broad range of loan characteristics across euro area countries, including the LTV numbers reported in the text, see "Housing Finance in the Euro Area", ECB Occasional Paper Series No. 101, March 2009.

A common supervisory environment is likely to induce the emergence of more consistent bank business models across euro area countries, spurring competition and ultimately resulting in benefits for retail customers.

Looking at a broader concept of prices, it should be expected that banks compete not only through the rates they offer to depositors or charge to debtors, but also by reducing fees. For example, before the beginning of the crisis, the cost of taking out a loan varied from 3.5% of the total loan amount in Belgium to practically zero in Finland. These charges would comprise variable bank charges, fixed bank charges and non-bank charges, with the relative importance of each of these components over the total cost varying substantially across countries too.[97]

Greater financial sector integration should go hand in hand with banking sector restructuring. It is difficult to judge the specific path that this will take. Recent developments in foreign branches and subsidiaries show some increase in the market penetration of foreign entities, accompanied by a general decline of the number of subsidiaries and entities (Chapter 1, Chart 33). This would suggest that the consolidation process in the banking market has already started.

On the one hand, the increase in cross-border M&A will trigger the formation of truly pan-European banks. But at the same time, it can be expected that new players at the local level will appear under the new supervisory framework. In any case, the various developments should translate into benefits for consumers via lower prices, and they should also result in a faster pass-through of monetary policy decisions. Interest rates charged by banks in more competitive markets tend to respond more strongly to changes in market interest rates.[98] This is a key element for the smooth functioning of monetary policy under a monetary union.

Overall, the potential impact of the Banking Union on these kinds of developments is expected to be positive on balance. First, the SSM, as already mentioned, should not be affected by domestic considerations in its own action (reduction of domestic bias) and will be very attentive to developments in the concentration of sovereign risk and banks' "carry trade" activities. In addition, the SSM can be expected to play an active role when discussions of the regulatory treatment of different instruments (e.g. sovereign debt) arise at the EU level. Furthermore, more broadly, the Banking Union as a whole is likely to help reduce the negative effects of widespread risk aversion in the banking sector.

2 Other aspects of Banking Union relevant for financial integration in the euro area

Even though the three aforementioned pillars of the Banking Union can be viewed as important achievements in enhancing EU financial stability, there is still room for further improvement. Below is a discussion of some issues that could promote greater financial integration.

97 See "Housing Finance in the Euro Area", ECB Occasional Paper Series No. 101, March 2009.

98 See van Leuvensteijn, M., Kok, C., Bikker, J. and van Ritxel, A. (2008), "Impact of Bank Competition on the Interest Rate Pass-Through in the Euro Area". ECB WPS No 885, March.

2.1 The scope of the Single Supervisory Mechanism (SSM)

SSM supervision is mandatory only for banks within the euro zone. Non-euro area Member States can voluntarily enter a close cooperation with the ECB to join the SSM (Articles 2(1), 7 SSM Regulation[99]). However, due to the increasing amount of cross-border banking activity within the Internal Market, there is a substantive danger of contagion effects. Therefore, and in order to achieve a strengthening and avoid a fragmentation of the Internal Market, it would be preferable to extend the scope of SSM supervision to all banks operating in the European Union beyond the euro zone and voluntarily joined Member States in the longer-term. Admittedly, a mandatory extension of the SSM's scope is for the time being unrealistic. Nonetheless, a splitting of the Internal Market can be counteracted by creating incentives for other Member States to join the SSM. At the moment, it is not clear whether the existing incentives are sufficient.[100]

On the contrary, the exclusion of "less significant" banks from direct ECB supervision according to Article 6(4) SSM Regulation is in principle not problematic.[101] While the national competent authorities remain responsible for the primary supervisory tasks in respect of such "less significant" banks (see Article 6(6) SSM Regulation), the ECB has sufficient powers and instruments to exercise bank supervision for all banks throughout the euro area. The ECB has the power to issue regulations, guidelines or general instructions to national competent authorities according to which supervisory decisions are then adopted by national competent authorities (see Article 6(5) (a) SSM Regulation). Moreover, the ECB may, at any time, when necessary to ensure consistent application of high supervisory standards (on its own initiative after consulting with the national competent authority or upon its request), decide to exercise directly itself all the relevant powers of supervision for "less significant" institutions (see Article 6(5)(b) SSM Regulation). After all, principally keeping direct banking supervision for "smaller" banks within the competence of national authorities under the ECB's guidance creates an efficient symbiosis of the ECB's and national authorities' expertise. Furthermore, this setup is in line with the principle of subsidiarity provided by Article 5(3) TEU and mentioned in Recital 87 of the SSM Regulation. In accordance with this principle, bank supervision at the Union level does not go beyond what is necessary in order to achieve an efficient and effective framework for the exercise of specific supervisory tasks over credit institutions and to ensure the consistent application of the single rulebook to credit institutions.

99 Council Regulation (EU) No 1024/2013 of 15 October 2013 conferring specific tasks on the European Central Bank concerning policies relating to the prudential supervision of credit institutions, OJ L 287, 29.10.2013, p. 63.

100 See Peters, K., (2014) "Die geplante europäische Bankenunion – eine kritische Würdigung""Wertpapier-Mitteilungen, p. 400.

101 For the contrary view, see Dullien, S. (2014), "How to Complete Europe's Banking Union", European Council of Foreign Affairs, Brief Policy, June, p. 9, online available at http://mercury.ethz.ch/serviceengine/Files/ISN/181721/ipublicationdocument_singledocument/86eef052-756d-41f3-8a0e-b4d15dc6e1bd/en/ECFR107_BANKING_UNION_BRIEF_250614_Single_Pages.pdf

2.2 Operationalising the bail-in tool

One of the key new resolution tools for protecting public funds in bank resolution is the bail-in tool, which means that shareholders and unsecured creditors (other than insured depositors) are primarily liable for the bank's losses and recapitalisation (Article 27 SRM Regulation,[102] Articles 43 et seq. BRRD[103]). This important tool will become applicable as of 1 January 2016, at the latest. To credibly remove the implicit state guarantee and effectively resolve large and complex banks within a very short period of time, there is added value in introducing a requirement that banks have sufficient own funds and liabilities that can be credibly and feasibly bailed-in quickly when needed. This is particularly relevant, as some types of liabilities are excluded from the scope of bail-in (for example secured liabilities and insured deposits) and authorities may decide to exclude other liabilities on a case-by-case basis, either because it is not possible to bail them in quickly enough or their bail-in brings about further contagion risks. Such a requirement would also mitigate the risk of banks increasing their leverage and funding themselves with bank debt that is excluded from the scope of bail-in, or that is believed to be less credibly loss absorbing.

While the BRRD and the SRM Regulation stipulate the general features of the bail-in tool, such as e.g. scope and a minimum requirement for own funds and eligible liabilities (MREL) for bail-in, much of the details will be provided by EBA in forthcoming guidelines and regulatory technical standards (issued by the Commission) with the aim of ensuring effective and consistent procedures across the Union, in particular with respect to cross-border financial institutions. For example, on the basis of Article 47 and 50 of the BRRD, the EBA will issue guidelines that clarify the circumstances which should guide the choice between cancellation and severe dilution of existing shares (or other instruments of ownership) when applying the bail-in tool, or the power to write-down or convert capital instruments provided for in the BRRD, as well as when and how different debt-to-equity conversion rates should be set for different types of liability. In particular, whereas the BRRD requires institutions to meet MREL as determined by resolution authorities on a case-by-case basis, the EBA is mandated by Article 45 of the BRRD to further specify the MREL criteria by means of technical standards. These technical standards will clarify how the institution's capital requirements should be linked to the amount of MREL needed to absorb losses and, when applicable, recapitalise a firm in resolution. They are necessary to achieve an appropriate degree of convergence in how MREL is applied, thereby ensuring that similar levels of MREL are set for institutions with similar risk profiles, resolvability, and other characteristics regardless of their domicile in the EU.

102 Regulation (EU) No 806/2014 of the European Parliament and of the Council of 15 July 2014 establishing uniform rules and a uniform procedure for the resolution of credit institutions and certain investment firms in the framework of a Single Resolution Mechanism and a Single Resolution Fund and amending Regulation (EU) No 1093/2010, OJ L 225, 30.7.2014, p. 1.

103 Directive 2014/59/EU of the European Parliament and of the Council of 15 May 2014 establishing a framework for the recovery and resolution of credit institutions and investment firms and amending Council Directive 82/891/EEC, and Directives 2001/24/EC, 2002/47/EC, 2004/25/EC, 2005/56/EC, 2007/36/EC, 2011/35/EU, 2012/30/EU and 2013/36/EU, and Regulations (EU) No 1093/2010 and (EU) No 648/2012 of the European Parliament and of the Council, OJ L 173, 12.6.2014, p. 190.

To achieve a smooth implementation of MREL, it is important for these technical standards to be compatible with the forthcoming international requirement of a Total Loss-Absorbing Capacity (TLAC) for Global Systemically Important Banks (G-SIBs), currently under development by the Financial Stability Board (FSB).[104] Although MREL and TLAC are broadly consistent, there are some significant differences between them.[105] For example, the TLAC requirement will be a global minimum requirement applicable to G-SIBs, with a possibility for authorities to require a case-by-case "top-up", whilst MREL applies to all institutions in the EU and is always determined on a case-by-case basis. While both allow for Common Equity Tier 1 (CET1) to count towards the requirement, only CET1 capital in excess of that needed to satisfy the TLAC requirement may count towards the capital buffers in the FSB proposal. Another difference is that the FSB proposal requires all liabilities eligible for TLAC to be subordinated to all liabilities not eligible as TLAC, while still senior to capital and junior instruments like subordinated debt. In the BRRD, however, MREL eligible liabilities are not in general required to be subordinated to other liabilities. These, and other small differences, need to be addressed. That said, Article 45.20 (d) of the BRRD also requires the EBA to further consider consistency with international standards as part of a report on MREL due out in 2016.

2.3 A backstop for the Single Resolution Fund

Effective financing of the SRF is of paramount importance to the credibility of the SRM and, by extension, also for financial integration within the Banking Union. Situations may arise where both the resources available in the SRF and what can be collected by ex post contributions are insufficient or not immediately accessible. For this reason, the SRM Regulation [recital 107] specifies that the SRB's capacity to contract alternative funding means for the SRF should be enhanced in a manner that optimises the cost of funding and preserves the creditworthiness of the SRF. The SRB will have to take the necessary steps in cooperation with the participating Member States to develop the appropriate methods and modalities permitting the enhancement of the SRF's borrowing capacity, to be in place when the Fund is established. Furthermore, there is a commitment (recital 13 in the IGA on the transfer and mutualisation of contributions to the Single Resolution Fund) to develop a common backstop to the SRF before the end of the transitional period of the SRF. Such a backstop will also facilitate borrowings by the SRF and significantly weaken the link between banks and sovereigns.

104 See FSB (2014), "Adequacy of loss-absorbing capacity of global systemically important banks in resolution", Consultative Document, 10 November.

105 By December 2016, the European Commission will submit a legislative proposal on a harmonised application of the MREL. Such a proposal may take into account possible adjustments to ensure consistency with any international standards in this area developed by international fora. The BRRD thus allows for the introduction of a harmonised Pillar 1 minimum requirement, inter alia taking into account international standards.

3 Financial integration for the whole EU – Towards a Capital Markets Union[106]

The new European Commission has identified Capital Markets Union (CMU) as one of its main policy initiatives for the coming five years.

Traditionally, European non-financial corporates rely predominately on bank loans for their funding. The crisis has demonstrated the problems of concentrating on one source of funding by highlighting the need to enhance the role of market funding as alternative funding source. The CMU initiative is directed to this ambitious goal and will be a supportive factor for the economic recovery of the EU. Further development of non-bank sources of funding seems inevitable in Europe compared to the more market-oriented economies. In the short term, the efforts to enhance market-based sources of funding are part of the policy response to the pronounced deleveraging in the EU banking sector and the continuing weak credit growth.

As a first step towards the establishment of CMU, the Commission published its so-called Green Paper on CMU[107] on 18 February 2015, which includes proposals for early action measures and medium to long term measures which are outlined below. The paper signals the start of a three months public consultation period until 13 May by highlighting a number of questions which should guide the consultation and help the Commission prioritising action in view of the action plan on CMU to be published later in 2015. The main building blocks of CMU are intended to be in place by the end of the term of this Commission in 2019.

The publication of the Green Paper is accompanied by two technical consultations: (i) one on an EU framework for simple, transparent and standardised securitisation[108] that outlines proposals to encourage high-quality securitisation of pooled loans, making it easier for banks to free up their balance sheets for new lending and (ii) the

106 See the speech of the EU Commissioner for Financial Stability, Financial Services and Capital Markets Union Jonathan Hill on 6 November 2014, online available at http://europa.eu/rapid/press-release_SPEECH-14-1460_en.htm.

107 Available under http://ec.europa.eu/finance/consultations/2015/capital-markets-union/docs/green-paper_en.pdf. It was accompanied by the publication of a Staff Working Document on "Initial reflections on the obstacles to the development of deep and integrated EU capital markets" (http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52015SC0013&from=EN) which analyses the state of play on capital markets integration and the main barriers to its development.

108 Building on separate consultations by the ECB/BoE and BCBS/IOSCO the Commission published a consultation seeking to develop simple, transparent and standardised (STS) securitisations. The aim is to revive the securitisation market, allow efficient and effective transfer of risk, enable securitisation to act as an effective funding mechanism for a broader range of market participants, and manage systemic risk. Qualifying STS would likely have to comply with disclosure and transparency requirements, be limited to simple structures with homogenous pools of assets with a 'true sale' rather than a synthetic structure, ensure the creditworthiness of the borrowers is compliant with mortgage and consumer credit protections, and be listed on a trading venue. Derivatives would be limited to hedging purposes only and re-securitisation would be excluded. As qualifying STS would potentially benefit from more favourable capital treatment, this could lead to a split in the securitisation market between qualifying STS and non-qualifying STS. Further aspects of the consultation include: identification criteria for short-term securitisations; streamlining risk retention requirements for investors; a standardised structure for securitisation (legal form of the SPV, forms of transfer, and the rights and subordination of shareholders); monitoring and verification mechanisms for compliance with the STS criteria; and securitisation for SMEs. Available under: http://ec.europa.eu/finance/consultations/2015/securitisation/docs/consultation-document_en.pdf

other on the Prospectus Directive[109] that looks at how prospectuses can be simplified for smaller companies.

In its Green Paper the Commission identifies three objectives for CMU, namely, first improving access to financing for all businesses across Europe, especially small and medium sized enterprises (SMEs) and investment projects such as infrastructures. Second, increasing and diversifying sources of funding from investors in the EU and globally and third, making markets work more effectively and efficiently to improve the connections between investors and those who need funding both within and across Member States.

The Commission lists a number of priorities for early action (including on-going work), such as (i) lowering barriers to access capital markets by streamlining the prospectus requirements for companies raising capital; (ii) widening the investor base for SMEs by improving credit information through the development of a common minimum set of comparable information for credit reporting and assessment (e.g. on-going work on credit scoring; organisation of workshops on SME credit information); (iii) building a sustainable (HQS) securitisation market by establishing an EU framework for simple, transparent and standardised (STS) securitisation; (iv) boosting long term investment by setting up a European Fund for Strategic Investment (EFSI) in the context of the Commission's Investment Plan; in addition, the COM and Member States should encourage the take-up of European Long-Term Investment Funds (ELTIFs); and (v) developing European private placement markets based on market-led initiatives such as ICMA's *Pan-European Corporate Private Placement Market Guide* on common market practices, principles and standardised documentation for private placements (published in February 2015). This Guide is built on the Charter for Euro Private Placement developed by the Euro PP Working group, a French financial industry initiative, launched at the beginning of 2014.

In addition, the Green Paper discusses a number of measures to develop and integrate capital markets in the medium- to long-term, which are grouped under the following objectives:

a. Improving access to finance. The lack of transparency and high costs of due diligence are seen as key elements impeding access to capital markets, in particular for SMEs and mid-sized firms. This could be improved through: (i) developing a simplified, common and high-quality accounting framework for companies listed on certain trading venues. This would improve transparency and comparability whilst avoiding the cost of applying International Financial Reporting Standards (IFRS) for SMEs; (ii) creating a European Investment Project Pipeline to facilitate access to information on investment opportunities; (iii) enhancing standardisation as a mechanism to kick-start certain markets, namely for covered bonds, corporate bonds, and crowdfunding activities, and exploring the potential for green bonds in financing.

b. Developing and diversifying the supply of funding sources by attracting institutional, retail and international investors. A wide range of initiatives are proposed, including: (i) reducing regulatory costs for setting up funds and facilitate

109 http://ec.europa.eu/finance/consultations/2015/prospectus-directive/docs/consultation-document_en.pdf

the cross-border marketing of EU investment funds and other instruments in 3rd countries; (ii) tailoring the treatment of infrastructure investments in relation to the calibration of capital requirements of insurers and banks, namely with a view to identify lower risk projects that may warrant a possible review of prudential rules; (iii) exploring the potential of a standardised product for personal pensions (possibly through a so-called "29th regime"); (iv) creating a better environment for business angels, venture capital and initial public offerings to boost the supply of venture capital funds; and (v) enhancing cross-border competition in retail financial services.

c. Improving market effectiveness by: (i) removing unjustified barriers to investment flows within the EU; (ii) considering the revision of powers and responsibilities of the European Supervisory Authorities (ESAs) with a focus on increasing supervisory convergence and ensuring a consistent implementation and application of EU law across the Single Market; (iii) developing common data and reporting across the EU, e.g. establishment of a "consolidated tape" in equity markets and (iv) assessing potential further need to harmonise across Member States the legal framework for: collateral movements, investors' rights in securities (namely ownership rules), legal certainty in cross-border transfer of claims, and the entry, operation and restructuring of companies; (v) looking into the impact of the different tax treatment between debt and equity.

The ECB fully supports the Commission's initiative for a CMU which is a key element to complete the Single Market. It is a welcome step towards developing and integrating the EU financial markets with a strong potential to support growth and competitiveness in the long run. CMU has the potential to complement the Banking Union, strengthen the EMU and foster financial stability. If well designed and thoroughly implemented, CMU can constitute a significant leap towards greater capital markets development and deeper financial integration. It could thus support the smooth and homogenous transmission of monetary policy and help foster financial stability by facilitating access to market-based funding, creating deeper cross-border markets, and increasing the resilience of the financial system by creating alternative sources of funding to the economy.

In order to achieve these objectives, CMU needs to be pursued with a high level of ambition. In the ECB's view, a genuine CMU would mean achieving full financial integration, which is achieved when all market participants with the same relevant characteristics face a single set of rules; have equal access to a set of financial instruments or services; and are treated equally when they are active in the market. The CMU therefore needs to be underpinned by a single and appropriate legal and regulatory framework that provides a level-playing field, and allows markets to develop. This would ultimately imply more steps towards greater harmonisation of insolvency law, company law and taxation of financial products. It is key that the definition of CMU should be included in the introduction of the upcoming proposal on CMU to clearly delineate the necessary level of ambition and to define the key steps leading to this final objective.

4 Summary and outlook

This article provides an account of the expected positive effects of the Banking Union on financial integration. Overall, the establishment of the SSM will likely be a game changer for more integrated banking markets in the euro area. However, the Banking Union is not fully completed yet. The SRM only becomes fully operational in 2016, including the bail-in tool. Beyond finalising the Banking Union, the EU needs to further enhance financial integration. The next major project for the Single Market will be the CMU initiative of the European Commission. A successful implementation of CMU measures will lead to better cross-border functioning of financial markets in support of economic growth and to increased financial stability. The ECB is therefore fully committed to contribute to the CMU project.

Special Feature C
The financial sector in the New National Accounts Framework[110]

The implementation of the new European System of Accounts (ESA 2010) in October 2014 has given us a wider and more precise statistical definition of the financial sector. This increases the cross-country comparability of national accounts data, providing in particular a clearer picture of the size of the financial sector in terms of financial assets and liabilities. The financial sector's contribution to value added varies substantially between countries and over the business cycle, raising questions about the measurement of financial services, especially during times of systemic stress.

This Special Feature takes a look at the financial sector's size, structure, geographical distribution, and contribution to value added in the EU, by using the new national accounts results based on ESA 2010.

Introduction

Historically, national accounting has been at the heart of macroeconomics and macro-econometric modelling. The latter cannot be disassociated with the practical questions policymakers put to economists after the Great Depression and after World War II. Ever since, national accounting has provided a coherent framework for building the required aggregates such as gross domestic product and gross national income. Whilst the basic logic has remained in place since the first modern macro-models were put forward in the 1950s by economists such as Lawrence Klein in the U.S. and Jan Tinbergen in Europe, national accounting has evolved to reflect structural changes in the economy, the evolution of modelling approaches, and a shift towards more evidence- and indicator-based policymaking.

For a long time, financial intermediation escaped macroeconomic analysis. In the immediate after-war period this may have been acceptable, since the relationship of finance and economic development appeared to be very stable between 1950 and 1980,[111] i.e. the modelling cost of adding a sector where measurement issues abound may have appeared simply too high, given that not much could be expected in terms of additional insight. Hence, financial markets appeared in modelling only to

[110] Authors: A. Hertkorn, R. Oliveira-Soares (ECB), H. Stieber, J. Villar-Burke (European Commission). Valuable comments have been received from F. Lequiller (European Commission).

[111] See evidence presented in Philippon, T and Reshef, A (2013), "An International Look at the Growth of Modern Finance", The Journal of Economic Perspectives 27(2), pp. 73-96; as well as Philippon, T and Reshef, A (2009), "Wages and Human Capital in the U.S. Financial Industry: 1909-2006", NBER Working Paper Series No. 14644; and Schularick, M and Taylor, A M (2009), "Credit Booms Gone Bust: Monetary Policy, Leverage Cycles and Financial Crises, 1870–2008", NBER Working Paper No. 15512.

the extent that interest rates for alternative investment opportunities were presumed to be established on (efficient) financial markets. Finally, long-term interest rates in macro-econometric models were often approximated by the yield of benchmark government securities, which ensured some presence for bond markets, albeit without their explicit modelling.

In parallel to the scarce interest on the part of economists, national accounting did not devote much energy to the measurement of the financial sector. However, in view of its sustained growth, financial sector activities could no longer be ignored by a national accounting system whose goal is to comprehensively measure all activity in a national economy.

European integration was an additional driving force behind the quest for more and better comparability between national economies. The study of European economic and financial integration – including its political implementations – needs reliable and comparable data to ensure that country specificities are reflected in an accurate and comparable manner. The indicator-based coordination of macroeconomic policies enshrined in the European Treaties from the beginning became more stringent with the so-called Maastricht criteria for the introduction of the single currency in 1999. More recently, this indicator-based approach has been further strengthened with the entry into force of the so-called macro imbalances procedure (MIP)[112] in 2011, as well as the Treaty on Stability, Coordination and Governance. These developments and the outbreak of the crisis highlighted the importance of the financial sector in the functioning of the economy and, therefore, the need for an accurate measure of it. An overall revision of the European System of Accounts was launched in 2010 to incorporate a series of improvements to the previous System of 1995. The goal of this Special Focus is to explain how the financial sector is measured within the system of national accounts and which are the main changes incorporated in ESA 2010 with respect the previous system (ESA 1995). Section 1 provides a snapshot of the financial sector based inter alia on data from monetary and financial statistics, and on the financial accounts framework; Section 2 discusses the improvements brought by the new European System of Accounts; Section 3 lays out the main challenges in the measurement of financial services; and Section 4 summarizes the main findings.

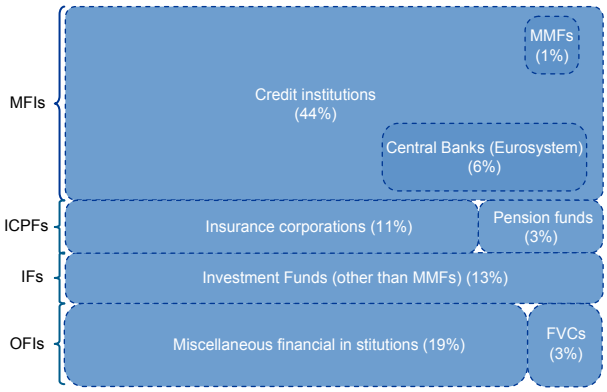
1 Snapshot of the financial sector

National sector accounts provide a comprehensive picture of how economic value is generated and distributed in the economy on the basis of the analytical grouping of economic agents into institutional sectors (e.g. private households, governments, financial and non-financial corporations). The integrated financial and non-financial accounts by institutional sector are the framework for the analysis of the financial sector. The balance sheets of the financial accounts provide a comprehensive representation of the financial position of the financial sector.

[112] The MIP is developed in these two regulations: Regulation (EU) No 1176/2011 of 16 November 2011 on the prevention and correction of macroeconomic imbalances, and Regulation (EU) No 1174/2011 of 16 November 2011 on enforcement measures to correct excessive macroeconomic imbalances in the euro area

Chart 50

Financial sector in the Euro area and subsectors (2014 Q3)



Sources: Euro area accounts (ESA 2010) and monetary and financial statistics.
Note: The surface of each box is proportional to the assets of each subsector.

Chart 50 presents the composition of the financial sector grouped into four sub-sectors: monetary financial institutions (MFIs), insurance corporations and pension funds (ICPFs), investment funds (IFs) and other financial institutions (OFIs). MFIs comprise credit institutions, central banks and money market funds (MMFs).[113] OFIs include financial vehicle corporations engaged in the securitisation of assets (FVCs), venture capital companies, securities dealers, leasing and factoring corporations, but also institutions that are not financial intermediaries, mainly captive financial institutions and financial auxiliaries. OFIs other than FVCs can be grouped in a heterogeneous category labelled "miscellaneous financial institutions".

Chart 50 also shows the relative size of each financial sub-sector with respect to the total. Credit institutions represent almost half of the euro area financial sector in terms of total assets; non-MMF investment funds (13%) and insurance corporations (11%) follow in terms of importance. The remaining sub-sectors are much smaller, representing between 3 and 6% each (central banks, pension funds and financial vehicle corporations). Money market funds represent about 1% of the euro area financial sector. Finally, the residual category "miscellaneous financial institutions" represents 19% of the total financial sector.

In recent years the term "shadow banking" has been coined to refer to financial intermediation activities outside the regular banking system, namely those activities related to credit intermediation, liquidity and maturity transformation. While shadow banking activities can contribute to the financing of the real economy, they are subject to different standards of supervision and prudential requirements as compared to banking activities, and can become a source of systemic risk.

Under the national accounts framework, shadow banking would correspond to the aggregate of money market funds and OFIs, representing around one-fourth of the financial sector.[114] Recently, the Financial Stability Board has proposed a broader measure of shadow banking[115] including also investment funds with activities related to credit intermediation (i.e. investment funds excluding equity funds and real estate funds). As such funds constitute 6% of the financial sector, the broader measure would result in an estimate for shadow banking of about one-third of the total financial sector.

The corporations that have been added to the financial sector with the adoption of ESA 2010 belong to the "miscellaneous financial institutions" category, and they

[113] Note that MMFs are included within MFIs and, therefore, are not included with the rest of investment funds in the category "IFs" because they issue liabilities which are close substitutes of bank deposits. In addition, money market funds and credit institutions except central banks are sometimes referred to as "other MFIs" (oMFIs).

[114] See *Shadow Banking in the Euro Area: an Overview*, by K. Bakk Simon et al., ECB Occasional Paper No 133 (April 2012)

[115] See *Global Shadow Banking Monitoring Report 2014*, by the Financial Stability Board.

together represent 5% of the total financial sector. All in all, the inclusion of those corporations has not significantly changed the results of earlier calculations of the size of shadow banking. However, as will be described in the next section, the small increase in the euro area aggregate hides more significant changes in a few countries.

2 Improvements in the new European system of accounts

National accounts have a clear macroeconomic focus and provide a consistent framework for measuring both the economy's total output (e.g. GDP) and standards of living (e.g. GNI per capita). Until recently, their format has well served most macroeconomic uses.[116] However given the growing role of indicators for policymaking directly or indirectly derived from national accounting, it is important to have a good understanding of how the financial sector and its activities are defined and measured in the sector accounts framework. The change to a new reporting standard under ESA 2010 included some improvements in this respect.

ESA 2010 as part of a global update of International Statistical Standards

The changeover to ESA 2010 has been part of a global move to new international statistical standards. The standards comprise the System of National Accounts (SNA 2008) – jointly prepared by Eurostat, the IMF, the OECD, the United Nations (UN) and the World Bank – and the IMF's Balance of Payments and International Investment Position Manual (sixth edition, BPM6, 2009).

Work was carried out to update the previous versions of the standards (SNA 93 and the BPM5) in order to better capture structural changes taking place in the world economy, driven by the globalisation of production processes, and the impact of financial innovation. The European standard corresponding to the SNA 2008 is the European System of Accounts (ESA 2010). ESA 2010 is laid down in a Regulation adopted in 2013[117] and implemented in the EU from September 2014, thereby replacing ESA 95. In addition to legally binding methodological standards, ESA 2010 contains a transmission programme which determines the national accounts datasets that the Member States are to transmit to Eurostat; similarly, the ECB has defined the transmission programme for the statistics concerned under its responsibility (e.g. the quarterly financial accounts); this approach attaches a relatively higher importance to making data comparable across countries on the basis of common definitions, whereas the SNA allows for more flexibility to cater for country-specific features of

[116] For a recent overview see BIS (2013) Statistical issues and activities in a changing environment. Proceedings of the Sixth IFC Conference, Basel, 28-29 August 2012, Irving Fisher Committee on Central Bank Statistics, IFC Bulletin No 36, February 2013.

[117] Regulation (EU) No 549/2013 of the European Parliament and of the Council of 21 May 2013 on the European system of national and regional accounts in the European Union (OJ L 174, 26.6.2013, p.1). See also the corresponding ECB Opinion of 19 May 2011 on the proposal for a regulation of the European Parliament and of the Council on the European system of national and regional accounts in the European Union (OJ C 203, 9.7.2011, p. 3).

the data generating process. Clearly, the more binding ESA approach reflects the importance of economic indicators in the policy approach genuine to the European integration framework.

EU coordinated changeover to ESA 2010

Ensuring the continued production of relevant and harmonised statistics for the EU requires that the new standards are implemented across Member States in a well-coordinated manner. Sector accounts are compiled from a series of data sources and statistical operations. From September 2014, all data transmissions are based on the new statistical standards for datasets relating to national accounts, balance of payments and government finance statistics. From January 2015, this is also the case for monetary and financial statistics.

More detailed and harmonised recording of the financial sector

The new sector accounts benefit from a more detailed breakdown of the financial corporations sector of the economy and more precise guidance on the recording of specialised financial institutions. ESA 2010 provides for a clearer separation between non-financial corporations and corporations that are disengaged from non-financial activities, such as holding companies of non-financial corporations and other so-called captive financial institutions. These changes allow a better analysis of the financing and investment of non-financial and financial corporations.

The previous European statistical standard (ESA 95) limited the financial sector to financial intermediaries and financial auxiliaries. Financial intermediaries raise funds from the public (e.g. through deposits, investment funds shares, and/or life insurance policies) and lend those funds to the public or invest them in financial markets. This restrictive definition excluded, for example, units such as holdings and other special purpose entities (SPEs) that provide financial services to an enterprise group rather than to the public and were previously recorded as a non-financial corporation (NFCs).

The ESA 2010 extends the financial sector to include so-called captive financial institutions and money lenders. This category includes SPEs that raise funds on open markets on behalf of their parent companies and passive holding companies that do not manage their subsidiaries. Therefore, with ESA 2010 the debt financing raised by SPEs or holding companies is allocated to the debt of the financial sector. Moreover, only the direct funding granted by SPEs or holding companies to non-financial corporations is recorded as debt of the NFCs sector, so that the recorded debt of NFCs decreased while the liabilities and assets of financial corporations increased (with respect to the recording under ESA 95). The impact of this change was sizeable in some Member States, particularly in Belgium, where there has been a large reclassification of holding companies to the financial sector.

On top of the reclassification of holding companies into the financial sector, ESA 2010 clearly requires that entities (such as SPEs) with little or no physical presence

in a country are recorded as residents if they are incorporated or registered in that country. The enhanced recording of such entities has a particularly large effect in Malta, as well as in Cyprus, Austria and the Netherlands.

While this methodological change cannot, by definition, have a large impact on value added, it is an important step with a view to merging sector accounts data with other data, e.g. on bilateral cross-border financial flows. After all, from an economic perspective, the incorporation of entities with limited physical presence in a particular country may simply reflect market distortions or barriers to financial integration.

Corporations that were not in the financial sector under ESA 95 but were either recognised as residents or reclassified under ESA 2010 from non-financial sectors were allocated into the "miscellaneous financial institutions" category. All in all, those corporations held about one fifth of the total assets of the "miscellaneous financial institutions", which represented around 4.5% of the total assets of the euro area financial sector.

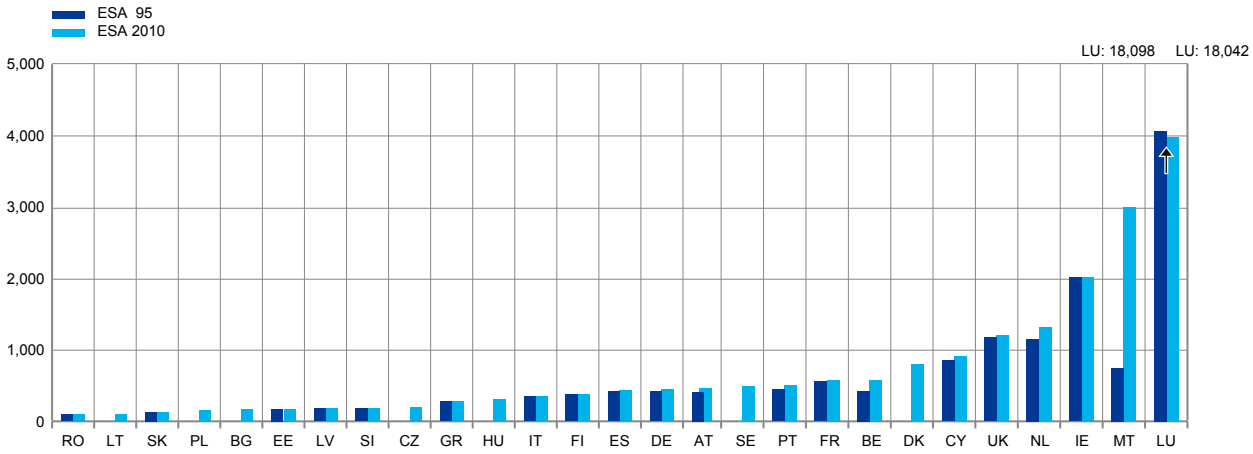
Reviews of data sources and methods impacted more strongly the recorded size of the financial sector in a few countries, in particular in the Netherlands. These reclassifications impacted mainly the category "Other Financial Institutions".

Overall, owing to the methodological changes and higher coverage, the euro area financial sector only "grew" by 4.5% with the implementation of ESA 2010.[118] However, behind the relatively small "growth" of the euro area financial sector laid important differences across countries (Chart 51).

Chart 51

Size of the financial sector of EU countries

(Liabilities as a percentage of annual GDP, 2013)



Source: Quarterly and annual financial accounts, ECB and Eurostat.
* Different scale for Luxembourg.

[118] A breakdown of this change is not available for the euro area as not all countries provided a breakdown of the revisions.

The increased coverage of SPEs explains most of the upward revisions in Cyprus and Malta. In the case of the Netherlands, the most important factor is the inclusion of the balance sheets of SPEs that were discovered well after their first appearance and had been left out for continuity purposes. Furthermore, deconsolidation of enterprise group data played a role. The shift of holding companies to the financial sector was particularly large for Belgium, Austria and Portugal. For other countries these revisions were much smaller. Luxembourg hosts very large holding companies and SPEs which were already recorded as financial institutions in the financial accounts based on ESA 1995.

Further enhancements to monetary and financial statistics

The data collection frameworks of monetary and financial statistics (MFS) cover inter alia central banks, credit institutions, money market funds, non-money market investment funds, and financial vehicle corporations. In 2013, those frameworks were adapted to reflect the new international statistical standards. Such adaptation was relevant to keep the frameworks fit for policymaking purposes and to optimally support the new presentations of the national and euro area financial accounts and balance of payments statistics, for which the MFS represent an important source of information. Sector accounts incorporate the new MFSs since January 2015.

In particular, new regulations have been adopted for the balance sheet statistics of MFIs,[119] investment funds,[120] and financial vehicle corporations engaged in securitisation transactions.[121] The changes reflect the revised international statistical standards, as well as other user requirements, e.g. in the context of measuring financial integration or monitoring financial stability.

The new data requirements cover more granular breakdowns in terms of counterparty sectors and instrument categories. For example, non-money market investment funds, pension funds and insurance corporations are separately identified among counterparty sectors. Additional breakdowns by original maturity appear under loans and holdings of government debt securities.

3 Challenges in Measuring Financial Services

The recorded contribution of the financial sector to whole economy value added varies substantially between countries and over the business cycle. Value added at current prices by the financial sector continued to grow in 2009 and 2010 after the

[119] Regulation (EU) No 1071/2013 of the ECB of 24 September 2013 concerning the balance sheet of the monetary financial institutions sector (recast) (ECB/2013/33), OJ L 297, 7.11.2013.

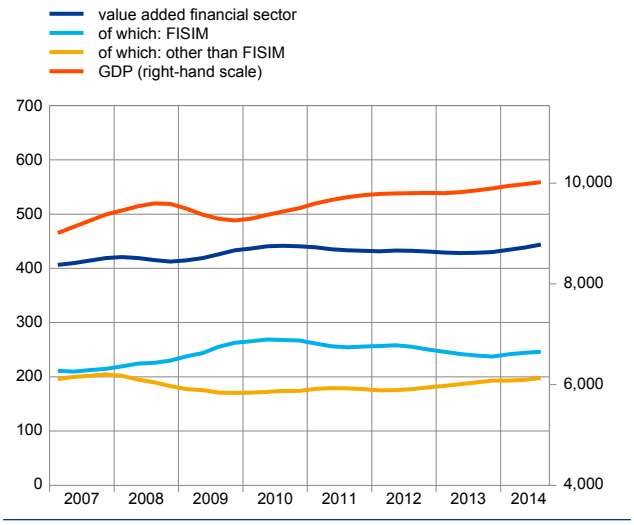
[120] Regulation (EU) no 1073/2013 of the ECB of 18 October 2013 concerning statistics on the assets and liabilities of investment funds (recast) (ECB/2013/38), OJ L 297, 7.11.2013.

[121] Regulation (EU) no 1075/2013 of the ECB of 18 October 2013 concerning statistics on the assets and liabilities of financial vehicle corporations engaged in securitisation transactions (recast) (ECB/2013/40), OJ L 297, 7.11.2013.

Chart 52

The financial sector's contribution to value added at current prices in the euro area

(EUR billions, four quarter cumulated transacations)



Source: euro area accounts
*Value added of financial sector excluding FISIM

financial crisis erupted in 2007/2008 (see Chart 52). Volume measures are not generally available by institutional sector. Considering the decline in loans, one would expect that the volume of financial intermediation services provided declined. This would imply that the prices explicitly or implicitly charged increased. In particular, in the EU financial sector value added at current prices increased in the fourth quarter of 2008 (immediately after the failure of Lehman Brothers), driven especially by the UK, where an important part of the EU's financial services industry is located, but also by increases in the Netherlands (see Chart 54 for EU countries).

This section tries to solve the apparent puzzle by discussing the challenges involved in measuring financial services, how they are addressed in the current methodology, and possible future improvements.

Measuring financial services – economic theory and statistical praxis

The category "financial corporations" in the national accounting framework covers a highly heterogeneous set of economic agents. Some of the services provided by financial corporations have volume and price measures attached to them, so there are no particular methodological issues involved in measuring their contribution to total production. This is when the financial sector provides services remunerated in the form of fees and commissions, as well as other operating incomes that contribute to the sector gross value added.

However, challenges arise with the services typically provided by credit institutions for their "intermediation services". Intermediation is at the core of their activity and is remunerated by interest. It is the service of intermediation that has to be measured and not gross interest flows. For instance, the interest observed on loans cannot be assimilated to a measure of the production of the credit institutions, as the service charge is only one element of it, and what needs to be measured in order to measure the contribution of the credit institutions is this service charge only. Interest on loans consists of "pure" interest received plus the service charge, while the interest observed on deposits consists of "pure" interest minus a service charge. Assuming that there is a "reference", "pure" interest rate (net of service charges) for both deposits and loans, the difference between this pure interest and the observed interest allows for calculating a net interest margin per monetary unit. The applications of this method result in an increase of FISIM if – ceteris paribus – the risk premium on loans increases. This raises the question whether such an increase reflects an increase in the price and or the volume of financial intermediation services provided.

Alternatively, one may argue that an increase in the risk premium on loans increases the risk to the financial intermediaries' shareholders. This increased risk may or may not be remunerated in the property income of the shareholders. If the financial intermediary does not succeed in transforming the additional risk, it would seem inappropriate to record additional value added simply because risk has gone up.

The practice in national accounts most often uses one single reference rate. The question whether reference rates should be adjusted for differences in maturity and risk of deposits and loans is on the research agenda for the international statistical standards. The literature on measuring banking output referred to in this Special Focus does not discuss how the net interest margin should be interpreted when a credit institution lends to another credit institution. As Colangelo and Inklaar (2009) note, FISIM are compiled on all loans and deposits vis-à-vis non-financial sectors and insurance corporations and pension funds. The costs incurred in lending operations to other financial institutions therefore are not considered in the calculation of GDP (in any case they would be a production entirely assigned to the internal intermediate consumption of the financial sector, thus with no impact on GDP). This may be seen as introducing an inconsistency into the accounting framework given that in this case as well, "labour and assets are used to transform inputs of goods and services into outputs of other goods and services" (SNA criterion for activities to become part of production). This is also particularly true for much of the so-called shadow banking activity.

From both a theoretical (opportunity cost, revealed preferences) and a practitioner's perspective,[122] one could expect to find this link between cost and output also in the way sector accounts record output of deposit-taking credit institutions. However, this is not currently the case.

As in the early days of national accounting, the interaction with macro-modelling comes to bear on statistical conventions. A long-established practise in macro-modelling has been to use only two interest rates: one short-term interest rate and one long-term interest rate. This was sufficient to have a well-defined monetary policy transmission mechanism by modelling users' costs of capital (production side) and a stylized yield curve. The issue for national accountants is to find a "risk-free" interest rate to be chosen as the "pure" interest rate. Some national accountants measure the output of credit institutions by comparing the interest rate of deposits and loans against the interest rate of (overnight) interbank markets. Some others use the interest rate on government bonds (when considered risk free).

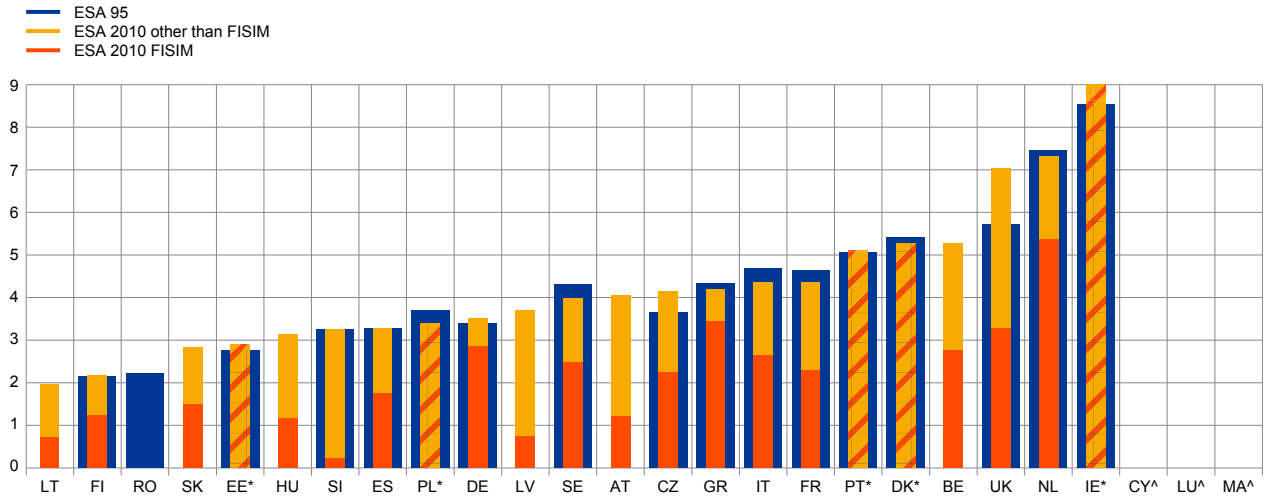
Of course, in normal times the former does not deviate much from the ordinary refinancing rate, which is the main policy lever the monetary policy authority uses to influence the cost of short-term credit and the steepness of the yield curve. During times of stress, interbank market volumes may change quickly, and the price of

[122] See Colangelo, A and Inklaar, R (2009), "Measuring the Output of the Banking Sector: Shortcomings of the Current European Methodology and New Perspectives", and M. Niederkorn, "Banking on Lean – A Practicioner's View on Productivity in European Banking", published as chapters 7 and 5, respectively, in: M. Balling, E. Gnan, F. Lierman, and J-P. Schoder, Productivity in the Financial Services Sector, SUERF Study 2009/4, Larcier, Vienna.

Chart 53

The financial sector's contribution to value added

(as % of GDP, 2013)



Source: Quarterly and annual non-financial accounts by institutional sector, ECB and Eurostat.
*) Value added (FISIM component is not available separately)
^) Not available.

lending between credit institutions may lose much of its informational content.[123] Also, during the current episode of ultra-low interest rates, some credit institutions have started to charge negative interest rates on large deposits.[124] It is not clear how this fits into the current measurement of banking output.

The indirect measurement of financial intermediation services in the national accounts

In the national accounts framework, the recording of services related to financial intermediation is largely based on indirect measures, as in many cases no explicit fees are charged. In the case of deposit-taking institutions in particular, service charges are considered implicit in the observed interest rates.

Depositors lending funds pay by accepting a rate of interest lower than the "reference" rate of interest, while debtors obtaining a loan pay by accepting a rate of interest higher than the "reference" rate of interest. The difference between the observed interest rate paid to banks by debtors and the interest rate actually paid to depositors is a charge for FISIM.

Financial intermediation services indirectly measured (FISIM) account for about 60% of the value added of the financial sector in the euro area, although this proportion varies between countries (Chart 53).

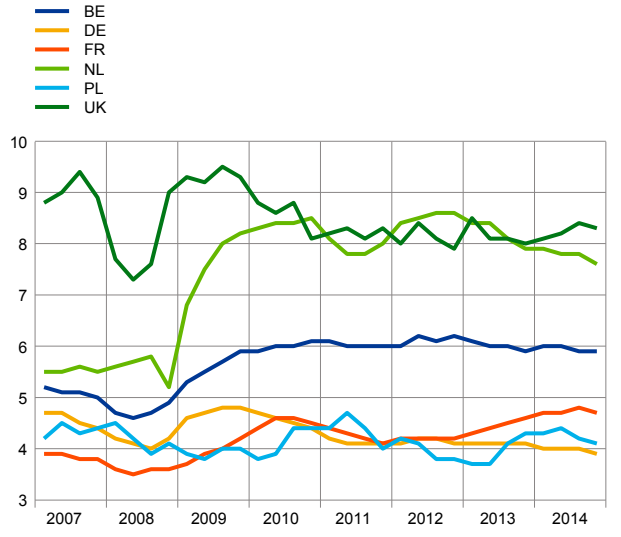
[123] An extreme case would be the complete absence of such a market interest rate, as was the case during the fixed rate / full allotment policy after the Lehman Brothers collapse, which helped to stabilise the banking sector at a time of high stress, and which replaced a market-determined price and quantity of interbank liquidity by a fully certain quantity and price of central bank liquidity; see e.g. M. Lenza, H. Pill and L. Reichlin, "Monetary Policy in Exceptional Times", ECB Working Paper 1253, October 2010.

[124] Commerzbank announced on 19 November 2014 that it would charge negative interest on large deposits, justifying such a move by citing the negative interest of 0.2% on overnight deposits at the ECB; some of the larger U.S. and Swiss commercial banks had already introduced negative rates on large depositors.

Chart 54

Shares in Total Gross Value Added compared: Germany, France, UK, Netherlands, Belgium, and Poland

(Financial and insurance activities shares in total value added, seasonally and working day adjusted)



Source: Gross value added by industry (A* 10 breakdown), Eurostat.

ESA 2010 did not substantially alter the FISIM calculation methodology. However, with the implementation of the new standards, many countries worked on sources and methods. Since the changeover to the new standards, several countries have started to provide the breakdowns needed to derive FISIM. By now, FISIM can be shown for most countries.

The financial sector's contribution to value added – how important is measurement bias when credit institutions are distressed?

Recent analysis[125] shows how the measurement of FISIM overstates the contribution of the financial sector, with the bias growing disproportionally during times of financial stress. See, for instance how the value added of the financial sector increased for the UK and the Netherlands, in 2009, at the height of the financial crisis (Chart 54). The disproportionality is particularly driven by the fact that the number of transactions is not taken into account, even if the number of loans falls during times of stress. This bias can be somewhat mitigated by risk-adjusting the balance of outstanding credit. Another source of bias is connected to the choice of deflator.

As discussed in the previous Section, with the new ESA 2010 the differences in the recorded relative size of the financial sector in terms of balance sheets have increased. In terms of value added, there is no such clear change, apparently because some countries, having had relatively low valued added, tended to revise upward more than others. According to some estimates, measurement bias could be up to half a percentage point for the aggregated euro area GDP, but behind this limited change stands a larger potential bias in a few countries: FISIM hoovers around 5% of Gross Value Added (GVA) in three large euro area economies – Germany, France and Italy – irrespective of the many structural differences between these three economies (Chart 54). However, the UK and the Netherlands show wider swings in FISIM, and the order of magnitude is such that the measurement of FISIM significantly contributes to the GDP in these economies.

Towards direct measurement of output in financial services

In the context of the SNA 2008/ESA 2010 reform, several authors made concrete proposals for how to improve the output measurement for a range of financial

[125] See Haldane, A G (2010), "The Contribution of the Financial Sector – Miracle or Mirage?", available at http://www.bankofengland.co.uk/archive/Documents/historicpubs/speeches/2010/speech442.pdf, as well as Inklaar, R and Wang, C J (2013), "Real Output of Bank Services: What Counts is What Banks Do, Not What They Own", *Economica* 80, pp. 96-117.

services covering the most common categories: commercial and industrial loans, real estate loans, and deposit transactions.[126]

The modern financial system is sometimes compared to a complex ecosystem with a myriad of different agents engaged in various activities that transfer and transform risk and liquidity. The quantities and prices attached to these activities do not fit easily into the standard accounting model. In general, transactions are performed against a spot price in a market where a good or service is transferred to the buyer in exchange for another product or for money. However, prices for financial services are closely linked to time preferences and maturity transformation. Quantities often look out of proportion compared to volumes in the real economy.

Philippon (2012)[127] distinguishes three types of service in a modern financial service industry: (i) liquidity management, (ii) transfer of funds by pooling savers on one side and screening and monitoring credit risk on the other side, and (iii) collecting and transforming information, e.g. identifying undervalued assets in the context of mergers and acquisitions. Clearly, this already goes beyond the more narrow definition of what credit institutions are supposed to do and reflects the growing importance of non-bank activities, many of which are today carried out by so-called shadow banks (see the discussion in section 1).

Staying within the narrower range of banking activities, Inklaar and Wang (2013)[128] distinguish three types of banking output: (a) provision of commercial and industrial loans, (b) real estate loans, and (c) deposit transactions (which includes payment services such as credit and debit cards, direct debits, electronic cash, cheques and similar transactions). These authors find that a count of transactions weighted by the size of transactions would result in a moderately but steadily growing output, as opposed to the current standard method of simply deflating transaction account balances (which results in strongly decreasing output). Functions (a) and (b) are more complex, as they raise the question of financial sector efficiency.[129]

Another question that would need to be addressed in this context is the extent to which measured output for real estate finance is driven by secular trends in the housing market. In the absence of robust price indices, output growth has been deflated with the (change in the) consumer price index. However, choosing the CPI rather than an index of house prices produces strongly varying differentials from one

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126 Colangelo and Inklaar (2009, 2010), as well as Inklaar and Wang (2013).

127 Philippon, T (2012) “Has the US finance industry become less efficient? On the theory and measurement of financial intermediation”, NBER Working Paper No. 18077.

128 Ibid.

129 This would call for a correction of risk and maturity profiles as proposed by Colangelo, A and Inklaar, R (2010), “Banking Sector Output Measurement in the Euro Area – A Modified Approach”, ECB Working Paper Series No. 1204, available at http://www.ecb.int/pub/pdf/scpwps/ecbwp1204.pdf

country to another. A more systematic measurement of house price developments promises the largest marginal improvements in this area.[130]

Furthermore, function (a) corresponds to the most common service associated with the financial sector in general and banks in particular. However, as a share of MFI balance sheets, this is by far the smallest function.[131] In contrast with the findings on function (c), function (a) may be grossly underestimated by simply deflating the balance of loans outstanding. Average loan size is falling, possibly reflecting falling transaction costs in this area. On the other hand, the fixed cost element[132] attached to the screening of loan quality seems to be rather insensitive to different measurement approaches. The number of loans therefore appears to be an important element in moving towards a more robust output measure. Hence, a commercial or industry loan appears to be closer to a normal production or consumption good than what has been assumed so far.[133]

Finally, whichever method of output measurement is finally chosen, it has to pass a set of plausibility checks to avoid measurement of value added where pure financial transfers take place. For example, the FISIM puzzle that appeared in some countries in the aftermath of the Lehman failure should largely disappear once transactions are counted as proposed by Inklaar and Wang.

Obviously, the number and volume of transactions have significantly increased in the last two to three decades, mostly *within* the financial sector, without creating measurable benefits for the non-financial sector.[134] Such transactions within the process of intermediation should not be counted towards output *unless* they result in an observed reduction in overall cost of financial intermediation.[135]

What the adjustment with a weighted number of loans could achieve can be gauged by considering the following information. The net annual flow of loans to households

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[130] See Knoll, K, Schularick, M, and Steger, T (2014), "No Price Like Home: Global House Prices, 1870-2012", CesIfo Working Paper 5006, October, who provide data on European house price developments; it should be noted, however, that these indices do not reflect market valuations of the existing housing stock, which would require repeated sale price indices, as pointed out by Shiller, R J (2014), "Speculative Asset Prices", repeat of the Nobel prize lecture delivered at Yale, available at https://www.youtube.com/watch?v=oBXPOWytDMs

[131] Add an indication of the order of magnitude (UK: less than 10% of total assets are loans to the real economy, whereas more than 50% of total assets are real estate credits and derived/structured financial products based on real estate credit).

[132] Such a fixed cost element could reflect very different screening technologies, e.g. small banks using different technologies compared to large banks as portrayed in Cole et al (2004).

[133] White, L (1984), Free Banking in Britain: Theory, experience, and debate 1800-1845. Cambridge University Press. White argued that banks are not different in principle from other firms producing goods and services; a similar claim has been made recently by Davies and Tracey (2014), who find banks comparable to other industries in terms of cost structure once implicit subsidies have been accounted for.

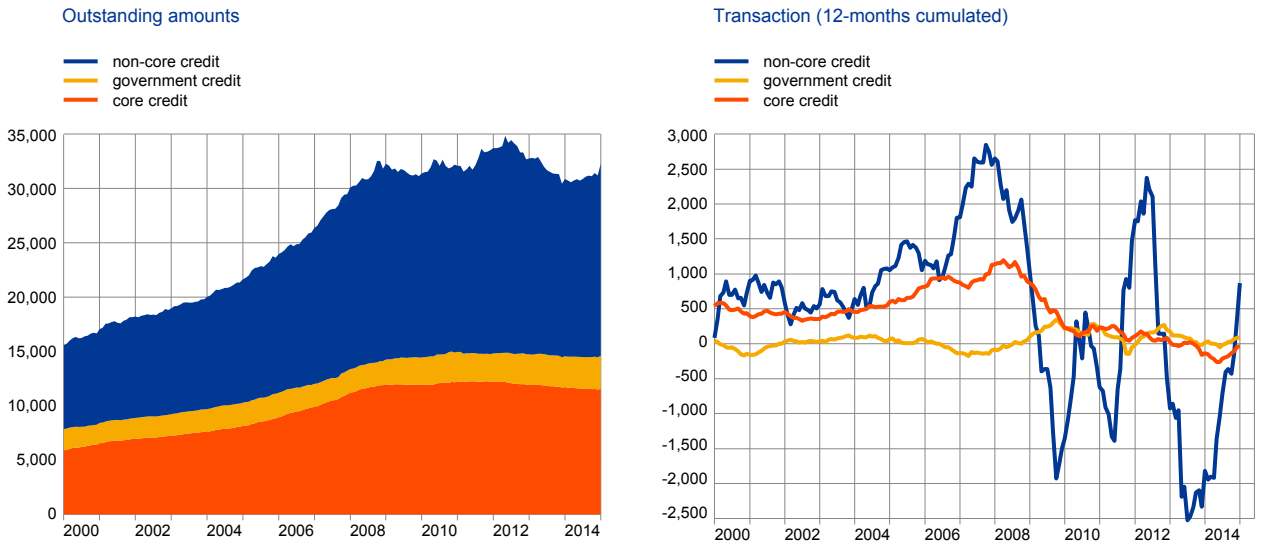
[134] See e.g. the discussion in Bai, J., T. Philippon, and A. Savov (2013), "Have financial markets become more informative?" NBER Working Paper No. 19728, December.

[135] See e.g. Shin, Hyun Song, (2010) "Macroprudential policies beyond Basel III", Policy Memo, Princeton University, on the costliness of lengthening intermediation chains as cross-exposures across intermediaries increase.

Chart 55

Credit to non-financial sectors and other assets of euro area MFIs, EUR billion

(EUR billions)



Source:

Notes: Core credit: credit provided by MFIs to households and to non-financial corporations. Government credit: credit provided to governments. Non-core credit is calculated as the residual factor with respect to total assets. Credit can be provided in the form of loans or by purchasing securities (debt securities and equity). Annual flows are computed as the sum of net flows for 12 consecutive months through a rolling window. "Net" refers to new transactions minus redemptions.

and non-financial corporations,[136] i.e. the categories considered by Inklaar and Wang, fell significantly in 2008 and 2009 (Chart 55).

The evolving competitive structure of the financial sector may lead to a seemingly larger size of the financial sector in the future, but a financial sector which contributes less to the real economy or provides services at a higher cost (include some reflections on substitution effects with market-based finance and new forms of banking). In this context, a growing literature documents the nearly two-thirds reduction in the number of banking and savings institutions in the US. During an episode of rapid consolidation, economies of scale and scope may lead to reductions in transaction costs, but once these low hanging fruits have been picked, gross wages outgrowing those of the rest of the economy[137] should lead us to expect (strongly) negative productivity growth, in particular if such negative growth cannot be measured directly.

Therefore, an evolving structure of interest rate spreads should not raise banking output if such changes cannot be associated with a measured improvement in efficiency, e.g. resulting in lower user cost of capital. Historically, it seems that a more complicated process of intermediation involving highly skilled (and expensive) labour did not result in lower transaction costs, except during a short period where such benefits could be realised at the expense of higher concentration.

[136] As reflected in core assets on the balance sheet of credit institutions.

[137] See e.g. the chart on salary trends in the financial sector vis-à-vis the rest of the economy in the recent ESRB report entitled "Is Europe overbanked?".

Two additional observations may be added to the debate.

The first observation concerns the challenge statisticians and national accountants face on a regular basis: how to find appropriate proxies when direct measurement is difficult. On the issue of how to best measure the credit risk screening that banks undertake and for which they are compensated via the spread of interest as compared to an appropriately defined benchmark interest rate, there is a growing industry of business information and credit scoring where the business model is such that customers are charged directly for the screening of their credit risk. The comparable function performed by this rapidly expanding industry raises the question of whether the measurement of bank screening could not, at least partly, be enhanced via imputed screening costs and market prices, as they can be observed in the business information and credit scoring industry.[138]

The second observation relates to the production technology, especially in those national financial systems where banks are not only users but also owners of the payments infra-structure. There, measuring deposit-based and payments account services could benefit from a more systematic disentangling of the credit screening function from the payments system function for a more accurate measurement of financial sector output. Similarly to other network industries, a full unbundling on the grounds of price transparency and competition could be a preferred solution that might also prove beneficial for statistical purposes.

Even an intermediate solution where banks are required to disclose detailed accounts of operational and maintenance costs of the payments systems they run could go a long way towards better measurement of output in this area. As in the case of credit screening services, one could discuss the potential of imputing costs and market output prices also in this area. In those parts of the payments system where providers are firms that are acting themselves as external service providers to financial institutions, i.e. due to changes in payments technology, more market prices should become available for services previously provided almost exclusively by banks.

Summary and outlook

Drawing on all sections of the chapter, we can make the following observations:

The financial crisis has raised the question of the EU financial sector's true size. This Special Feature has provided a number of first replies to this question based on the more detailed reporting exercise under ESA 2010.

While only very slightly affecting the global measure of the financial sector, the new methodology under ESA 2010 has enhanced our understanding of the structure of the EU financial system. More granular data are particularly useful for better

[138] For differences in screening technology, see Cole, Rebel A., Lawrence G. Goldberg, and Lawrence J. White (2004), "Cookie cutter vs. character: The micro structure of small business lending by large and small banks", Journal of financial and quantitative analysis, 39.02: 227-251. The fact that more screening is done by larger banks using the same technology as other market producers lends further support to imputing value from observed market production and reducing FISIM by the same token.

delineating the relative significance of shadow banking activities across EU member states and identifying potential regulatory gaps in this area. Also, comparability across countries has further improved, which is an important aspect in the light of increasing use of evidence- and indicator-based policy frameworks in the EU.

However, measuring the volume and nominal output generated by some parts of the financial sector is still subject to some challenges that show scope for further improvement. In particular, biases in the measurement of the financial sector may introduce systematic biases in the measurement of the entire economy's total output (GDP). As a consequence, some concerns remain both for the authorities in charge of compiling and producing the statistics, and for end users (policymakers, academics and the public in general).

Statistical Annex

1 The composite indicator of financial integration in Europe – 'FINTEC'

The two financial integration composite indicators – the price- and quantity-based FINTEC – aggregate the information from a selection of market-specific indicators, thereby offering a comprehensive overview of financial integration in the euro area.

1.1 The price-based FINTEC

The price-based FINTEC is constructed from a selection of price-based indicators that cover the four main market segments: money, bond, equity and banking markets.

In a first step, the indicators are homogenised for aggregation by applying a transformation based on the indicator's cumulative distribution function (CDF), which involves the computation of order statistics. For a time series of T observations of an indicator $x = (x_1, x_2, \ldots, x_T)$, the data is ranked in ascending order, that is $x_{[1]} \leq x_{[2]} \leq x_{[T]}$ where $x_{[1]}$ represents the sample minimum (min(x)) and $x_{[T]}$ the sample maximum (max(x)). The transformation of the series requires the calculation of the empirical CDF, $F(x)$, equal to the number r of observations not exceeding a particular value x, divided by the total number T of observations in the sample

$$F(x) := \begin{cases} \frac{r}{T} \text{ for } x_{[r]} \leq x < x_{[r+1]}, r = 1,2, \ldots, T-1 \\ 1 \text{ for } x \geq x_{[T]} \end{cases}$$

If a value in x occurs more than once, the ranking number assigned to each of the observations is set to the average of the covered ranks.

All the input series used for the price-based FINTEC measure price dispersion. Higher values of price dispersion tend to indicate a lower degree of financial integration. Since we want higher values of the FINTEC to signal a higher level of financial integration, we transform each of the dispersion indicators by taking 1 - F(x). After transformation, all input series are unit-free and uniformly distributed within the range of zero to one.

We still have to deal with the problem of how to relate the transformed input series to a theoretical state of perfect integration. Each indicator can only provide information on the relative degree of financial integration achieved over its specific period of observation. For instance, a (transformed) indicator might display a trend increase over its data sample, signalling that financial integration has improved. But despite this trend increase, the actual state of integration might still be rather low compared to other market segments or to a state of perfect integration.

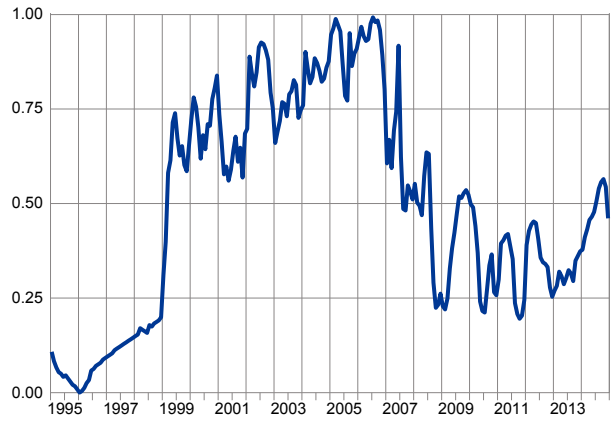
We now define a theoretical (ideal) benchmark value of zero for all dispersion measures of financial integration and construct a sample-dependent scaling factor

$$\theta^{P}(x) := \frac{\max(x) - \min(x)}{\max(x) - 0},$$

where the superscript P differentiates the price-based scaling factor from the one applied to the quantity-based FINTEC.

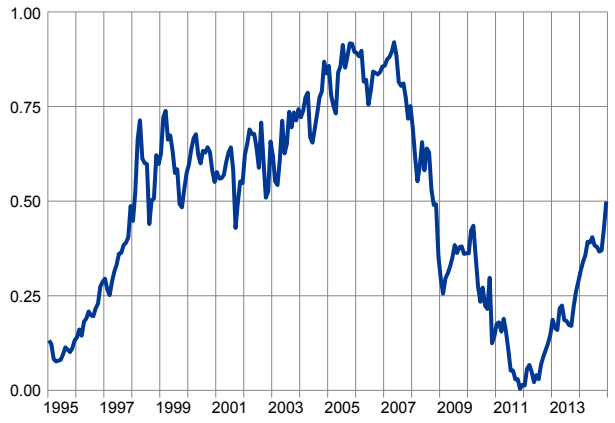
The factor scales down each transformed series by the percentage share of the realised range of dispersion (the historical maximum minus the minimum dispersion)

Chart S1
Sub-index for the Money Market



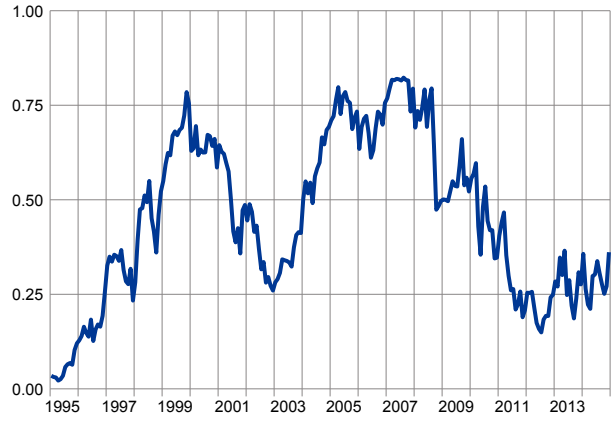
Source: ECB and ECB calculations. Monthly data (Jan. 1995 – Dec. 2014).
Indicator entering the sub-index: the cross-country standard deviation of unsecured interbank overnight lending rates.

Chart S2
Sub-index for the Bond Market



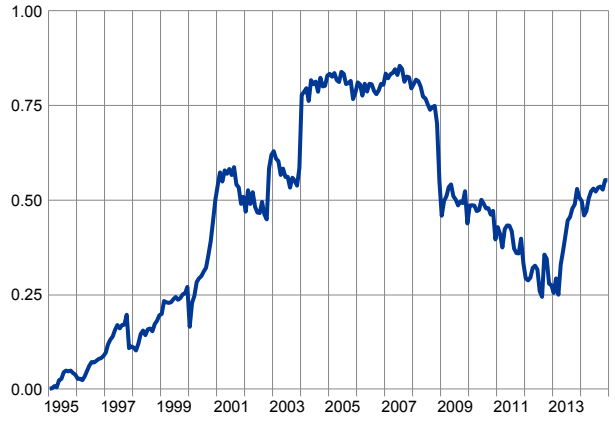
Source: ECB and ECB calculations. Monthly data (Jan. 1995 – Dec. 2014).
Indicators entering the sub-index: the cross-country standard deviations of 2- and 10-year sovereign bond yields, and the cross-country standard deviation of bond yields of uncovered corporate bonds issued by non-financial corporations (data aggregated at the country level).

Chart S3
Sub-index for the Equity Market



Source: ECB and ECB calculations. Monthly data (Jan. 1995 – Dec. 2014)
Indicators entering the sub-index: the segmentation index, and the absolute value of the difference between the cross-sectional dispersions in sector and country index returns.

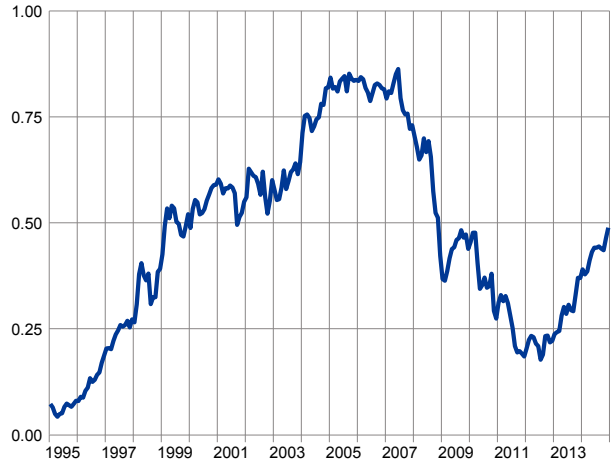
Chart S4
Sub-index for the Banking Market



Source: ECB and ECB calculations. Monthly data (Jan. 1995 – Dec. 2014)
Indicators entering the sub-index: the cross-country dispersions of interest rates on new loans to households (for consumer credit and total loans) and non-financial corporations, and the cross-country dispersions of deposit rates for households and non-financial corporations on deposits with agreed maturity.

Chart S5

The price-based FINTEC



Source: ECB and ECB calculations. Monthly data (Jan. 1995 – Dec. 2014)

to the ideal dispersion range (the historical maximum less the theoretical benchmark of zero). Because there is no theoretical upper bound on price dispersion, its highest observed value is set as the benchmark for the lowest degree of financial integration. $\theta^P(x)$ multiplies the series 1 - F(x) and yields the final indicator z^P, which is used as an input series in the computation of the price-based FINTEC

$$Z_t^P = [1 - F(x_t)]\theta^P(x).$$

All available indicators z^P are aggregated into sub-indices S_i^P for the four markets. The sub-index for each market segment is computed as the arithmetic average of its N_i constituent integration indicators after transformation

$$S_{i,t}^P = \frac{1}{N_i}\sum_{n=1}^{N_i} Z_{n,t}^P, \quad \text{for } i = 1, \ldots, 4.$$

The sub-indices are further aggregated into the price-based FINTEC by computing weighted averages using size weights that reflect the relative size of the underlying financial market segment:

$$FINTEC_t^P = \sum_{i=1}^{4} W_i^P S_{i,t}^P.$$

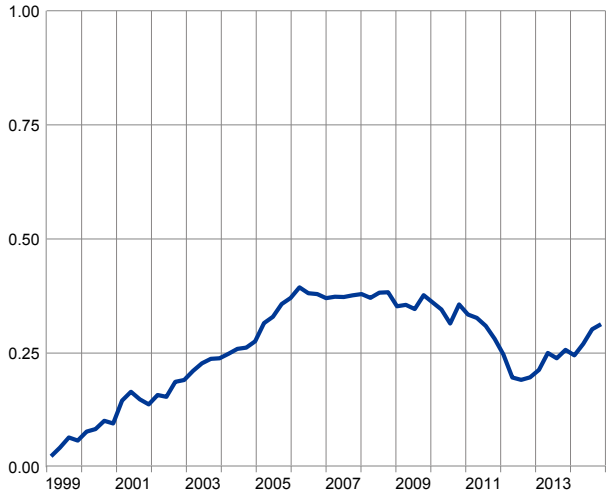
These are based on the aggregated euro area financial accounts, for which the average amounts outstanding over the entire period 1997-2014 are taken and yield the following weights w_i^p : money markets 17%, bond markets 36%, equity markets 15% and banking markets 32%.

1.2 The quantity-based FINTEC

The quantity-based FINTEC is constructed in a way similar to the one described above for the price-based composite indicator. The main difference resides in the definition of the input indicators and of the scaling factor. The indicators used are intra-euro area cross-border holdings expressed as a percentage of euro area total holdings.[139] In order to derive the scaling factor, which is based on the theoretical benchmark for the share of cross-border security holdings, a simple portfolio perspective is adopted. To this end, it is assumed that, in a perfectly integrated market, all agents invest in the market portfolio. This implies that all investors should hold a portfolio whose assets are proportional to its total supply in the economy. Accordingly, each country's share in the total amount outstanding for the market segment under consideration is computed. If country *k* represents a share $\omega_{k,t}$ of the total amount outstanding of a given asset class at time *t*, the portfolio of domestic investors should have a cross-border share of $1 - \omega_{k,t}$. Accordingly, one can compute

[139] The total is calculated as the sum of intra-euro area cross-border and domestic quantities.

Chart S6
Quantity-based FINTEC



Source: ECB and ECB calculations. Quarterly data (Q1 1999 – Q3 2014).
Raw indicators: share of cross-border lending among monetary financial institutions of the euro area, monetary financial institutions' and investment funds' shares of cross-border holdings of debt securities of all maturities issued by euro area governments and non-financial corporations, and monetary financial institutions' and investment funds' cross-border holdings of equity issued by euro area residents.

a time-varying benchmark for a given market segment with *K* countries as

$$BM_t = \sum_{k=1}^{K} \omega_{k,t} (1-\omega_{k,t}) \quad for\ t = 1,...T.$$

This yields the following sample-dependent, time-varying scaling factor

$$\theta^Q(x_t) := \frac{\max(x)}{BM_t},$$

where *max(x)* represents the sample maximum of the time series of an indicator $x = (x_1, x_2, ..., x_T)$.

The transformed and scaled indicators z^Q are defined as[140]

$$z_t^Q = F(x_t)\theta^Q(x_t).$$

These are further aggregated into three sub-indices: inter-bank markets, which include the money and banking markets, bond markets, and equity markets

$$s_{i,t}^Q = \frac{1}{N_i} \sum_{n=1}^{N_i} z_{n,t}^Q, \quad for\ i = 1,...,3.$$

Finally the quantity-based FINTEC is calculated as the weighted average[141] of the sub-indices

$$FINTEC_t^Q = \sum_{i=1}^{3} w_i^Q s_{i,t}^Q.$$

1.3 Additional information

The analysis is based on Hollo, D., Kremer M. and Lo Duca M. (2012), "CISS – A Composite Indicator of Systemic Stress in the Financial System", *ECB Working Paper No. 1426*, March; and Hoffmann, P., Kremer, M. and Zaharia, S., "FINTEC – A Composite Indicator of Financial Integration in Europe", mimeo.

[140] For the quantity-based indicators, higher values of *F(x)* signal higher levels of integration.

[141] In the quantity-based FINTEC the money and banking market segments are considered together for data reasons. In other words, interbank and retail lending cannot be disentangled. Since cross-border interbank lending is far larger than cross-border retail lending, only the former is considered for the weighting. The initial shares of the money, bond and equity markets are used to recalculate weights that sum up to 100%. This yields the following weights w_i^Q: inter-bank markets 23%, bond markets 54% and equity markets 23%.

2 Explanation of the country groupings

Some financial integration indicators show not only the average across all euro area countries, but also a distinction between two groups of countries. The reason is that some financial integration phenomena can only be presented effectively when financial market developments of country groups are compared with each other. A simple average across all countries could hide or blur important financial integration developments for some indicators in the Statistical Annex, in particular in the money markets.

To distinguish between country groups, a clear financial market criterion was selected that achieves an objective result which does not involve discretion. The grouping of countries is based on long-term sovereign interest rates for bonds with a remaining maturity of approximately ten years. The calculation of the average spread against the German long-term sovereign interest rate used monthly data between January 2007 and November 2014. This factual criterion, which is simple and should thus be interpreted with due caution, leads to the following country groups:

- Countries with the highest sovereign interest rates: Cyprus, Greece, Ireland, Italy, Latvia, Lithuania, Portugal, Slovenia and Spain. In the Statistical Annex, this group of countries is called “countries under financial stress” or “distressed countries”.
- Countries with the lowest and intermediate rates: Austria, Belgium, Estonia, Finland, France, Germany, Luxembourg, Malta, the Netherlands and Slovakia. In the Statistical Annex, this group of countries is called “non-distressed countries”.

Some financial integration indicators broken down by country grouping do not incorporate all the countries mentioned above, as data is sometimes not available for all countries. Where this is the case, the description of the respective indicator explains which countries are included.

3 Standard financial integration indicators

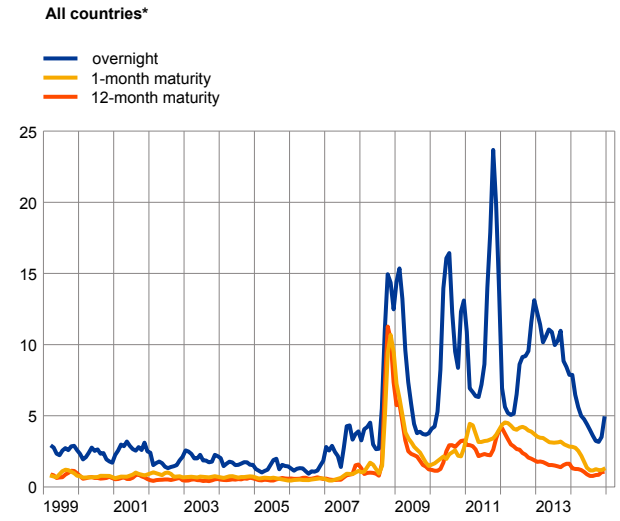
3.1 Money market indicators

3.1.1 Price-based indicators

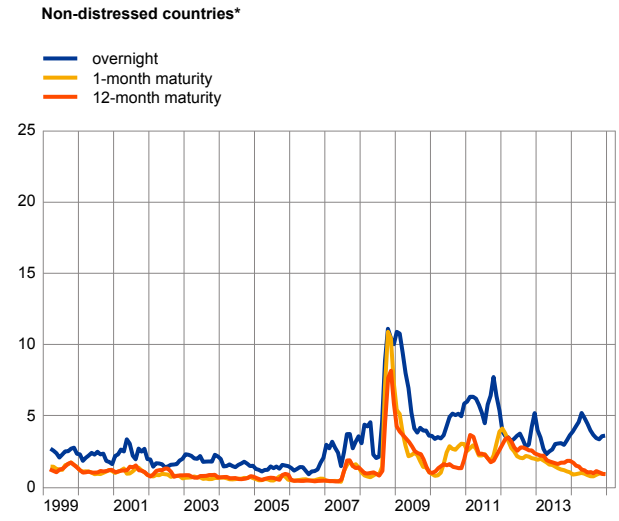
Chart S7

Cross-country standard deviation of average unsecured interbank lending rates across euro area countries *(EONIA/EURIBOR)*

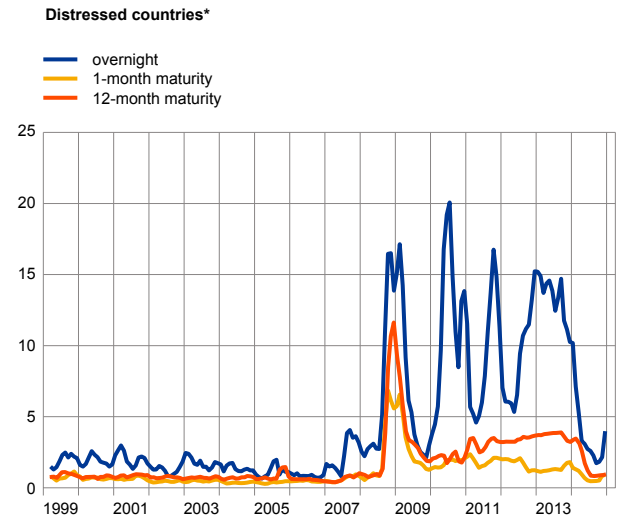
(61-day moving average: basis points)



*Here: AT, BE, DE, ES, FI, FR, GR, IE, IT, LU, NL, PT



*Here: AT, BE, DE, FI, FR, LU, NL



Sources: EBF and ECB calculations.
Notes: Cut-off date: 31/12/2014.
*Here: ES, GR, IE, IT, PT

Non-technical description

The analysis of the dispersion of interbank rates across countries contributes to the assessment of the state of integration and to the possible segmentation of markets. However, an increase in the standard deviation of rates cannot be automatically

interpreted as a sign of decreasing financial integration, given that other factors, such as liquidity and the interplay with sovereign debt markets, also have an impact on the standard deviation.

Description

The EBF makes available (daily) business frequency data for a panel of individual institutions for both unsecured and secured short-term interbank debt and deposits. These data cover the EONIA and the EURIBOR (unsecured). Data on the EONIA SWAP INDEX are also available. For each dataset, the indicator is the unweighted standard deviation D_t of average daily interest rates prevailing in each euro area country. Reported rates are considered to be the national rates of country c if the reporting bank is located there. However, the counterparty of the transaction is not known, and the reported interest rate could thus potentially refer (in part) to transactions with a bank outside country c. The number of euro area countries (n_t) is the number of countries that had adopted

the euro in the reference period: $$D_t = \sqrt{\frac{1}{n_t}\sum_c (r_{c,t} - r_t)^2} \quad (1)$$

where $r_{c,t}$ is the unweighted average of the interest rate $r_{i,t}^c$ reported by each of the panel banks m_c at time t in country c: $$r_{c,t} = \frac{1}{m_c}\sum r_{i,t}^c \quad (2)$$

The euro area average r_t is calculated as the unweighted average of the national average interest rates $r_{c,t}$. The data are smoothed by calculating a 61-day (business day) centred moving average of the standard deviation, transformed into monthly figures, and taking the end-of-month observation of the smoothed series. For indicative series prices (EURIBOR), the data are corrected for obvious outliers. The computed indicator has a monthly frequency.

(1) For further information, see the EURIBOR. See also “The contribution of the ECB and the Eurosystem to European financial integration” in the May 2006 issue of the ECB’s Monthly Bulletin.

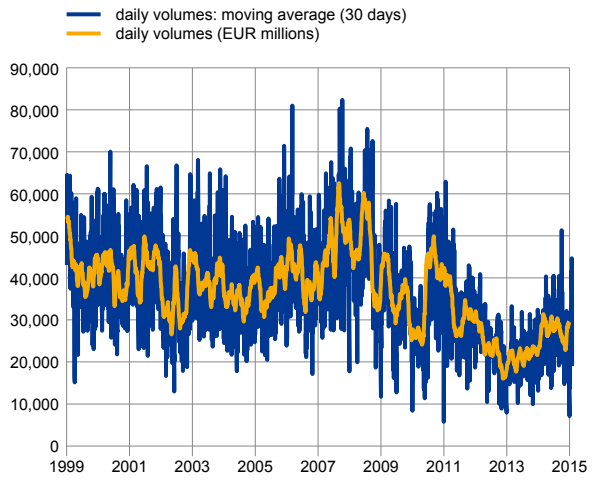
Additional information

The EONIA is the effective overnight reference rate for the euro. The banks contributing to the EONIA are the same as the EURIBOR panel banks (composed of banks resident in the euro area and in other EU Member States, as well as some international banks). The EURIBOR is the rate at which euro interbank term deposits are offered by one prime bank to another within the euro area.

Chart S8

Daily volumes and 30-day moving averages for the EONIA panel

(EUR million)



Sources: EBF and ECB calculations.

Non-technical description

A lower daily number of banks trading in the EONIA interbank market, besides being a possible signal of increasing market fragmentation, has an impact on the values of the indicators calculated above.

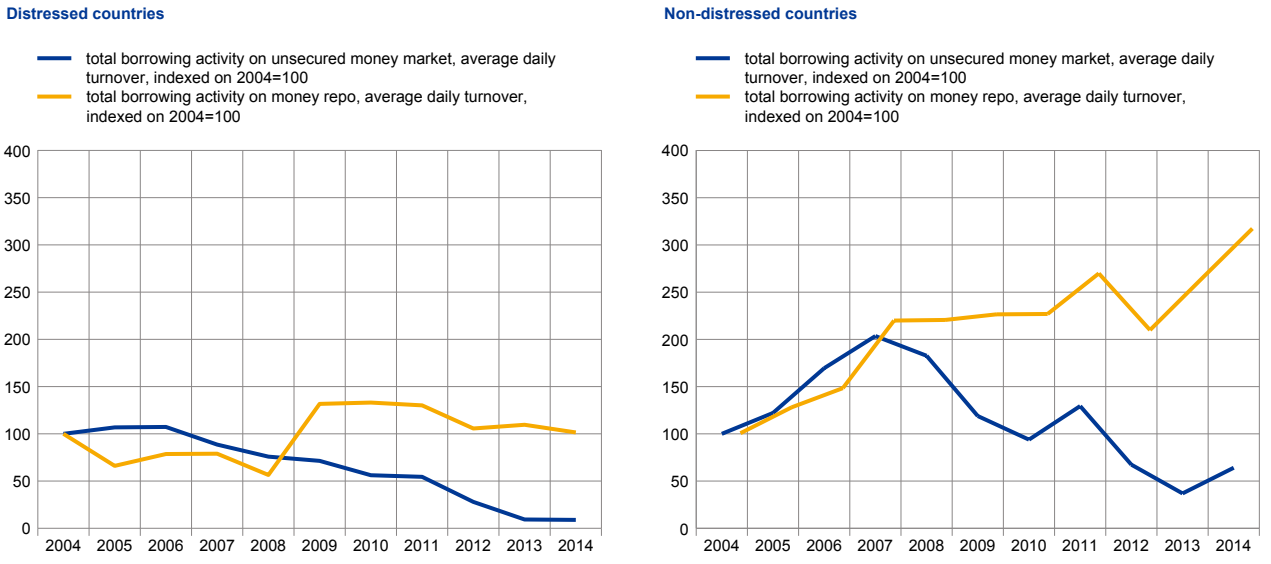
Description

This chart shows the number of banks in the EONIA panel for which a price is available on a given date. The centred 30-day moving average is also displayed.

3.1.2 Quantity-based indicators

Chart S9

Borrowing activity in the euro area secured and unsecured markets



Source: ECB's Euro Money Market Survey.

Non-technical description

This indicator shows the development of borrowing activity in the euro area, divided into unsecured and secured money markets, and distressed and non-distressed countries. Following the onset of the financial crisis, some segments of the money

market developed differently to others. Several indicators show that, overall, the secured/repo market fared much better during the financial crisis than other segments of the interbank market, in particular the unsecured market. This result is not surprising given the fact that the collateralised nature of repo transactions makes them more resilient to heightened credit risk concerns than unsecured transactions. The two charts show that, as counterparty and liquidity risks significantly increased, recourse was indeed made to the secured money market as an alternative to the unsecured market. As expected, the negative development for distressed countries in the unsecured segment is more pronounced than that for non-distressed countries. It is also worth pointing out that the transfer to secured markets started well before the outbreak of the financial crisis in 2007. This may reflect the fact that collateralised transactions are more complex in terms of legal and settlements issues, and that today's non-distressed countries were sophisticated enough in early 2000 to conduct these types of transactions.

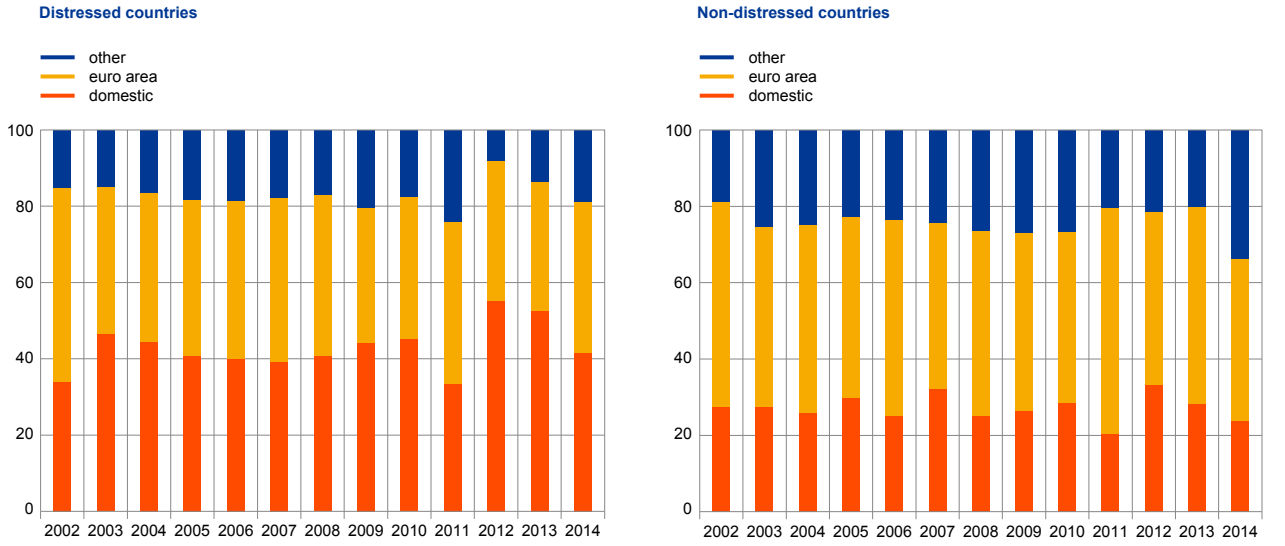
Description

The data for these charts are related to the Euro Money Market Survey, conducted annually by the ECB with panel banks who report their activity in the different segments of the money market. To compute the data, we first divided the banks in two sub-panels: distressed countries and non-distressed countries. Then for each sub-panel we add the total borrowing activity on unsecured markets (blue line) and the total borrowing activity on repo markets (red line). The initial numbers correspond to the average daily turnover in the second quarter of each year, with 2002 as the base year.

Chart S10

Geographical counterparty breakdown for secured and unsecured transactions

(percentage of total transactions)



Source: ECB's Euro Money Market Survey.

Non-technical description

The charts display the shares in percentage points of different geographical locations of counterparties in transactions in the money markets. Secured and unsecured transactions are combined, but the development is mainly driven by secured transactions, as this market segment is larger than the unsecured market. The charts

show that the share of domestic transactions is higher for distressed countries, while the share of transactions with other euro area countries is higher for non-distressed countries. Thus, non-distressed countries are more able to conduct cross-border transactions. This highlights financial fragmentation between the groups of countries. So, for example, the increased exposure in 2012 to domestic counterparties for both groups reflects the continuing concerns about the sovereign debt crisis and its spillover to the respective banking systems.

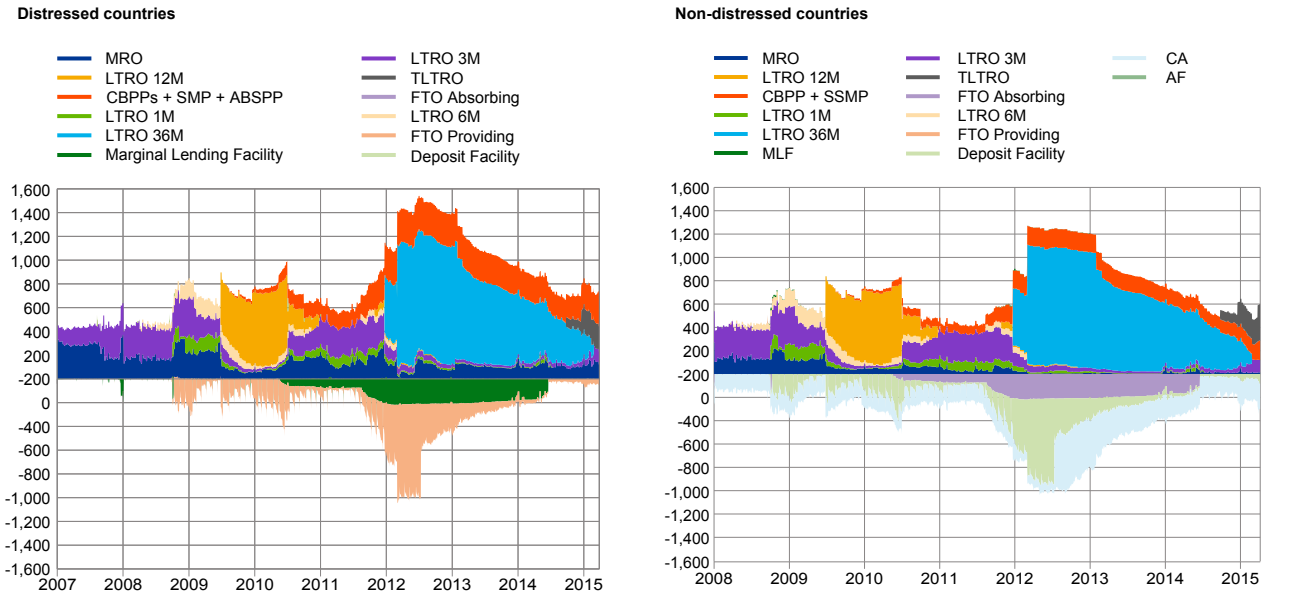
Description

The data for these charts are taken from the Euro Money Market Survey, conducted annually by the ECB with panel banks who report their activity in the different segments of the money market. In the survey, the banks report their activity in the secured and unsecured segments, and the nature of the counterparty: domestic, inside of the euro area, or outside (other). These charts show the aggregation of the breakdown of the overall volumes with each counterparty. Secured transactions include transactions conducted through central counterparties (CCPs).

Chart S11

Recourse to the ECB's market operations and standing facilities

(EUR billion)



Source: ECB.

Non-technical description

The charts rather clearly show a fragmentation between non-distressed and distressed countries, i.e. non-distressed countries are depositing liquidity with the Eurosystem, while distressed countries are borrowing liquidity from the Eurosystem, mainly through the three-year long-term refinancing operations (LTROs).

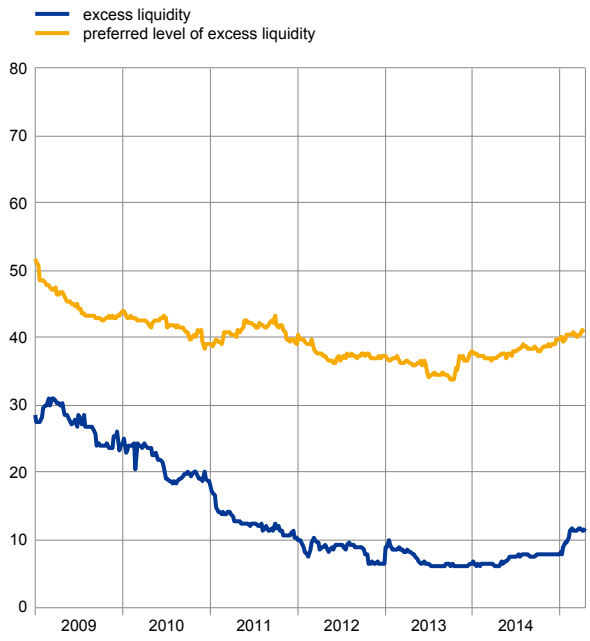
Description

The chart distinguishes between non-distressed and distressed countries. It uses ECB daily data from the liquidity operations. For these two charts, data on one- to

Chart S12

Use of cross-border collateral in Eurosystem monetary policy operations

(percentage of total collateral use)

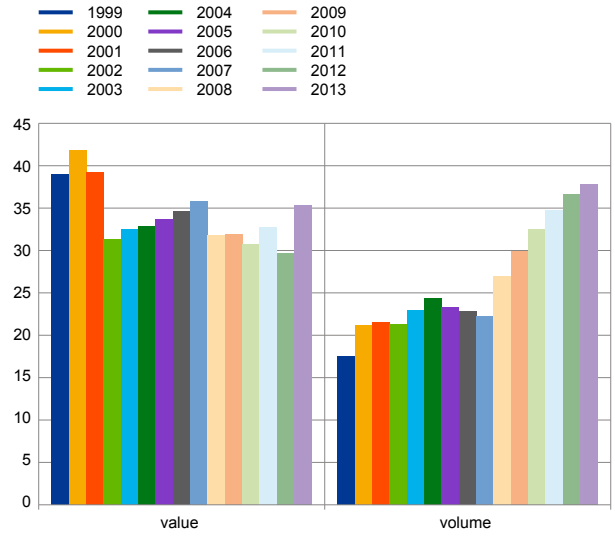


Source: ECB.

Chart S13

TARGET2's share of inter-Member State payments in terms of volume and value

(percentage of total payments)



Source: ECB.

six-month operations are combined, and data from the marginal lending facility are excluded. As these data are ECB restricted, it would not be possible for readers to re-construct them.

Non-technical description

Since the start of the financial turmoil, there has been a trend away from posting cross-border collateral and towards greater use of domestic collateral in Eurosystem liquidity-providing operations, in particular for distressed countries. This trend has intensified since the onset of the euro area sovereign debt crisis. The greater use of domestic collateral can be attributed both to an increasing home bias among investors and to an increase in the use of self-originated marketable assets as collateral.

Description

The chart distinguishes between distressed and non-distressed countries. It uses weekly data from the Use of Collateral Database (UCDB) and combines the residence information on the counterparty and the issuer of the asset.

Additional information

An asset is regarded as being used on a cross-border basis when the issuer of the asset and the counterparty using it as collateral with the Eurosystem reside in different jurisdictions.

3.1.3 Other indicators

Non-technical description

The chart presents the share of cross-border payments in the overall traffic settled in TARGET2 (in both volume and value terms). The share of cross-border volume grew in 2008 following the launch of the TARGET2 single shared platform, as the new system offered banks further opportunities to centralise their payments processing.

As regards the share of cross-border payments in value terms, the drop observed in 2008 mainly resulted from a change in the calculation methodology. In subsequent years, it has not grown at the same pace as the cross-border share in volume terms owing to strained market activity following the financial crisis.

Description

The first indicator shows the share by volume of payments between EU Member States (inter-Member State payments) in the total number of payments processed in TARGET2. The graph shows a general increase in this indicator, in particular from 2008 onwards. Before 2008, in the decentralised TARGET1 system, multi-country banks (or banking groups) had accounts in most countries in which they operated. Consequently, a large share of the traffic they generated in TARGET1 was treated as “domestic”. In TARGET2, these banking groups concentrate their intraday liquidity management and their payment processing in one account, usually with the national central bank of the country in which they have their head office. For that reason, a higher share of their payments traffic is now “crossborder”.

The second indicator shows the share by value of payments between EU Member States (inter-Member State payments) in the total value of payments processed in TARGET2. With the exception of some irregular increases/decreases recorded in 2000, 2001 and 2008 (following closure of other euro payment systems or changes in the statistical method), a general increase can be observed up to 2007, reflecting the positive contribution of TARGET1 to the integration of large-value payment activities. However, from 2008 onwards, the share remains roughly stable, owing to a deterioration in market conditions with, in particular, fewer cross-border money market transactions being settled in TARGET2. While these money market transactions are relatively small in number, their average value is much higher than that of other payments, which is why market conditions affect the cross-border share in terms of value more than in terms of volume.

In spite of the fact that both indicators include transactions in connection with monetary policy operations, their impact on the trends is considered negligible. In principle, as such transactions are treated as “domestic”, they would typically increase the value of domestic payments, thereby reducing the cross-border share. However, the impact of these operations is extremely limited compared to the average daily turnover of TARGET2, which amounts to €2.7 trillion. Even the LTROs do not significantly change the overall picture, as the value they generate in TARGET on one specific day is marginal when spread over an entire year.

Additional information

TARGET2 is the real-time gross settlement system for the euro. A second-generation system (TARGET2) operating on a single shared platform was launched in November 2007 and fully replaced the former decentralised system in May 2008.

In TARGET2, an “inter-Member State payment” is a payment between counterparties who maintain accounts with different national central banks participating in TARGET2. An “intra-Member State payment” is a payment between counterparties who maintain accounts with the same national central bank.

Chart S14

Share of cross-border overnight money market transactions identified in TARGET2

(percentage)

Source: TARGET2 money market transactions, based on ECB methodology refined in 2013.
Notes: Intra-group activity and loans with a zero interest rate are excluded from the calculation. Total volume is aggregated on a weekly basis.

Non-technical description

The chart displays the percentage of the volume (in euro) of euro area unsecured overnight money market activity that is cross-border in nature and identified as such in TARGET2 transactions data. Since the overnight money market is an immediate source of central bank money for banks, a decrease in cross-border lending can be a signal of market fragmentation. The autumn of 2008 and second half of 2011 are characterised by drops in cross-border lending. The chart shows a steady increase in overnight lending since the second half of 2012, reflecting a more financially integrated cross-border overnight market.

Description

This chart uses interbank payment transactions in TARGET2 and applies a Furfine algorithm to identify unsecured overnight money market loans. Cross-border activity is defined as loans involving two banks holding TARGET2 accounts with different central banks participating in TARGET2. Intra-group activity and loans with a zero interest rate are excluded from the calculation. The calculation does not further distinguish between spot-next and tomorrow-next transactions. Total volume is aggregated on a weekly basis.

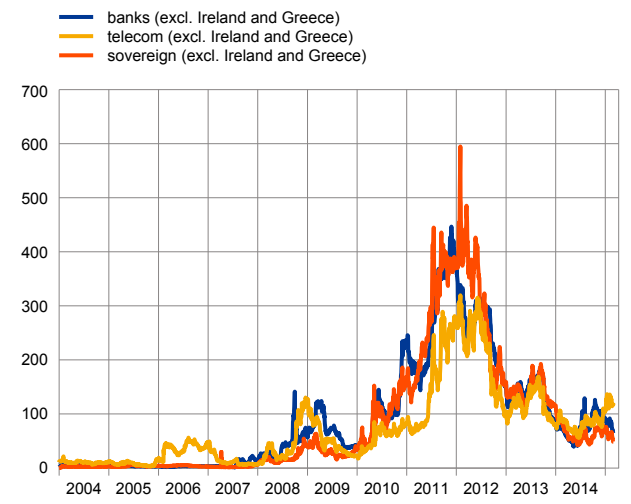
3.2 Securities market indicators

3.2.1 Price-based indicators

Chart S15

Dispersion in five-year CDS premia across the euro area

(daily data; basis points)



Sources: Thomson Reuters and ECB calculations.

Non-technical description

We consider here the dispersion of credit default swap (CDS) premia of different sectors to highlight the degree of dispersion of the cost of funding for different entities at the euro area level (while the CDS premium primarily reflects the cost of insuring debt against default, the premium can also be regarded as a proxy for the cost of funding). The higher the dispersion is at industry level for the euro area (so removing possible country specialisations that could bias the dispersion), the lower the integration is for the financing of these entities (sovereigns, banks and telecoms) at the euro area level.

Description

These indicators are computed as the standard deviation of five-year CDS premia for different sectors at the euro area level. The three sectors considered are sovereigns, telecommunications and banks, so as to constitute groups of homogenous entities with comparable credit risk at the euro area level.

Additional information/notes

The data do not include Greece and Ireland. Greece is excluded owing to very high sovereign CDS premia, and Ireland is excluded owing to the very high CDS premia of its telecommunications company.

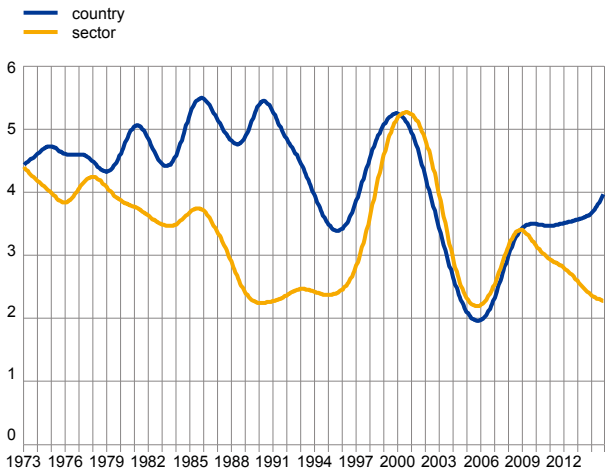
"Sovereign" includes Austria, France, Germany, Italy, the Netherlands, Portugal and Spain. Commercial banks include ABN AMRO (NL), Alpha Bank (GR), Allied Irish Banks (IE), Banca Monte dei Paschi di Siena (IT), Banca Popolare di Milano (IT), Banco Comercial Português (PT), Banco Sabadell (ES), Banco Espirito Santo (PT), Banco Santander Central Hispano (ES), Erste Bank der österreichischen Sparkassen (AT), Bank of Ireland (IE), Bayerische HypoVereinbank (DE), BNP Paribas (FR), Commerzbank (DE), Crédit Agricole (FR), Deutsche Bank (DE), Dexia Group (BE), EFG Eurobank Ergasias (GR), Fortis NL (NL), Intesa Sanpaolo SPA (IT), Mediobanca (IT), Natixis (FR), National Bank of Greece (GR), Nordea Bank (FI), Piraeus Group Finance PLC (GR), Société Générale (FR) and UniCredito Italiano (IT).

"Telecom" includes Deutsche Telekom (DE), France Telecom (FR), Hellenic Telecommunications Organization (GR), KPN (NL), Portugal Telecom (PT), Telecom Italia (IT), Telefõnica (ES) and Telekom Austria (AT).

Chart S16

Country and sector dispersions in euro area equity returns

(percentages)



Sources: Thomson Reuters and ECB calculations.
Note: cross-sectional dispersions are filtered.

Non-technical description

This chart presents the dispersion in equity returns, across sectors and across countries, in the euro area for a period of over 35 years to reflect structural changes in the aggregate euro area equity market. Under full financial segmentation, limited diversification opportunities for investors mean that they demand a high return for holding shares in undiversified firms, so cross-country dispersion (which reflects not only cross-border fragmentation, but also the different sectoral composition of each country's economy) should be high relative to cross-sectoral dispersion (which also reflects the different performance of the underlying sectors). By contrast, in an integrated financial market, there is no financial premium on sectoral or geographical diversification, and greater specialisation is affordable. This should reduce the gap between cross-country and cross-sectoral dispersions. Assuming sectoral compositions and performances remain constant over the sample period, three periods can be distinguished: 1) the pre-EMU period, in which cross-country dispersion was significantly higher than cross-sectoral dispersion; 2) the pre-crisis EMU period after 1999, in which cross-country fragmentation has been eliminated and the two dispersions get closer; and 3) the crisis period, in which fragmentation has increased, as shown by the increase in both dispersion indicators as of 2007.

Description

This indicator is derived by calculating the cross-sectional dispersions in both sector and country index returns for the euro area countries. They include (reinvested)

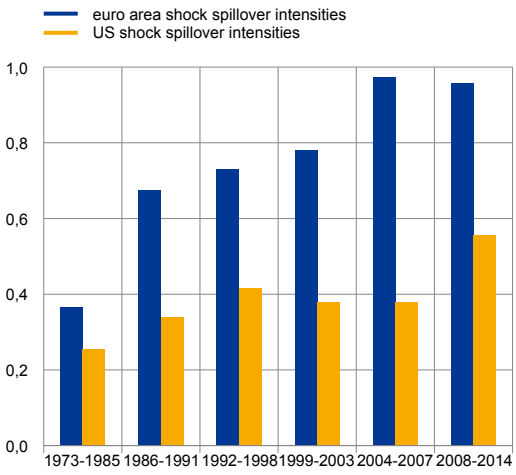
dividends and are denominated in euro. The indicator has a monthly frequency. The cross-sectional dispersions are filtered using the Hodrick-Prescott smoothing technique, which provides a smooth estimate of the long-term trend component of the series. The smoothing parameter λ is equal to 14,400.

Additional information

This indicator is based on an approach first presented by Adjaouté and Danthine; see Adjaouté, K. and Danthine, J.P. (2003), "European Financial Integration and Equity Returns: A Theory-based Assessment", in Gaspar, V. et al. (eds.), Second ECB Central Banking Conference: The transformation of the European financial system, ECB, May.

Chart S17

Proportion of variance in euro area country equity returns explained by euro area and US stock market shocks



Sources: Thomson Reuters and ECB calculations.
Note: Calculations based on equity market indices at weekly frequency (1973-2014).

Non-technical description

This chart compares the extent to which local euro area equity markets are sensitive to US market shocks and euro area-wide shocks. Over the last decade, euro area-wide volatility has been the main determinant of local stock market volatility, but the share of US volatility incorporated in local euro area equity market volatility has intensified. Between 2004 and 2007 only 17% of euro area local equity market volatility could be attributed to US volatility, but this reached 25% in the period from 2008 to 2014 after the collapse of Lehman Brothers.

Description

This chart presents the proportion of total domestic equity volatility of country stock returns explained by euro area and US shocks. To quote the original source,[142] the rationale of the analysis is as follows: "An important implication of integration is that asset prices should only react to common news. If there are no barriers to international investment, purely local shocks can generally be diversified away by investing in assets from different regions. Local shocks should therefore not constitute a systematic risk."

The source goes on to say: "For the purpose of examining integration in local euro area equity markets, we need to distinguish between global and euro area-wide effects on equity returns in the euro area. To this end, the return on US stock markets is used as a proxy for world news, while the return on a euro area-wide stock market index, corrected for US news, is used as the euro factor."

Additional information/notes

The variance ratio is derived by assuming that country-specific shocks are uncorrelated across countries and that they similarly do not correlate with euro area

[142] Baele, L., Ferrando, A., Hördahl, P., Krylova, E. and Monnet, C. (2004), *"Measuring financial integration in the euro area"*, Occasional Paper Series, No 14, ECB, April.

and US benchmark indices. The influence of euro area shocks may have been greater in very recent years. For detailed calculations, see Baele et al. (2004).

To compare the relevance of euro area and US shocks for average changes in country returns, the indicators report the variance ratios, i.e. the proportion of total domestic equity volatility explained by euro area and US shocks respectively. The model-based indicator is derived by assuming that the total variance of individual country-specific returns is given by:

$$\sigma_{c,t}^2 = h_{c,t} + \left(\beta_t^{eu}\right)^2 \sigma_{eu,t}^2 + \left(\beta_t^{us}\right)^2 \sigma_{us,t}^2$$

where $h_{c,t}$ is the variance of the local shock component. The euro area variance ratio is then given by:

$$VR_{c,t}^{eu} = \frac{\left(\beta_t^{eu}\right)^2 \sigma_{eu,t}^2}{\sigma_{c,t}^2}$$

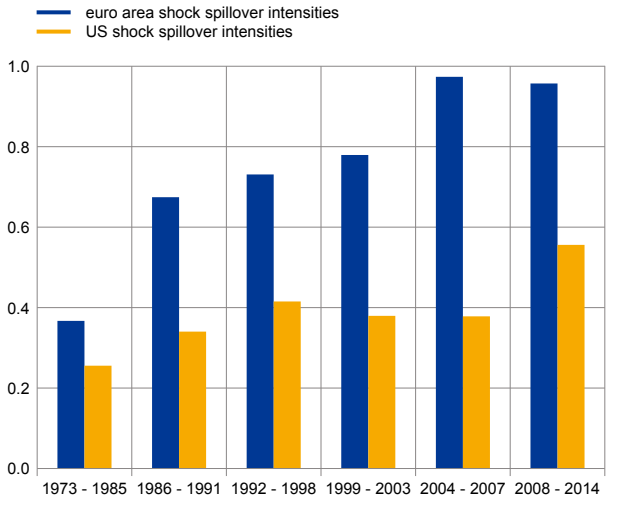
and the US variance ratio by a corresponding equation. The conditional variances are obtained using a standard asymmetric GARCH (1,1) model.

For each period, the indicators report the unweighted average of the relative importance of euro area-wide factors, other than US equity market fluctuations, for the variance of individual euro area countries' equity market indices (the "variance ratio"), and the unweighted average of the relative importance of US equity market fluctuations for the variance of euro area equity markets.

Data refer to Datastream market indices, and have been calculated on a weekly basis since January 1973.

Chart S18

Euro area and US shock spillover intensity in individual euro area countries



Sources: Thomson Reuters and ECB calculations.
Note: Calculations based on equity market indices at weekly frequency (1973-2014).

Non-technical description

This chart compares the extent to which local euro area equity markets are sensitive to US market shocks and euro area-wide shocks. Over the last decade, euro area-wide shocks have been transmitted almost one-to-one to local euro area equity markets, which can be interpreted as a sign of strong equity market integration among euro area countries. Transmission of US shocks (which can be seen as a proxy for global shocks) has intensified since the collapse of Lehman Brothers: between 2004 and 2007 almost 40% of US shocks were transmitted to euro area markets, but this has risen to 60% since Lehman.

Description

Empirical evidence suggests that equity returns are driven to a significant extent by global factors. For this reason, both euro area-wide shocks and US shocks

(as a proxy for global factors) are included in the assessment of common news. To calculate the relative importance of euro area-wide and US stock market fluctuations for local stock market returns, the stock market returns of individual countries are modelled as having both an expected component and an unexpected one, $\varepsilon_{c,t}$. The unexpected component is then decomposed into a purely local shock ($e_{c,t}$) and a reaction to euro area news ($\varepsilon_{eu,t}$) and world (US) news ($\varepsilon_{us,t}$):

$$\varepsilon_{c,t} = e_{c,t} + \beta_{c,t}^{eu} \varepsilon_{eu,t} + \beta_{c,t}^{us} \varepsilon_{us,t}$$

The expected return is obtained by relating euro area and US returns to a constant term and to the returns in the previous period. The conditional variance of the error terms is governed by a bivariate asymmetric GARCH (1,1) model.

β represents the country-dependent sensitivity to euro area or US market changes (of the unexpected component). The analysis is performed over the periods 1973-1985, 1986-1991, 1992-1998, 1999-2003, 2004-2007 and 2008-2013. The reported indicator is the cross-country unweighted average of country-specific sensitivities (betas). A reported beta close to one in the chart indicates that on average all euro area countries respond to the corresponding shock (from either the euro area or the United States). In a well-integrated euro area, the beta associated with the euro area shock should be close to one.

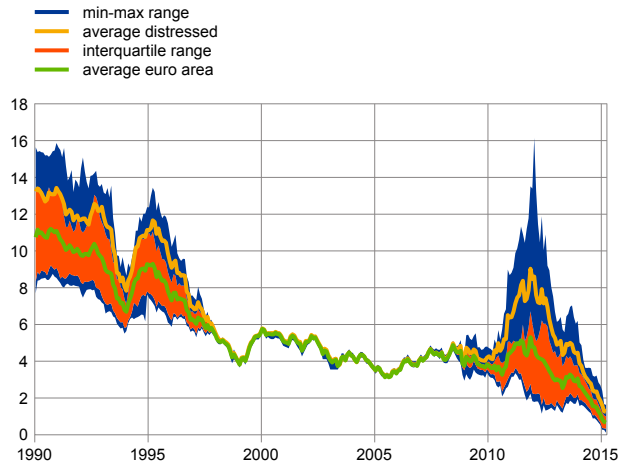
Additional information

To distinguish global shocks from purely euro area shocks, it is assumed that euro area equity market developments are partly driven by events in the US market. It is furthermore assumed that the proportion of local returns that is not explained by common factors is entirely attributable to local news.

Chart S19

Dispersion of euro area ten-year sovereign bond yields

(percentages)



Sources: Bloomberg and ECB calculations.

Non-technical description

The chart presents the average evolution and dispersion of euro area sovereign bond yields. In a well-integrated market, there should be low dispersion, because investors will not demand such a high premium to compensate for the risk of idiosyncratic shocks, while in a fragmented market, dispersion is higher.

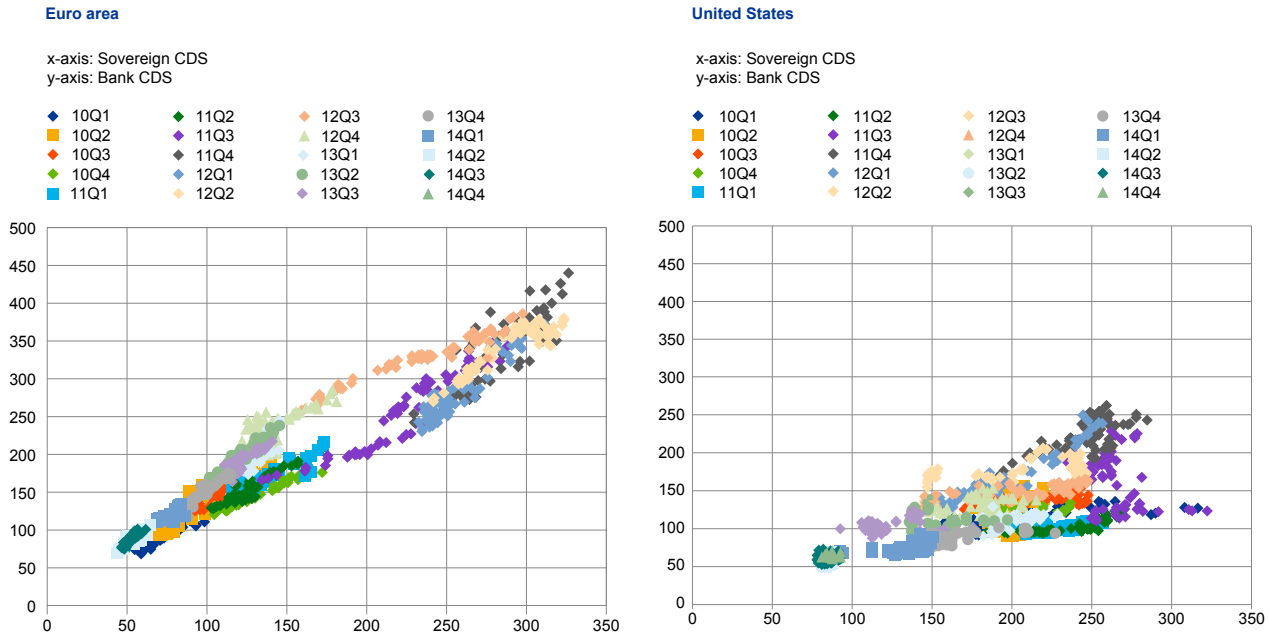
Description

The shaded areas represent the min-max range and the interquartile range of individual bond yields for the country composition of the euro area as in 2011. The lines represent the yields for some distressed euro area countries. The yields for Greece, Cyprus, Estonia, Luxembourg, Malta and Slovenia are excluded owing to infrequent observations or a lack of observations.

Chart S20

Sovereign and bank CDS premia – euro area and United States

(basis points; Q1 2010 – Q4 2014)



Source: Thomson Reuters and ECB calculations.

Non-technical description

A tight link between sovereign and bank creditworthiness is clearly visible in the high degree of correlation between sovereign CDS premia and bank CDS premia in euro area countries. This high correlation illustrates the self-reinforcing loop between bank and sovereign risks, with doubts about the solvency of the sovereigns feeding doubts about the solvency of the banks, and vice versa. Such dynamics are much weaker in the United States, where the CDS premia of sovereigns and banks are less correlated.

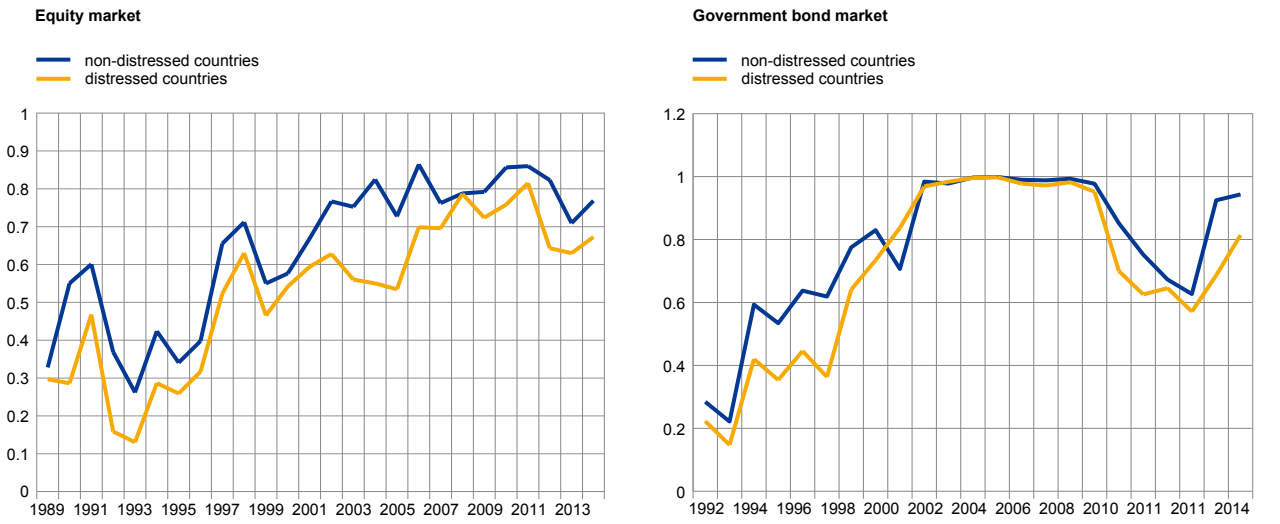
The self-reinforcing loop between bank and sovereign risk, characterised by tight bank-sovereign linkages (in particular in non-AAA-rated euro area countries), is one of the causes of the increasing heterogeneity of sovereign bond yields (particularly the divergence between AAA-rated countries and non-AAA-rated countries). This phenomenon (tight banksovereign linkages on the periphery) has an impact on bond market integration in the euro area (and consequently on the integration of the funding markets for corporates and banks).

Description

The euro area bank CDS premium is calculated as a weighted average of CDS premia for the main euro area banks (one bank per country weighted by the national capital key), and the euro area sovereign CDS premium is calculated as a weighted average of national sovereign CDS premia. For the United States, the bank CDS premium is calculated as the median of CDS premia for the eight largest US banks, and the sovereign CDS premium is the CDS premium for the US sovereign. All the CDS premia considered are at the five-year maturity. Each point on the chart represents one day, while each colour represents one quarter (from Q1 2010 to Q4 2013). Any point on the diagonal line would indicate a one-for-one relationship between bank and sovereign CDS premia.

Chart S21

Equity and government bond market integration based on common factor portfolios



Sources: Thomson Reuters and ECB Calculations.
Note: Data cover the following countries:
distressed countries: ES, IE, IT, PT distressed countries: ES, IE, IT
non-distressed: AT, BE, DE, FI, FR, LU, NL non-distressed: AT, BE, DE, FR, NL

Non-technical description

This indicator measures integration in the euro area equity and government bond markets via the explanatory power of common factor portfolios. For each calendar year, these portfolios are formed on the basis of a principal component analysis and used in a simple regression framework to explain equity and bond market returns for each country. The measure is then computed as an average (median) R-square across countries. In general, a higher measure indicates a more integrated market, where 1 implies perfect integration and 0 entails no integration.

Description

This measure of financial market integration for calendar year t is computed as the cross-sectional mean (median) R^2 that is obtained from estimating the following regression separately for each country i:

$$R_{i,t,T} = \alpha_{i,t} + \sum_{k=1}^{K} \beta_{i,t}^{k} \Theta_{i,t}^{k} + \varepsilon_{i,t,T}$$

where $R_{i,t,\tau}$ is the market return in country i on trading day τ within year t, and $\theta_{ki,t}$ is the return on the k-th common factor portfolio on the same day. The K common factor portfolios are obtained via principal component analysis, and it assumed throughout that K=3. The weights (eigenvectors) for the factor portfolios in year t are calculated using data from year t-1.

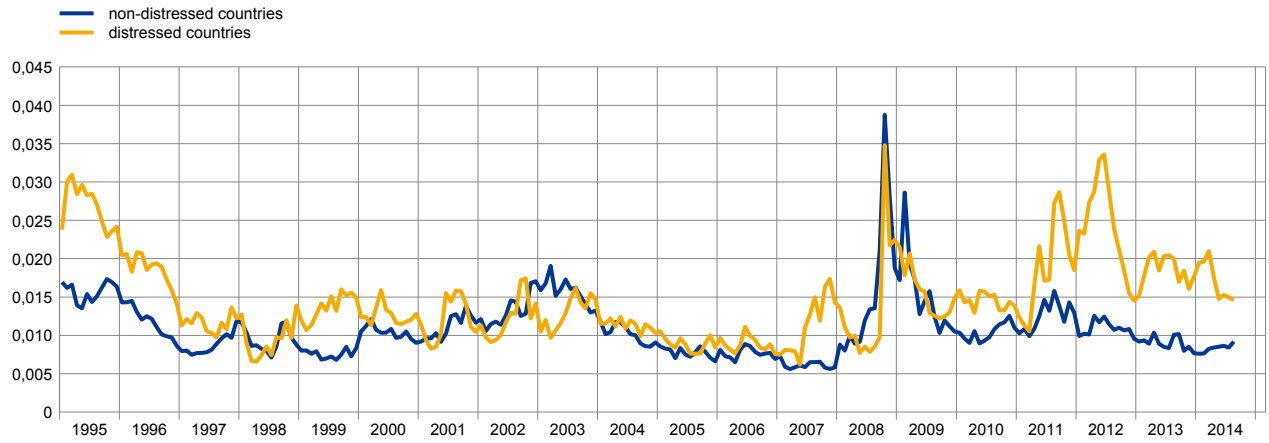
In order to obtain a measure that is comparable across years, we require daily return data (on broad equity market indices and ten-year benchmark bonds) to be available from the beginning of the sample.

Additional information

The analysis is based on Pukthuanthong, K. and Roll, R. (2009), "Global market integration: An alternative measure and its application", Journal of Financial Economics, Vol. 94, No 2, November, pp. 214-232.

Chart S22

Equity market segmentation in distressed and non-distressed countries



Sources: Thomson Reuters and ECB calculations.
Note: Data cover the following countries: distressed countries: ES, GR, IE, IT, PT; non-distressed: AT, BE, DE, FI, FR, NL

Non-technical description

This indicator measures segmentation (the opposite of integration) of euro area equity markets via valuation differentials. For each calendar month, the absolute difference between the stock market valuation level (based on analyst forecasts) of a given country and the euro area average is computed, based on industry portfolios that allow for different valuation levels in different industries. These absolute differences are then aggregated by calculating the median across two groups of countries (distressed and non-distressed, respectively). A larger value indicates a higher level of market segmentation (i.e. a lower level of market integration).
A measure of zero implies perfect integration.

Description

The segmentation measure for country i is computed as

$$Seg^i = \sum_{k \epsilon K} \omega_k^i |EY_k^i - \overline{EY}_k|$$

Where EY_k^i is the average earnings yield (the inverse of the price-earnings ratio) based on analyst forecasts for industry sector k in country i, $\overline{EY}_k$ is the respective euro area average, and ω_k^i is the share of sector k in the stock market capitalisation of country i.

Additional information

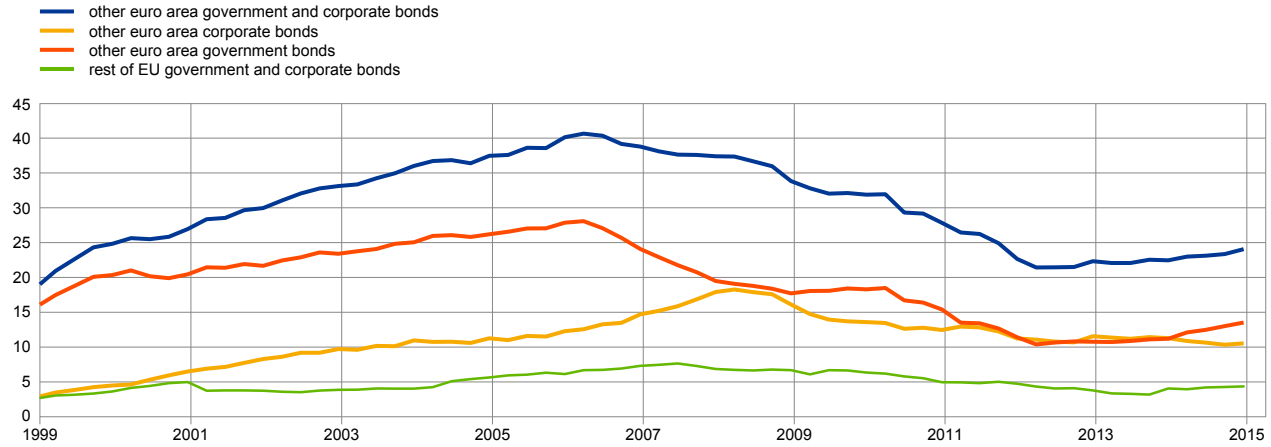
The analysis is based on Bekaert, G., Harvey, C.R., Lundblad, C.T. and Siegel, S. (2011), "What segments equity markets?", Review of Financial Studies, Vol. 24, No 12, October.

3.2.2 Quantity-based indicators

Chart S23

Share of MFI cross-border holdings of debt securities issued by euro area and EU corporates and sovereigns

(percentage of total holdings, excluding the Eurosystem)



Source: ECB.

Non-technical description

Cross-border holdings by euro area MFIs of bonds issued by non-financial borrowers (sovereign and corporate) of other euro area countries are a relevant quantity indicator of financial integration. The indicator points to decreasing integration in these markets in recent years.

Description

See Charts S28 to S31 in the banking section.

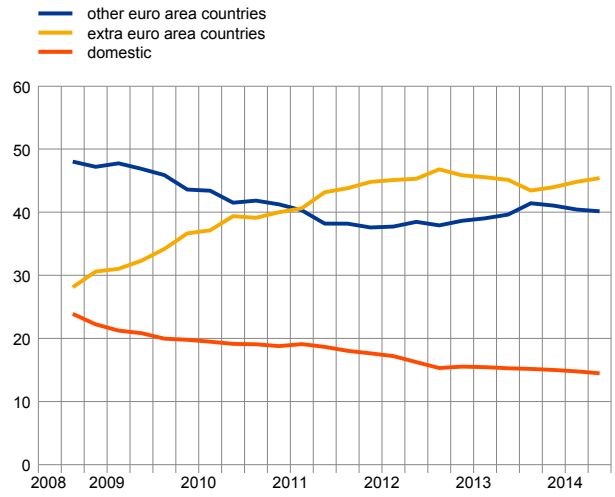
Additional information

See Charts S28 to S31 in the banking section.

Chart S24

Investment funds' holdings of debt securities

(percentage of total holdings of debt securities)

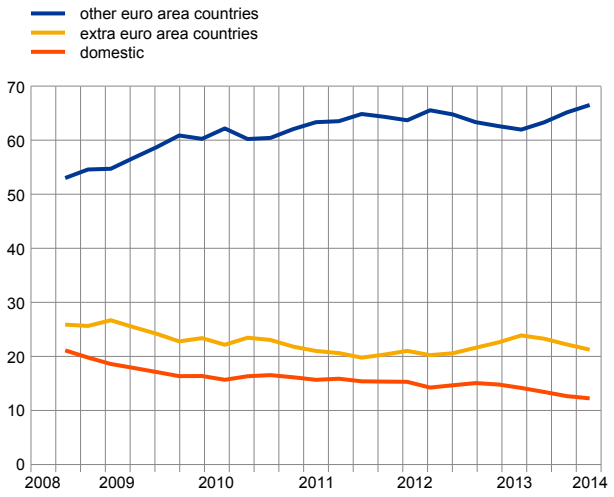


Source: ECB.

Chart S25

Investment funds' holdings of equity

(percentage of total holdings of equity)



Source: ECB.

Non-technical description

These two indicators are used to assess the contribution of institutional investors to financial integration in the euro area.

Description

The first indicator shows the share of euro area investment funds' total holdings of all securities other than shares (including money market paper) issued by domestic residents, by residents of euro area countries other than the country in which the investment fund is located, and by non-domestic, non-euro area residents. The second indicator provides the same measure for the share of euro area investment funds' combined holdings of all shares and other equity (excluding investment fund shares/units).

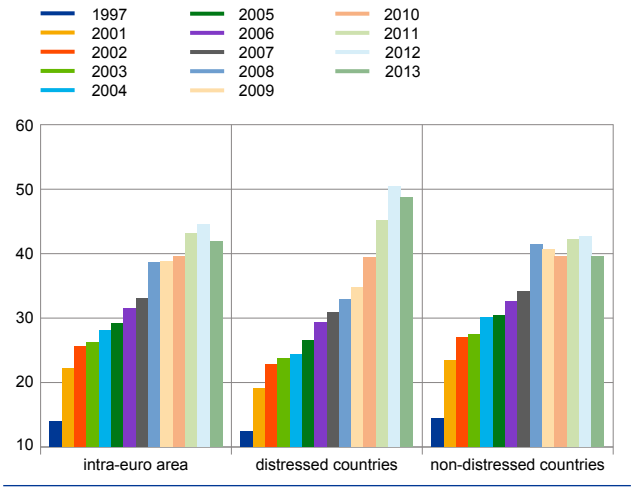
Additional information

These two indicators are constructed on the basis of the balance sheets of euro area investment funds (other than money market funds, which are included in the MFI balance sheet statistics). A complete list of euro area investment funds is published on the ECB's website. Further information on these investment fund statistics can be found in the Manual on investment fund statistics. Since December 2008 harmonised statistical information has been collected and compiled on the basis of Regulation ECB/2007/8 concerning statistics on the assets and liabilities of investment funds.

Chart S26

The degree of cross-border holdings of equity issued by euro area residents

(percentages)



Sources: IMF, Thomson Reuters, ECB calculations.
Notes: Intra-euro area is defined as the share of equity issued in the euro area residents and held by residents of other euro area countries (excluding central banks). Extra-euro area is defined as the share of euro area equity held by non-residents of the euro area (excluding central banks).

Non-technical description

This chart shows the degree of cross-border holdings of equity securities among euro area countries. This indicator measures the degree of stock market integration at the euro area level.

Description

Intra-euro area is defined as the share of equity issued by euro area residents and held by other euro area residents (excluding central banks):

$$\frac{\sum_i \sum_{ji} Outstock_{ij,t}}{\sum_i MKT_{i,t} + \sum_i TOutstock_{i,t} - \sum_i TInstock_{i,t}}$$
$$i,j \in \{euro\ area\ countries\}$$

where $Outstock_{ij}$ denotes the value of equity issued by residents of euro area country i and held by residents of euro area country j;

MKT_i stands for stock market capitalisation in country i; $TOutstock_i$ is the total foreign equity held by country i; and $TInstock_i$ is the total foreign liabilities of country i.

Extra-euro area is defined as the share of euro area equity held by non-residents of the euro area (excluding central banks). The measure takes the following form:

$$\frac{\sum_i \sum_r Outstock_{ir,t}}{\sum_r MKT_{r,t} + \sum_r TOutstock_{r,t} - \sum_r TInstock_{r,t}}$$
$$i \in \{euro\ area\ countries\}$$
$$r \in \{rest\ of\ the\ world\}$$

where $Outstock_{ir}$ denotes the value of equity issued by residents of euro area country i and held by non-residents of the euro area r (rest of the world); MKT_r stands for market capitalisation in country r; $TOutstock_r$ is the total foreign equity held by country r; and $TInstock_r$ is the total foreign liabilities of country r. The computed indicator has an annual frequency.

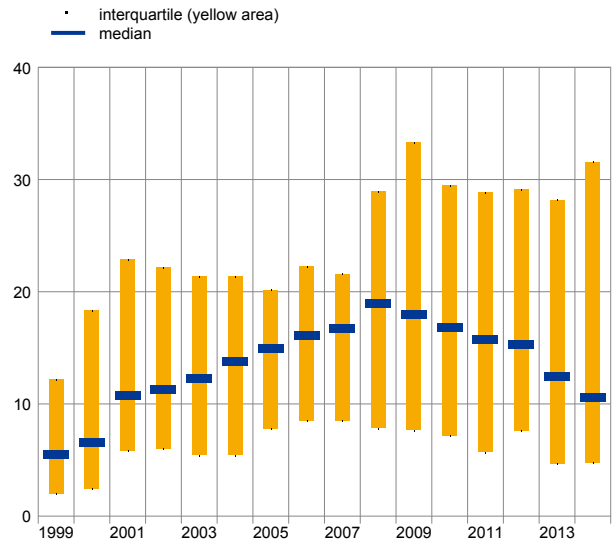
3.3 Banking market indicators

3.3.1 Structural indicator

Chart S27

Dispersion of the total assets of foreign branches and subsidiaries of euro area banks across euro area countries

(percentage of the total assets of the euro area banking sector)



Source: ECB.

Non-technical description

This indicator describes the development over time of the assets of foreign branches and subsidiaries of euro area banks within euro area countries other than the home country as a share of the total assets of the euro area banking sector, with higher shares implying higher cross-border activity. Overall, this share continues to be rather limited across the majority of countries. However, it is noteworthy that, owing to the crisis, the median degree of cross-border penetration of banking institutions has fallen in recent years.

Description

The share of total assets of foreign branches and subsidiaries over total assets of the national banking system is calculated for each country of the euro area. Then, the level and dispersion of these country shares are described by the following measures: the first quartile (25th percentile), the median (50th percentile) and the third quartile (75th percentile).

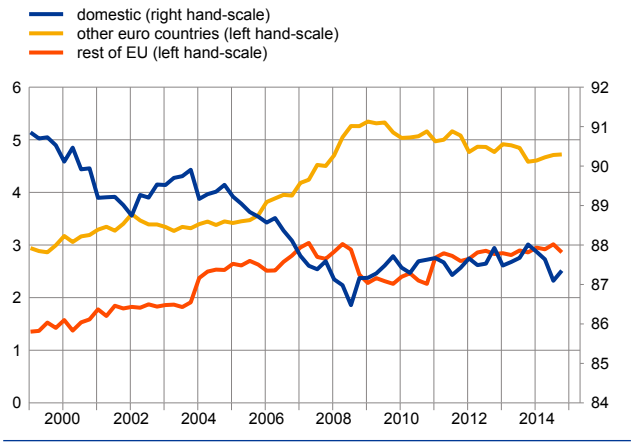
These computed indicators have an annual frequency. The composition of the euro area is that applicable during the respective reference period.

3.2.2 Activity-based indicators

Chart S28

MFI loans to non-MFIs: outstanding amounts by residency of counterparty

(percentage of total lending excluding the Eurosystem)

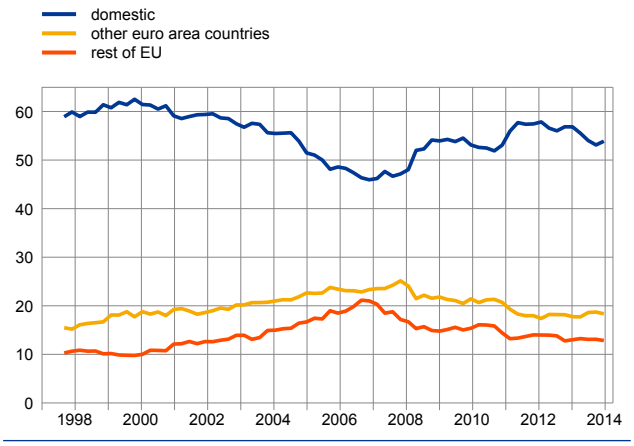


Source: ECB.

Chart S29

MFI loans to MFIs: outstanding amounts by residency of counterparty

(percentage of total lending excluding the Eurosystem)

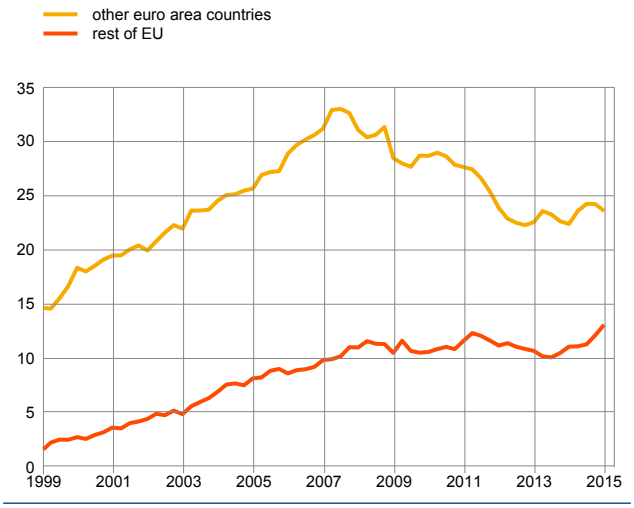


Source: ECB.

Chart S30

MFI holdings of securities issued by MFIs: outstanding amounts by residency of counterparty

(percentage of total holdings)

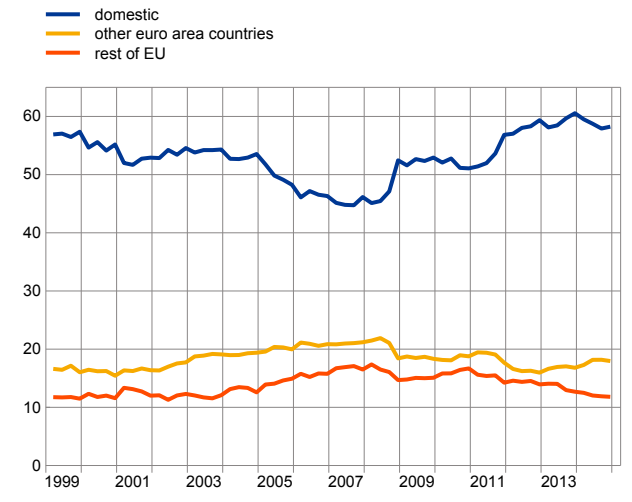


Source: ECB.

Chart S31

MFI deposits from MFIs: outstanding amounts by residency of counterparty

(percentage of total deposits excluding the Eurosystem)



Source: ECB.

Non-technical description

This set of indicators displays the relevance of cross-border balance sheet connections for euro area monetary financial institutions (MFIs). The indicators show that euro area wholesale banking markets are far more integrated than retail markets.

Description

The indicators in Charts S28 and S29 show loans granted by euro area MFIs (excluding the Eurosystem) to non-MFIs and other MFIs, broken down by residency of counterparty. The compositions of the euro area and the rest of the EU are those applicable during the respective reference periods. In Chart S30, a similar indicator is shown for securities issued by euro area MFIs and held by euro area and other EU MFIs. In Chart S31, a similar indicator is shown for deposits placed in the euro area by non-MFIs. Inter-MFI borrowing and lending is also conducted through CCPs. In cases where these CCPs are not themselves MFIs, these volumes are not included in the inter-MFI loans and deposits in Charts S29 and S31. (For more information, see Box 3 of the September 2012 issue of the ECB's Monthly Bulletin.)These indicators have a quarterly frequency.

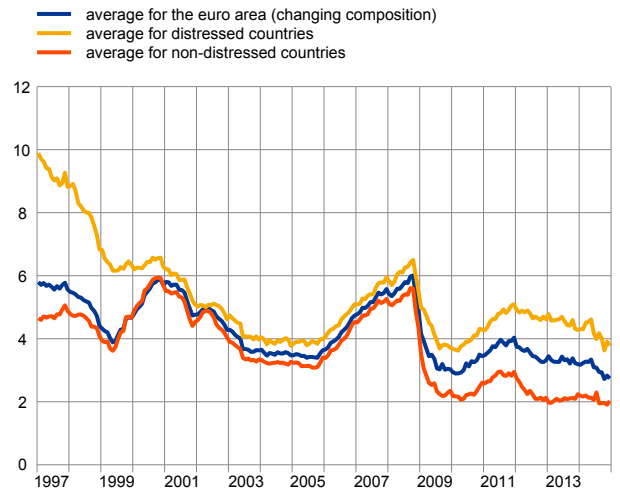
Additional information

These indicators are constructed on the basis of the national aggregated MFI balance sheet statistics reported to the ECB at monthly and quarterly frequencies. These data cover the MFI sector excluding the Eurosystem and also include data on money market funds (MMFs). It is not yet possible to derive indicators that strictly refer to banking markets. Consequently, as MMFs typically invest in inter-MFI deposits and short-term securities, the indicators displaying data for these assets are somewhat affected by the MMFs' balance sheet items.

Chart S32

Interest rates on new loans to euro area non-financial corporations

(percentages)

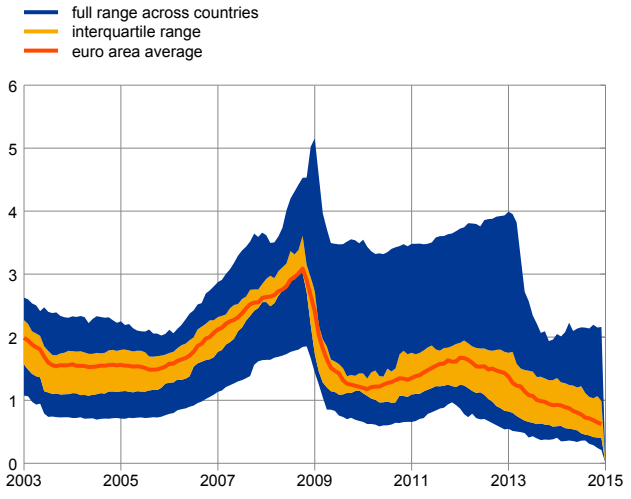


Source: ECB.
Note: All euro area countries, changing composition.

Chart S33

Interest rates on MFI deposits for households in the euro area

(percentages)



Sources: ECB and ECB calculations
Notes: The deposit rates are aggregated using outstanding amounts.

These balance sheet items are transmitted on a non-consolidated basis. This means that the positions with foreign counterparties include those with foreign branches and subsidiaries.

Non-technical description

An important aspect of the gains from increasing financial integration is that lower financing costs reached a significant level of convergence across countries. The strong convergence across countries in bank rates charged to non-financial corporations for new loans is clearly visible.

Description

This indicator displays the average of MFI interest rates (MIRs) on new business reported to the ECB.

Additional information/notes

These statistics are based on MIRs on new business reported to the ECB at monthly frequency since January 2003.

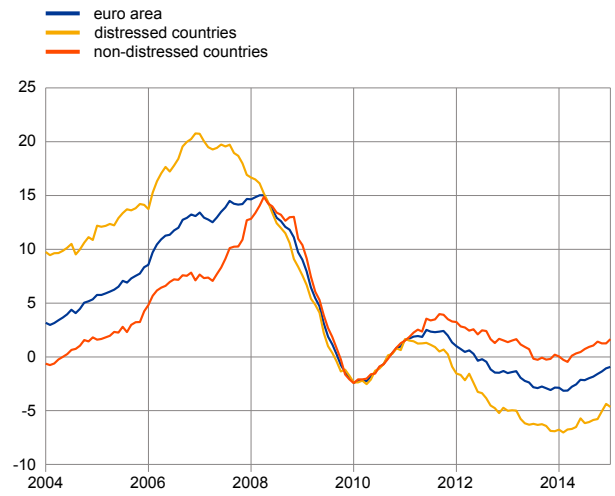
Non-technical description

This chart shows the dispersion of deposit rates in the euro area. The increasing dispersion highlights the fragmentation of retail markets.

Chart S34

MFI loans to non-financial corporations

(annual loan growth; percentages)



Source: ECB.

Non-technical description

Persistent divergence between groups of countries suggests increasing disparities in borrowers' demand and/or access to credit across euro area countries, reflecting differences in economic environment and outlook as well as potential disparities in the state of their banking systems and domestic sovereign risk.

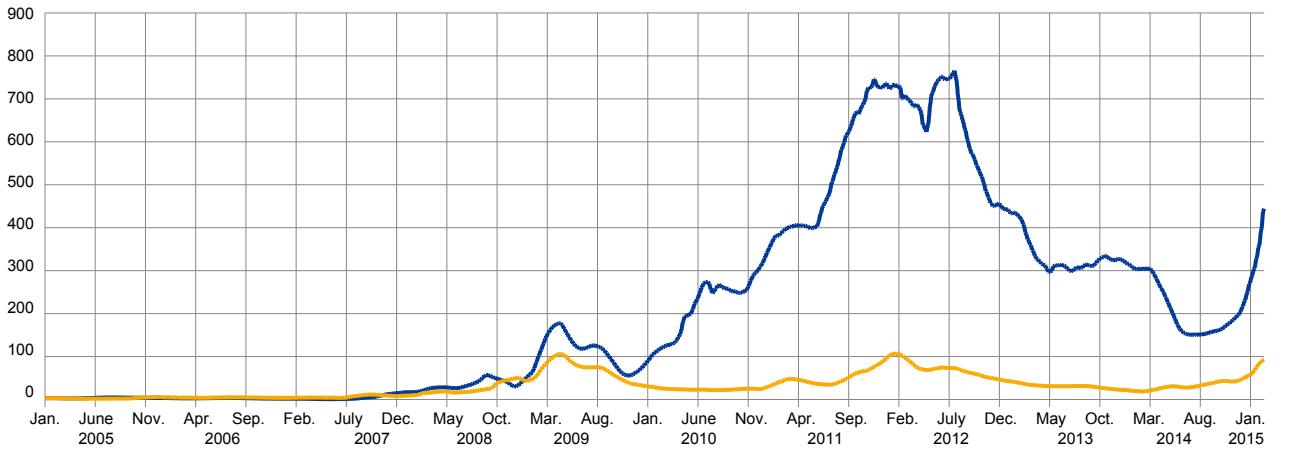
Description

Annual percentage changes; adjusted for loan sales and securitisation from 2009 onwards.

ChartS 35

Standard deviation of banks' CDS premia by country group

(basis points)



Sources: Bloomberg, Thomson Reuters, Credit Market Analysis Ltd (CMA) and ECB calculations.
Note: Data cover banks from the following countries: distressed countries – ES, GR, IE, IT, PT; non-distressed countries – AT, BE, DE, FR, NL.

Non-technical description

The cross-country variance of CDS premia charged by investors for bank debt should provide a signal on financial integration. It must, however, be kept in mind that CDS prices also depend on a range of other factors, such as risk, liquidity, and the correlation between CDS premia for banks and sovereign CDS premia.

Description

For each group of countries, the indicator is the unweighted standard deviation of the average of banks' daily CDS premia in each euro area country.

Additional information

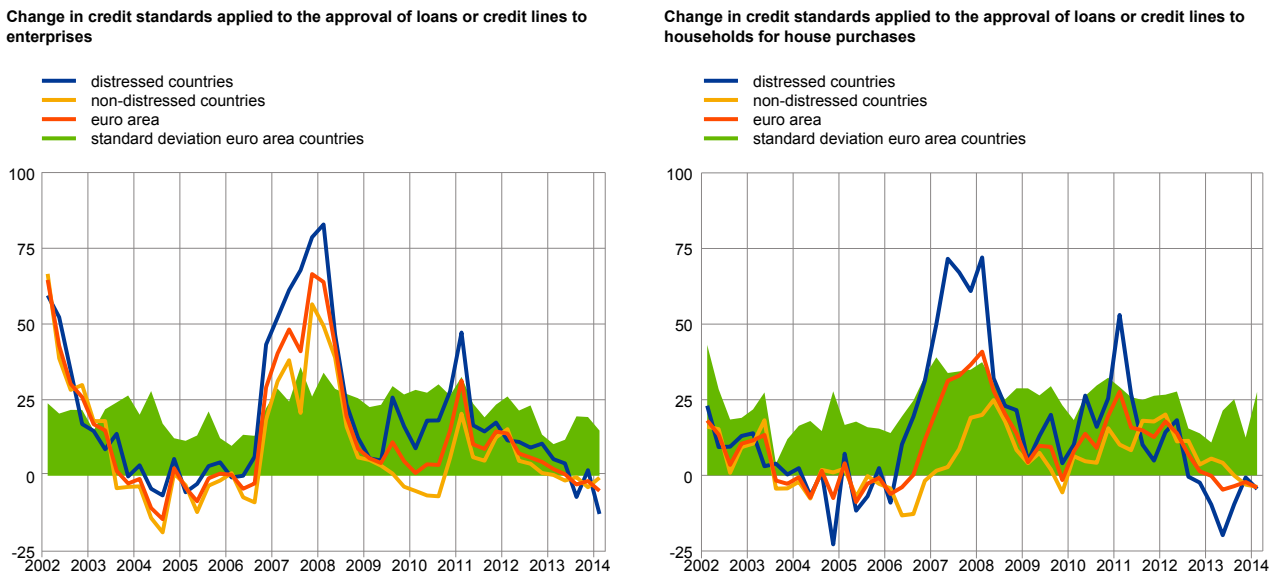
This indicator is based on CDS prices available for banks on the EONIA panel.

3.3.3 Survey-based indicators

Chart S36

Changes in credit standards

(net percentage of banks indicating a tightening of standards)



Sources: Eurosystem's bank lending survey (BLS) and ECB calculations.

Non-technical description

Persistent divergence in the level of credit standards between groups of countries suggests ongoing disparities in borrowers' access to credit across euro area countries.

Description

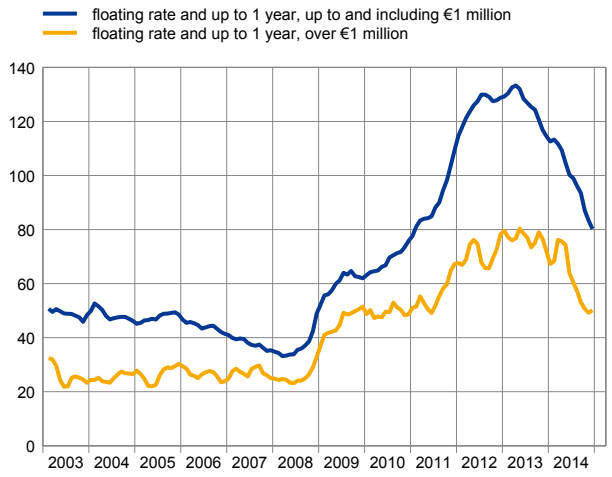
Changes in credit standards are given as net percentages of replies, i.e. percentage of banks indicating a tightening of credit standards minus percentage of banks indicating an easing of credit standards; country aggregate results are weighted by aggregate lending volumes.

3.3.4 Price-based indicators

Chart S37

Cross-country standard deviation of MFI interest rates on new loans to non-financial corporations

(unweighted, basis points)



Source: ECB.

Non-technical description

The euro area cross-country dispersion of retail interest rates on loans and deposits from banks to non-financial corporations and households can be taken as an indicator of the degree of integration in the retail banking market. The dispersion of bank interest rates should be lower in the case of instruments that are more homogeneous across countries. In this respect, it should be noted that differences in bank interest rates can be due to other factors, such as different conditions in national economies (credit and interest rate risk, firm size, industrial structure, degree of capital market development), institutional factors (taxation, regulation, supervision), and financial structures (degree of bank/capital market financing, competitiveness, etc.).

Description

The following general notation is used for each of the above categories of loan: $r_{c,t}$ = the interest rate prevailing in country c in month t $b_{c,t}$ = the business volume in country c in month t

$w_{c,t}=\frac{b_{c,t}}{B_t}$ is the weight of country c in the total euro area business volume B in month t where

$B_t=\sum_c b_{c,t}$

MFI interest rates in the euro area are computed as the weighted average of country interest rates $r_{c,t}$, using the country weights $w_{c,t}$.

$r_t=\sum_c w_{c,t} r_{c,t}$

The euro area weighted standard deviation takes the following form:

$M_t=\sqrt{\sum_c (r_{c,t}-r_t)^2 w_{c,t}}$

The monthly data are smoothed by calculating a three-month centred moving average of the standard deviation.

Additional information

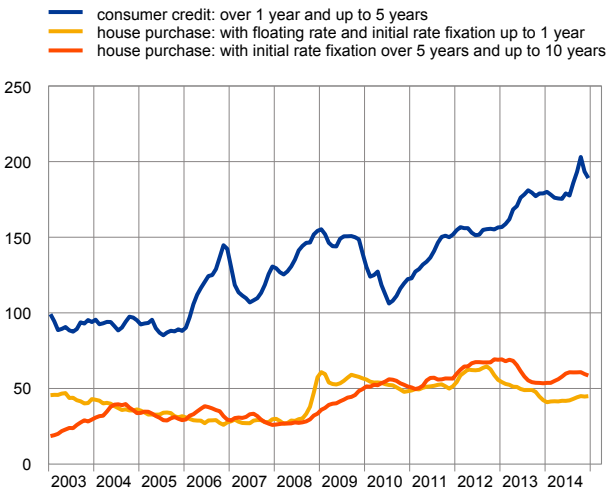
The price measures for credit market integration are based on MIRs on new business reported to the ECB at monthly frequency since January 2003.

For the purpose of measuring financial integration, it might be preferable to compute the dispersion as the standard deviation of unweighted interest rates at the level of individual MFIs. However, these data are not available at the ECB, and therefore standard deviations of weighted rates across euro area countries are calculated instead.

Chart S38

Cross-country standard deviation of MFI interest rates on loans to households

(unweighted, basis points)



Source: ECB.

Non-technical description

See Chart S37 above.

Description

See Chart S37 above.

Additional information

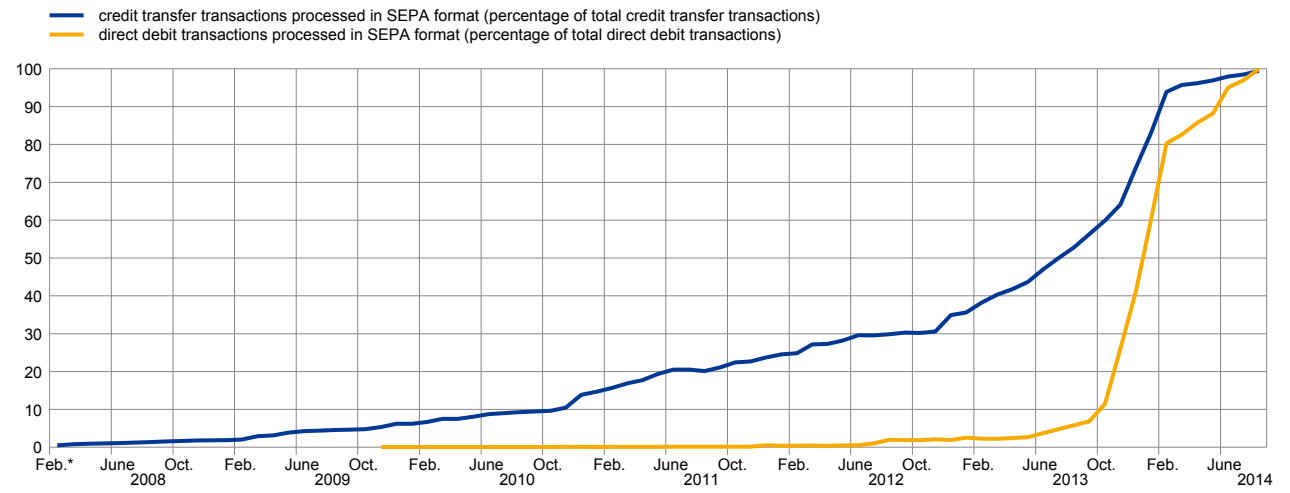
See Chart S37 above.

3.3.5 Other indicators

Chart S39

Credit transfer and direct debit transactions processed in SEPA format in the euro area

(percentages of total transactions)



* 28 Jan. 2008 - 29 Feb. 2008
Source: ECB.

Non-technical description

To address fragmentation in the euro retail payments market, national credit transfers and direct debits migrated fully by 1 August 2014 to pan-European SEPA credit transfers (SCTs) and SEPA direct debits (SDDs), established as part of the SEPA project and complemented by interoperability arrangements between processing infrastructures. Migration to SEPA instruments facilitates the creation of an integrated euro retail payments market.

Description

This indicator presents, on a monthly basis, the share of euro area SCT and SDD transactions as a percentage of the total volume of all euro area credit transfer and direct debit transactions (i.e. credit transfers and direct debits in old formats and SEPA formats combined) processed by clearing and settlement mechanisms (CSMs) located in the euro area. The indicator does not include “on-us” transactions (i.e. transactions between accounts at the same bank) or transactions cleared between banks bilaterally or via correspondent banking. Nevertheless, focusing on the transactions processed by CSMs provides a good approximation of SCT and SDD usage.

The higher the value of the indicator, the higher the usage of the SEPA format. A value of 100% indicates that only SEPA formats are used and have fully replaced the non-SEPA instruments (i.e. SEPA has been fully implemented with regard to credit transfers and direct debits) in the “bank-to-bank” domain, as measured by the CSM data.