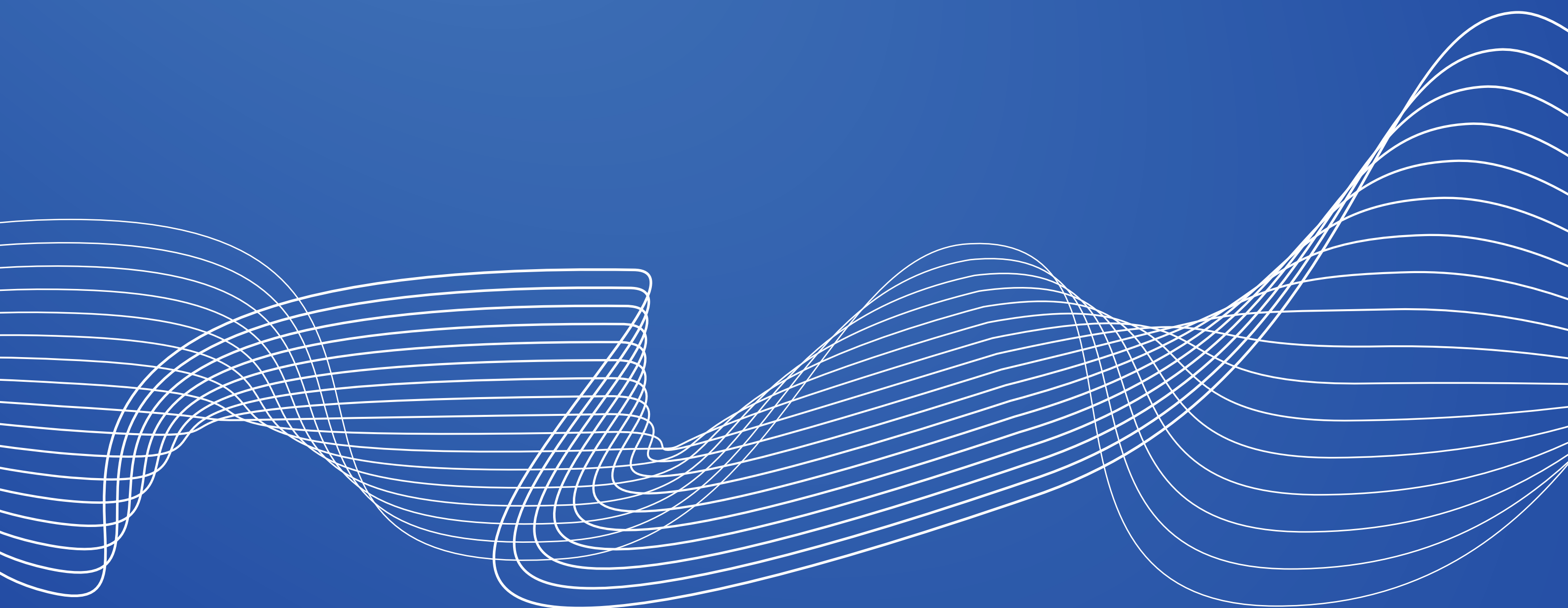
Annual Report
2012



ESRB
European Systemic Risk Board
European System of Financial Supervision

Annual Report
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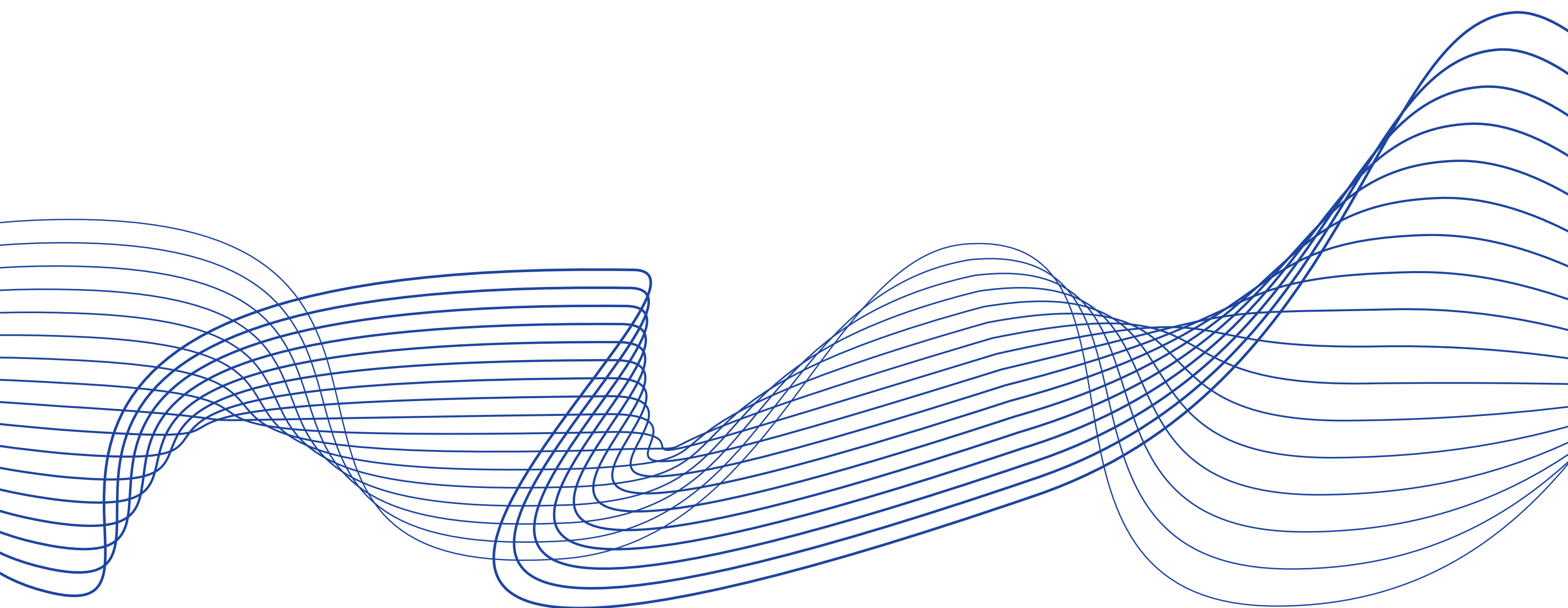

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Contents

Foreword ... 4

Executive summary ... 5

Section 1
Systemic risks in the EU financial system ... 6
1.1 Main developments in the period from January 2012 to April 2013 ... 7
1.2 Macro-financial feedback loops: a key challenge ... 9
1.2.1 Has the deterioration in the macroeconomic outlook abated? ... 9
1.2.2 Difficulties in assessing the quality of banks' balance sheets ... 11
1.2.3 The low interest rate environment ... 14
1.3 Structural vulnerabilities: additional sources of systemic risk ... 15
1.3.1 Intra-financial sector interconnectedness and the risk of contagion ... 15
1.3.2 Risks stemming from the more prominent role of central counterparties ... 16
1.3.3 Public contingent liabilities and insufficient bank resolution tools ... 16
1.3.4 Sovereign debt exposures ... 17
1.3.5 The role of money market funds as potential risk amplifiers ... 18

Section 2
The ESRB's policy response ... 20
2.1 Recommendations adopted since January 2012 ... 21
2.1.1 Recommendation on funding of credit institutions ... 21
2.1.2 Recommendation on money market funds ... 24
2.1.3 Recommendation on intermediate objectives and instruments of macro-prudential policy ... 27
2.2 Focus on topical macro-prudential issues ... 30
2.2.1 Linkages and potential channels of contagion within the EU financial system ... 30
2.2.2 The shadow banking sector/securities financing transactions ... 33
2.2.3 Macro-prudential aspects of draft EU legislation ... 36
2.3 Development of the ESRB risk dashboard ... 40

Section 3
Ensuring accountability and implementation ... 42
3.1 The ESRB as an institution ... 43
3.2 Accountability ... 44
3.3 Review of the ESRB ... 46
3.4 Responses to recommendations adopted in 2011 ... 47
3.4.1 Methodology to assess compliance ... 47
3.4.2 Lending in foreign currencies ... 48
3.4.3 US dollar-denominated funding ... 49
3.4.4 Macro-prudential mandate of national authorities ... 50

Abbreviations ... 52

Foreword

Mario Draghi
Chair of the
European Systemic Risk Board

I am pleased to present the second Annual Report of the European Systemic Risk Board (ESRB) – the independent body of the European Union (EU) responsible for the macro-prudential oversight of the EU financial system, for which the European Central Bank (ECB) ensures the Secretariat and provides analytical, statistical, logistical and administrative support. The report gives a faithful account of the ESRB's activities during its second year of existence. It has been a year of intense work aimed at establishing a sound macro-prudential framework across the EU, while identifying and taking action to mitigate systemic risks in the EU financial system.

This report begins by giving a comprehensive picture of the ESRB's assessment of systemic risk. It then provides an overview of the ESRB's policy response to the risks identified and concludes with an outline of the action taken by the ESRB to ensure the implementation of such policy measures, as well as full accountability. Further information on the ESRB and its activities can be found on the ESRB's website (www.esrb.europa.eu).

The report has been prepared in accordance with Article 19 of the ESRB Regulation[1], which states that "at least annually and more frequently in the event of widespread financial distress, the Chair of the ESRB shall be invited to an annual hearing in the European Parliament, marking the publication of the ESRB's annual report to the European Parliament and the Council". It will be my privilege to present this report to the Committee on Economic and Monetary Affairs (ECON) of the European Parliament in a public hearing scheduled for 8 July 2013.

Frankfurt am Main, July 2013

Mario Draghi
ESRB Chair

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

Executive summary

The aim of the ESRB is to identify systemic threats at an early stage, thus enabling proactive measures to be taken and limiting the impact of uncontrolled developments. The ESRB's second year of operation was punctuated by a number of events with real and/or potential implications for the stability of the EU financial system. While several of these events were driven by cyclical vulnerabilities, a number consisted of structural threats that had already been identified by the ESRB in 2011.

Adverse feedback loops resulting from the linkages between a deteriorating macroeconomic outlook and fragilities in the financial system were the overarching threat to systemic stability in 2012. The effects of these adverse feedback loops were evident in all financial subsectors, with the banking sector being identified as particularly vulnerable. In addition, some EU insurance markets were affected by the prolonged low interest rate environment. The identification of risks to systemic stability was facilitated by the development of the ESRB risk dashboard, which has been published after each General Board meeting since September 2012.

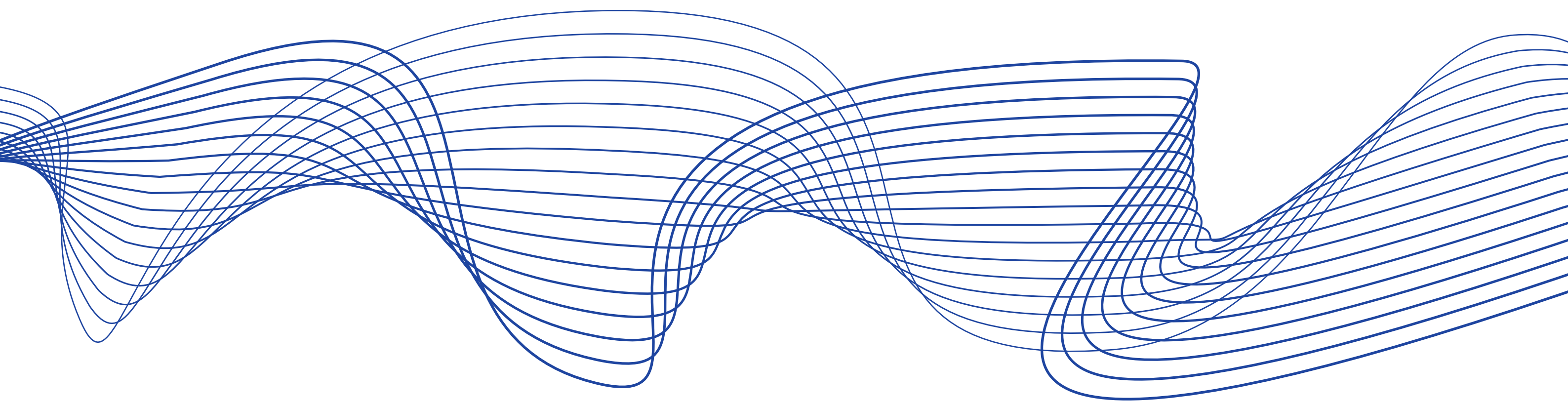
On the structural side, the ESRB pinpointed a number of vulnerabilities with possible implications for financial stability. Intra-financial sector interconnectedness and the risk of contagion remained a core area of focus in the ESRB's risk monitoring during 2012. The ESRB's assessments of planned and ongoing regulatory reforms covered, in particular, the work on market infrastructures, such as central counterparties (CCPs), and the development of resolution tools. Furthermore, it monitored the financial sector's exposure to sovereign debt. The valuation methods used by the money market fund (MMF) industry were also considered a significant source of systemic risk.

When assessing changes to the EU financial architecture, the ESRB continued to pursue its double aim of preventing and mitigating systemic risks to the EU financial system, while taking into account the need to support the smooth functioning of the internal market, as well as the economic recovery. Recommendations addressed to EU Member States and EU institutions from January 2012 covered (i) funding of credit institutions, (ii) MMFs, and (iii) the establishment of a framework for the use of macro-prudential instruments. Work was also ongoing on topical macro-prudential issues, such as contagion risk, shadow banking and securities financing transactions (SFTs), as well as on systemic stability-related aspects of forthcoming EU legislation.

During the period under review the ESRB took a number of steps to promote accountability and ensure the implementation of its recommendations, through hearings, outreach activities and enhanced communication tools. It also developed a framework for conducting objective and coherent assessments of the implementation of recommendations by the addressees. In accordance with the ESRB Regulation, a review of the ESRB is currently under way.

Section 1

Systemic risks in the EU financial system



Systemic risks in the EU financial system

1.1 Main developments in the period from January 2012 to April 2013

The period under review was characterised by overlapping and interlinked crises. In many cases, the crises originated in the financial sectors of EU Member States and had negative effects on their economic growth and fiscal positions. This further reduced Member States' ability to absorb the large public sector contingent liabilities arising from strains in the financial sector. In turn, lower levels of market confidence in the soundness of banks weakened their ability to provide credit to the private sector, further undermining the recovery of the EU economy. In addition to country-specific risks, the geographical fragmentation of financial intermediation in the single financial market and the emergence of currency redenomination risk in some euro area countries posed tail, i.e. extreme, risks to the EU and euro area respectively.

Weak macro-financial conditions exacerbated the risks to the EU financial system during the first half of 2012. Uncertainty about the evolution of the sovereign debt crisis led to high levels of market volatility, while the deteriorating macroeconomic outlook put further pressure on banks' asset quality, profitability and access to funding. These negative factors reinforced each other, creating adverse feedback loops, and thereby contributed further to the fragility of financial market conditions.

EU policy-makers responded to these strains in the macro-financial environment in several ways. In addition to the adoption of the Fiscal Compact and the Compact for Growth and Jobs, progress was also made on regulatory reforms, with the adoption of the European Market Infrastructure Regulation (EMIR)[2], as well as the draft directive (CRD)[3] and regulation (CRR)[4] on capital requirements for banks and investment firms. Moreover, the announcement of the creation of the Single Supervisory Mechanism (SSM) as the first step towards the establishment of a true banking union, signalled a renewed firm commitment to strengthen the euro area.[5]

From July 2012 financial market conditions and sentiment improved notably, in particular after the ECB's announcement of Outright Monetary Transactions (OMT). For example, government bond yields relative to the German Bund tightened (see Chart 1) and some countries under

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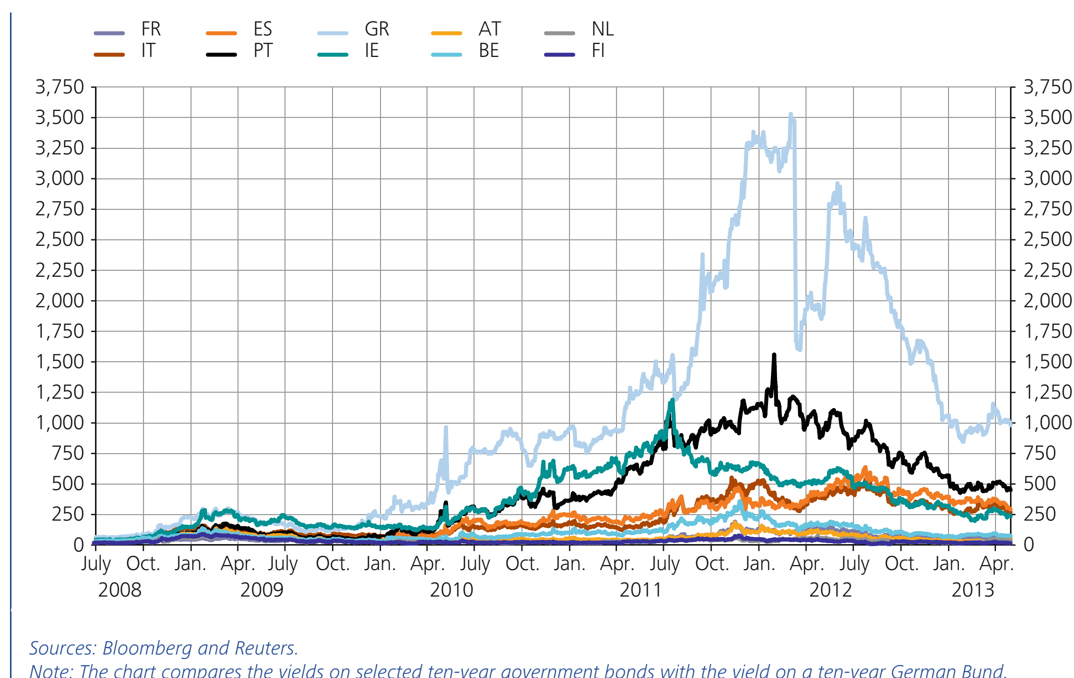
2 Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories.

3 Proposal for a directive of the European Parliament and of the Council on the access to the activity of credit institutions and of the prudential supervision of credit institutions and investment firms and amending Directive 2002/87/EC of the European Parliament and of the Council on the supplementary supervision of credit institutions, insurance undertakings and investment firms in a financial conglomerate.

4 Proposal for a regulation of the European Parliament and of the Council on prudential requirements for credit institutions and investment firms.

5 For an assessment of the proposed SSM, see "A contribution from the Chair and Vice-Chairs of the Advisory Scientific Committee to the discussion on the European Commission's banking union proposals", *Reports of the Advisory Scientific Committee*, No 2, ESRB, October 2012 (http://www.esrb.europa.eu/pub/pdf/asc/Reports_ASC_1210.pdf).

Chart 1
Government bond yields relative to the German Bund
(basis points)



Sources: Bloomberg and Reuters.
Note: The chart compares the yields on selected ten-year government bonds with the yield on a ten-year German Bund.

an economic and financial adjustment programme (Ireland and Portugal) issued medium and long-term sovereign bonds for the first time since requesting assistance. Corporate bond yields declined to record low levels, while equity markets were buoyant and financial market volatility waned. Conditions in bank funding markets also stabilised in early 2013.

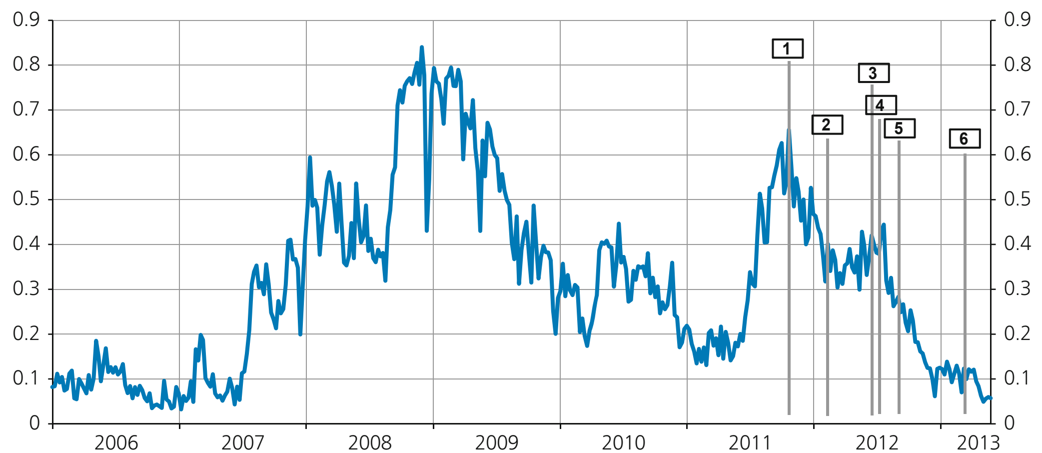
As reflected in the fall in market-based indicators of systemic stress, tail risks to the EU financial system receded significantly in response to determined action by the ECB, the bank recapitalisation plan by the European Banking Authority (EBA) and other supervisory measures aimed at strengthening the resilience of the financial system (see Chart 2).

However, significant vulnerabilities have yet to be addressed, which are fuelling the aforementioned adverse feedback loops and continuing to pose high risks to financial stability. These vulnerabilities relate largely to the weak economic outlook, to shrinking but still highly leveraged public and private sector balance sheets, and to ongoing fragilities in the banking sector. In addition, structural vulnerabilities in the financial system, such as the high level of intra-financial sector interconnectedness, potential information asymmetries regarding the par value of MMF units, asset encumbrance levels and asset quality deficiencies, can magnify the negative effect of the feedback loops and reduce the resilience of the financial system to shocks.

In early 2013 financial markets started to perceive the overall sovereign risk in Europe as deriving from two distinct elements: (i) political and economic uncertainty in a few EU Member States; and (ii) concerns about the treatment of contingent liabilities in Cyprus and the associated risk of contagion. They therefore started to price in the two elements separately. This, however, did not significantly affect the overall favourable sentiment in financial markets.

Chart 2

Composite Indicator of Systemic Stress and specific policy events



1) 13 November 2011 – political crisis in Italy
2) 21 February 2012 – Eurogroup agrees on second financial aid package for Greece
3) 29 June 2012 – European Council creates European banking supervision mechanism
4) 26 July 2012 – speech by Mario Draghi in London
5) 6 September 2012 – ECB announces technical features of OMT
6) 25 March 2013 – Eurogroup reaches agreement on financial aid for Cyprus

Sources: Thomson Reuters and ECB.
Notes: The Composite Indicator of Systemic Stress includes 15 raw, predominantly market-based measures of financial stress. It is a unit-free indicator bounded by the half-open interval (0, 1]. For further details, see Holló, D., Kremer, M. and Lo Duca, M., ''CISS – a composite indicator of systemic stress in the financial system'', Working Paper Series, No 1426, ECB, March 2012.

1.2 Macro-financial feedback loops: a key challenge

Despite the improvement in financial conditions, a distinguishing feature of the financial crisis in the EU, and in particular the euro area, during the period under review was the continuing pernicious interaction between weakening macroeconomic conditions, declining fiscal revenues, and fragilities in the banking sector and the financial system as a whole. As highlighted below, the ESRB helped to identify a number of key sources of systemic risk, as well as mitigate these risks through recommendations and other public communications.

1.2.1 Has the deterioration in the macroeconomic outlook abated?

During the period under review the weak macroeconomic outlook, for which expectations were continuously revised downwards, fuelled the creation of adverse macro-financial feedback loops (see Chart 3). Lower than expected growth reduced tax revenues and had a negative impact on Member States' medium-term fiscal dynamics.

At the same time, against the backdrop of highly leveraged private sector balance sheets (see Chart 4), the deteriorating macroeconomic environment caused a surge in non-performing loans, thus further weakening the outlook for banks' balance sheets and earnings.

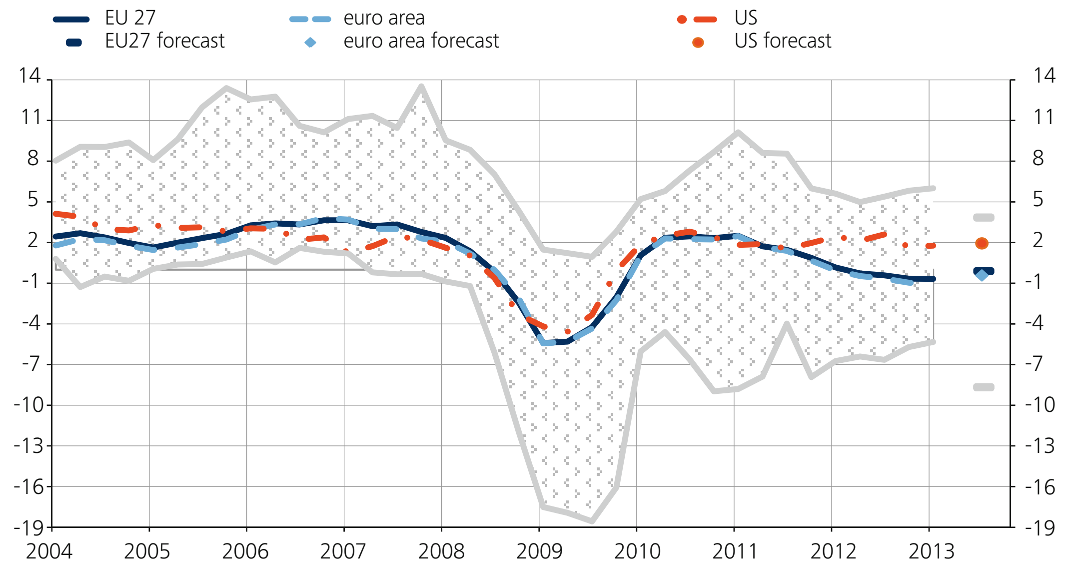
Concerns about the soundness of banks, owing to their public sector contingent liabilities, remained significant. The linkages between sovereigns and banks were reinforced by banks' exposure to sovereign debt, especially in the weaker euro area economies, where banks tended to be more exposed to their own sovereigns (see Section 1.3.4).

Market concerns over sovereign risk and other residual credit risk related to the difficult market environment at that time had, to some degree, been mitigated by the additional capital buffer built up by banks upon the recommendation of the EBA in December 2011. However, the fragility

Chart 3

Actual and forecast real GDP growth

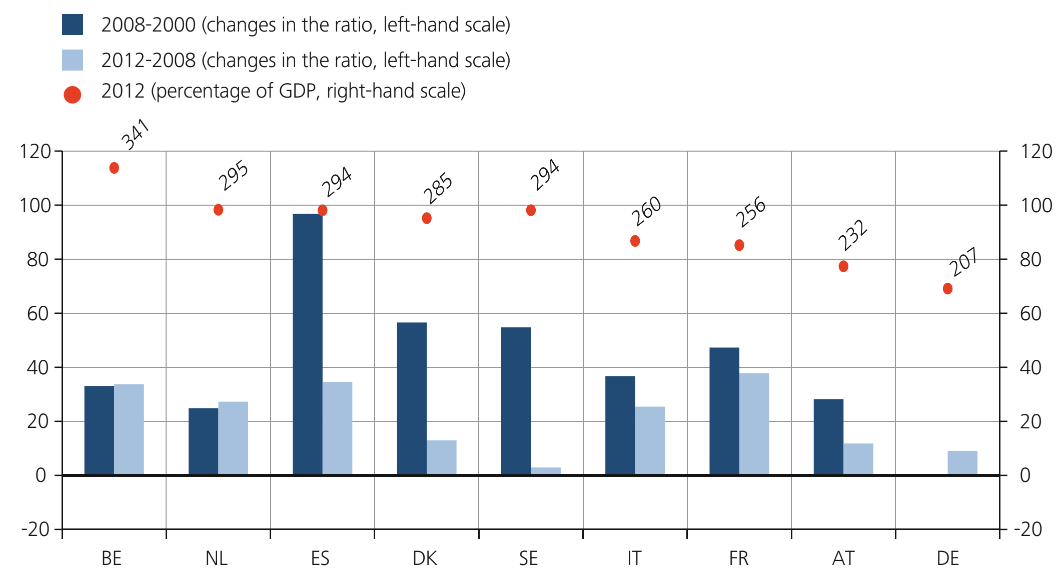
(percentages)



Sources: Eurostat and European Commission (AMECO, spring 2013 forecast).
Note: The shaded area indicates the minimum to maximum range for EU Member States.

Chart 4

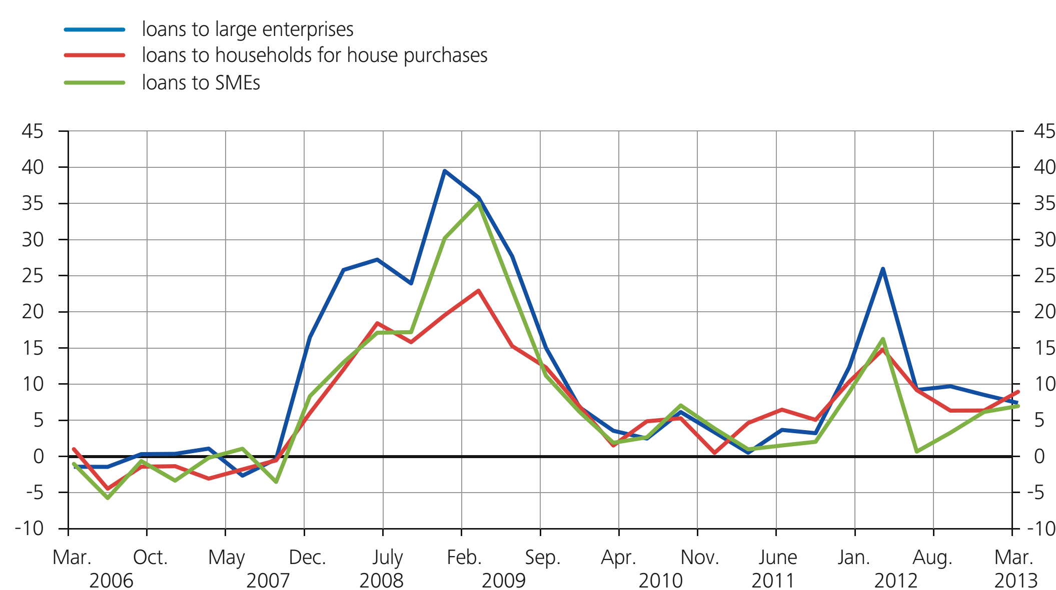
Debt-to-GDP dynamics in selected EU Member States (2000-12)



Source: Eurostat.
Notes: Sum of household, non-financial corporate and government sector non-consolidated debt over GDP at market prices. For the Netherlands, non-financial corporate debt is consolidated at the group level. For some countries, such as Belgium, there are sizeable differences between the non-consolidated and consolidated debt of non-financial corporations as a result of intragroup loans.

Chart 5

Changes in lending standards in the euro area by type of counterparty



Source: ECB.
Note: Weighted net percentages of banks contributing to the tightening of standards over the past three months.

of countries with excessively large banking sectors and potentially unsustainable public sector contingent liabilities was then confirmed by the case of Cyprus, which became the fourth EU Member State to request full assistance from the EU and the International Monetary Fund (IMF).

Reflecting, among other things, persistent vulnerabilities in the banking sector, the provision of credit to the real economy overall remained weak, although it varied from country to country (see Chart 5). This amplified the slowdown in economic activity which, in turn, had a further adverse impact on banks' balance sheets. The lack of credit affected, in particular, small and medium-sized enterprises (SMEs), as in general they only have limited access to other sources of external financing.

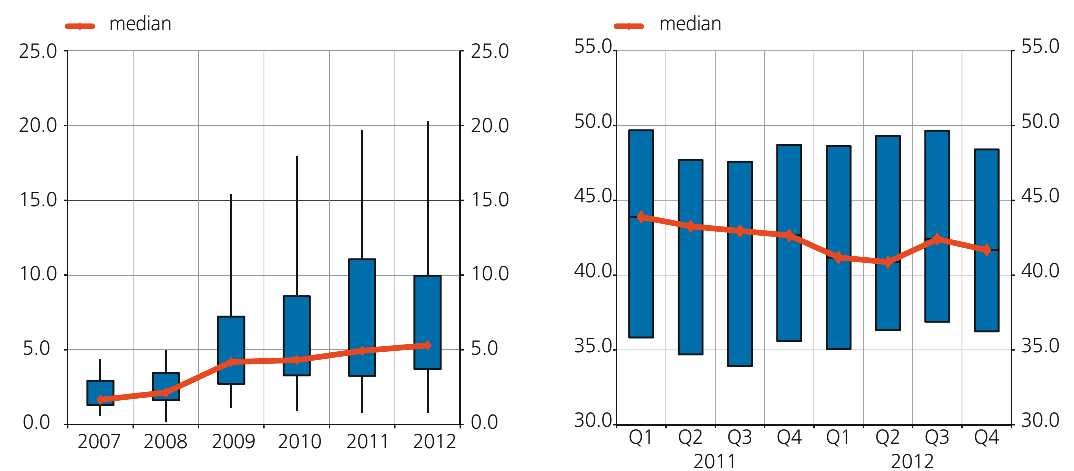
In addition, bank funding markets in the euro area became increasingly fragmented, as reflected by the outflows of non-domestic funding and by TARGET2 balances. This amplified the funding problems for those banks already under stress, with further pressure to reduce their balance sheets, which, in turn, limited the resources available to the economy.

1.2.2 Difficulties in assessing the quality of banks' balance sheets

Concerns about a deterioration in the quality of banks' assets alongside questions as to banks' forbearance practices were another major driving force behind the creation of adverse feedback loops.[6] Key factors in this regard include the difficulty in valuing non-marketable assets and assessing the adequacy of loan loss provisions against non-performing loans (see Chart 6).

6 See the press release published by the ESRB on 20 September 2012 (http://www.esrb.europa.eu/news/pr/2012/html/pr120920.en.html). The granting of forbearance by banks implies an underestimation of the deterioration in the quality of their assets, as well as of the associated provisioning requirements.

Chart 6
Non-performing loans (left) and coverage ratio (right) of EU banks
(percentages)



Source: ESCB.
Notes: The chart shows the distribution of gross total doubtful and non-performing loans (as a percentage of total debt instruments and total loans and advances) for the EU27. Data for Ireland, Luxembourg, Slovenia and Sweden are not available.

Source: EBA.
Notes: The chart shows a box plot distribution of the coverage ratio for a sample of 56 large EU banks. The coverage ratio is the ratio of specific allowances for loans to total gross impaired loans.

Perceived uncertainty about the quality of banks' assets continued to undermine their ability to obtain funding (see Chart 7) and thus provide adequate credit to the real economy. This uncertainty was also compounded by the absence of a standard definition for non-performing loans, which complicated comparisons across countries. Moreover, signs of inflated house prices in some EU Member States further exacerbated concerns about the ability of banks' balance sheets to withstand a sudden reversal in house prices.

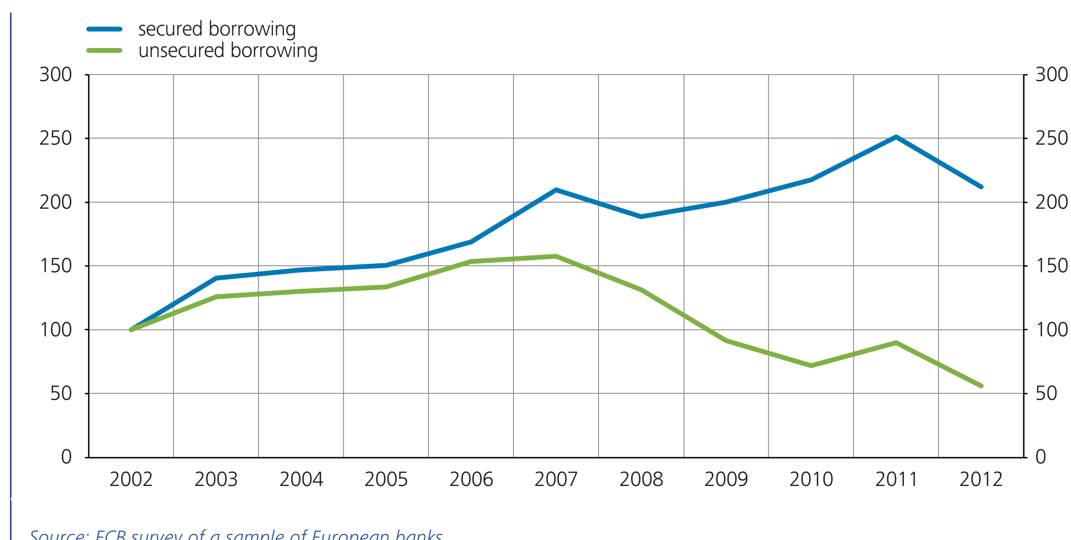
Chart 7
Five-year credit default swap spreads for financial and non-financial firms
(basis points)

Source: JP Morgan.

Chart 8

Changes in secured and unsecured borrowing in the euro money market

(index: 2002 = 100)



Source: ECB survey of a sample of European banks.

The concerns about the soundness of and risks to banks' balance sheets were magnified by a greater encumbrance of their assets.[7] Owing to a widespread shift from unsecured to secured bank funding (see In addition to making banks' balance sheets more complex, the increase in asset encumbrance heightened systemic risk by amplifying pro-cyclicality – with collateral requirements rising during a period of market stress – and by making it more difficult to resolve insolvent banks. From a macro-prudential perspective, the greater encumbrance of banks' balance sheets was closely linked not only to the malfunctioning of unsecured debt markets, but also to the impact of legislative changes in a number of countries.Chart 8), an increasing (but uncertain) amount of banks' assets had indeed been earmarked to cover rising secured claims.

In addition to making banks' balance sheets more complex, the increase in asset encumbrance heightened systemic risk by amplifying pro-cyclicality – with collateral requirements rising during a period of market stress – and by making it more difficult to resolve insolvent banks. From a macro-prudential perspective, the greater encumbrance of banks' balance sheets was closely linked not only to the malfunctioning of unsecured debt markets, but also to the impact of legislative changes in a number of countries.

Alongside the greater encumbrance of banks' balance sheets, there were growing concerns that banks could have been granting forbearance on too many bad loans, thus delaying the implementation of more fundamental restructuring measures.[8] Therefore, having initially focused on mitigating the risk of a disorderly bank deleveraging process, some market participants and policy-makers then turned their attention to the risk of excessive forbearance and its potential

7 Asset encumbrance implies that a share of a bank's assets is used to secure creditors' claims.

8 According to the Risk Assessment of the European Banking System published by the EBA in January 2013, "uncertainty about the quality of banks' assets and valuation criteria in many jurisdictions create challenges in attracting private investors. […] Bank credit forbearance, though not universal, is widespread."

impact on the economic recovery, as well as the risk of adverse macro-financial feedback loops. In some stressed countries, the authorities tried to mitigate these risks by conducting detailed reviews of the quality of banks' assets.

The ESRB also contributed to mitigating the risks arising from these developments. Through the adoption of a public recommendation on funding of credit institutions,[9] the ESRB called for better management of funding risks, as well as greater monitoring and market transparency with regard to asset encumbrance (see Section 2.1.1 for more details). In addition, the ESRB drew attention to the need to boost confidence in banks' balance sheets. This included encouraging authorities at the European and the national level to support credible mechanisms for the recapitalisation and restructuring of the banking sector, by ensuring that banks' assets are valued correctly and by fostering greater market transparency through the harmonisation of guidelines on key instruments such as forbearance and non-performing loans.[10]

1.2.3 The low interest rate environment

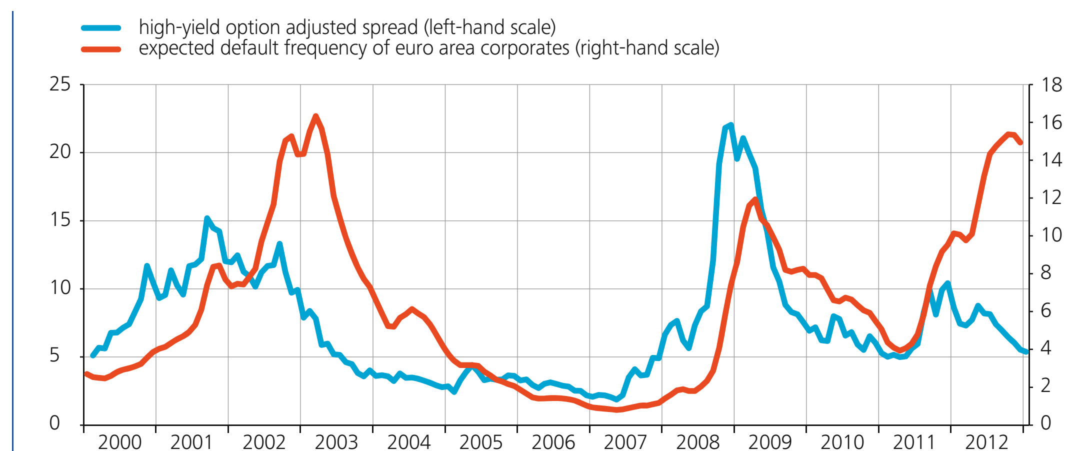
Low interest rates are a reflection of a weak macroeconomic outlook and a mechanism for supporting economic recovery. However, a prolonged period of low interest rates can also give rise to macro-prudential risk and exacerbate negative macro-financial feedback loops. In particular, low interest rates put a squeeze on banks' and other institutions' margins, thus compounding their weak earnings outlook.

In the case of some life insurance companies and defined benefit pension funds, low interest rates lead to fragilities associated with the longer maturity of their liabilities relative to that of their assets. This can have negative consequences for their solvency and profitability in the

Chart 9

Yields on high-yield bonds and expected default frequency of euro area corporates

(percentages)



Sources: Moody's KMV and Bloomberg.

9 Recommendation (ESRB/2012/2) of the European Systemic Risk Board of 20 December 2012 on funding of credit institutions.

10 For more details on forbearance, see "Forbearance, resolution and deposit insurance", *Reports of the Advisory Scientific Committee*, No 1, ESRB, July 2012 (http://www.esrb.europa.eu/pub/pdf/asc/Reports_ASC_1207.pdf).

medium term, and – given their interconnectedness – potentially for the wider financial system. The ESRB, in cooperation with the European Insurance and Occupational Pensions Authority (EIOPA), underlined the impact of a prolonged low interest rate environment on life insurance companies and the potential systemic risks for the wider financial system.

During the period under review low or declining interest rates were reflected, for example, in below average yields in certain corporate credit segments. This development may not be consistent with fundamentals, as suggested by an increase in the gap between the expected default frequency of corporates and credit spreads (see Chart 9). In such an environment, sudden downward price corrections can trigger adverse macro-financial feedback loops.

1.3 Structural vulnerabilities: additional sources of systemic risk

The severity of the global financial crisis highlighted the importance of addressing structural vulnerabilities, with a view to reducing systemic risks and strengthening the resilience of the financial system to systemic shocks. During the period under review the ESRB focused its efforts on five main structural vulnerabilities: (i) intra-financial sector interconnectedness and the risk of contagion; (ii) risks stemming from the more prominent role of CCPs; (iii) potentially unsustainable public sector contingent liabilities and insufficient bank resolution tools; (iv) sovereign debt exposures; and (v) the role of MMFs as potential risk amplifiers.

1.3.1 Intra-financial sector interconnectedness and the risk of contagion

Intra-financial sector interconnectedness is a focal point of the ESRB's analytical work, as it is the mandate of the ESRB to provide a comprehensive overview of risks to the EU financial system as a whole. In this regard, the ESRB focused on the interbank market in its assessment and monitoring of risks during the period under review, highlighting specific vulnerabilities linked to the credit default swap (CDS) market (see Section 2.2.1).

In line with the initiatives undertaken by the Financial Stability Board (FSB) and other international fora, the ESRB also initiated work on securities financing transactions (SFTs), such as repurchase transactions and securities lending transactions. SFTs allow intermediaries to refinance long-term assets with shorter-term funding. This facilitates maturity and liquidity transformation, which can be of benefit to the wider economy and contributes to credit growth. However, maturity and liquidity transformation also represents an increase in leverage and reflects the transfer of important sources of systemic risk from banks to the shadow banking system.

Moreover, repurchase transactions and securities lending transactions result in greater interconnectedness between financial institutions, as they create links both between banks and between the banking and shadow banking systems.[11] Given these risks, it is important that the use of SFTs is monitored. However, the ESRB has identified a number of major information gaps that will need to be filled to enable the effective macro-prudential oversight of SFTs in the future.

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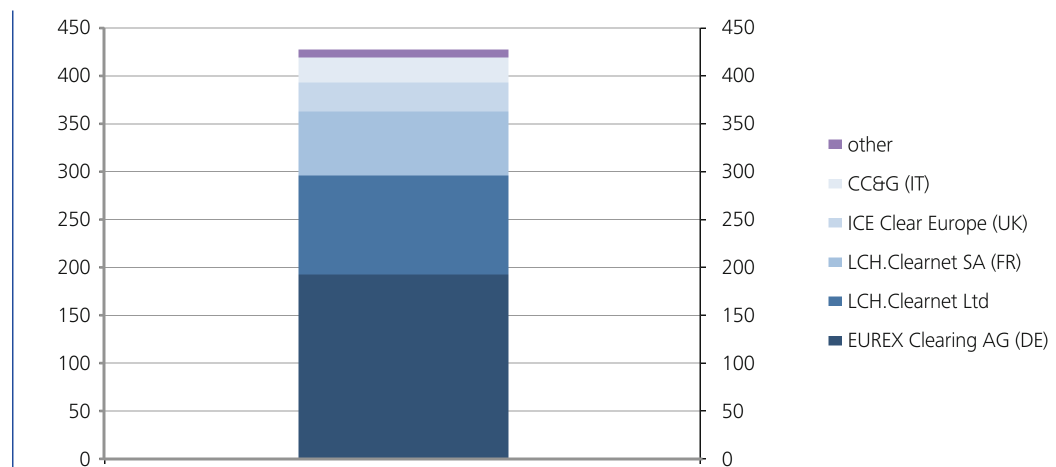
11 For further details on the various risks to financial stability that may arise from SFTs, as well as the data requirements for a monitoring framework, see "Towards a monitoring framework for securities financing transactions", *Occasional Paper Series*, No 2, ESRB, March 2013 (http://www.esrb.europa.eu/pub/pdf/occasional/20130318_occasional_paper.pdf).

Chart 10
Transactions cleared by European CCPs
(2012; EUR trillions)



Sources: BIS and ECB.
Notes: Includes outright and repurchase transactions, financial and commodity derivatives. Data for LCH.Clearnet Ltd are unavailable. The area shaded in blue shows the volume of transactions cleared by the five largest European CCPs in 2012, while the area shaded in purple indicates data for other CCPs.

1.3.2 Risks stemming from the more prominent role of central counterparties

Structural reforms being promoted across the globe have paved the way for improved risk management throughout the financial system. In particular, the mandatory move to clearing standardised over-the-counter (OTC) derivatives trades via CCPs will help to reduce counterparty risk between financial institutions, promote transparency in hitherto opaque OTC derivatives markets and facilitate a more orderly resolution of failing financial institutions (see Chart 10).

However, the more prominent role of CCPs will also introduce new systemic risks. Mandatory clearing will turn CCPs into systemic nodes in the financial system, with unknown, but possibly far-reaching, consequences. For example, systemic risks may be exacerbated by the pro-cyclicality of CCPs' practices, as they tend to tighten collateral requirements during an economic downturn. This, in turn, may fuel the creation of adverse feedback loops in financial markets and possibly trigger asset fire sales.

During the period under review the ESRB provided advice to the European Securities and Markets Authority (ESMA) on the clearing of OTC derivatives by non-financial corporations, as well as on the eligibility of collateral for CCPs (see Section 2.2.3).

1.3.3 Public contingent liabilities and insufficient bank resolution tools

The crisis in Cyprus revealed macro-prudential challenges in the event of a bank failure for countries with potentially unsustainably large public sector contingent liabilities. In this context, the ESRB announced in March 2013 that it shared the Eurogroup's view on the importance of fully guaranteeing deposits below €100,000 across the EU. It also called for greater legal clarity for bank creditors on how their claims would be prioritised.

In 2012 the ESRB, under the leadership of the Advisory Scientific Committee (ASC), explored the benefits and challenges of establishing a credible recovery and resolution regime for financial intermediaries.[12] This work complemented the European Commission's proposal for a framework for the recovery and resolution of credit institutions and investment firms.[13]

The ESRB also considered the advantages and disadvantages of recovery and resolution regimes for financial institutions other than banks. In its response to the European Commission's consultation launched in October 2012, the ESRB welcomed the adoption of such frameworks for non-banks, such as CCPs, central securities depositories, large insurance companies, systemic payment systems and, potentially, other financial institutions (see Section 2.2.3).

1.3.4 Sovereign debt exposures

The recent financial crisis and subsequent distress suffered by a number of sovereigns, including some EU Member States, further underlined the increase in sovereign risk. The more specific causes of this increase, however, varied across countries. In some countries, the financial crisis exacerbated an already weak fiscal position, while in other countries, the government's fiscal position had been viewed as strong prior to the crisis, but was severely affected by the cost of supporting its banks. Regardless of its original cause, sovereign risk acquires its own dynamics and can reach a point where it compounds the problems in the banks and financial markets.[14]

Owing to the pervasiveness of government debt in the financial system, a rise in sovereign risk may severely affect financial institutions and have systemic implications. The literature identifies several specific channels through which systemic risk may arise. More generally, however, sovereign risk is virtually non-diversifiable and has the potential to affect the entire balance sheet structure of a bank over and beyond any direct exposure associated with its holdings of sovereign debt. Sovereign risk can affect both the liabilities and asset sides of a bank's balance sheet. On the liabilities side, an increase in sovereign risk could push up funding costs for banks in countries under distress, limiting their access to the market. In turn, this would also affect their capacity to lend. On the asset side, sovereign risk can have an impact on macroeconomic stability,[15] thus affecting a bank's assets and limiting the range of investment opportunities for new lending, which then reinforces the negative effects in terms of funding.

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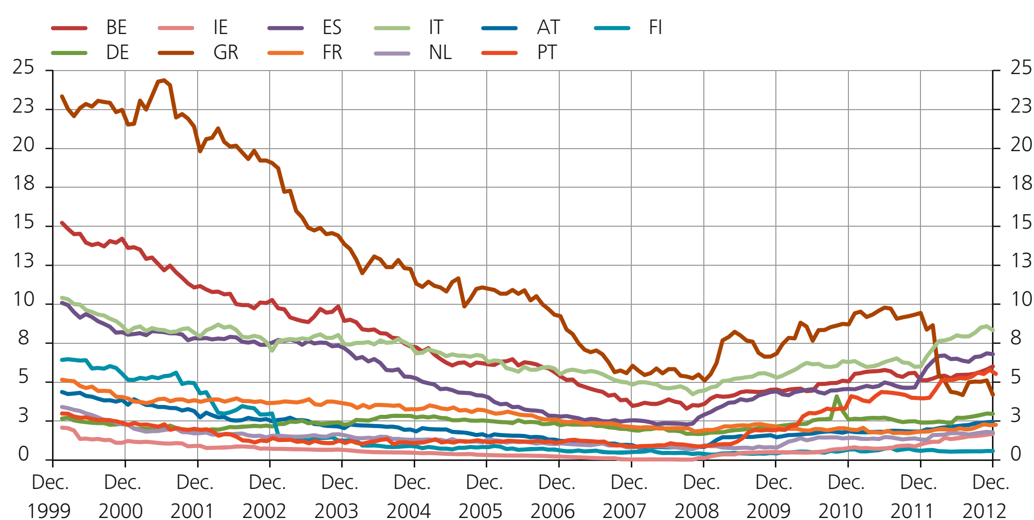
12 See "Forbearance, resolution and deposit insurance", *Reports of the Advisory Scientific Committee*, No 1, ESRB, July 2012 (http://www.esrb.europa.eu/pub/pdf/asc/Reports_ASC_1207.pdf).

13 See Proposal for a Directive of the European Parliament and of the Council establishing a framework for the recovery and resolution of credit institutions and investment firms and amending Council Directives 77/91/EEC and 82/891/EC, Directives 2001/24/EC, 2002/47/EC, 2004/25/EC, 2005/56/EC, 2007/36/EC and 2011/35/EC and Regulation (EU) No 1093/2010.

14 See "The impact of sovereign credit risk on bank funding conditions", *CGFS Paper*, No 43, Bank for International Settlements, Basel, July 2011.

15 See, for example, Corsetti, G., Kuester, K., Meier, M., and Mueller, G.J., "Sovereign risk, fiscal policy, and macroeconomic stability", *Working Paper Series*, No 33, IMF, January 2012.

Chart 11
MFI holdings of euro area sovereign debt in selected euro area countries
(percentages)



Source: ECB.

The exposure of banks and other financial institutions to sovereign debt could also form a channel of contagion during periods of stress, with the risk of contagion potentially being exacerbated by valuation losses (as a result of credit and/or market/devaluation risk) on sovereign debt holdings and other domestic assets.

In most of the euro area countries analysed, the exposures of monetary financial institutions (MFIs) to euro area sovereign debt (as a proportion of total assets) were considerably greater at the start of Economic and Monetary Union (EMU) than they are now. Prior to the crisis, MFIs were gradually reducing such exposures, but since 2008 this general trend has come to a halt (see Chart 11), with exposures increasing in a number of cases or remaining broadly stable in others.

In almost all the euro area countries analysed, a significantly large proportion of MFIs' euro area sovereign debt holdings were domestic sovereign debt holdings. This home bias is particularly evident in countries that have been more stressed and where the ratio of MFIs' euro area sovereign debt holdings to total assets is large and can be explained by a number of factors.

1.3.5 The role of money market funds as potential risk amplifiers

MMFs are a key component of the shadow banking sector. The important role they play in the financial system as a whole was underlined when, at the height of the European debt crisis, US MMFs suddenly stopped providing European banks with US dollar funding, which had a major impact on market liquidity and bank funding. In Europe, such MMFs manage around €1 trillion in assets, concentrated in a few countries (mainly France, Ireland and Luxembourg).

The ESRB identified key risks associated with constant net asset value (CNAV) funds, which use amortised cost accounting to maintain a stable unit (share) value and so may have been perceived by investors as a safe alternative to bank deposits. However, during periods of market stress MMF

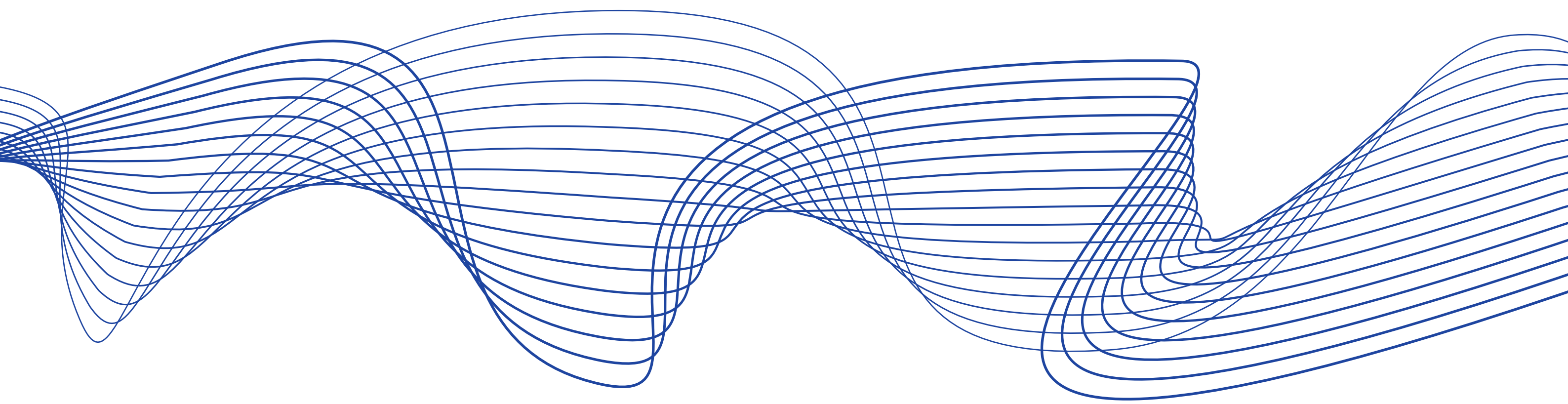
units may fall below their par value, potentially triggering destabilising investor runs that could spread to other funds and impair the availability of short-term funding, particularly for banks.

The ESRB contributed to addressing the risks arising from MMFs by adopting a public recommendation[16] in December 2012. The recommendation proposed structural and regulatory changes to the European MMF industry, which are discussed in further detail in Section 2.1.2. In particular, the ESRB recommended the mandatory conversion of CNAV funds into variable net asset value (VNAV) funds over a transition period.

16 Recommendation (ESRB/2012/01) of the European Systemic Risk Board of 20 December 2012 on money market funds.

Section 2

The ESRB's policy response



The ESRB's policy response

During 2012 the ESRB contributed to the prevention and mitigation of risks arising within the financial system by closely monitoring, on the basis of the ESRB risk dashboard, developments in terms of the main risks discussed in Section 1 and by responding to real and potential systemic threats.

The ESRB's policy response to prevailing systemic conditions in the EU financial system from January 2012 included recommendations on funding of credit institutions, MMFs, and macro-prudential objectives and instruments. Furthermore, developments in other areas were continuously monitored and assessed by the ESRB, in particular interconnectedness, shadow banking, SFTs and forthcoming EU legislation.

2.1 Recommendations adopted since January 2012

In 2012 the ESRB adopted two public recommendations which were both approved by the General Board on 20 December 2012 and published in February 2013. Recommendation ESRB/2012/2[17] on funding of credit institutions was addressed to national supervisory authorities (NSAs), national authorities with a macro-prudential mandate and the EBA, while Recommendation ESRB/2012/1[18] on MMFs was addressed to the European Commission.

In April 2013 the ESRB also approved Recommendation ESRB/2013/1[19] on intermediate objectives and instruments of macro-prudential policy as a follow-up to Recommendation ESRB/2011/3[20] on the macro-prudential mandate of national authorities. The aim of Recommendation ESRB/2013/1 is to identify the intermediate objectives of macro-prudential policies, as well as to solicit action from national authorities to create a legal basis for a set of macro-prudential instruments and design appropriate macro-prudential strategies.

2.1.1 Recommendation on funding of credit institutions

As a result of the prolonged financial crisis, banks' funding structures have undergone significant changes in recent years, the most notable being the increase in the relative importance of secured funding (see Chart 12) on the back of heightened risk aversion among investors and regulatory developments. These developments have set the scene for a rise in demand for

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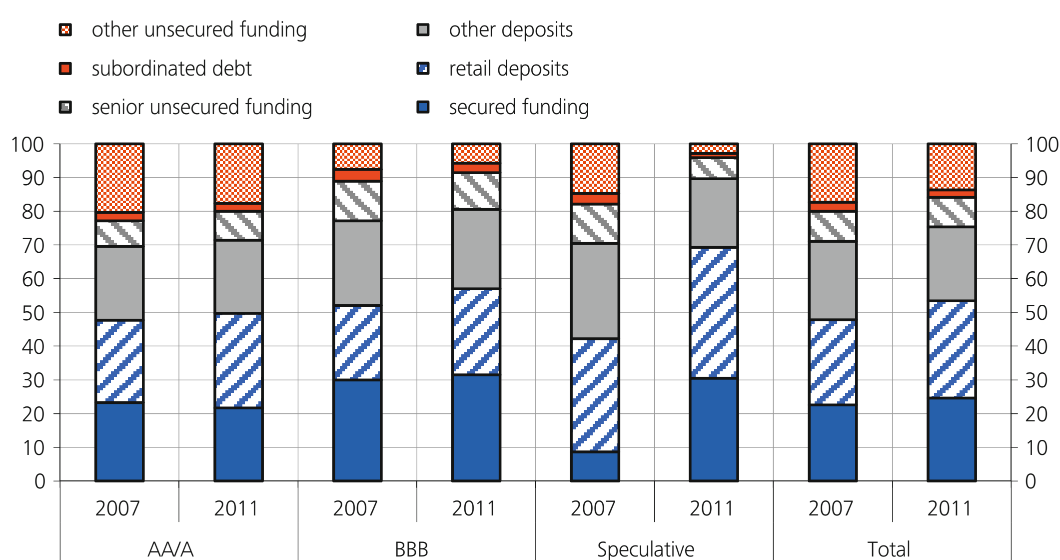
17 Recommendation (ESRB/2012/2) of the European Systemic Risk Board of 20 December 2012 on funding of credit institutions.

18 Recommendation (ESRB/2012/1) of the European Systemic Risk Board of 20 December 2012 on money market funds.

19 Recommendation (ESRB/2013/1) of the European Systemic Risk Board of 4 April 2013 on intermediate objectives and instruments of macro-prudential policy.

20 Recommendation (ESRB/2011/3) of the European Systemic Risk Board of 22 December 2011 on the macro-prudential mandate of national authorities. This recommendation is discussed in greater detail in Section 3.1 of the ESRB Annual Report 2011, as well as in Section 3.4.4 of this report.

Chart 12
Funding structure of banks with different ratings at the end of 2007 and 2011
(percentages)



Sources: ESRB survey on asset encumbrance and innovative funding, and Bloomberg.
Notes: The sample includes a total of 29 banks: 12 AA/A banks, 6 BBB banks and 11 banks with a speculative rating. In order to ensure a consistent comparison, the same sample of banks was used for both end-2007 and end-2011 data.

collateral alongside a comparatively slow-growing supply of high-quality collateral, at a time when banks need stable funding sources to maintain their lending to the real economy.

The heightened levels of uncertainty associated with the sovereign debt crisis have led banks to rely increasingly on funding from central banks, which have responded with extraordinary measures, such as longer-term refinancing operations (LTROs), and the expansion of their lists of eligible collateral. Banks have also increased their reliance on, and competitiveness for, customer deposits. Furthermore, a few banks have introduced more innovative products, such as liquidity swaps[21], in order to obtain funding at competitive prices.

Against this background, an expert group was established at the beginning of 2012 under the auspices of the Advisory Technical Committee (ATC). It was tasked with investigating developments in European banks' funding sources and structures, as well as the risks stemming from such developments, and proposing policy measures to address these risks.

The work conducted by the expert group helped to identify the main sources of risk from a systemic perspective, notably those associated with an excessive level of asset encumbrance. Chart 13 summarises the data collected by the expert group on the relatively high ratio of encumbered assets on the balance sheets of the banks in the sample. A high level of asset encumbrance implies a further subordination of other creditors, in particular depositors, which would affect the potential usage of funds from deposit guarantee schemes. More broadly,

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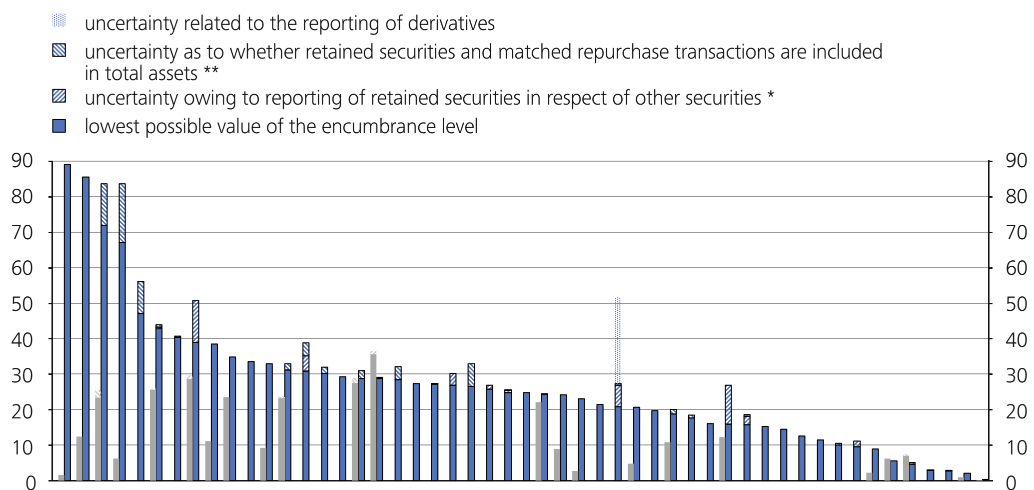
21 In general, liquidity swaps are a type of secured lending whereby a lender provides a borrower with highly liquid assets (e.g. cash and government bonds) in exchange for a pledge of less liquid collateral (e.g. asset-backed securities). This is known as a "liquidity upgrade".

Chart 13
Encumbered assets (including matched repurchase transactions) as a proportion of total assets at the end of 2011 and 2007
(percentages)



Source: ESRB survey on asset encumbrance and innovative funding.
Notes: Blue shading indicates the situation at the end of 2011, while grey shading indicates the situation at the end of 2007. End-2011 data cover 51 banks, while end-2007 data cover 28 banks. The lowest value in this interval is calculated as the share of total encumbered assets (decreased by the value of retained securities at banks, where they may be included in other covered bonds and other collateralised securities) in the amount of total assets increased by the amount of matched repurchase transactions. The middle value (indicated by (*) in the legend) is calculated as the share of total encumbered assets (including matched repurchase transactions) in the amount of total assets increased by the amount of matched repurchase transactions. The highest value (indicated by (**) in the legend) is calculated as the share of total encumbered assets (including matched repurchase transactions) in the amount of total assets, as reported. For banks whose reporting method was clear from the data, the above-mentioned adjustments to the encumbrance ratio have not been made and the uncertainty intervals are negligible.

system-wide increases in the level of asset encumbrance create challenges in terms of liquidity and funding management and reinforce the risks of pro-cyclicality, with collateral requirements increasing in times of stress. Furthermore, the opacity of banks' balance sheets regarding the level of asset encumbrance may have a negative impact on banks' future access to unsecured markets and make it difficult to price risks correctly, which can impede the efficient allocation of resources. Further difficulties are associated with the effective management and oversight of institutions with a high level of asset encumbrance.

Recourse to innovative funding products also entails significant risks, as such products tend to be less transparent and, as a result, more difficult to manage and supervise. In the light of this, there is also a greater possibility of litigation and reputation risk, particularly if the products are sold to retail customers.

A well-diversified funding structure is crucial to guaranteeing banks' capacity to withstand stress events. This implies avoiding over-reliance on individual funding sources, specifically secured funding. Furthermore, it requires that financial institutions also take account of the actions of other institutions when determining their capacity to implement their own funding plans, in particular with regard to their reliance on customer deposits, which, owing to increased competition, may become a less stable source of funding. There is already evidence of banks resorting to retail funding instruments, which can appear similar to deposits, but entail different risks, as the products may not be covered by a deposit guarantee scheme.

Turning to the content of Recommendation ESRB/2012/2, three main policy areas are covered. First, with regard to banks' funding plans, NSAs and the EBA are recommended to monitor and assess funding and liquidity risks, as well as the viability of funding plans, at both the national and the EU level. Given that market conditions are still impaired, authorities are recommended, in particular, to assess institutions' plans to reduce their reliance on public sector funding sources. They are advised to pay special attention to the use of innovative instruments that may pose systemic risks and to consider the risks of uninsured deposit-like instruments that are sold to retail customers and the negative effects that these may have on traditional deposits.

Second, with regard to asset encumbrance, the starting point for the proposals for managing the associated risks is to address them with a comprehensive strategy. In the short run, it is suggested that a concerted effort be made to further improve credit institutions' management of liquidity and funding risks where encumbrance is involved. It is also recommended that supervisors be more consistent when monitoring and assessing the levels, evolution and types of encumbrance, as well as the effects of stress events on encumbrance. A recommendation on improving market transparency is included in order to facilitate the pricing of risks related to asset encumbrance. However, it is important that any increase in transparency does not include making a disclosure about the use of central bank operations.

Third, with regard to covered bonds, it is recommended that NSAs promote the implementation of best practices for the use of covered bonds. Given the importance that covered bonds have gained in banks' funding structures, a set of risks was identified, relating in particular to legal uncertainties in some EU Member States and differences in disclosure practices. As a first step, the EBA is recommended to coordinate national efforts to promote the adoption of best practices in this regard. The EBA should also consider whether or not it would be appropriate for it to use its own powers to impose such best practices, or whether to refer the matter to the European Commission for further action. As a second step, the EBA is recommended to consider whether there are other financial instruments, in addition to covered bonds, that encumber assets and would therefore require similar treatment.

Additionally, without proposing formal recommendations to stimulate other funding markets, the ESRB, in the annex to the recommendation, took note of some private initiatives, such as the labelling of securitisations and covered bonds, as these may help to restore confidence in certain financial products.

The EBA is requested to communicate to the ESRB and the EU Council the actions taken in response to this recommendation, and adequate justification in the case of inaction, by specific deadlines between 31 December 2013 and 31 December 2016. The corresponding timeline for NSAs is between 31 December 2013 and 30 September 2015.

2.1.2 Recommendation on money market funds

As revealed by developments in the aftermath of the collapse of Lehman Brothers in 2008, MMFs – as a key component of the shadow banking sector – may not only be a source of risk, but may also act as a channel for spreading risk throughout the financial system. Similarly to banks, they perform maturity and liquidity transformation functions and may be viewed by investors as an alternative to bank deposits.

However, although MMFs are subject to securities regulation, they are not subject to banking regulatory requirements and may, in some cases, be particularly vulnerable to destabilising investor runs. This may therefore make them a source of significant systemic risk. Another risk associated with MMFs is the implicit and discretionary support provided by the third party (often a bank) that sponsors the MMF. Various international and European regulatory initiatives have already been taken to address the risks associated with MMFs.

Against this background, an ATC expert group was set up in mid-2012. It was tasked with examining, from a macro-prudential perspective, the implementation within the EU of the policy recommendations for MMFs that were issued by the International Organization of Securities Commissions (IOSCO) in October 2012, particularly in view of the European Commission's proposal for a reform of the Undertakings for Collective Investments in Transferable Securities (UCITS) – including MMFs.

In order to assess the possible impact of the IOSCO recommendations, the expert group drew up a detailed profile of the European MMF industry, based, inter alia, on an ad hoc data collection exercise. In particular, this revealed that, in Europe, MMFs manage approximately €1 trillion in assets, with three countries (France, Ireland and Luxembourg) holding an aggregate share of 95% of total MMF assets.

MMFs play an important role in European money markets and are estimated to hold approximately 25% of all short-term debt securities issued in the euro area. Around 75% of their exposures are to MFIs, which receive deposits in order to grant credit and/or make investments in securities (see Chart 14). MFIs are themselves major investors in MMFs, accounting for more than 30% of the total investor base (see Chart 15). The interconnectedness of MMFs with the rest of the financial system is further increased through the relationship with their sponsors, which are often banks.

Somewhat more than 40% of the industry's assets under management are invested by CNAV funds, which seek to maintain an unchanging face value. Compared with VNAV funds, such funds are much larger and have a more conservative risk profile, shorter asset maturity, higher liquidity levels and a bigger non-EU investor base. According to the results of the data collection exercise, around 27% of the CNAV funds included in the survey had seen the par value of their assets deviate from the market value by more than 10 basis points over the past five years.

The recommendation on MMFs covers four specific areas. First, with regard to the mandatory move to VNAV, MMFs should be required to have a fluctuating net asset value, as it would strengthen their investment features and reduce their bank deposit-like features. It would also lessen the likelihood of investor runs, increase price transparency and reduce interconnectedness in the financial system. In addition, MMFs are requested to make general use of fair valuation and limit their use of amortised cost accounting to a number of predefined circumstances.

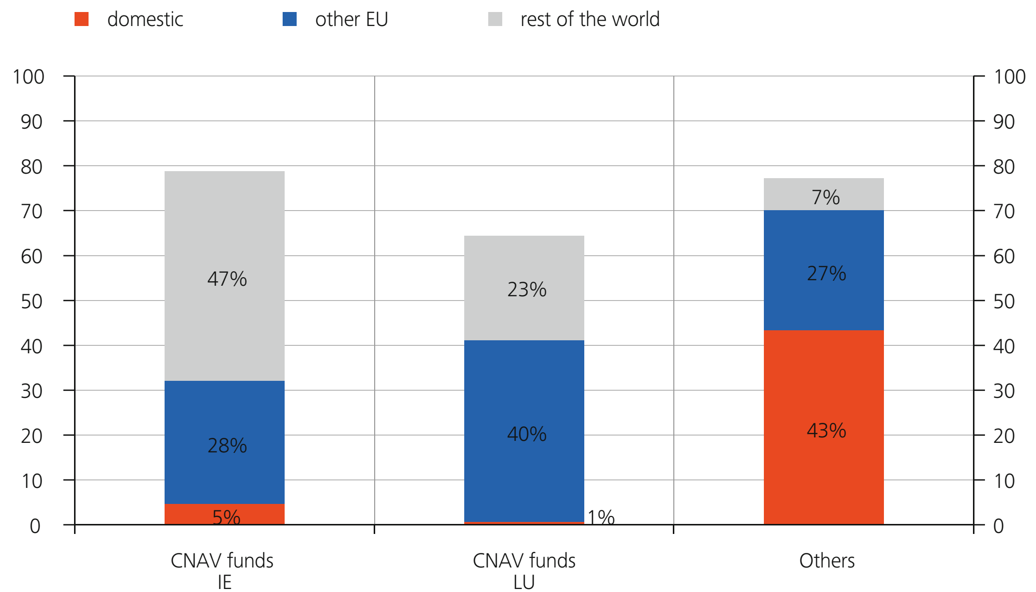
Second, with regard to liquidity requirements, it is recommended that these be enhanced by requiring MMFs to hold explicit minimum amounts of daily and weekly liquid assets. Furthermore, the responsibility of the funds' managers to monitor liquidity risk should be

strengthened. Finally, NSAs and the funds' managers should have in place effective tools, for example temporary suspensions of redemptions, to deal with liquidity constraints in times of stress resulting from both fund-specific and market-wide developments.

Chart 14

MMFs' investments in MFIs

(percentages)

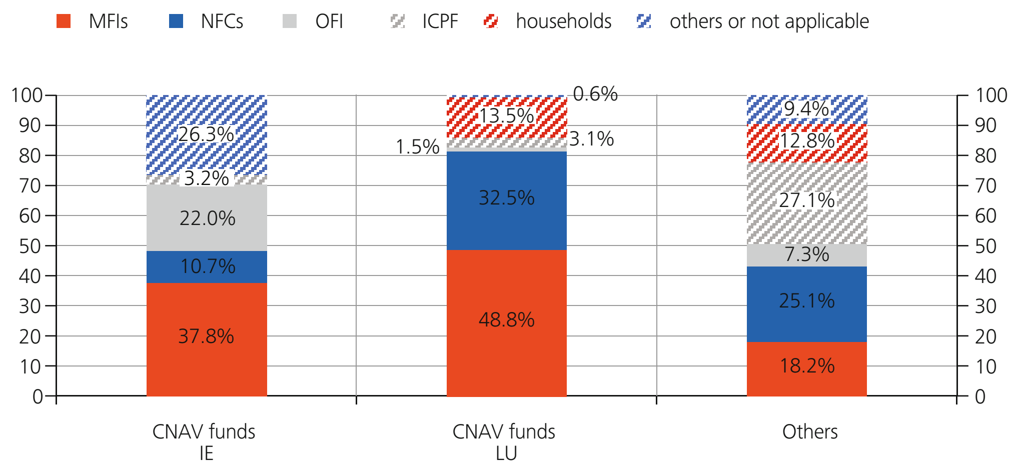


Source: ESRB survey.
Notes: "Others" includes funds from France, Germany, Italy and Spain, plus VNAV funds from Ireland and Luxembourg. Coverage is 100% of ESRB survey and approximately 70% of total EU MMFs' assets under management.

Chart 15

MMFs' investors, broken down by sector

(percentages)



Source: ESRB survey.
Notes: "Others" includes funds from France, Germany, Italy and Spain, plus VNAV funds from Ireland and Luxembourg. Coverage is 100% of ESRB survey and approximately 70% of total EU MMFs' assets under management.

Third, with regard to public disclosure, it is recommended that the marketing material of MMFs inform investors of the absence of a capital guarantee and the possibility of principal loss. Any public information that would give the impression of sponsor support or capacity for such support should be prohibited, unless this support is a firm commitment by the sponsor, in which case it must be recognised in the sponsor's accounts and prudential requirements. It is also recommended that MMFs disclose their valuation practices, in particular with regard to the use of amortised cost accounting, and provide information on applicable procedures for redemption and suspending subscriptions in times of stress.

Fourth, with regard to reporting and information sharing, the recommendation requires that any instances of sponsor support should be reported to the competent NSA, which should share this information with other relevant national and European authorities. In addition, the regular reporting of MMFs should be further enhanced and harmonised.

2.1.3 Recommendation on intermediate objectives and instruments of macro-prudential policy

The global financial crisis has demonstrated the severe costs of financial instability, in both economic and fiscal terms. Policy-makers have therefore identified macro-prudential oversight as one of the key building blocks needed to reform the existing institutional and regulatory framework that supports the markets.

The ESRB has acknowledged the importance of setting up a well-defined policy framework for the effective conduct of macro-prudential oversight. It has also drawn attention to the difficulties arising from having a closely interconnected financial system and a common set of rules at the EU level, while the nature of economic and financial cycles is still largely country-specific. Against this background, the ESRB published in January 2012 Recommendation ESRB/2011/3, which resulted in national macro-prudential authorities (NMAs) being set up across the EU (see Section 3.4.4). Moreover, the ESRB published in March 2012 its view on the principles for macro-prudential policies in EU legislation on the banking sector, thereby providing an important contribution to the regulatory discussion.[22]

As a follow-up to the aforementioned strands of work, the ESRB brought forward its work on macro-prudential objectives and instruments, a policy area that is being discussed intensively at both the EU and the global level. While the CRD IV/CRR (and the Basel III framework) provide a common set of macro-prudential instruments that may be used by national authorities, the ESRB concluded that there is still a need for a comprehensive framework linking the ultimate objective of macro-prudential policy to intermediate objectives and the instruments for achieving these intermediate objectives. The ESRB therefore identified five intermediate objectives for achieving the ultimate objective of macro-prudential policy. These intermediate objectives will form the basis for the selection of instruments and for the accountability of national authorities.

The first intermediate objective relates to mitigating and preventing excessive credit growth and leverage within the EU financial system. This involves addressing excessive risk-taking during

22 See the press release entitled "Principles for macro-prudential policies in EU legislation on the banking sector", ESRB, 2 April 2012 (http://www.esrb.europa.eu/news/pr/2012/html/pr120402.en.html).

an upturn, which could result in rising levels of intra-financial activity, by tightening capital and collateral requirements. The buffers created during the upturn could then be used to absorb losses during a downturn, thus alleviating the need for deleveraging and preventing bank runs, while supporting the granting of credit to sustain economic growth.

The second intermediate objective relates to supporting the resilience of the financial system by mitigating and preventing excessive maturity and liquidity mismatches. Acknowledging that maturity transformation is at the core of financial intermediation, excessive levels of maturity mismatch can be addressed by requiring banks to finance their non-liquid assets with stable funding and to hold high-quality liquid assets to ensure the refinancing of volatile, short-term funds. This could help to shield banks from market illiquidity and the associated pressure to sell assets at distressed prices, as well as from runs by depositors and other financial institutions.

The third intermediate objective concerns limiting excessive levels of direct and indirect exposures, which is particularly relevant for intra-financial sector exposures. This can be achieved either by establishing maximum exposure levels for specific financial sectors and (groups of) counterparties or by introducing circuit breakers, such as CCPs, which help to reduce the domino effect that could be triggered by an unexpected default and common exposures across financial institutions.

The fourth intermediate objective aims to limit the systemic impact of misaligned incentives, with a view to reducing moral hazard. This includes enhancing the robustness of systemically important financial institutions (SIFIs), while counteracting the negative effects of an implicit government guarantee. Credible arrangements for an orderly wind-down and resolution are also fundamental to addressing the risk of moral hazard.

The fifth and final intermediate objective aims to strengthen the resilience of financial market infrastructures. It focuses on two main areas: (i) addressing externalities within the financial system's infrastructure; and (ii) correcting the effects of moral hazard that could arise from the institutional set-up. This could cover legal systems, credit rating agencies, deposit guarantee schemes and market practices.

Taking into account the above-mentioned intermediate objectives, the ESRB identified an indicative set of 15 macro-prudential instruments (see Table 1). These instruments were selected on the basis of three considerations: (i) their effectiveness, i.e. the degree to which they address underlying market failures and facilitate the achievement of intermediate and final objectives; (ii) their efficiency, i.e. achieving objectives at minimum cost; and (iii) their feasibility, i.e. addressing the need to provide national authorities with a macro-prudential toolkit with minimum delay, while continuing to work on additional/new instruments in the medium term. The set of instruments will be adapted over time, with national authorities being able to add new instruments to meet their national requirements. As mentioned above, the CRD IV/CRR will, to a certain extent, provide a harmonised EU toolkit, including a coordination mechanism, which can be used at the national level. In terms of drawing up a coherent set of macro-prudential policies at the EU level, the ESRB will work together with the ECB and national competent authorities setting up the SSM, as well as with the European Supervisory Authorities (ESAs) and other members of the ESRB.

Table 1

Indicative set of macro-prudential instruments

1. Mitigating and preventing excessive credit growth and leverage
- Counter-cyclical capital buffer
- Capital requirements for each sector (including the intra-financial system)
- Macro-prudential leverage ratio
- Loan-to-value (LTV) requirements
- Loan-to-income (LTI)/debt (service)-to-income requirements

2. Mitigating and preventing excessive maturity and liquidity mismatch
- Macro-prudential adjustment to liquidity ratio (e.g. liquidity coverage ratio)
- Macro-prudential restrictions on sources of funding (e.g. net stable funding ratio)
- Macro-prudential unweighted limit to less stable funding (e.g. loan-to-deposit ratio)
- Margin and haircut requirements

3. Limiting direct and indirect exposures
- Restrictions on large exposures
- Requirement for clearing by CCPs

4. Limiting the systemic impact of misaligned incentives, with a view to reducing moral hazard
- Capital surcharges for SIFIs

5. Strengthening the resilience of financial infrastructures
- Margin and haircut requirements for CCP clearing
- Greater disclosure requirements
- Structural systemic risk buffer

The ESRB also looked into what would be an appropriate level of harmonisation for an EU toolkit, taking into account two key considerations: (i) the need to develop a common approach to macro-prudential policy and its coordination; and (ii) the need to address country-specific financial cycles and differences in the structure of financial systems.

With regard to limiting the systemic impact of misaligned incentives, the ESRB carried out work in the area of recovery and resolution plans and deposit guarantee schemes. It concluded that the sound functioning of the financial system requires the consultation of macro-prudential authorities regarding the design and implementation of their respective recovery and resolution plans, as well as their deposit guarantee schemes.

The aforementioned analytical work carried out by the ESRB on macro-prudential instruments is reflected in Recommendation ESRB/2013/1, which was adopted in April 2013. The recommendation advises EU Member States to create a toolkit that allows national authorities to pursue the ultimate and intermediate objectives of macro-prudential policy. It also recommends that national authorities continue their efforts to make macro-prudential policy operational by putting in place a framework for the activation of macro-prudential instruments, which could also help them to meet the transparency and accountability requirements. Finally, while the recommendation

emphasises the considerable number of positive cross-border spillover effects stemming from macro-prudential policies, it advises national authorities to assess the materiality of the net impact of positive and negative cross-border spillovers. In the event that they are expected to have a significant cross-border impact on other Member States or the Single Market, it is recommended that national authorities inform the ESRB prior to their application at the national level.

2.2 Focus on topical macro-prudential issues

In addition to issuing recommendations, the ESRB conducted research into and assessments of other structural sources of systemic risk. This section presents the results of these streams of work, covering primarily interconnectedness, the shadow banking sector, SFTs and macro-prudential aspects of draft EU legislation.

2.2.1 Linkages and potential channels of contagion within the EU financial system

Interconnectedness is a core component of systemic risk and has been a focal point of the ESRB's work since it became operational. In 2012 the ESRB, in cooperation with the ESMA, made significant progress in understanding the interconnectedness within the EU financial system by investigating in greater detail the interbank market and the CDS market.

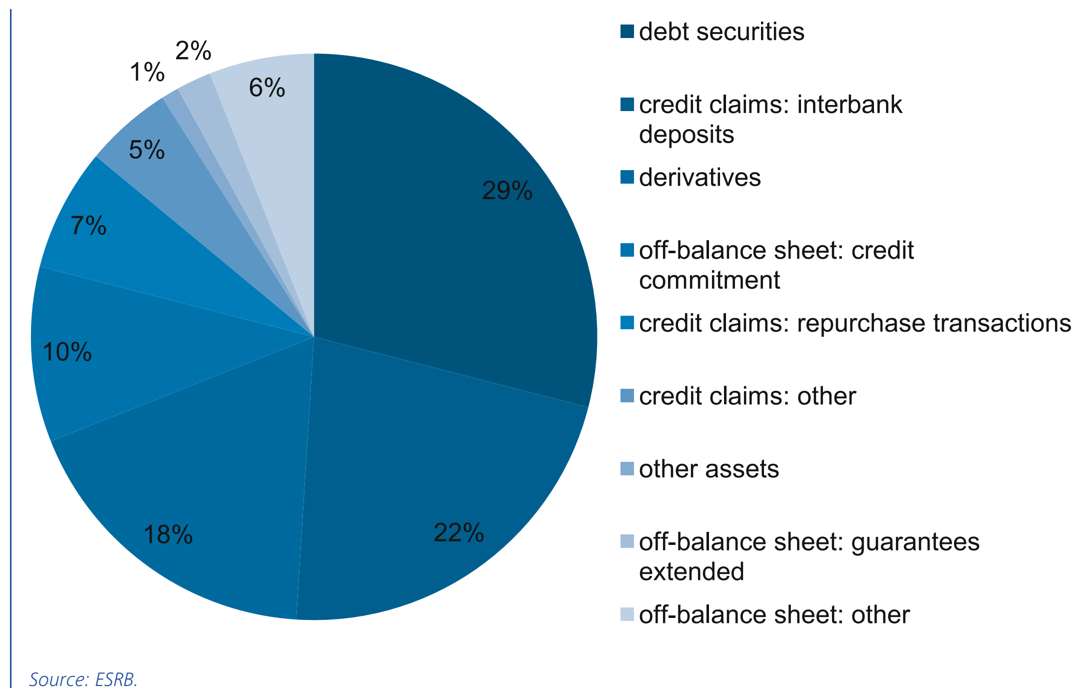
Interconnectedness in the interbank market

In 2012, under the aegis of the Analysis Working Group (AWG) of the ATC, the ESRB undertook further analysis of the EU's interbank system in order to assess its resilience. To this end, the ESRB collected granular data on the bilateral exposures of 53 large EU banks at the end of 2011. These granular data, despite being collected during a period of lower interbank activity, provide a more complete picture of interconnectedness, which would otherwise be obscured by aggregated or average data. Within the dataset, exposures were broken down by instrument into assets (divided into credit claims, debt securities and other), derivatives and other off-balance sheet exposures, and then split according to residual maturity (at sight, overnight, up to one year and more than one year). The project delivered four important findings.

First, the interbank exposures (including off-balance sheet items) reported by the banks in the sample totalled around €1.7 trillion, which represents 6% of total assets or 160% of Tier 1 capital. Interbank assets account for somewhat less than two-thirds of total interbank exposures, with the remaining one-third being split equally between derivatives and off-balance sheet exposures. Chart 16 shows the full breakdown of interbank exposures by instrument.

Second, the EU interbank market is characterised by the high degree of connectivity between the largest banks. The network is also very dense, with the most connected institution having links with all but three banks. Every bank is "close" to other banks in the sample, in the sense that it takes only a few bilateral exposures to reach any bank in the sample. These findings are partly attributable to the nature of the datasets, which covered the 53 largest banks in the EU. By contrast, national datasets capture the entire national banking system. Thus, analyses of these datasets typically conclude that national banking systems tend to be structured around a set of core institutions that are closely connected to the rest of the banking system (the "periphery").

Chart 16
Interbank exposures at the end of 2011, broken down by type of instrument



Source: ESRB.

Third, the impact of hypothetical credit and funding events on the network could be far-reaching, as no institution is "remote" from the others. The systemic impact of this contagion would depend on the size of the interbank exposures. However, this closeness also indicates that interbank activities could easily be diverted to a viable substitute if a given bank fails, which is positive from a systemic risk perspective. Nevertheless, a few banks stand out as being systemically important, in terms of activity, control and independence.

Fourth, the potential for contagion in the EU banking system stemming from solvency and funding problems was investigated by simulating stress scenarios. An initial shock was assumed as a common exogenous shock equivalent to a loss given default of between 1% and 4% of banks' non-interbank assets. In addition, individual banks were also assumed to default on their liabilities, thereby imposing losses on the defaulting bank's creditors, with assumed losses of between 0% and 100% under different scenarios.

Under a severe but plausible benchmark stress scenario (in which the common loss was 1% and the idiosyncratic loss given default was 45%), no bank defaulted as a result of another bank's default, although some incurred substantial losses. Furthermore, the banks that had the largest potential loss impact on the rest of the system were those with the highest credit rating, indicating that the likelihood of such a contagion event is small. However, the banking system's vulnerability to contagion rises non-linearly as the magnitude of the common shock increases.

Interconnectedness in the CDS market

The CDS market attracted particular attention from policy-makers in the context of the Greek bond exchange programme, known as the Private Sector Initiative. At the time, there were concerns that a credit event on Greek government bonds would have a destabilising effect on the EU financial system and spark contagion across a number of important market segments. Against this backdrop, at the beginning of 2012 the ESRB established a joint ATC/ASC expert group to study, in cooperation with the ESMA, contagion channels in the CDS market. Some of its key findings are as follows.

First, with around 800 market participants and more than 3,500 bilateral links (as at January 2012), the EU CDS network is large and complex. Second, activity in the CDS market is concentrated at the level of counterparties and less so at the level of reference entities. The EU CDS market is centred around 15 bank-like global derivatives dealers, which trade the debt of a large majority of reference entities.

The ten largest net sellers/buyers of bilateral CDSs belong to the FSB's list of global systemically important banks (GSIBs). By contrast, the average market participant is trading the debt of fewer than 20 reference entities and is linked to around ten counterparties. In order to identify the network structure of the CDS market, the expert group used Duffie's approach to measure systemic risk exposures, focusing on the top 15 counterparties and their top ten exposures.[23]

Chart 17 shows that, among the core traders, a large majority (ten) have, in aggregate, a net selling position.[24] Many of the second-tier counterparties are linked to several of the top 15 entities. Furthermore, the top 15 have large net exposures between themselves (multi-lateral netting is considered at the reference entity level).

Third, a number of non-bank institutions (e.g. asset managers, hedge funds) play an important role in the CDS market. These institutions are often buyers of protection rather than market-makers. Therefore, their risk mitigation needs depend, to a large extent, on the counterparty credit risk they incur by carrying out transactions with the core set of traders.

Fourth, contagion arising from a sovereign credit event is typically channelled through banks' sovereign bond exposures rather than their sovereign CDS exposures. From a country perspective, domestic banks typically have sizeable sovereign bond exposures, while foreign banks tend to be more vulnerable to correlated losses on their sovereign bond exposures. A key vulnerability stems from the requirement to post collateral against multiple correlated positions.

Finally, the large amount of gross (and net) exposures held by major market participants relative to their capital could, in some cases, give rise to significant domino-like contagion effects. For

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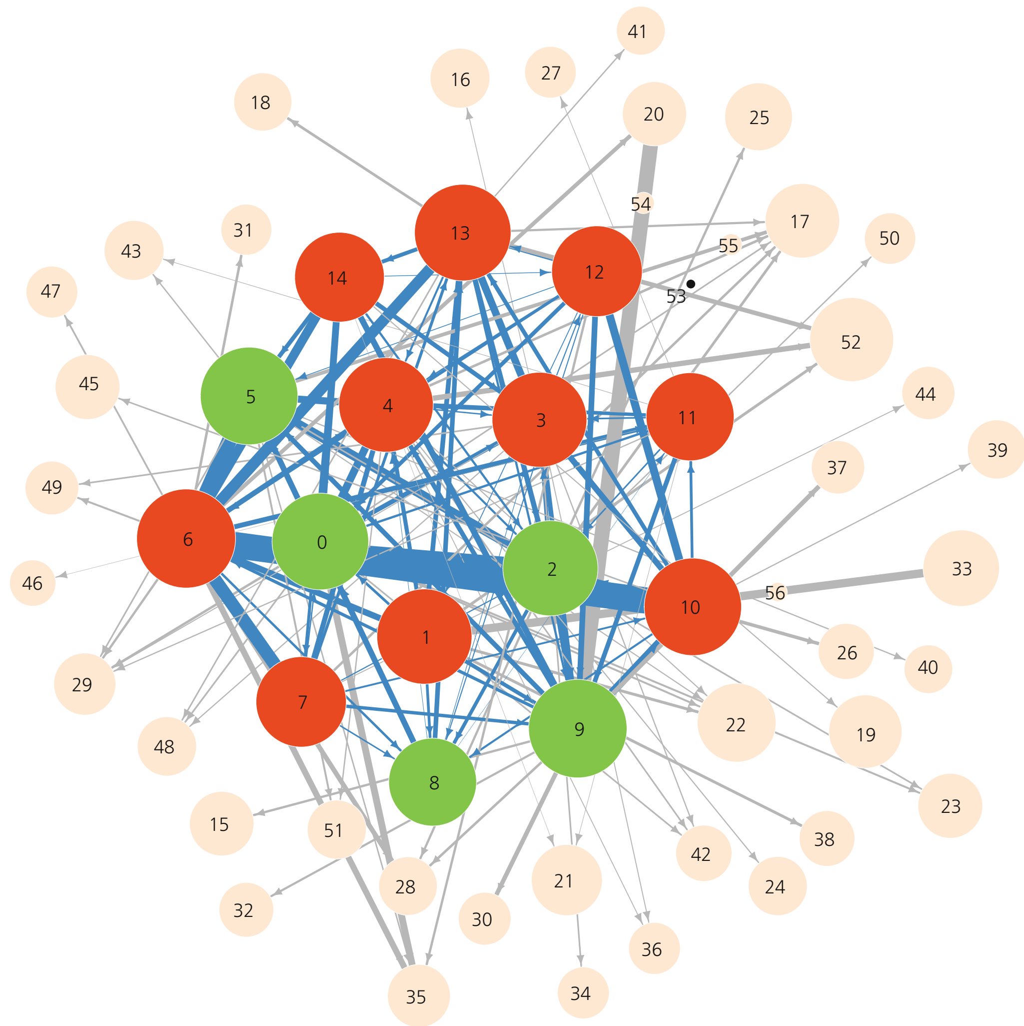
23 See Duffie, D., "Systemic risk exposure: a 10-by-10-by-10 approach", in Brunnermeier, M.K., and Krishnamurthy, A. (eds.), *Risk Topography: Systemic Risk and Macro Modeling*, NBER, University of Chicago Press, Chicago, 2013.

24 The red nodes (net sellers) and green nodes (net buyers) in the centre represent the 15 largest counterparties in the CDS market, when counterparties are ranked according to total notional exposure. For each of these 15 traders, the chart shows their ten largest bilateral net sell exposures. The size of each node is proportional to the log of the underlying gross exposure. The size of each link is proportional to the log of the net exposure it represents. Large net exposures between the top 15 traders are shown in blue.

Chart 17
A 15-by-10 approach to identifying systemic players



Sources: DTCC and ESRB calculations.

instance, public data show that a number of major banks have net exposures amounting to over one-third of their capital.

Therefore, overall it can be said that, in the context of interconnectedness, contagion is more likely to stem from indirect linkages, such as common exposures or simultaneous margin calls, than from direct bilateral contractual links between market participants. Thus, from the ESRB's perspective, there is a need to focus more on monitoring and mitigating risks associated with indirect channels of contagion rather than with channels based on direct contractual links, as the potential systemic risk tends to be lower in the latter.

2.2.2 The shadow banking sector/securities financing transactions

During 2012 and at the beginning of 2013, as part of its wider work on identifying risks and vulnerabilities that could arise from shadow banking activities, the ESRB took important steps towards gaining a better understanding and monitoring of the risks stemming from securities

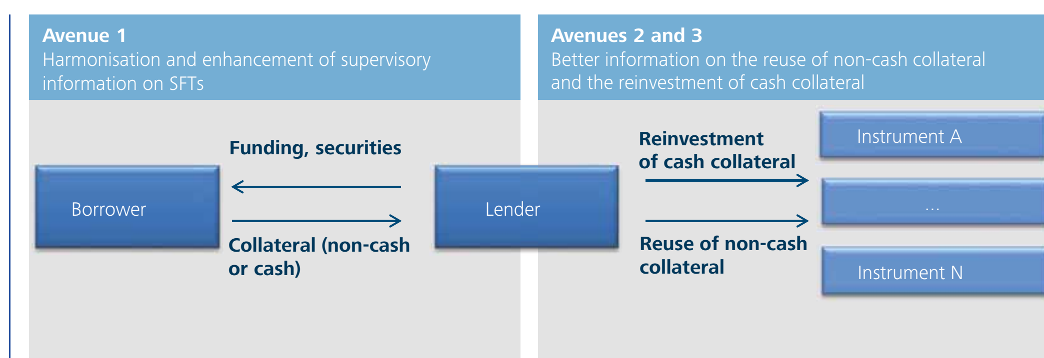
lending and repurchase transactions, often referred to as SFTs. The work on SFTs was carried out by an ESRB team under the aegis of the AWG.

During the first phase of its work the team identified potential sources of systemic risk entailed in SFTs. Under normal conditions, SFTs are low-risk instruments that enhance liquidity in securities markets and money markets, and possibly reduce settlement risks. A wide range of market participants, including credit institutions, pension funds, insurance companies, asset managers, broker-dealers and investment firms, make use of these instruments. From a macro-prudential perspective, there are potentially several major sources of risk in the SFT market. These include (i) system-wide leveraging, (ii) pro-cyclical effects and fire sales, (iii) maturity and liquidity transformation in connection with the reuse of non-cash collateral, (iv) maturity transformation resulting from securities lending cash reinvestment, (v) interconnectedness and contagion channels, (vi) concentration risk, and (vii) inadequate collateral valuation practices.[25]

During the second phase the team turned its attention to bridging the significant information gaps with regard to securities lending and repurchase transactions. In fact, the information currently available does not allow for a comprehensive macro-prudential monitoring and assessment of risks stemming from SFTs. Furthermore, it is not sufficient for the in-depth analysis required to enable policy-makers to take appropriate and timely action to mitigate the risks stemming from this market. To remedy this, the ESRB's work focused largely on contributing to establishing a satisfactory framework for monitoring this market in the EU. The ESRB also benefited from the FSB's ongoing work on this subject from a global perspective.

The ESRB's work in this context proceeded along three avenues (see Chart 18). The first covered the harmonisation and enhancement of supervisory information on SFTs in a more general sense, while the second and third avenues were more specific and focused on two common practices in the SFT market, namely the reuse of non-cash collateral and the reinvestment of cash collateral. Information for supervisory authorities on these two practices is particularly scarce, despite their importance in terms of volume and their potential impact on financial stability.

Chart 18
Overview of the work on SFTs in terms of activities covered



Source: ESRB.

25 For a description of the potential risks stemming from SFTs, see "Strengthening Oversight and Regulation of Shadow Banking – A Policy Framework for Addressing Shadow Banking Risks in Securities Lending and Repos", FSB consultative document, 18 November 2012 (http://www.financialstabilityboard.org/publications/r_121118b.pdf).

Towards a better framework for monitoring the SFT market

During the period under review the ESRB contributed to drawing up a European macro-prudential framework for SFTs, which will facilitate a more consistent assessment of the risks across the EU Member States. Policy-makers around the world are currently debating how to improve the information available on securities lending and repurchase transactions. From a macro-prudential perspective, it is of great importance that the competent authorities have access to the information necessary to assess the risks associated with the SFT market.

In this regard, the ESRB, in an Occasional Paper, describes the sequence of steps that it will take, from identifying the risks, through describing the indicators and data needed to assess those risks, and the various options for collecting that information, to analysing which of the monitoring options would be the most appropriate.[26] The main conclusion is that collecting transaction-based data via a trade repository would be superior to other methods (such as regulatory reporting or market surveys). While recognising the obstacles that need to be overcome before such a trade repository can be established, the work conducted in this field should also provide policy-makers with a strong impetus to address them.

Enhancing information on and assessing the risks stemming from the reuse of collateral and reinvestment of cash collateral

Financial institutions require non-cash collateral when engaging in SFTs. The reuse of collateral creates a network of linkages between financial institutions across different market segments, including banks and non-bank financial institutions, thereby giving rise to complex "collateral chains". The unwinding of a transaction by one institution may trigger the unwinding of transactions by other institutions, which may lead to collateral fire sales with repercussions on the financial system as a whole. The propagation of shocks through the financial system may be facilitated by the presence of weaker financial institutions in the collateral chain, including non-banks, which have less shock absorption capacity.

The reuse of non-cash collateral, i.e. when market participants use the same security several times as collateral for different SFTs, may also increase leverage across the system-wide intermediation chain. In addition, it can exacerbate pro-cyclical dynamics in the financial sector. In good times, market participants tend to be more willing to allow counterparties to reuse collateral, which increases market liquidity and lowers the cost of capital. However, in times of market stress, the reuse of collateral makes the unwinding of transactions more difficult. As a result, market participants become more sensitive to counterparty risk and reluctant to allow the reuse of collateral, thus compounding already tight liquidity conditions. In this context, it is also important to have a clear picture of the market-wide concentration of collateral positions.

The reinvestment of cash collateral obtained by securities lenders exacerbates liquidity problems in times of market stress by introducing a new layer of interest rate risk, credit risk and maturity mismatch. These risks are aggravated if lenders act on behalf of their clients (who remain the beneficial owners of the collateral), but do not provide indemnifications against losses, making it difficult for counterparties to fully price in the underlying risk and potentially exacerbating lenders' risk-taking. Furthermore, lenders may reinvest cash collateral in, by nature more

26 See "Towards a monitoring framework for securities financing transactions", *Occasional Paper Series*, No 2, ESRB, March 2013 (http://www.esrb.europa.eu/pub/pdf/occasional/20130318_occasional_paper.pdf).

opaque, commingled funds instead of separate accounts. This could provide an incentive for clients to "run" when markets come under pressure. As part of a long credit intermediation chain, the reinvestment of cash collateral can create negative externalities beyond the parties involved in the initial transaction. Moreover, non-banks involved in such transactions are not subject to the same regulations as banks and are not obliged to monitor the associated risks.

At the moment there is no monitoring framework to help EU supervisory authorities adequately identify the build-up of systemic risks stemming from the reuse of non-cash collateral and the reinvestment of cash collateral. The FSB has published a consultative document with proposals on how to develop monitoring frameworks for these market practices. The ESRB's work in this regard, which is guided by the FSB's proposals, presents concrete tools for helping to detect systemic risks arising from these practices in the European context. As part of this work, the ESRB elicited the views of private stakeholders in confidential roundtable discussions, as well as by means of a written consultation. It also launched a one-off data collection exercise to assess the risks, evaluate the suitability of the proposed tools and facilitate a cost-benefit analysis of potential regulatory measures.

General monitoring and dialogue – combining different types of expertise

The ESRB is committed to enhancing dialogue on risks stemming from shadow banking activities, as well as to setting up a more general framework for monitoring them.[27] The aim is to identify, at an early stage, any relevant developments, risks and vulnerabilities emerging in the shadow banking sector that may need to be addressed from a macro-prudential perspective. To some extent, the work on SFTs was the result of such a monitoring process, which the ESRB will develop further, as shown in Chart 19.

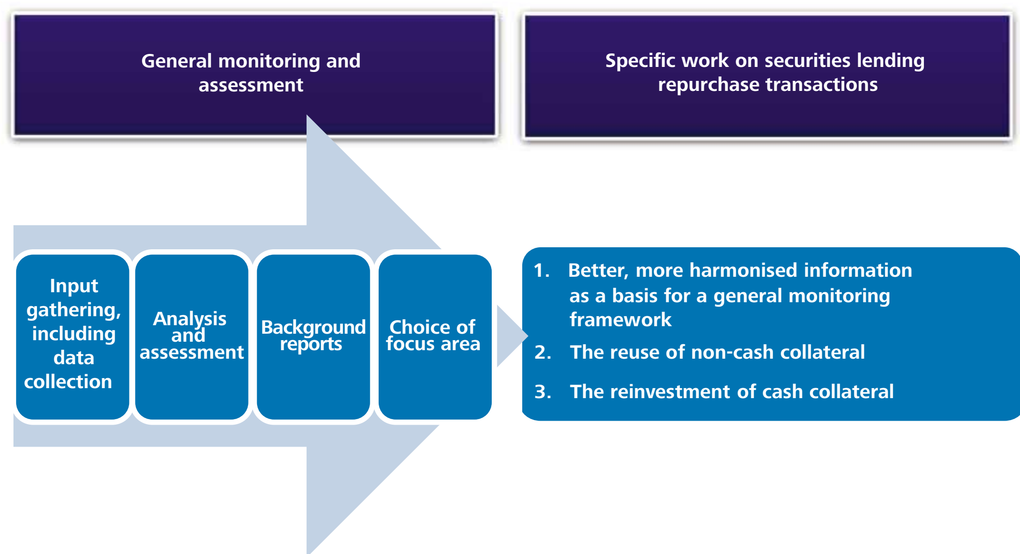
Given that the ESRB is responsible for the macro-prudential oversight of the EU financial system (including the shadow banking sector), it is particularly well placed to carry out work in the area of SFTs. Its membership spans all financial sectors and includes macro-prudential and micro-prudential supervisory authorities, as well as national central banks (NCBs). In addition, the ESRB can draw on the academic expertise of the ASC, which contributes both directly and through its various expert groups. The cross-fertilisation that has been achieved by combining these different sources of expertise, together with the input from private stakeholders and other experts, has proven very useful, not only for the specific work on SFTs, but also in terms of achieving a better understanding of the risks and vulnerabilities stemming from the shadow banking sector.

2.2.3 Macro-prudential aspects of draft EU legislation

During the period under review, as part of the development of a basis for macro-prudential policies in the EU, the ESRB continued to consider the macro-prudential aspects and implications of forthcoming EU legislation. In particular, it closely followed discussions on three key pieces of draft EU sectoral legislation, which will have major implications, in terms of scope of

27 As a starting point the ESRB will use the FSB's definition of shadow banking (see "Shadow Banking: Strengthening Oversight and Regulation", Recommendations of the Financial Stability Board, Financial Stability Board, 27 October 2011). This is further explained in the ESRB's reply of 30 May 2012 to the European Commission's Green Paper on shadow banking (see http://www.esrb.europa.eu/shared/pdf/2012-05-30_ESRB_reply.pdf).

Chart 19
From the general monitoring of shadow banking to specific work on SFTs



Source: ESRB.

intervention, for macro-prudential oversight in the period ahead: (i) the CRD IV/CRR; (ii) the proposal for the Omnibus II Directive[28]; and (iii) EMIR, which was adopted in July and entered into force in August 2012. The ESRB's responses to the regulatory consultations undertaken during the period under review are presented in Box 1.

28 See the proposal for a directive of the European Parliament and of the Council amending Directives 2003/71/EC and 2009/138/EC in respect of the powers of the European Insurance and Occupational Pensions Authority and the European Securities and Markets Authority.

Box 1
ESRB responses to consultations during the period from January 2012 to April 2013

- In March 2012 the ESRB submitted official responses to (i) the EBA consultation paper on draft implementing technical standards on supervisory reporting requirements for institutions, (ii) the EBA consultation paper on draft implementing technical standards on large exposures, and (iii) the EIOPA consultation on the proposal for quantitative reporting templates for financial stability purposes.

- In May 2012 the ESRB responded to the European Commission's consultation on shadow banking, as part of the global debate on the oversight and regulation of this sector. In its response, the ESRB expressed its support for using the FSB's definition of shadow banking. Regarding its own ongoing work on the topic, the ESRB emphasised the need to establish a framework for cooperation and data sharing both across the EU and with non-EU jurisdictions.

- With regard to EMIR, the ESRB submitted to the ESMA on 31 July 2012 a response to both of its consultations on the draft regulatory technical standards pursuant to Article 10 and Article 46 of EMIR.

- In the context of the fundamental review of the Financial Conglomerates Directive, the ESRB responded in August 2012 to the Consultation Paper of the Joint Committee of the ESAs, focusing mainly on the ESRB's information requirements for the conduct of macro-prudential oversight.

- In November 2012 the ESRB responded to the European Commission's consultation on a possible framework for the regulation of indices serving as benchmarks in financial and other contracts. The consultation was initiated among growing concerns that benchmark interbank rates, such as the LIBOR and the EURIBOR, may not track interbank borrowing costs accurately, thus broadening the scope for manipulation. Focusing on macro-prudential aspects, the ESRB's response addressed issues such as the desirable features of a benchmark, the re-establishment of benchmark integrity, the need for greater transparency in interbank markets, and the management of a possible transition to a new regime.

- In December 2012 the ESRB responded to the European Commission's consultation on a possible recovery and resolution framework for financial institutions other than banks. The ESRB expressed its support for the proposal under consultation and provided a number of suggestions as to how it could be strengthened in order for it to more effectively mitigate risks to systemic stability in crisis situations.

For further information see http://www.esrb.europa.eu/pub/html/index.en.html

With regard to the CRD IV/CRR, the EU Council approved a compromise version of the legal text in March 2013, which harmonised many micro- and macro-prudential instruments that had often been used on a discretionary basis in the context of the second pillar of the Basel II framework. The macro-prudential instruments include several capital surcharges (the SIFI buffer, systemic risk buffer and counter-cyclical buffer), an instrument covering real estate risk weights and a specific liquidity instrument, all of which address specific macro-prudential objectives. The CRD also retains the discretionary powers available to national authorities under the second pillar in non-regulated areas, including for the purposes of macro-prudential oversight. Furthermore, the CRR provides for a new mechanism that will allow national authorities to use certain micro-prudential instruments in a stricter manner when the above-mentioned macro-prudential instruments are insufficient to address macro-prudential or systemic risks. In the light of these developments, the ESRB is now adapting its functions in order to effectively utilise the possibilities provided by the forthcoming legislation.

The ESRB has also closely followed the discussions on the new prudential regime for insurance companies, the Solvency II Directive.[29] The proposed Omnibus II Directive will amend certain provisions of the Solvency II Directive, namely the long-term guarantee measures, which aim to

29 See Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II).

reduce volatility in the balance sheets of insurers with long-term obligations and to protect long-term insurers against temporary short-term economic stress. The mechanisms currently under discussion include (i) permanent adjustments to the risk-free rate for discounting obligations that are more or less matched with certain assets (via matching adjustment), and (ii) temporary adjustments to the risk-free rate for discounting all liabilities in times of financial market stress (such adjustments are also known as the "counter-cyclical premium").

In 2012 the ESRB conveyed to the European Parliament, the EU Council and the European Commission its concerns about the possible unintended medium-term macro-prudential implications of these long-term guarantee measures (also known as the "long-term guarantee package"). The ESRB was then involved in the design of the EIOPA's quantitative impact assessment of the long-term guarantee package, which was conducted in the first quarter of 2013. In particular, the ESRB assisted the EIOPA in its assessment of the impacts on financial stability of the package and whether it could give rise to systemic risks.

With regard to EMIR, the ESRB submitted to the ESMA on 31 July 2012 a response to both of its consultations on the draft regulatory technical standards pursuant to Article 10 and Article 46 of EMIR. In its first response, on the clearing of OTC derivatives by non-financial corporations (NFCs), the ESRB was of the view that the proposed regime in EMIR for derivatives held by NFCs does not adequately cover two significant risks to the EU financial system.[30] In accordance with EMIR, those derivatives linked to the commercial and treasury financing activities of NFCs are excluded from the computation of the clearing threshold and somehow qualify as being risk-free. The ESRB is of the opinion that this is conceptually wrong and that it could lead to an "inefficiently large level of hedging", affecting entire segments of the market. Furthermore, from a macro-prudential perspective, it is preferable that NFCs, as far as possible, clear their OTC derivatives through CCPs rather than obtaining similar services from banks, as banking fees may not adequately price in the risk involved in such transactions.

In its second response, the ESRB advised the ESMA on the collateral eligibility framework for CCPs.[31] With regard to the type of collateral that could be considered highly liquid, the ESRB proposed a number of changes to the ESMA's criteria-based approach. The ESRB also suggested imposing limits on the use of collateral issued by clearing members in order to limit the risks of cross-collateralisation. In addition, the ESRB called for regular reviews of these technical standards so that they can be adapted to take into account the way in which structural developments related to collateral are affecting the stability of the EU financial system, as well as the mitigation of risks related to collateral transformation services. Furthermore, with regard to haircuts applied to asset values, the ESRB focused its response on two related areas of macro-prudential concern, namely pro-cyclicality and over-dependence on commercial credit ratings. Finally, the ESRB questioned the suitability of commercial bank guarantees for use as collateral

30 See Advice (ESRB/2012/2) of the European Systemic Risk Board of 31 July 2012 submitted to the European Securities and Markets Authority in accordance with Article 10(4) of Regulation (EU) No 648/2012 of the European Parliament and of the Council on OTC derivatives, central counterparties and trade repositories concerning the use of OTC derivatives by non-financial corporations (http://www.esrb.europa.eu/pub/pdf/advice_article_10_en.pdf).

31 See Advice (ESRB/2012/3) of the European Systemic Risk Board of 31 July 2012 submitted to the European Securities and Markets Authority in accordance with Article 46 (3) of Regulation (EU) 648/2012 of the European Parliament and of the Council on OTC derivatives, central counterparties and trade repositories concerning the eligibility of collateral for CCPs (http://www.esrb.europa.eu/pub/pdf/advice_article_46_en.pdf).

and was of the view that their use should be limited and subject to a lower concentration ratio than the one applicable to other eligible collateral.

2.3 Development of the ESRB risk dashboard

Under Article 3(2)(g) of the ESRB Regulation, the ESRB is required, in collaboration with the ESAs, to develop "a common set of quantitative and qualitative indicators to identify and measure systemic risk", i.e. a risk dashboard for the EU financial sector. The purpose of such a dashboard is to provide the ESRB with the wherewithal to communicate with the surrounding financial and institutional community on systemic risks, and to meet accountability requirements vis-à-vis the public. Following the work initiated in 2011 on developing the indicators, both in terms of choosing the right type of indicator and structuring the dashboard in an effective way, the first ESRB risk dashboard was published in September 2012.[32]

The ESRB risk dashboard is produced with the close involvement of the ECB and in cooperation with the three ESAs, and is one of the inputs considered by the General Board in its discussions on risks and vulnerabilities within the financial system. The dashboard is updated on a quarterly basis and focuses on six different categories of risk (see Table 2), from both a sectoral and system-wide perspective. It should be viewed as an information tool to guide further analysis of systemic risks, rather than a fully fledged early warning system.

The risk dashboard is published together with an "Overview note", which is intended to provide a summary of the current risks and vulnerabilities, as signalled by the indicators. It is also supplemented by two annexes. Annex I describes the methodology used to compile the indicators, while Annex II provides a description of each indicator and a short guide on how to interpret them.[33]

Since March 2013 the ESRB risk dashboard has also been available in the ECB's Statistical Data Warehouse[34], which enables users to access data and metadata in the risk dashboard simultaneously, as well as other closely related statistics. This was the result of the technical work on the dashboard carried out by the ECB, owing to its long-standing expertise in data

Table 2
The six categories of risk in the ESRB risk dashboard

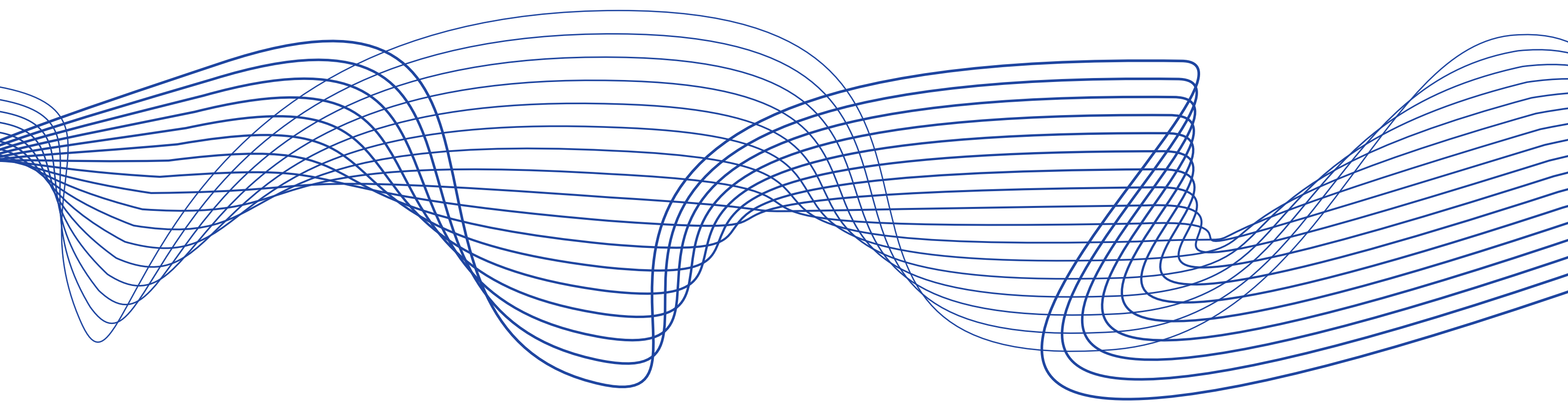
1. Interlinkages and imbalances
2. Macro risks
3. Credit risks
4. Funding and liquidity
5. Market risks
6. Profitability and solvency

32 See http://www.esrb.europa.eu/pub/rd/html/index.en.html
33 See http://www.esrb.europa.eu/pub/rd/html/index.en.html
34 See http://sdw.ecb.europa.eu/reports.do?node=1000003268

handling, as well as the well-established harmonised statistical datasets that it uses. In the context of the statistical support it provides to the ESRB, the ECB is also responsible for regularly updating the risk dashboard in close cooperation with the ESRB Secretariat.

Given the evolving nature of risks in the EU financial sector, the ERSB has also established a procedure for reviewing the risk dashboard on a regular basis (at least once a year). Technical input is provided by a working group consisting of experts from several of the ESRB's member institutions. In the future, additional indicators are expected to capture, in particular, vulnerabilities related to interconnectedness and the shadow banking sector, and risks stemming from the financial market infrastructure.

Section 3
Ensuring accountability and implementation



Ensuring accountability and implementation

3.1 The ESRB as an institution

The ESRB is an independent EU body responsible for the macro-prudential oversight of the EU financial system. Its aim is to identify, prevent and mitigate systemic risk with a view to preserving the stability of the EU financial system as a whole, thereby contributing to the smooth functioning of the internal market and ensuring sustainable economic growth in the future. The ESRB constitutes the "macro pillar" of the European System of Financial Supervision (ESFS), while the "micro pillar" – with its focus on the stability of individual firms and institutions – is the responsibility of the ESAs, i.e. the EBA, the EIOPA and the ESMA, their Joint Committee, and the competent micro-prudential supervisory authorities in the EU Member States. Together, these two pillars aim to ensure the effective supervision of the EU financial system as a whole. During 2012, for example, the ESRB's cooperation with the ESAs involved the EBA capital exercise, the joint monitoring of CDS markets and interconnectedness (ESMA) and the impact assessment of the long-term guarantee package under the Solvency II Directive (EIOPA).

During its second year of operation the ESRB continued to foster cooperation on macro-prudential matters with international institutions and macro-prudential authorities in the global arena, i.e. outside the EU. To this end, there was an active exchange of information and experiences between the ESRB and the US Financial Stability Oversight Council (FSOC). The ESRB also further enhanced its collaboration with international organisations such as the FSB, the IMF, the Basel Committee on Banking Supervision (BCBS), the IOSCO and the International Association of Insurance Supervisors (IAIS). In early 2013 the ESRB was involved in the IMF's EU Financial Sector Assessment Program (FSAP). Furthermore, it communicated with private sector associations within the EU and a large number of market players as part of its risk surveillance. The ESRB's relations with academia were fostered mainly through the activities of the ASC.

On a day-to-day basis, in order to fulfil its mandate, the ESRB (i) collects and analyses relevant and necessary information, (ii) identifies and prioritises systemic risks, and (iii) where such systemic risks are deemed to be significant, issues warnings and recommendations for remedial action. Warnings are intended to draw attention to systemic risks, while recommendations focus on the policy actions required in order to mitigate such risks. Recommendations and warnings may be addressed to the EU as a whole, to one or more of its Member States, to one or more of the ESAs and to one or more of the NSAs. Recommendations may also be addressed to the European Commission if they concern EU legislation. Warnings and recommendations can be either public or confidential.

The institutional framework of the ESRB comprises the General Board, the Steering Committee, the ASC, the ATC and a Secretariat. The General Board is the decision-making body of the ESRB. It is chaired by the President of the ECB, Mario Draghi. The first Vice-Chair is Sir Mervyn King, Governor of the Bank of England until the end of June 2013. The second Vice-Chair is the Chair of the Joint Committee of the ESAs, currently Steven Maijoor, Chair of the ESMA. The General

Board has 65 members, which ensures that all the relevant authorities are involved and that the ESRB's policy-making is sound and broadly based. At the same time, however, this means that the meetings of the General Board require thorough preparation. To this end, the Steering Committee, comprising 14 members of the General Board, plays a key role.

Furthermore, two advisory committees assist the ESRB by providing advice at the request of the Chair. First, there is the ATC, which is composed of high-level representatives from the ESRB's member institutions and, second, there is the ASC, which is made up of 15 independent experts, as well as the Chair of the ATC (currently Stefan Ingves, Governor of Sveriges Riksbank). On 1 September 2012 André Sapir (formerly Vice-Chair) became Chair of the ASC, replacing Martin Hellwig, who had chaired the committee since 1 May 2011. The two Vice-Chairs are Martin Hellwig and Marco Pagano.

The day-to-day business of the ESRB is carried out by its Secretariat. The ECB ensures the Secretariat of the ESRB, thereby providing it with analytical, statistical, logistical and administrative support. The Head of the ESRB Secretariat is Francesco Mazzaferro and the Deputy Head is Andrea Maechler (since November 2012). In terms of resources, in 2012 the ECB provided the ESRB with 56.5 full-time equivalent staff (of which 22 are employed within the Secretariat and 34.5 are dedicated to other forms of support). The direct costs incurred by the ECB amounted to €7.3 million, to which indirect costs relating to other support services shared with the ECB (e.g. human resources, IT, general administration) have to be added. Over the same period other member institutions of the ESRB provided approximately 22 full-time equivalent staff for analytical support within the context of ESRB groups and ESRB chair positions.

3.2 Accountability

In line with its own legal basis and as an independent body of the EU, the ESRB is accountable to the European Parliament (see Article 19 of the ESRB Regulation). To this end, the Chair of the ESRB is invited to regular hearings before the ECON of the European Parliament. These hearings are public and can be followed on the ESRB's website, where the Chair's introductory statements are also published. So far, there have been four hearings, which took place on 16 January, 31 May and 9 October 2012, as well as on 18 February 2013. The first hearing on 16 January 2012 was also the occasion on which the ESRB Chair, in accordance with Article 5(4) of the ESRB Regulation, presented to the European Parliament how he intended to discharge his duties under the Regulation. At the hearing on 31 May 2012, the ESRB Chair presented to the European Parliament the first ESRB Annual Report[35], which was simultaneously made available to the public on the ESRB's website. The introductory statement of the ESRB Chair before the ECON of the European Parliament has been an important tool for providing Members of the European Parliament (MEPs) with regular updates on systemic risk and with insights into major strands of the ESRB's ongoing and future work. The ESRB has also strived to ensure that its policy recommendations are made public at these hearings, with a view to informing MEPs, first hand, on the rationale behind them.

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35 See http://www.esrb.europa.eu/pub/pdf/ar/2011/esrbar2011en.pdf

In addition to the public hearings, the Chair of the ESRB, as appropriate, holds confidential face-to-face discussions on the activities of the ESRB with the Chair and Vice-Chairs of the ECON of the European Parliament. On 6 November 2012 the Chair and Vice-Chairs of the ASC had an exchange of views with members of the ECON, focusing specifically on the work of the ASC. There was a similar exchange of views with the Chair of the ATC on 10 May 2011, which focused on the work of the ATC.

In 2012 the ESRB also continued its work on developing a diversified set of communication tools to be used, as appropriate, depending on the message to be conveyed and the target audience. In addition to the ESRB Chair's introductory statements before the ECON, the ESRB issued press releases on the day of each meeting of the General Board, as well as ad hoc press releases (e.g. for the publication of a recommendation).

The ESRB also continued to develop a series of publications with a view to raising public awareness of systemic risks and macro-prudential oversight. These publications, available on the ESRB's website, include the Macro-prudential Commentaries, the Reports of the ASC, and the Occasional Papers. A list of the publications published by the ESRB during the period under review is provided in Box 2. The views expressed in these publications are those of the authors and do not reflect the official stance of the ESRB.

In June 2012 the European Ombudsman made a visit to the ESRB, as part of his programme of approaching EU agencies and further developing the administrative culture of service in organisations. His observations were reported to the ESRB in February 2013. The proposals made are currently further considered and implemented.

Box 2

Commentaries, reports and papers published by the ESRB during the period from January 2012 to April 2013

- "The ESRB at work – its role, organisation and functioning", *Macro-prudential Commentaries*, No 1, 29 February 2012
  http://www.esrb.europa.eu/pub/pdf/commentaries/ESRB_commentary_1202.pdf

- "The macro-prudential mandate of national authorities", *Macro-prudential Commentaries*, No 2, 29 March 2012
  http://www.esrb.europa.eu/pub/pdf/commentaries/ESRB_commentary_1203.pdf

- "Principles for the development of a macro-prudential framework in the EU in the context of the capital requirements legislation", 29 March 2012
  http://www.esrb.europa.eu/pub/pdf/2012-03-29_CRR-CRD_letter.pdf

- "Money market funds in Europe and financial stability", *Occasional Paper Series*, No 1, 22 June 2012
  http://www.esrb.europa.eu/pub/pdf/occasional/20120622_occasional_paper.pdf

- "Systemic risk due to retailisation?", *Macro-prudential Commentaries*, No 3, 12 July 2012
  http://www.esrb.europa.eu/pub/pdf/commentaries/ESRB_commentary_1207.pdf

- "Forbearance, resolution and deposit insurance", *Reports of the Advisory Scientific Committee*, No 1, 23 July 2012
  http://www.esrb.europa.eu/pub/pdf/asc/Reports_ASC_1207.pdf

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3.3 Review of the ESRB

The de Larosière Report, which led to the establishment of the ESRB and the ESAs in December 2010/January 2011, acknowledged that "a step-by-step approach" would be needed when setting up the new supervisory framework for the EU financial system and that revisions might be necessary. Accordingly, both the ESRB Regulation and Council Regulation (EU) No 1096/2010[36] provide for a review by 17 December 2013.[37] A similar timeline applies to the reviews of the ESAs. As the European Commission indicated its intention to initiate the review

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

37 See Article 20 of the ESRB Regulation, which states "By 17 December 2013, the European Parliament and the Council shall examine this Regulation on the basis of a report from the Commission and, after having received an opinion from the ECB and the ESAs, shall determine whether the mission and organisation of the ESRB need to be reviewed. They shall, in particular, review the modalities for the designation or election of the Chair of the ESRB."; and Article 8 of Council Regulation (EU) No 1096/2010, which states "By 17 December 2013, the Council shall examine this Regulation, on the basis of a report from the Commission. After having received opinions from the ECB and from the European Supervisory Authorities, it shall determine whether this Regulation should be reviewed."

by the end of 2012 in connection with the work on the establishment of the SSM, the ESRB initiated its preparations in the same regard in September 2012.

To assist the members of the General Board in preparing the ESRB's contribution to the review, a high-level group was set up, comprising Vítor Constâncio, Vice-President of the ECB, Stefan Ingves, Chair of the ATC and Governor of Sveriges Riksbank, and André Sapir, Chair of the ASC.

Based on the outcome of extensive consultations with ESRB's members – including a workshop on 29 October 2012 with special representatives from the member institutions – the group reviewed (i) the ESRB's work with regard to systemic risks (covering the risk monitoring, analytical and policy-making processes), (ii) the ESRB's external relations and communication channels, and (iii) the institutional framework and corporate governance of the ESRB. On this basis, it delivered in December 2012 the first draft of a report, which provided recommendations for possible improvements to (i) the ESRB Regulation, and (ii) the procedures and processes not covered by the Regulation.

Following the political agreement reached by the EU Council in December 2012 on the proposal for a Council regulation "conferring specific tasks on the European Central Bank concerning policies relating to the prudential supervision of credit institutions", it was proposed to the General Board that the group would also assess the possible implications of the SSM for the ESRB.[38]

3.4 Responses to recommendations adopted in 2011

This section of the annual report provides information on the implementation of the ESRB recommendations that were adopted prior to the period under review. These are the recommendations on (i) lending in foreign currencies[39], (ii) US dollar-denominated funding[40], and (iii) the macro-prudential mandate of national authorities[41]. To facilitate an objective and coherent assessment of addressees' compliance with the recommendations, the ESRB compiled a handbook, outlining the methodology to be used. This handbook was approved by the General Board in April 2013.

3.4.1 Methodology to assess compliance

Although ESRB public recommendations have no direct binding force, they are nevertheless subject to an "act or explain" regime, whereby the addressees communicate to the ESRB (and to the EU Council) the actions they have taken in response to the recommendation, and provide adequate justification for any inaction. This functions as an early monitoring mechanism without

38 Pursuant to Article 4a of the latest (and final) compromise version of the proposal for a Council regulation conferring specific tasks on the European Central Bank concerning policies relating to the prudential supervision of credit institutions" (16 April 2013), the competent or designated authorities of the participating Member States, as well as the ECB, will be assigned macro-prudential tasks and provided with the tools necessary for carrying them out.

39 Recommendation (ESRB/2011/1) of the European Systemic Risk Board of 21 September 2011 on lending in foreign currencies.

40 Recommendation (ESRB/2011/2) of the European Systemic Risk Board of 22 December 2011 on US dollar denominated funding of credit institutions.

41 Recommendation (ESRB/2011/3) of the European Systemic Risk Board of 22 December 2011 on the macro-prudential mandate of national authorities.

triggering more formal measures and allows for sufficient flexibility, while taking into account the principle of proportionality. Identifying the dividing line between (i) compliance, (ii) adequate justification of inaction, and (iii) non-justified inaction is a sensitive exercise that must be based on transparent rules.[42]

At the start of the assessment procedure, an assessment team is set up to pool expertise at the highest possible level, from both the ESRB Secretariat and a variety of the ESRB's member institutions. The team then collects and checks the information provided by the addressees in their reports. The assessment ultimately results in the assignment of compliance ratings which summarise:

- the status of the actions taken (e.g. final, still planned);
- their content/substance (e.g. whether or not they satisfy – in full or in part – the objectives of the recommendation);
- their appropriateness (e.g. whether or not, from a policy point of view, the implementation of the objectives is supported by a favourable legal and economic environment, as well as adequate administrative resources);
- the risk of circumvention (e.g. whether or not there is a risk that the addressee could circumvent the recommendation);
- the completeness of the response (e.g. whether or not all elements of the recommendation have been addressed in the responses provided).

In the event that addressees provide appropriate justification for their inaction, this is also assessed on the basis of certain criteria, including completeness, quality and substance.

3.4.2 Lending in foreign currencies

In September 2011 the ESRB issued a recommendation on lending in foreign currencies, which was addressed primarily to NSAs. The ESRB had identified a number of systemic threats emerging from foreign currency lending in some countries, with the potential for negative cross-border spillover effects. The issuance of the recommendation was also motivated by the possibility that national measures could be circumvented.

The purpose of the recommendation, which contains several individual recommendations, was to tackle risks to financial stability through a holistic policy approach, addressing the different components of the risks involved. To address credit risk, the recommendation aimed at raising borrowers' awareness of the risks embedded in foreign currency lending, by requiring that they be supplied with adequate information on such risks (Recommendation A) and ensuring that new foreign currency loans are extended only to borrowers that are creditworthy and capable of withstanding severe shocks to the exchange rate. In this regard, the use of debt-to-income and loan-to-value ratios was encouraged (Recommendation B). If foreign currency lending is seen to be fuelling excessive overall credit growth, more stringent or new measures should be considered (Recommendation C).

42 In accordance with Article 17 of the ESRB Regulation, in the case of insufficient action by an addressee, the follow-up report prepared for each addressee shall be submitted not only to the addressee concerned, but also to the EU Council, and, where relevant, the ESA concerned.

To tackle the mispricing of risks associated with foreign currency lending, NSAs should require financial institutions to incorporate these risks into their internal risk pricing (Recommendation D) and to hold sufficient capital under the second pillar of the Basel II framework (Recommendation E). Furthermore, NSAs should closely monitor and, if necessary, consider imposing limits on funding and liquidity risks associated with foreign currency lending, paying particular attention to the concentration of funding sources, currency and maturity mismatches between assets and liabilities, and the resulting reliance on foreign currency swap markets (Recommendation F). Member States should also contribute to impeding regulatory arbitrage by applying reciprocity vis-à-vis other Member States that have implemented measures to limit risks associated with foreign currency lending (Recommendation G).

The first deadline for the addressees to report on the action taken was 30 June 2012. This deadline applied to Recommendation A on the risk awareness of borrowers and Recommendation D on internal risk management. Recommendation A was addressed to both NSAs and the EU Member States, while Recommendation D was addressed to NSAs only. For Recommendation A, all addressees except one (the Netherlands) submitted reports. For Recommendation D, all 27 addressees submitted reports.

The second deadline of 31 December 2012 applied to all recommendations (A to G). Recommendation B on creditworthiness of borrowers, Recommendation C on credit growth, Recommendation E on capital requirements, Recommendation F on liquidity and funding, and Recommendation G on reciprocity were addressed to NSAs, whereas Recommendation E was also addressed to the EBA. All addressees submitted reports. The ESRB is currently analysing and assessing the responses received, in accordance with the procedure set out in the handbook.

3.4.3 US dollar-denominated funding

In December 2011 the ESRB issued a recommendation on US dollar-denominated funding, which was addressed to the NSAs of the EU Member States. Since US dollar funding markets are of significant importance to EU banks, the recommendation was issued with a view to avoiding a recurrence of the bank funding strains observed, in particular, during the periods 2007-08 and 2010-11. EU banks relying on US dollar funding during these periods were exposed to vulnerabilities, owing, on the one hand, to maturity mismatches between long-term assets and short-term liabilities denominated in US dollars and, on the other hand, to the risk aversion of US money market funds during times of heightened market tensions.

NSAs were requested to communicate to the ESRB the action taken in response to the recommendation, and adequate justification in the case of inaction, by 30 June 2012. The recommendation was expected to be implemented within a relatively short time frame, given that it mainly involved measures to strengthen the use of existing supervisory tools, but also because banks had already taken action in order to reduce the risk.

The ESRB recommended that the NSAs step up their monitoring activities in order to prevent EU credit institutions from building up excessive exposures to US dollar funding risks in the future. In particular, they were requested to keep a close eye on maturity mismatches, funding concentration, the use of US dollar currency swaps and intragroup exposures. Moreover, they

were advised to encourage credit institutions to take action before these risks reach excessive levels, while avoiding a disorderly unwinding of existing financing structures (Recommendation A).

To help EU credit institutions become more resilient to strains in US dollar funding markets, the ESRB also recommended that NSAs require EU banks to include in their contingency funding plans mechanisms for handling a shock to their US dollar funding. In addition, NSAs were requested to assess the feasibility of these plans at the level of the banking sector. If, on the basis of this assessment, there appeared to be a risk of similar and simultaneous responses from several banks in the face of a crisis, NSAs should consider taking action to diminish the potential impact at the systemic level (Recommendation B).

By 30 June 2012 the ESRB had received reports from all 27 NSAs on the action taken in response to Recommendations A and B. The results of the ESRB's assessment in accordance with the principles laid down in the handbook will be published shortly.

3.4.4 Macro-prudential mandate of national authorities

In December 2011 the ESRB adopted a recommendation on the macro-prudential mandate of national authorities. This recommendation differed from the first two recommendations in two ways. First, it only addressed EU Member States, i.e. national legislators, and second, it aimed to enhance resilience to systemic risk by strengthening the macro-prudential policy framework rather than by preventing or mitigating specific risks. It also had an organisational slant, in the same vein as the recently adopted Recommendation ESRB/2013/1 (see Section 2.1.3).

Recommendation ESRB/2011/3 had the core aim of creating a common framework for NMAs and comprised five individual recommendations. Recommendation A defined the macro-prudential objectives which closely reflected the macro-prudential objectives assigned to the ESRB under the ESRB Regulation. These objectives should guide the policy-making of the future NMAs.

Recommendation B invited Member States to assign, in their national legislation, a single national macro-prudential mandate either to a board composed of the authorities whose actions have a material impact on financial stability or to a single institution. In the latter case, the institution would need to cooperate closely with the NSAs. In both cases, the NCB should play a leading role in macro-prudential policy and the NMA should cooperate on a cross-border basis, in particular with the ESRB.

Recommendation C required that the future NMAs be tasked with risk monitoring and mitigation, as well as entrusted with the power to collect and share data, identify systemically relevant institutions and structures, such as SIFIs, and control macro-prudential instruments. Recommendation D advised that NMAs issue public and private statements on systemic risk and that they remain accountable to national parliaments, with their staff being assured legal protection if they have acted in good faith. Recommendation E required NMAs to be operationally independent, so that organisational and financial arrangements do not jeopardise the conduct of macro-prudential policy.

Recommendation ESRB/2011/3 set two deadlines for addressees to submit their reports. By 30 June 2012 EU Member States had to provide the ESRB with an interim report containing, in particular, a detailed statement on whether a macro-prudential mandate had been implemented or was being planned. All Member States provided the ESRB with the interim reports by 30 June 2012. They were required to submit their final report by 30 June 2013.

Abbreviations

BE	Belgium	HU	Hungary
BG	Bulgaria	MT	Malta
CZ	Czech Republic	NL	Netherlands
DK	Denmark	AT	Austria
DE	Germany	PL	Poland
EE	Estonia	PT	Portugal
IE	Ireland	RO	Romania
GR	Greece	SI	Slovenia
ES	Spain	SK	Slovakia
FR	France	FI	Finland
IT	Italy	SE	Sweden
CY	Cyprus	UK	United Kingdom
LV	Latvia	JP	Japan
LT	Lithuania	US	United States
LU	Luxembourg		

ASC	Advisory Scientific Committee
ATC	Advisory Technical Committee
BCBS	Basel Committee on Banking Supervision
CCP	central counterparty
CDS	credit default swap
CNAV	constant net asset value
CRD	Capital Requirements Directive
CRR	Capital Requirements Regulation
EBA	European Banking Authority
ECB	European Central Bank
ECON	Committee on Economic and Monetary Affairs
EIOPA	European Insurance and Occupational Pensions Authority
EMIR	European Market Infrastructure Regulation
EMU	Economic and Monetary Union
ESA	European Supervisory Authority
ESCB	European System of Central Banks
ESFS	European System of Financial Supervision
ESMA	European Securities and Markets Authority
ESRB	European Systemic Risk Board
EU	European Union
EURIBOR	Euro Interbank Offered Rate
FSAP	Financial Sector Assessment Program
FSB	Financial Stability Board
FSOC	Financial Stability Oversight Council
GDP	gross domestic product

GSIB	global systemically important bank
IAIS	International Association of Insurance Supervisors
ICPF	insurance corporations and pension funds
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions
LIBOR	London Interbank Offered Rate
LTRO	longer-term refinancing operation
MEP	Member of the European Parliament
MFI	monetary financial institution
MMF	money market fund
NBER	National Bureau of Economic Research
NCB	national central bank
NFC	non-financial corporation
NMA	national macro-prudential authority
NSA	national supervisory authority
OFI	other financial institutions
OMT	Outright Monetary Transaction
OTC	over-the-counter
SFT	securities financing transaction
SIFI	systemically important financial institution
SME	small and medium-sized entreprise
SSM	Single Supervisory Mechanism
UCITS	undertakings for collective investment in transferable securities
VNAV	variable net asset value

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