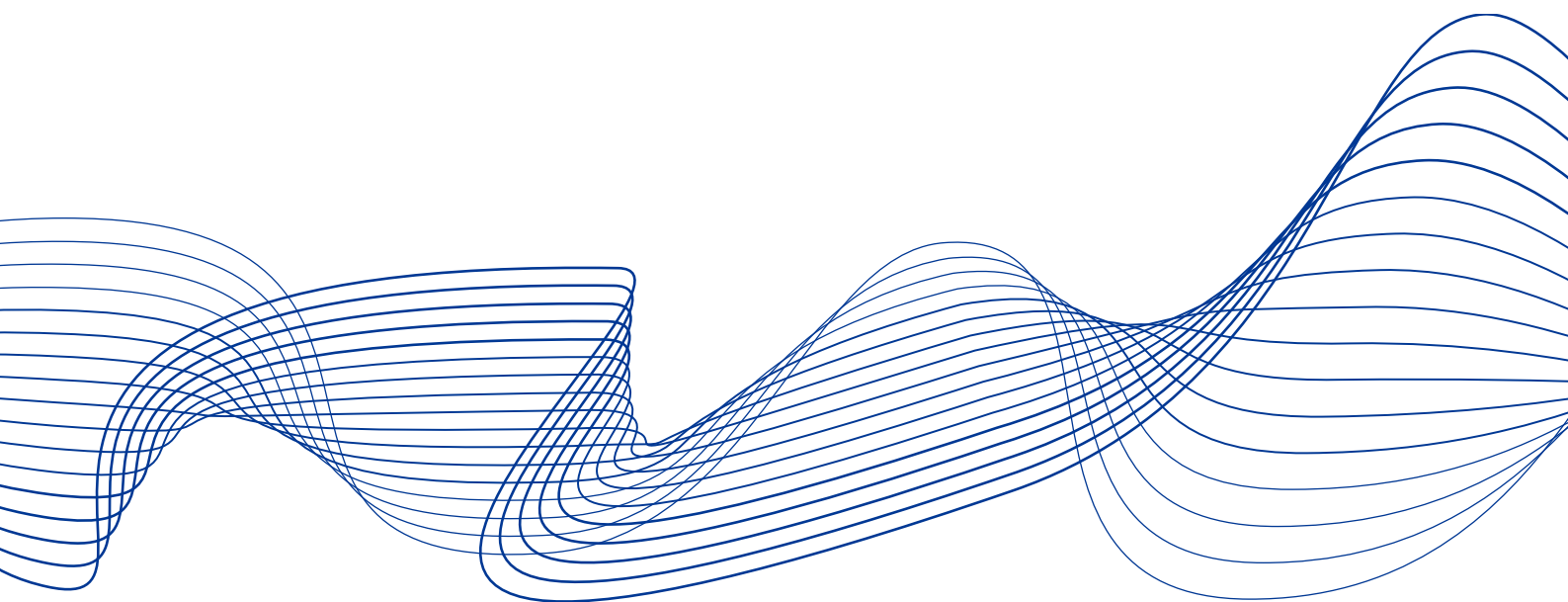


# Annual Report

2017



**ESRB**  
European Systemic Risk Board  
European System of Financial Supervision

# Contents

<b>Foreword</b>	<b>2</b>
<b>Executive summary</b>	<b>3</b>
<b>1 Systemic risks in the financial system of the European Union</b>	<b>5</b>
1.1 Repricing of risk premia in global financial markets	7
1.2 Persistent weaknesses in the balance sheets of banks, insurers and pension schemes	14
1.3 Debt sustainability challenges in the sovereign, corporate and household sectors	18
1.4 Vulnerabilities in the shadow banking system and contagion to the wider financial system	22
<b>2 Policies addressing systemic risk</b>	<b>29</b>
2.1 ESRB policies	29
2.2 ESRB contributions to the EU macroprudential policy framework	32
2.3 Review of national measures	41
<b>3 Ensuring implementation and accountability</b>	<b>50</b>
3.1 Assessment of compliance with ESRB recommendations	50
3.2 Reporting to the European Parliament and other institutional aspects	53
3.3 ESRB events and publications	56
<b>Annex Publications on the ESRB's website from 1 April 2017 to 31 March 2018</b>	<b>58</b>
<b>Imprint</b>	<b>64</b>



## Foreword



*Mario Draghi,  
Chair of the European Systemic  
Risk Board*

The seventh Annual Report of the European Systemic Risk Board (ESRB) covers the period between 1 April 2017 and 31 March 2018. During the review period the ESRB continued its close monitoring of sources of systemic risk in the European financial system and economy, and identified four main risks to financial stability in the European Union (EU). As part of this work, the ESRB analysed developments in the commercial real estate and the non-bank financial sectors.

For the commercial real estate market, following the publication of the ESRB's recommendation on closing the remaining data gaps, research was conducted on possible new data sources. In addition, the ESRB carried out a stock-taking exercise on the availability of physical commercial property data.

In the period under review the ESRB also continued developing the risk monitoring framework for the non-bank financial sector, in part through the publication of the second "EU Shadow Banking Monitor". Furthermore, the ESRB published new indicators for central counterparties and insurance companies in its risk dashboard.

Acknowledging the potential threat of cyber attacks, the ESRB took the initiative to form a European Systemic Cyber Group, with the aim of providing members with the opportunity to discuss ongoing policies and disseminate updates on new international initiatives.

In addition, the ESRB continued to foster discussion on macroprudential policy by hosting a number of conferences and workshops. In particular, the second ESRB Annual Conference was held in September 2017, with policy panel discussions on legal aspects of macroprudential regulation and the conduct of macroprudential policy beyond banking. There were also sessions on the challenges and future of banking in the EU, addressing non-performing loans in the EU banking sector and risk monitoring in the shadow banking system.

Finally, I would like to warmly thank Vítor Constâncio, who served as Vice-President of the European Central Bank until May 2018, for his support of the ESRB from its inception in his capacity as member of the General Board and of the Steering Committee.



## Executive summary

Over the period under review, the ESRB identified four main material threats to the stability of the EU financial sector, namely: (1) a repricing of risk premia in global financial markets; (2) persistent weaknesses in the balance sheets of banks, insurers and pension schemes; (3) debt sustainability challenges in the sovereign, corporate and household sectors; and (4) vulnerabilities in the shadow banking system and contagion to the wider financial system. As highlighted in the two previous ESRB Annual Reports, an abrupt reversal of global risk premia is seen as a particularly prominent risk to financial stability. In a change to the 2016 assessment, the risks related to the weaknesses in the balance sheets of banks, insurers and pension schemes were lowered by one step from the high-risk category to the medium-risk category. In addition, the risk arising from debt sustainability challenges in the sovereign, corporate and household sectors was raised by one step to the medium-risk category.

The aforementioned systemic risks to the EU financial sector formed the basis for the adverse macro-financial scenario that the ESRB provided to the European Banking Authority (EBA) for the 2018 EU-wide banking sector stress test. These risks were also reflected in the adverse scenarios that were provided to the European Insurance and Occupational Pensions Authority for the 2018 insurance sector stress test. Details of these scenarios are provided in this Annual Report.

In 2017, the ESRB amended the reciprocity framework, with the aim of further harmonising the application of materiality thresholds under the *de minimis* principle. The new framework requires a Member State activating a policy measure to propose an institution-level maximum materiality threshold when requesting reciprocation of its measure, with the ESRB validating the appropriateness, or otherwise, of the proposed threshold.

In addition, the ESRB published a recommendation designed to address systemic risks related to liquidity mismatches and the use of leverage in investment funds. The recommendation, which was addressed to the European Securities and Markets Authority (ESMA) and the European Commission, considers liquidity management tools, supervisory oversight and liquidity stress-testing practices, as well as enhanced reporting and the operationalisation of existing leverage-limiting powers.

Continuing the efforts to further develop the macroprudential framework for banking, the ESRB published a report discussing the financial stability implications of International Financial Reporting Standard (IFRS) 9. The report concluded that overall IFRS 9 represents a major improvement in comparison with International Accounting Standard 39 and that it is expected to bring substantial benefits from a financial stability perspective. This includes greater levels of transparency and a more timely and decisive recognition of credit losses. At the same time, the report highlighted a number of issues that will need to be analysed in the post-implementation review of IFRS 9, including the cyclical behaviour of the expected credit loss model in IFRS 9 and its impact on banks' behaviour. The ESRB also published a report on resolving non-performing loans (NPLs) in Europe, which outlined specific policy proposals complementing other initiatives at the EU and euro area level. Another contribution to the macroprudential framework for banking came in the form of an ESRB opinion provided to the European Commission on macroprudential structural buffers. It proposed a number of changes, namely significantly increasing the caps on the buffer for other systemically important institutions, upgrading the systemic risk buffer to target specific sources of



structural non-cyclical systemic risks, and making changes to the procedural framework for structural buffers.

With respect to progress made on the development of the macroprudential framework beyond the banking sector, the ESRB contributed to regulatory reviews and European consultations. In the context of the revision of the European Market Infrastructure Regulation, the ESRB published a report to further enhance the effectiveness and transparency of the current framework. Concerning central counterparties (CCPs), the ESRB responded to an ESMA consultation on draft guidelines on anti-procyclicality margin measures for CCPs. The ESRB also identified areas where legislative proposals for a recovery and resolution framework for CCPs should be refined to better address macroprudential concerns. With regard to macroprudential considerations for the insurance sector, the ESRB identified areas where the Solvency II framework could be enhanced and advocated the development of a harmonised recovery and resolution framework for the insurance sector across the EU.

The number of domestic macroprudential measures adopted by Member States remained stable compared with 2016. The years 2017 and 2016 are more comparable than the previous years as in most Member States all the elements of the Capital Requirements Directive IV/Capital Requirements Regulation macroprudential toolbox were available in this period. The majority of Member States took some macroprudential policy action in 2017. Most measures were of a tightening nature to address cyclical risks, with the loan-to-value cap and the countercyclical capital buffer among the most frequently used. However, the systemic risk buffer was also often used.

The ESRB continued to evaluate the implementation of its recommendations. During the period under review, the ESRB commenced or concluded the assessment of five recommendations or sub-recommendations. Compliance with the ESRB sub-recommendation addressed to the EBA on the funding of credit institutions was assessed as being fully compliant. The assessment of the ESRB Recommendation on money market funds is ongoing, as are the assessments of its Recommendation on guidance for setting the countercyclical capital buffer rates and its Recommendation on the assessment of cross-border effects of and voluntary reciprocity for macroprudential measures. Finally, some elements of the ESRB Recommendation on recognising and setting countercyclical buffer rates for exposures to third countries (outside the European Economic Area) were assessed.

To facilitate discussion and further develop conceptual thinking about macroprudential policy, the second ESRB Annual Conference was held in September 2017. The policy panel discussions focused on legal perspectives on macroprudential regulation and the conduct of macroprudential policy beyond banking. There were sessions on the challenges and future of banking in the EU, addressing NPLs in the EU banking sector, and risk monitoring in the shadow banking system.



# 1 Systemic risks in the financial system of the European Union

## During the review period, the ESRB identified four main risks to financial stability in the EU.

While the stronger and more broad-based economic growth improved the risk outlook for the stability of the EU financial system, tail risks remained elevated amid significant political, geopolitical and policy uncertainties. The identified risks are summarised in Table 1 and relate to: (1) a repricing of risk premia in global financial markets; (2) persistent weaknesses in the balance sheets of banks, insurers and pension schemes; (3) debt sustainability challenges in the sovereign, corporate and household sectors; and (4) vulnerabilities in the shadow banking system and contagion to the wider financial system. These four risks are inter-related and could reinforce each other if they were to materialise. Furthermore, these financial stability risks identified by the ESRB formed the basis for the design of adverse scenarios for various EU-wide stress tests (see Sub-section General for details).

Table 1

### Overview of the main risks to financial stability in the EU

1	<p><b>Repricing of risk premia in global financial markets</b></p> <p>Vulnerabilities: mispricing of risks and excessive risk-taking amid a historically low cost of funding/low returns on savings and a search for yield by financial investors</p> <p>Potential triggers: shocks to risk-free rates (such as monetary policy developments in main currency areas, inflation or fiscal shocks) or to risk premia (for example, as a result of geopolitical events or the materialisation of vulnerabilities in key emerging market economies)</p>
2	<p><b>Persistent weaknesses in the balance sheets of banks, insurers and pension schemes</b></p> <p>Vulnerabilities (banks): challenges to sustainable sources of profit in the low interest rate environment with structural changes like digitalisation and fintech challenging banks' businesses, significant asset quality issues still persist in certain countries</p> <p>Vulnerabilities (life insurers and pension schemes): low-yield environment increasing the liabilities of life insurers and pension schemes and creating return challenges for long-term investments in high-quality assets</p> <p>Potential triggers: significant prolonged profitability pressures (banks), revaluation of liabilities at low interest rates (life insurers), weak returns on financial investments, materialisation of system-wide cyber risk</p>
3	<p><b>Debt sustainability challenges in the sovereign, corporate and household sectors</b></p> <p>Vulnerabilities: high indebtedness in public and/or private sectors, as well as limited fiscal space to absorb shocks</p> <p>Potential triggers: materialisation of political risks, repricing in financial markets, unsustainable fiscal spending, shocks to the medium-term growth outlook arising from the slow implementation of structural reforms</p>
4	<p><b>Vulnerabilities in the shadow banking system and contagion to the wider financial system</b></p> <p>Vulnerabilities: rapidly increasing size and complexity of the shadow banking system, liquidity and leverage risks among certain types of investment funds, interconnectedness and risk of contagion to other parts of the financial system, including through cross-border linkages, a lack of transparency and of data for comprehensive risk monitoring</p> <p>Potential triggers: repricing in global financial markets, with a potential for fire sales and liquidity squeezes</p>

Source: ESRB.

Notes: Key financial stability risks identified over a three-year horizon. Yellow denotes risk, orange denotes medium risk and red denotes high risk. The assessment of the severity of each risk reflects a combination of the likelihood of the risk and its potential impact.



**An abrupt and sharp repricing of risk premia in global financial markets was assessed as being the most severe risk to financial stability in the EU.** As in the two previous ESRB Annual Reports, an abrupt reversal of global risk premia continued to be ranked as the most severe financial stability risk. This risk reflects increasingly aggressive risk-taking amid historically low returns on savings and a search for yield by financial investors, as well as elevated geopolitical and economic policy uncertainties. A repricing of risk premia in global financial markets could have an adverse impact on the solvency position of EU investment funds, banks and other financial institutions.

**Risks related to the weaknesses in the balance sheets of banks, insurers and pension schemes were reduced to the medium-risk category.** The ongoing supervisory and regulatory work, as well as the improved economic environment, contributed to the easing of the severity of vulnerabilities in the European banking sector. In particular, EU banks' regulatory capital ratios continued to improve over the review period. At the same time, the stock of non-performing exposures, while remaining sizeable, also declined due to action taken by banks and supervisors. Nonetheless, structural vulnerabilities that related to low profitability, high costs and over-capacity persisted in some EU banking systems. Moreover, the low interest rate environment as well as other factors, such as demographic change, continued to pose challenges to the profitability and solvency of the EU insurance and pension sectors.

**Risks related to debt sustainability challenges in the sovereign, non-financial corporate and household sectors were raised to the medium-risk category.** Given the high stock of public and private debt in several EU countries, a scenario where interest rates increase, for example due to a shift in risk-free rates or due to increased risk premia (see Risk 1), could raise concerns about debt sustainability over the medium term. Despite significant deleveraging efforts in some EU countries, indebtedness of the private sector remained high in several EU economies and, in some cases, still above levels observed in the run-up to the global financial crisis. The ESRB High-Level Task Force on Safe Assets published a report investigating the feasibility of sovereign bond-backed securities<sup>1</sup>. The report analysed whether the creation of such securities could play an important role in alleviating the sovereign-bank nexus if such risks were to materialise, without the mutualisation of sovereign debt across EU Member States (see Box 4 for details).

**Potential shocks and contagion from the shadow banking system continue to pose challenges to financial stability.** In 2017 the ESRB continued to monitor risks and vulnerabilities previously identified, as the EU shadow banking system grew in line with the banking sector. If a stressed situation were to arise, the high degree of interconnectedness of the shadow banking system with other parts of the financial system could lead to spillovers and contagion. Although efforts to improve the monitoring of risks outside the banking system continued, the lack of harmonised, granular data still limits the scope for a comprehensive monitoring of risks in the shadow banking system.

**The ESRB continued to develop the framework and tools for the identification of systemic risk, with a particular focus on real estate and the non-bank financial sector.** A topic that received particular attention in 2017 was risks and vulnerabilities in the EU commercial real estate

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<sup>1</sup> See [Sovereign bond-backed securities: a feasibility study](#), ESRB High-Level Task Force on Safe Assets, January 2018.



(CRE) markets (see Sub-section 1.1 below and Box 1). In addition, the ESRB also focused on analysing systemic risks originating in the shadow banking system<sup>2</sup> (see Sub-section 1.4 and Box 3) and macroprudential policy beyond the banking sector (see Sub-section ESRB contributions to the macroprudential framework beyond the banking sector).

## 1.1 Repricing of risk premia in global financial markets

### Risk premia remained at low levels and were compressed even further in the course of 2017.

One way of measuring risk premia in the EU is to take the spreads of yields on corporate bonds relative to German Bunds. These showed a continuous decline over 2017, followed by a slight increase at the beginning of 2018 (see Chart 1). Economic growth in the EU continued to become broad-based. At the end of 2017, it was at its highest rate since the onset of the financial crisis in 2007 (see Chart 2). Financial markets are currently expecting a gradual normalisation of monetary policy and of interest rates in the main economic areas. While the yield curve in the United States, where the recovery began earlier, already experienced a pronounced upward shift from the beginning of 2016 onwards, the euro area yield curve mainly became steeper over the review period (see Chart 3). Yields on maturities below two years, however, remained relatively stable in negative territory, with values below -50 basis points.

Chart 1  
Corporate bond spreads

(basis points)



Source: Bank of America Merrill Lynch.

Notes: Spreads in basis points over German government bonds for both plain vanilla bonds and bonds with embedded options (for which the value of the option is stripped using proprietary models). The latest observation is for 23 March 2018.

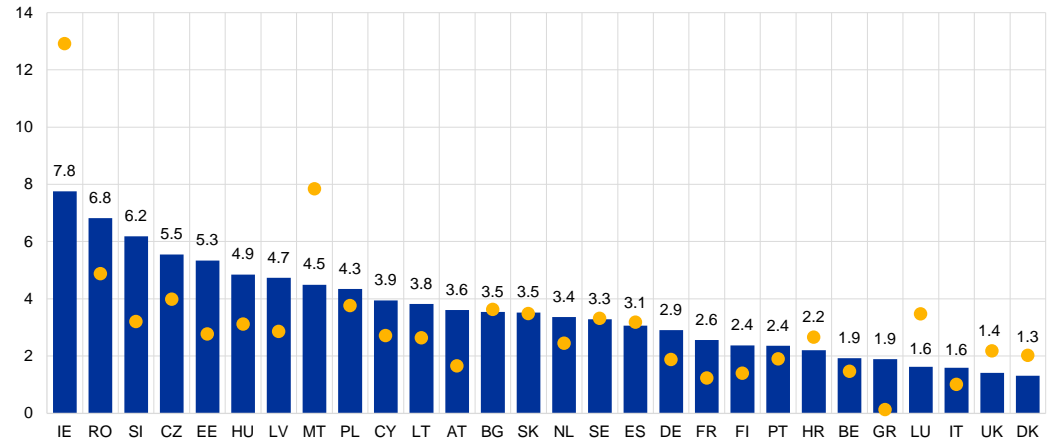
<sup>2</sup> See **EU Shadow Banking Monitor**, No 2, ESRB, May 2017.





Chart 2  
Annual GDP growth in the EU

(percentages)

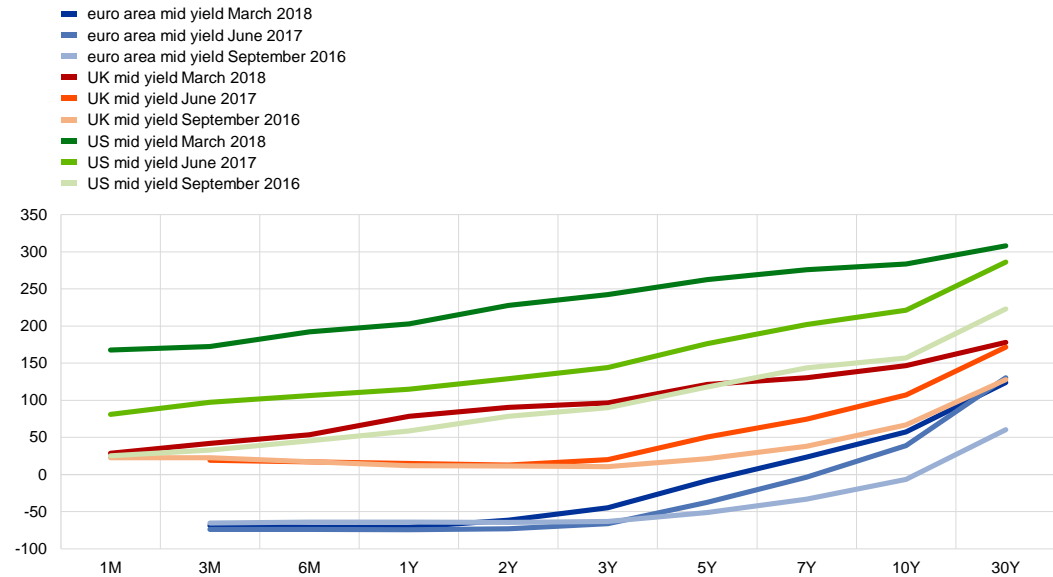


Source: ECB.

Notes: The blue bars represent the annual growth rate of GDP at market prices at the end of 2017. The yellow dots represent the three-year average.

Chart 3  
Yield curves of the euro area, the United Kingdom and the United States

(basis points)



Source: Bloomberg.

**In an environment of search for yield and compressed spreads, various types of shocks could spark an episode of risk premia repricing.** While it is expected that financial markets will



be able to absorb a gradual increase in the level of interest rates, an unexpected change in interest rates could trigger a repricing. Further potential triggers are adverse economic news as well as geopolitical events, such as concerns about rising protectionism, the risk of currency wars among major global trading partners or the materialisation of vulnerabilities in key emerging market economies.

**The market turbulence observed in February 2018 showed that risk premia can be repriced rapidly and abruptly.**

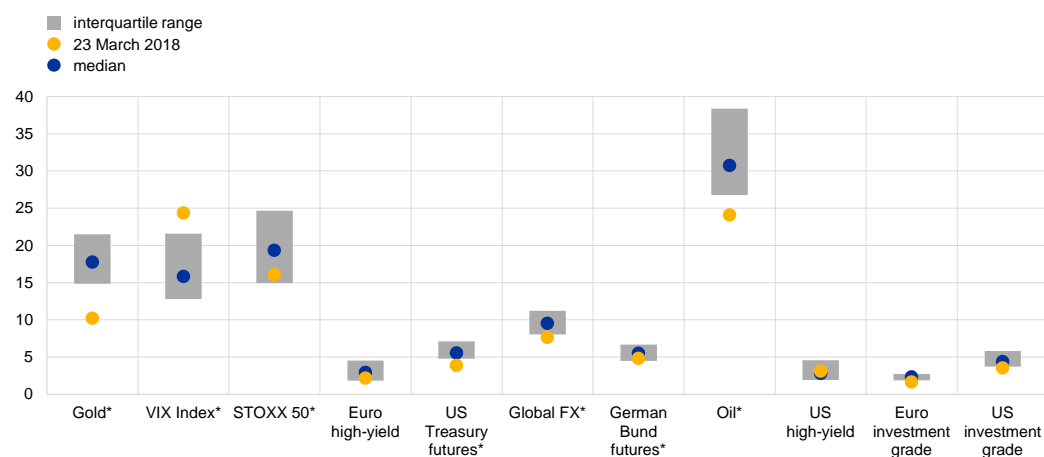
The sharp decrease in global stock prices that originated in the United States and the subsequent increase in volatility and trading volumes across several asset classes and markets since 5 February 2018 showed how repricing can occur abruptly, particularly when asset prices deviate significantly from their fundamentals. The release of higher than expected US average hourly earnings data on 2 February 2018 triggered expectations of higher inflation rates in the United States, which market participants interpreted to imply a potentially faster pace of increases in US monetary policy rates. As a result, stock markets in the United States fell. These effects were also immediately transmitted to European stock markets and led to temporary spikes in market volatility.

**Despite transitory spikes, volatility in several segments of the financial markets continued to remain at historically low levels (see Chart 4).**

The low levels of implied market volatility do not necessarily imply an absence of risks in financial markets though. In fact, it has been documented that periods of low volatility support asset price increases in financial markets and can be an indicator of future financial distress. This volatility paradox mainly originates from the positive feedback loop, where low volatility encourages the build-up of leverage and large positions in riskier assets, thereby also compressing risk premia.

**Chart 4**  
**Daily implied volatility across asset classes**

(basis points)



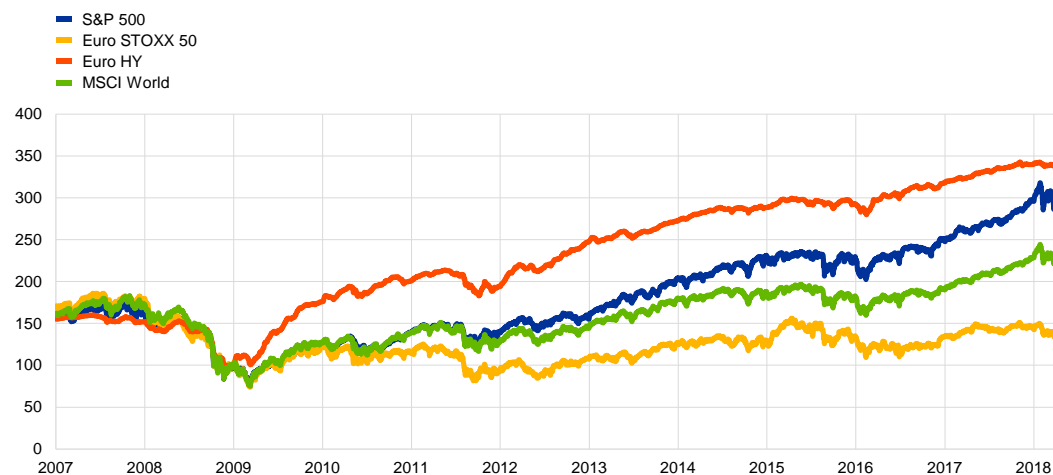
Sources: Bloomberg and ESRB calculations.

Notes: For assets marked with an asterisk, implied volatility is used. Observations between 1 January 2005 and 23 March 2018 were used.



Chart 5  
Evolution of asset prices

(index)



Sources: Bloomberg, Morgan Stanley Capital International, Haver Analytics and ESRB Secretariat calculations.

Notes: S&P 500 denotes the Standard & Poor's stock market index of 500 selected large US corporations. Euro Stoxx 50 denotes the Deutsche Börse Group stock market index of 50 selected large euro area based stocks. Euro HY denotes the Bloomberg Barclays Euro high-yield corporate bond index. MSCI World denotes the MSCI Inc. stock market index consisting of 1,649 selected companies throughout the world. All indices are normalised to a value of 100 on 1 January 2009. Last observation: 30 March 2018.

**As a result of the search-for-yield behaviour of market participants in the low interest rate environment, several investment classes showed elevated valuations.**

Assets that were particularly affected included equity in the EU, the United States and emerging market economies, as well as high-yield bonds (see Chart 5). As a measure for potential overvaluations, equity price/earnings ratios for European stocks remained at historically high levels throughout 2017 (see Chart 6).

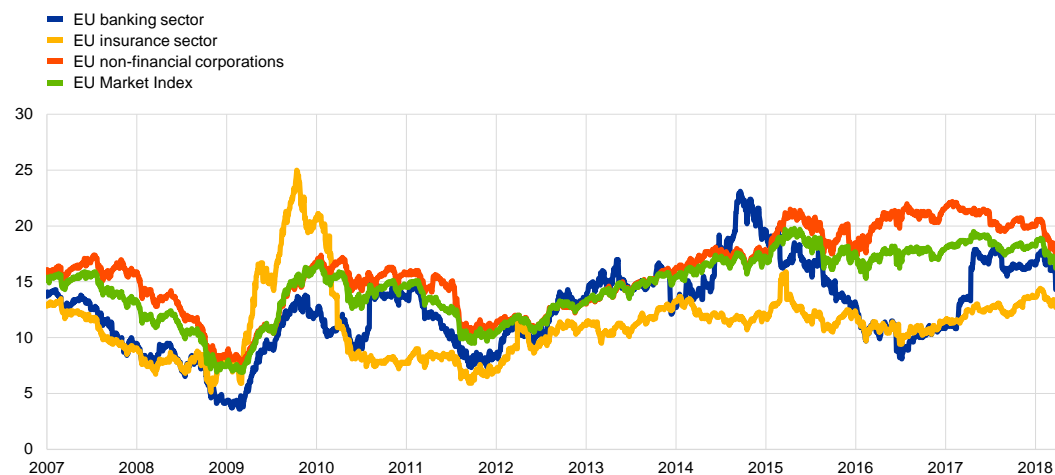
**Leveraged loan markets, which are often considered as a measure for broader risk-taking by market participants, also show signs of overheating.**

Issuance on leveraged loan markets in the EU and the United States reached record or near-record levels in 2017, while leverage of borrowers continued to increase and investor protection in terms of covenants decreased. Given the growing importance of leveraged loan markets for the funding of the real economy, the potential increase in the number of defaults in the event of economic and financial stress could pose a risk to financial stability.



Chart 6  
Equity price/earnings ratios for the EU

(basis points)



Source: Thomson Reuters Datastream.

Note: The latest observation is for 23 March 2018.

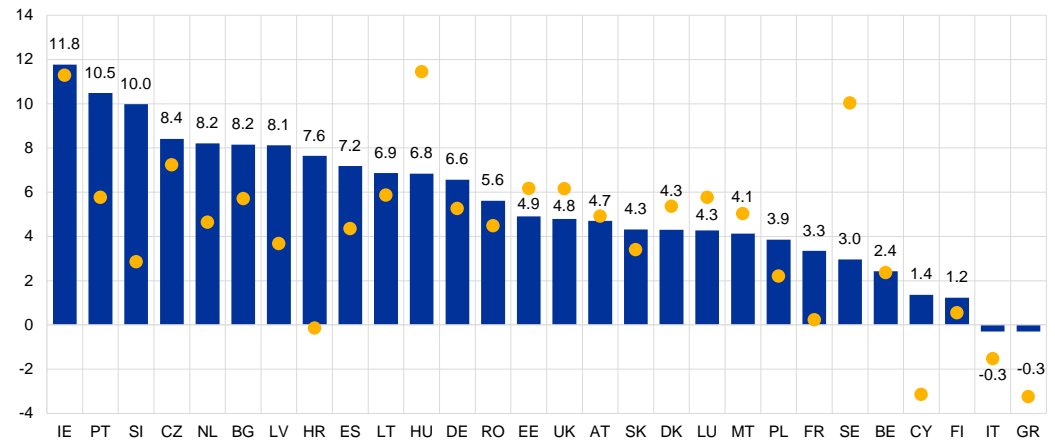
**Prices of residential and commercial real estate increased further in many EU countries, making these sectors potentially vulnerable to a repricing of risk premia.** Despite residential real estate (RRE) price levels being close to, or even exceeding, historical highs, annual growth rates of RRE prices exceeded 5% in 15 EU countries (see Chart 7). Moreover, bank lending to households for RRE purposes picked up further over 2017. Although data are not yet available for several countries (see Box 1), CRE price growth was also above 5% in several countries (see Chart 8). While the high growth rates also need to be assessed in the context of the recovery after the financial crisis, evidence of possible overvaluations in certain segments of real estate markets started to emerge. For example, in the case of prime CRE markets, valuations are at all-time highs, even though yields have fallen to historical lows in several EU countries.



Chart 7

Annual growth rates of residential real estate prices

(percentages)



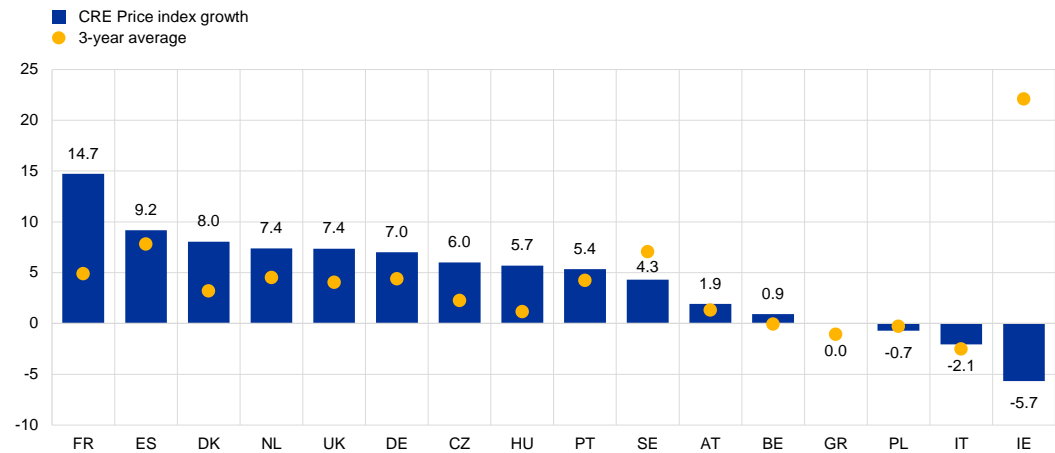
Source: ESRB risk dashboard.

Notes: The blue bars represent the annual growth rate of RRE prices in Q4 2017 (except for IE, MT and CY (Q3 2017)); the yellow dots represent the three-year average.

Chart 8

Annual growth rates of commercial real estate prices

(percentages)



Source: Commercial property price statistics.

Notes: The blue bars represent the annual growth rate of CRE prices in Q4 2017 (except for GR (Q2 2017)); the yellow dots represent the three-year average.



## Box 1

### Risk monitoring: ongoing ESRB work on closing real estate data gaps

The ESRB published the Recommendation ESRB/2016/14 with the aim of closing remaining data gaps in relation to exposures to RRE and CRE by establishing a more harmonised framework for monitoring developments in real estate markets in the EU. The recommendation provides a common set of indicators that national macroprudential authorities and the European Supervisory Authorities (ESAs) should monitor when assessing risks originating from the real estate sector. The first deadlines apply to the ESAs, which should develop templates by the end of 2017 and publish the first data on CRE exposures by mid-2018.

#### To facilitate the implementation of the recommendation, two work streams were established.

A Task Force on Real Estate under the auspices of the ESCB Statistics Committee conducted a mapping exercise on possible data sources. It came to the conclusion that a large number of indicators for CRE exposures would be covered by the ECB Regulation on the collection of granular credit and credit risk data.<sup>3</sup> The remaining indicators can be sourced from surveys and other sources. As regards RRE, the Task Force identified that the majority of national competent authorities are empowered to collect such data (e.g. based on supervisory reporting). Nevertheless, to ensure harmonised data collection across Europe and the comparability of indicators, consideration is being given to extending the scope of the aforementioned ECB Regulation accordingly. Furthermore, the Task Force developed practical guidance for national competent authorities on operationalising the ESRB definitions.

**A joint ECB-Eurostat work stream focused on the availability of physical commercial property data.** This joint expert group conducted a stock-taking exercise on the data on physical market variables that already exist or are under development at the Member State level, including data from commercial data providers where necessary. Experiences in selected G20 non-EU economies were also highlighted. The findings of the group were summarised in a report, which was presented to the Economic and Financial Affairs Council (ECOFIN Council) in November 2017.<sup>4</sup>

**The report concluded that the available data are often of limited quality.** Even when the data quality fulfils minimum standards, data are neither comparable across Member States nor available with the requested breakdowns and the needed timeliness. The stock-taking exercise also revealed that there are no “quick wins” that would allow comparable and reliable data to be supplied. Not least because of this, the short to medium-term solution is likely to rely on indicators that are already available from private sources. For the longer term, it is necessary to investigate how the current uncertainties could be reduced, for example by exploiting administrative sources.

<sup>3</sup> See Regulation (EU) 2016/867 of the European Central Bank (ECB/2016/13) (“AnaCredit” Regulation), 18 May 2016.

<sup>4</sup> See Council conclusions on EU statistics, ECOFIN Council meeting, Brussels, 7 November 2017.



## 1.2 Persistent weaknesses in the balance sheets of banks, insurers and pension schemes

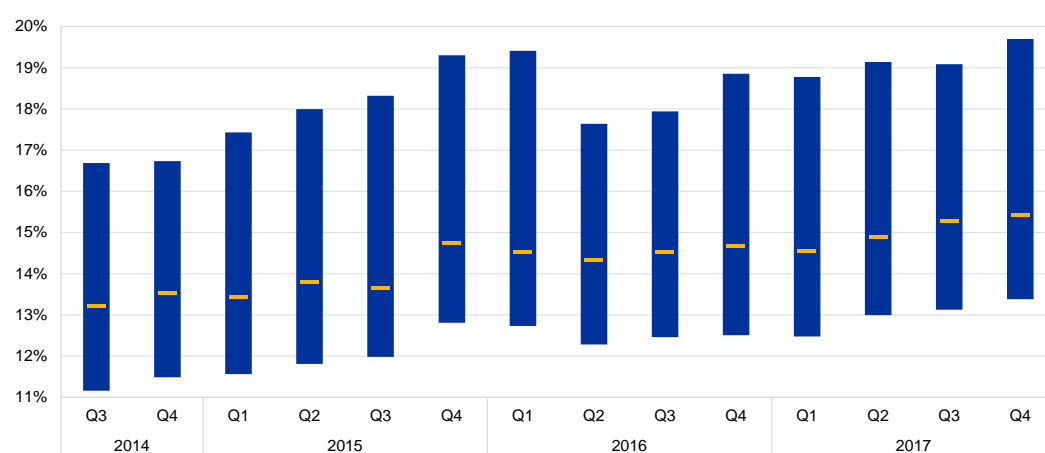
**The ongoing supervisory and regulatory work, as well as the improved economic environment, helped reduce the severity of vulnerabilities in the European banking sector.**

The regulatory capital of EU banks continued to increase over 2017. The median value of the Common Equity Tier 1 (CET1) capital ratio increased to 15.4% at the end of 2017 for an EBA sample of EU banks (see Chart 9). At the same time, the stock of non-performing exposures in the EU banking system, while still sizeable, declined further. The EU weighted average NPL ratio dropped from 5.7% to 4.0% in the two years from December 2015 to December 2017 (see Chart 10). However, in several of the countries most affected during the European sovereign debt crisis, including Greece, Cyprus, Portugal, Italy and Ireland, NPL ratios remained above 10%.

**Despite positive developments, there were still several issues to be solved in the EU banking system.** Low profitability, often below the expected cost of equity, continued to be an issue for the banking systems of several EU countries. The average return on assets (ROA) declined for banking systems in 17 EU countries between 2010 and 2017 despite starting from low profitability levels (see Chart 11). The low profitability was driven not only by the low interest rate environment, which tends to compress lending margins, but also by structural issues, such as overcapacities and increasing competition, as well as fintechs entering the market. Moreover, many EU banks were not able to cut costs despite restructuring efforts. In fact, operating costs increased further, mainly due to higher expenditures for compensation and benefits.

Chart 9  
**CET1-to-risk-weighted assets ratio**

(percentages)



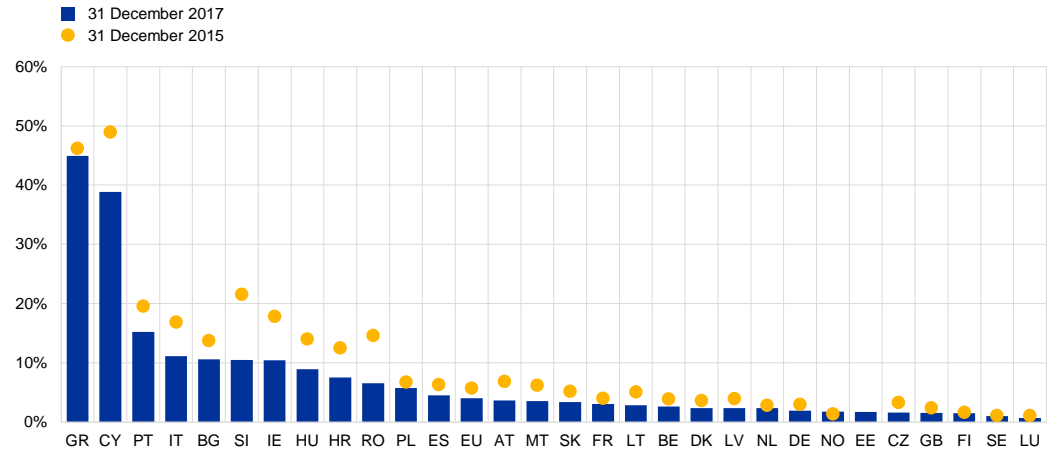
Source: EBA.

Note: The chart shows the interquartile range (blue bars) and the median CET1 (Common Equity Tier 1) ratios for the EU banking system.



Chart 10  
**Non-performing loan ratios in the EU**

(percentage of total loans)

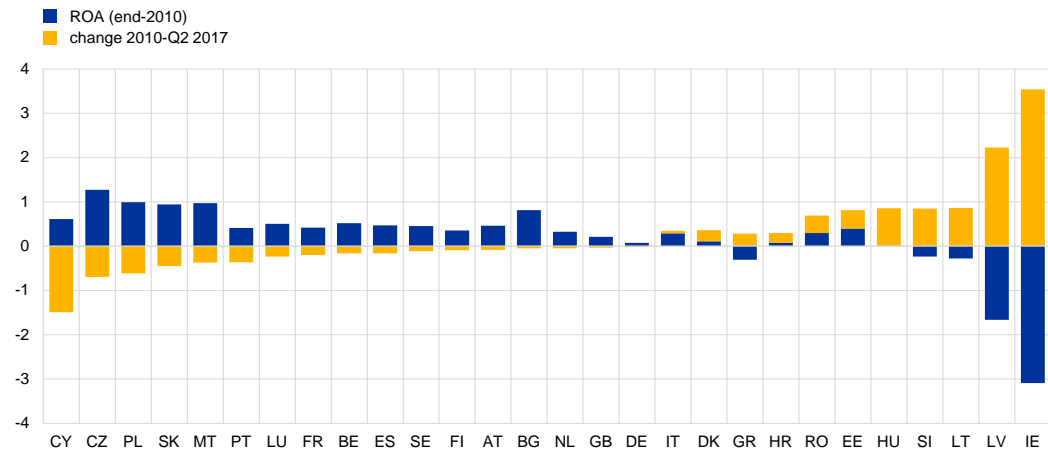


Source: EBA risk dashboard.

Note: The chart shows the gross ratio of NPLs and advances to total loans on 31 December 2017 (blue bars) and on 31 December 2015 (yellow dots) for an EBA sample of EU banks.

Chart 11  
**Return on assets of European banking systems and change since 2010**

(percentages)



Source: ECB consolidated banking data.

Notes: Data refer to domestic banking groups, stand-alone banks, and foreign-controlled subsidiaries and branches, regardless of the accounting standards applied (IFRS or national GAAP). For Croatia, the bars represent the change from 2013 to Q2 2017.

**Together with the evolution of business models and developments in the fintech sector, systemic cyber risk has become a growing challenge for the EU banking system.** The increased use of information technologies in banking calls for a timely and adequate prudential response. Microprudential authorities have already intensified their efforts and are adjusting their





processes to ensure that cyber risks are adequately considered when assessing individual institutions. In order to analyse and address systemic cyber risks, the ESRB launched a dedicated working group in 2017 (see Box 2).

## Box 2

### Risk monitoring: analysis of systemic cyber risks

**The threat of cyber attacks has increased in recent years.** Cyber attacks have the potential to disturb or disrupt financial services that are important to the real economy and/or the financial system. In extreme cases, cyber attacks may even endanger financial stability.

**Cyber attacks are continuing to exploit vulnerabilities of people, processes and technology.** Therefore, a number of international work streams are seeking to address these weaknesses within individual firms and across the financial sector as a whole. ESRB members participate in a range of fora and also take action domestically, with diverse approaches to cyber security and differing levels of policy advancement across the ESRB's membership.

**After discussions in early 2017, the ESRB formed a new group to discuss cyber policy issues, called the European Systemic Cyber Group (ESCG).** This group provides members with the opportunity to discuss ongoing policies and share updates (where possible) on new international initiatives.

**The role of the ESCG is to facilitate discussion and knowledge-sharing among ESRB members on cyber security in an aggregated system-wide context.** Acknowledging that cyber threats are generally considered an exogenous factor, it made sense for the ESCG to focus more narrowly on vulnerabilities. The ESCG therefore proposed the following activities as part of its future work plan:

1. collating and examining common cyber security vulnerabilities identified by ESRB members across domestic supervised entities, and understanding the methods used by each member to identify and assess these vulnerabilities;
2. comparing how ESRB members form a view on system-wide vulnerabilities and obtaining a common understanding on how to identify direct and indirect channels of contagion of any operational disruption and the conditions for cyber risk to become systemic;
3. identifying, prioritising and reporting on common weaknesses across ESRB members to the Advisory Technical Committee and/or the General Board; and
4. discussing, where appropriate, relevant international work being undertaken in other fora to raise awareness and minimise the duplication of effort.

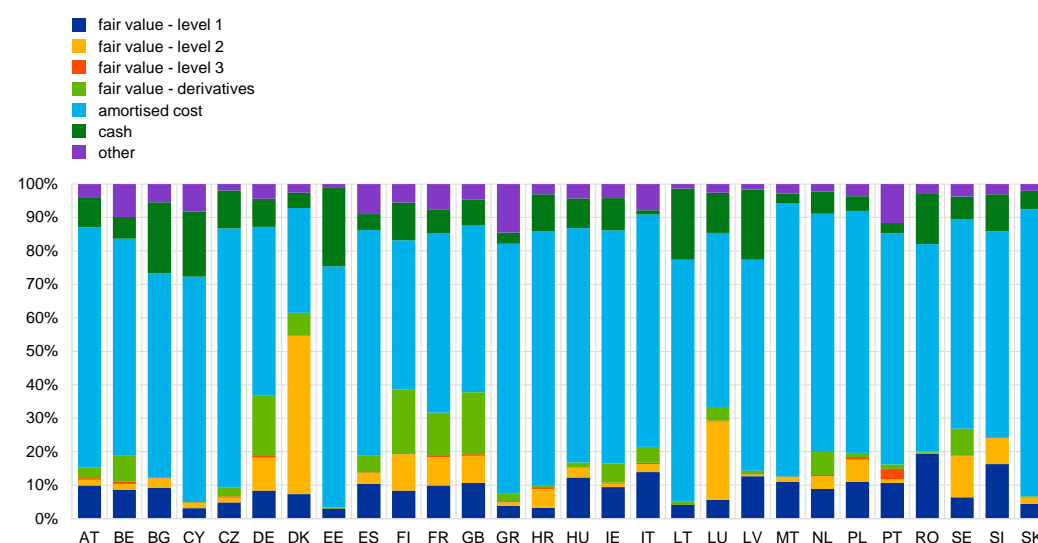
**Risks to and vulnerabilities of banks' balance sheets can also materialise with regard to financial instruments that need to be measured at fair value, but for which market prices are not directly observable (Level 2 and 3 instruments).** Potential risks include misvaluations, particularly of level 3 assets and liabilities, that can affect the solvency of banks, and potential



illiquidity of those instruments in times of financial stress.<sup>5</sup> Currently, level 2 and level 3 assets held at fair value, excluding derivatives, represent 7.8% and 0.5% of the aggregated balance sheet of EU banks, respectively (see Chart 12). Derivatives amount to a share of 11.7% of total assets and are mainly classified as level 2 assets. These shares are higher for the banking systems of some countries, including France, Germany and Great Britain, as well as for certain individual institutions.

**Chart 12**  
**Financial assets at fair value: breakdown of total assets across EU banking sectors**

(percentage of total assets)



Source: *Financial stability implications of IFRS 9*, ESRB, July 2017; based on EBA supervisory data.

Note: Data are for Q4 2016 and cover 190 EU banking groups, with total assets of almost €30 trillion, representing around 90% of all assets held by EU banks.

**Insurance corporations and pension funds (ICPFs) in the EU remained vulnerable to the environment of low interest rates during the review period.** For defined-benefit pension schemes and life insurance companies, the duration of liabilities is often longer than the duration of assets. The current environment of low interest rates thus makes it difficult for these institutions to earn sufficiently high asset returns to meet their long-term liabilities or fulfil benefit guarantees made to pension scheme members and life insurance policy holders. Besides, a rise in risk premia (see Risk 1) would typically lower the value of ICPFs' own funds, leaving the ICPF sector more vulnerable. As an example, the 2017 EIOPA stress test of institutions for occupational pension funds (IORPs) found an EU system-wide gap between assets and liabilities amounting to over €700 billion, equivalent to a deficit of 38% of liabilities in the adverse scenario using a common methodology for the valuation of liabilities (see Chart 13).<sup>6</sup> Moreover, for most of the institutions participating in the stress test, sponsor support is the most likely way to address these gaps, which could lead to undesirable second-round effects in the EU corporate sector.

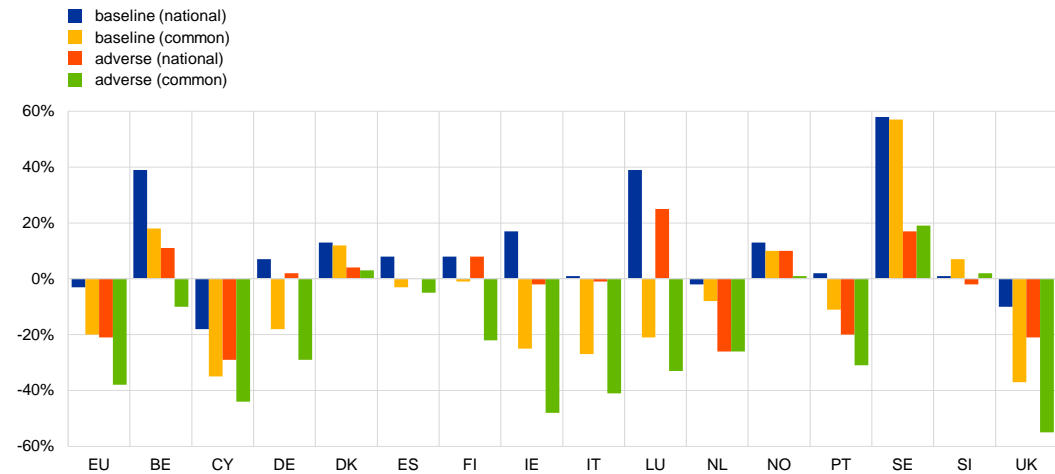
<sup>5</sup> Level 2 instruments are subject to these risks to a smaller extent, since they consist to a large part of standardised and centrally cleared instruments.

<sup>6</sup> See **2017 IORP Stress Test Report**, EIOPA, December 2017.



Chart 13  
**Funding ratio of defined-benefit and hybrid pensions**

(percentage of liabilities)



Source: 2017 EIOPA stress test of occupational pension funds.

Notes: The funding ratio is defined as the difference between total assets and total liabilities, divided by total liabilities. Figures exclude sponsor support, pension protection schemes and benefit reductions.

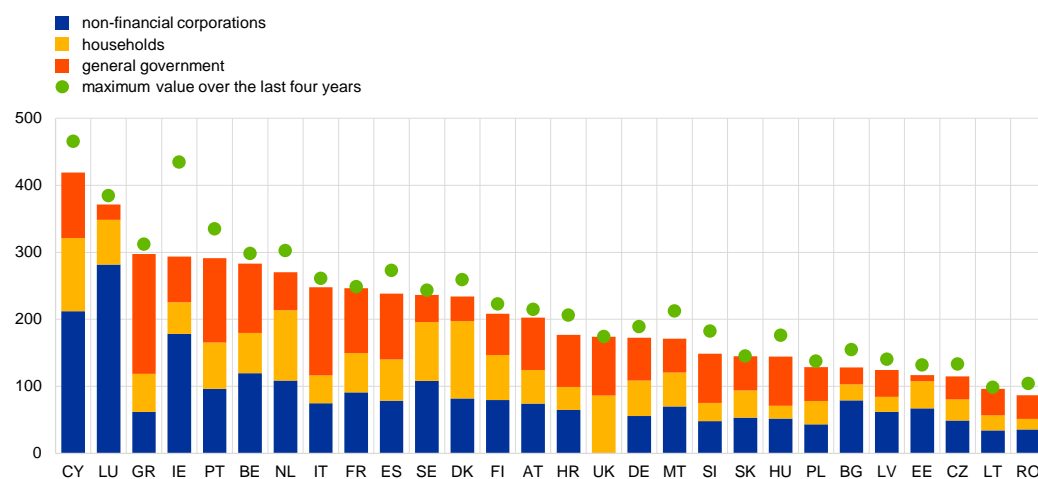
### 1.3 Debt sustainability challenges in the sovereign, corporate and household sectors

**Despite significant deleveraging efforts in some EU countries, indebtedness of the sovereign, corporate and household sectors remained high in several EU countries (see Chart 14).** Sovereign bond markets were relatively calm during the review period. This situation was reflected in the rather low levels of the sovereign bond yields and spreads of most EU Member States, compared with those at the height of the euro area sovereign debt crisis in 2012. However, given the high legacy stock of public and non-financial private debt in several EU countries following the global financial crisis and the euro area sovereign debt crisis, a scenario where interest rates increase, for example due to increased risk premia (see Risk 1), could put debt sustainability and, as a consequence, financial stability at risk.



Chart 14  
Private and public debt-to-GDP ratios

(percentage of GDP)



Sources: ECB and European Commission.

Notes: Debt-to-GDP ratios for non-financial corporations are based on consolidated debt figures. Data for consolidated non-financial corporate debt are not available for the United Kingdom from the sources used. Data refer to Q4 2017.

**Excessive credit growth and leverage in the non-financial private sector were at the origin of many past episodes of financial instability.**

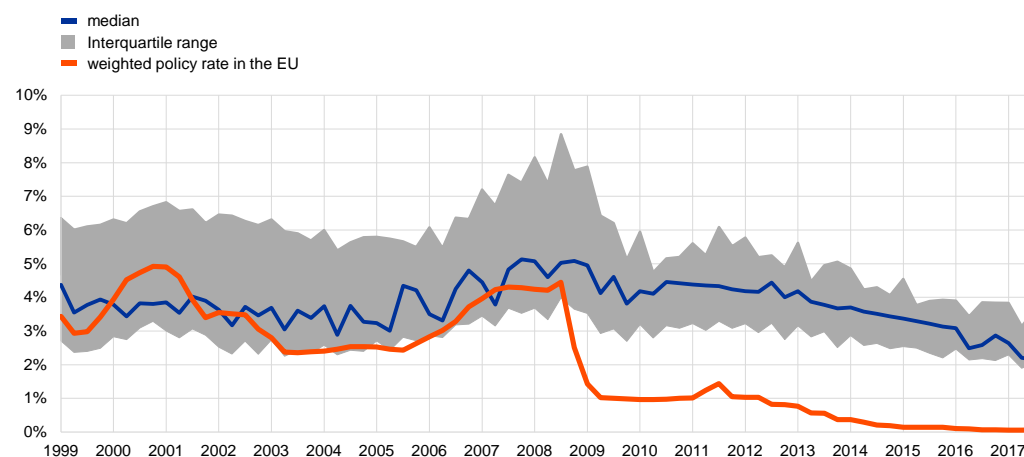
The evidence shows that NPL ratios tended to be higher in those EU countries that experienced large increases in the debt-to-GDP ratios of households and non-financial corporations (NFCs) in the years leading up to the crisis. Despite some deleveraging, indebtedness of households and NFCs has remained high in many EU countries and is, in most cases, still above the pre-crisis level. Moreover, the debt-servicing capacity of households, measured as the ratio of interest payments to gross disposable income, only improved gradually, despite the prevailing low interest rate environment and improvements in growth (see Chart 15). Given the expectations of gradually increasing interest rates, debt-servicing capacity may come under pressure quickly also depending on the degree to which loans are granted with flexible or fixed rates, respectively. This could lead to vulnerabilities for financial stability in the form of both higher loan defaults that hurt financial intermediaries directly and indirect effects on the financial sector when the private sector cuts back aggregate demand in order to deleverage.



Chart 15

**Ratio of interest payments to gross disposable income of households**

(percentages)



Sources: ECB quarterly sectoral accounts and ESRB calculations.

Notes: Data on interest payments and gross disposable income of households cover AT, BE, CZ, DE, DK, ES, FI, FR, GB, GR, HR, IE, IT, NL, PL, PT and SE. Gross disposable income is shown as an index with Q1 1999 = 100. The weighted EU policy rate depicts a GDP-weighted average of the main refinancing rates (or equivalent) of the countries used in the sample. Data are neither seasonally adjusted nor deflated.

**The risk of short-term fiscal stress receded significantly relative to the early crisis years, but considerable medium-term risks to sovereign debt sustainability remain.** Overall, public debt in the EU declined further in 2017 to 83% in the third quarter of 2017 from a peak of 88% of GDP in 2014, supported by the continuing economic recovery, the low interest rate environment and broadly stable fiscal policies. However, the European Commission assessed medium-term risks to sovereign debt sustainability to be high for ten EU countries.<sup>7</sup> For several of these countries, debt ratios stagnated or even recorded further increases over the last year. Moreover, the ongoing political fragmentation in some EU Member States could weaken efforts to implement structural reforms, build up fiscal buffers and reduce public debt. These fragilities expose especially highly indebted countries to unfavourable shocks.

**In the case of sovereign stress, financial institutions are affected directly via their sovereign debt holdings, which could potentially lead to sovereign feedback loops similar to those observed in the past.** The direct effects of sovereign stress on financial institutions would include mark-to-market losses in trading portfolios, balance sheet contractions, losses through sales of securities at lower prices, and lower values of collateral available for wholesale funding. Regulatory progress was made, however, in breaking the contagion link from the banking sector to sovereigns. This was achieved, for example, by increasing the resilience of banks through the implementation of Basel III rules, including higher regulatory capital (see Sub-section 1.2 above), and by establishing resolution and bail-in procedures via the Bank Recovery and Resolution Directive. The direct contagion link from sovereigns to banks had yet to be addressed by regulation.

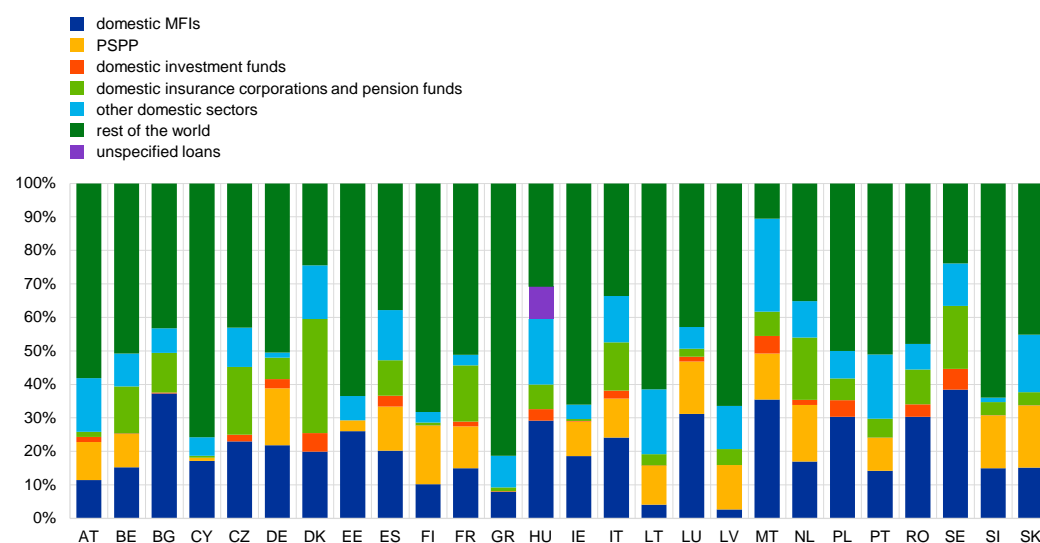
<sup>7</sup> See **Debt Sustainability Monitor 2017**, Institutional Paper 071, European Commission, January 2018.



**Banks, investment funds and ICPFs continued to hold large amounts of domestic sovereign debt.** The investor base for sovereign debt of EU countries in 2017 is depicted in Chart 16. On average, the domestic banking sector held 20% of its sovereign's debt. Domestic ICPFs held, on average, 9% and, due to the Eurosystem's public sector purchase programme (PSPP), official central bank holdings amounted to, on average, 12% of euro area countries' debt. On average, 49% of the debt issued by European sovereigns is held by non-domestic investors.

Chart 16  
Investor base of sovereign debt by issuing country

(percentages)



Sources: ECB quarterly sectoral accounts and ESRB calculations.

Notes: The chart shows investor shares of the sum of debt securities and loans outstanding in Q2 2017. MFIs refers to monetary financial institutions, including central banks, excluding Eurosystem holdings of sovereign debt under the PSPP.

**The financial sector reduced its exposures to sovereign debt over the review period, but holdings remained high compared with pre-crisis levels.** Sovereign debt holdings by insurance corporations, pension funds and investment funds remained mostly constant over the last year. Euro area monetary financial institutions (MFIs) continued to reduce their exposures over the review period (see Chart 17). After a peak in February 2015 of €1,885 billion, MFIs' sovereign debt holdings started to decline. This aggregate trend masks heterogeneous developments at the country level, though, with MFI sovereign debt holdings in several highly indebted countries declining only slightly.



Chart 17

### Euro area sovereign debt securities held by euro area MFIs

(EUR billions)



Source: ECB balance sheet item statistics.

Notes: The chart shows the time series of euro area sovereign debt securities holdings by MFIs (excluding the Eurosystem) in the euro area in EUR billions. The vertical lines indicate the start of the ECB's three-year longer-term refinancing operations (LTROs) in December 2011 and of the PSPP in March 2015.

**The continued existence of high degrees of home bias reflected the ongoing fragmentation of European sovereign debt markets.** Although home bias declined over the review period in most EU countries and financial sectors, banks and ICPFs, especially in highly indebted countries, remained heavily exposed to domestic sovereign debt. This could reactivate bank-sovereign feedback loops, which were observed during the euro area sovereign debt crisis, if market concerns about the health of the sovereigns or significant banks re-emerge.

## 1.4 Vulnerabilities in the shadow banking system and contagion to the wider financial system

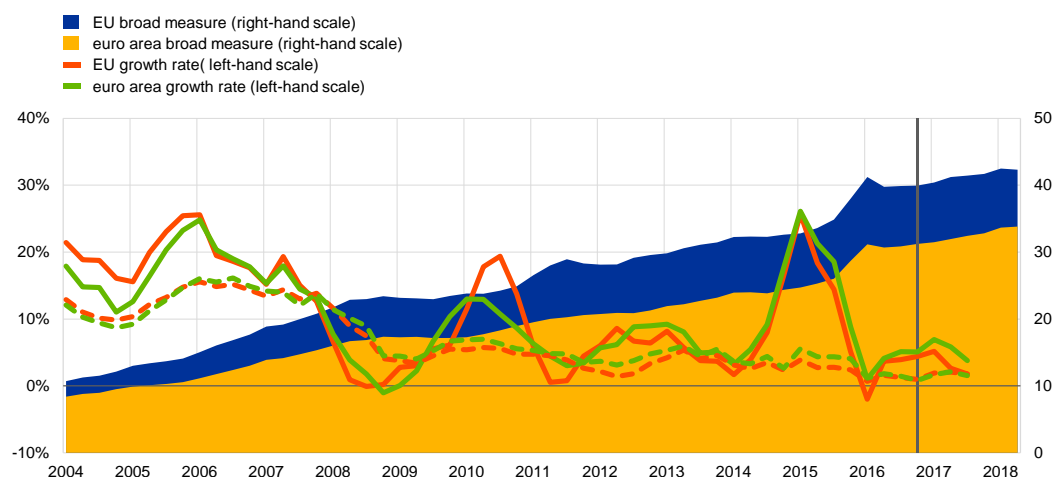
**During 2017 the EU shadow banking system grew in line with the overall financial system.** A broad measure of the shadow banking system in the EU, which includes all assets of the financial sector except banks, insurance corporations, pension funds and CCPs, amounted to €42.2 trillion at the end of the third quarter of 2017 (see Chart 18). Since the end of 2016 this broad measure has risen by 1.2%, broadly in line with growth in the overall financial sector. This contrasts with the period 2012-15, in which the average annual growth rate of the EU broad measure was 8.3%, thereby outpacing the growth of the banking sector and the overall financial system. In the third quarter of 2017, the size of the broad measure of the EU shadow banking system was roughly 80% of the size of the EU banking sector and accounted for around 40% of the overall EU financial system.



Chart 18

**Broad measure of the EU and euro area shadow banking system (investment funds and other financial institutions)**

(EUR trillions and annual growth rates)



Source: ESRB.

Notes: Annual growth rates based on changes in outstanding amounts are indicated with the continuous lines. The dashed lines indicate annual growth rates based on transactions – i.e. excluding the impact of foreign exchange or other revaluations and statistical reclassifications.

**The ESRB continued to build up its capacity for monitoring risks in the shadow banking system.** The ESRB published the second edition of the EU Shadow Banking Monitor, thereby expanding its monitoring framework.<sup>8</sup> This included enhanced analytical features through the use of supervisory data and additional statistics, such as data on securities holdings, real estate funds, exchange-traded funds (ETFs), money market funds (MMFs) and hedge funds. The improved entity-based and activity-based monitoring helps to identify and assess key risks and vulnerabilities emanating from the shadow banking system (see Box 3 for further details).

**One set of risks identified in the Shadow Banking Monitor was liquidity risk and risks associated with leverage among some types of investment funds.** If not properly managed, liquidity and maturity transformation among investment funds can create first-mover advantages among investors, leading to a drain on fund liquidity and selling pressures in times of stress. This can be particularly relevant for some property funds, bond funds and other funds investing in less liquid assets which offer daily redemptions to investors. Leverage employed by investment funds can also be a source of systemic risk, especially in the event of abrupt deleveraging, which may result in spillover effects on the wider financial system.

**The diversity of business models within the investment fund sector required a granular assessment of the underlying financial stability risks.** It is important, for instance, to account for differences in liquidity management and other risk mitigants when analysing liquidity risk in the investment fund sector. Investment funds usually have a range of liquidity management tools available to them to deal with ongoing but also exceptional investor redemption scenarios. While

<sup>8</sup> See **EU Shadow Banking Monitor**, No 2, ESRB, May 2017.





EU regulation provides some harmonisation across jurisdictions, there are differences in liquidity management tools that can be used by fund managers across Member States. The ESRB has therefore undertaken a mapping exercise to better understand the availability of liquidity management tools across jurisdictions. This exercise informed the ESRB recommendation to address systemic risks related to liquidity mismatches and the use of leverage in investment funds which is described in more detail in Section 2.

**Another risk identified in the Shadow Banking Monitor relates to the interconnectedness and contagion risk across sectors and within the shadow banking system.** European banks are highly interconnected with the shadow banking system. Vulnerabilities could result, for instance, from sudden and large redemptions by investors in MMFs and other investment funds. This could lead to sales of bank debt securities and an increase in the cost of short- and longer-term debt funding of the banking sector. Conversely, the non-bank financial entities are exposed to vulnerabilities in the banking sector through their bank deposits and exposures to bank-issued securities.

**The ESRB continued to examine cross-sector linkages.** The interconnectedness between banks and shadow banking entities through direct or indirect exposures (including ownership linkages) can amplify financial stability risks. Banks are highly interconnected with entities included in the broad measure of shadow banking. For example, 8% of euro area banks' assets are linked to euro area investment funds and other financial institutions (OFIs) through loans, debt securities and equity or investment fund shares. On the liability side of banks' balance sheets, 7% of euro area banks' liabilities, which include wholesale funding, represent deposits from euro area investment funds and OFIs. The assessment of entities' engagement in shadow banking activities suggests that financial vehicle corporations (FVCs), special-purpose entities and MMFs are particularly interconnected with the banking system. Financial corporations engaged in lending, real estate funds and ETFs also show some cross-sector linkages to the banking sector.

**Interconnectedness among banks and those entities providing financing to them increased, mainly through a large increase in bank debt held by euro area MMFs.** One measure of bank wholesale funding showed that there was an increase of funding provided by non-bank financial institutions in the third quarter of 2017 (see Chart 19).<sup>9</sup> It remains to be seen whether this development marks the start of a reversal of the longer-term trend of declining wholesale funding. EU legislation was strengthened for MMFs, which provides greater confidence that the likelihood of stress in the MMF sector has been reduced and therefore that contagion risk for the banking sector is also more limited.

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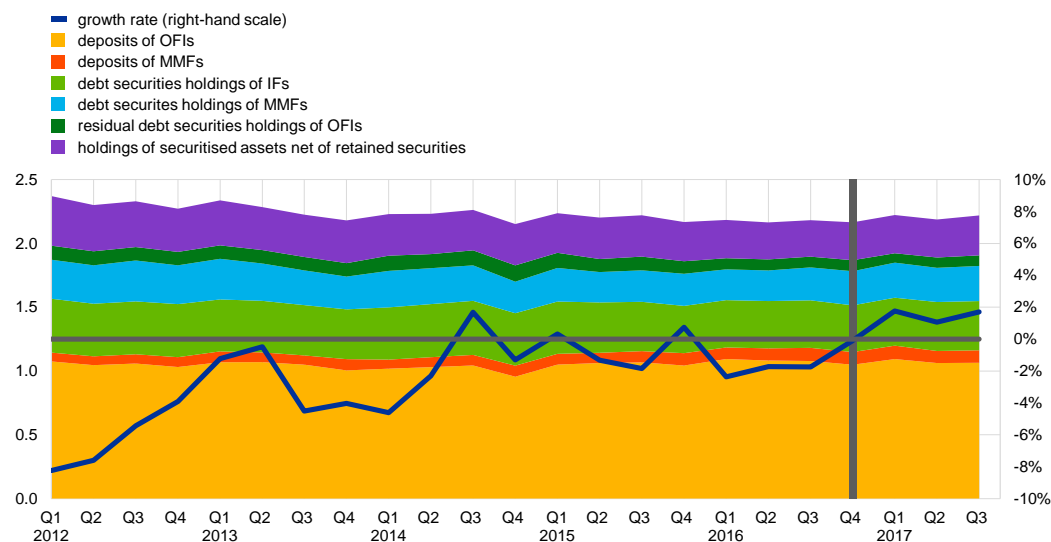
<sup>9</sup> The measure captures bank funding through securitisations, bank deposits provided by IFs, MMFs and OFIs, as well as bank debt securities held by these non-bank financial institutions. Compared with the previous EU Shadow Banking Monitor for 2016, the wholesale funding measure has been revised to exclude retained securitisations from the measure and to include deposits placed by OFIs at euro area MFIs. The historical time series for the measure has also been revised.



Chart 19

### Wholesale funding provided by entities engaged in shadow banking

(EUR trillions and annual growth rate)



Sources: ECB and ESMA calculations.

Notes: The wholesale funding measure is the sum of: MFI funding arising from securitisation; investment fund (IF), MMF and OFI deposits at euro area MFIs; and IF, MMF and OFI holdings of debt securities issued by euro area MFIs. "Residual OFI debt securities" reflects the difference between the total financial sector and the known sub-sectors within the statistical financial accounts (i.e. assets of the banking sector, insurance companies, pension funds, FVCs, IFs and MMFs). The latest observation is for Q3 2017.

### Vulnerabilities can also build up among entities where statistical information is not readily available.

Such data gaps limit the ability to closely monitor shadow banking activities, which is why additional efforts are necessary to close these data gaps. In addition, to gain an overview of the type of entities engaged in shadow banking activities, it is important to collect further granular information on cross-border transactions and exposures on a regular basis. New EU-wide reporting frameworks can be employed, for instance, to assess the use of derivatives as well as securities financing transactions (SFTs) by non-bank financial institutions.

### In order to reduce interconnectedness in the wider financial system and increase transparency, post-crisis reforms introduced a clearing obligation and reporting of derivative transactions to trade repositories.

CCPs reduce interconnectedness in the financial system by reducing counterparty credit risk and providing multilateral netting opportunities. They interpose themselves between the initial parties to the contracts, becoming the buyer to every seller and the seller to every buyer. As a result they assume the rights and obligations resulting from these contracts and they fulfil an important function by managing counterparty risk. Following the introduction of the central clearing obligation for certain standardised and liquid over-the-counter (OTC) derivatives in major jurisdictions and with market participants showing an increased preference to collateralise their transactions, CCPs have become key nodes in the financial system. Central clearing is likely to increase over the next few years, driven by increased margins for non-centrally cleared transactions and by the gradual entry into force of mandatory central clearing for further categories of counterparties and derivatives classes in the EU.



**It is important to understand the structure of the central clearing landscape, including the clearing members and their clients.** As an example based on a recent analysis of derivatives transactions data, the structure of the interest rate derivatives market in the EU not only depends on the direct links between CCPs and their clearing members, but also on the indirect effects CCP activities may have on the clients of clearing members.<sup>10</sup> For instance, margin and haircut requirements set by CCPs may be procyclical and could be transmitted from clearing members to their clients.<sup>11</sup> Therefore, the full clearing landscape needs to be considered in order to gain a more complete picture of interconnectedness in the financial system.

### Box 3

#### **Development of the risk monitoring framework for the non-bank financial sector**

**The ESRB developed the risk monitoring framework for the non-bank financial sector further.** The non-bank financial sector considered by the ESRB includes insurance corporations, pension funds, investment funds (including MMFs), OFIs and CCPs. While the monitoring framework continued to improve, a lack of granular data in some parts of the non-bank financial sector and for some activities continued to pose challenges.

**Within this monitoring framework, the ESRB published its second EU Shadow Banking Monitor.** The publication is a key element of the ESRB framework to monitor risks beyond the banking sector. It includes metrics for monitoring risks and vulnerabilities, identifies data gaps that need to be closed and informs discussions at the European level with a view to preventing or mitigating risks to financial stability. The second report highlighted several risks and vulnerabilities that need to be monitored, including: (i) liquidity risk and risks associated with leverage among some types of investment funds; (ii) interconnectedness and contagion risk across sectors and within the shadow banking system; (iii) procyclicality, leverage and liquidity risk created through the use of derivatives and SFTs; and (iv) vulnerabilities in some parts of the OFI sector, where significant data gaps hamper risk assessment. Using a wide range of data sources, the framework incorporated both entity-based and activity-based monitoring.

**The ESRB published new indicators in its risk dashboard to monitor developments pertaining to CCPs and insurance companies.** To monitor developments related to CCPs, the ESRB developed a set of indicators based on data from the CPMI (Committee on Payments and Market Infrastructures) – IOSCO (International Organization of Securities Commissions) public quantitative disclosure (PQD) framework. The ESRB held a workshop on the disclosure framework and proposed CCP indicators at the premises of ESMA in July 2017. The purpose of the workshop was to gather the views of regulators, supervisors and market participants on these indicators and the underlying dataset. The indicators developed by the ESRB are designed to provide a macroprudential outlook over time with respect to the CCPs' resources, liquidity and collateral policies, margin and haircut requirements, interoperability arrangements as well as market structure and concentration at CCP level. Chart A shows the collateralisation of clearing members at the

<sup>10</sup> See Fiedor, P., Lapschies, S. and Országhová, L., **Networks of counterparties in the centrally cleared EU-wide interest rate derivatives market**, *Working Paper Series*, No 54, ESRB, September 2017.

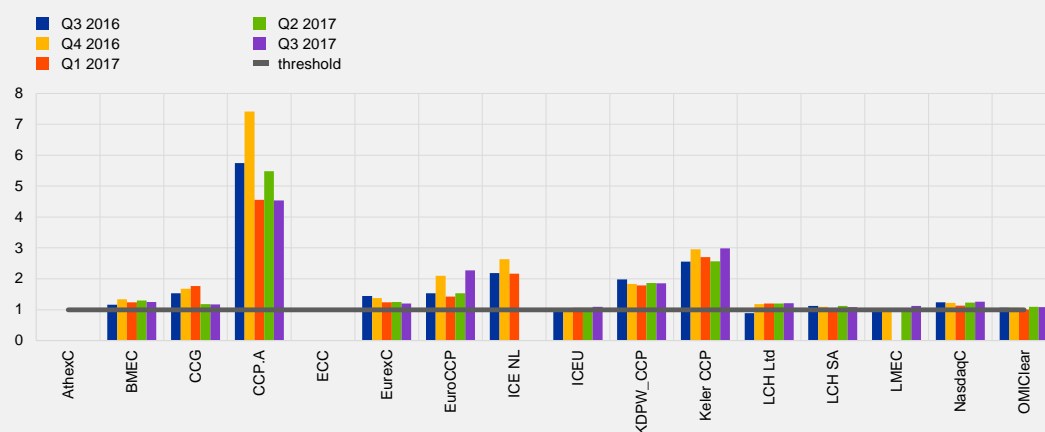
<sup>11</sup> See **ESRB response to the ESMA consultation on draft guidelines on anti-procyclicality margin measures for CCPs**, ESRB, February 2018.



level of the CCP. Values above 1 (marked by the solid grey line) indicate over-collateralisation, while values below one indicate under-collateralisation. This and other CCP indicators which are published in the risk dashboard are further described in an occasional paper<sup>12</sup>. For insurance companies, the ESRB is gradually including indicators based on the new Solvency II regulatory regime in the dashboard. Recent developments include the integration of Solvency II indicators that reflect the quality of capital and the credit quality of the bond portfolio of insurers.

Chart A  
Collateralisation of CCPs

(ratios)



Sources: PQD 6.1.1, 6.2.15, and 20.2.1 (for CC&G), and ESRB calculations.

Notes: Chart A represents the total initial margin held over the total initial margin required. No data are available for LMEC in 2017 Q1 for PQD 6.2.15 and there are no data for PQD 6.1.1 and 6.2.15 for ICE NL in 2017 Q2 and Q3. Data for AthexC and ECC were either not reported or were reported in a way which does not permit analysis of the data. PQD 20.2.1 is added to PQD 6.2.15 for CC&G from 2016 Q3 onwards as data do not include the initial margin resulting from interoperability arrangements in PQD 6.2.15. Data provided for segregated clearing services have been aggregated into a single structure. Each bar represents a quarter.

The ESRB continued its analytical work on trade repository data on derivatives transactions. Following the global regulatory reform of the derivatives markets, details concerning transactions in these instruments must be reported to trade repositories. The European Market Infrastructure Regulation (EMIR) grants the ESRB access to the full EU-wide dataset, which consists of approximately one hundred million reports per day.

The ESRB has published five research papers in its Working Paper Series (see the annex for further details) that focus on specific aspects of these markets by exploiting the wealth of information provided by these data. These papers provide an in-depth analysis of a variety of topics: (i) derivatives compression (a post-trade technique increasingly used by market participants in order to reduce gross exposures)<sup>13</sup>; (ii) a network analysis of the centrally cleared interest rate

<sup>12</sup> See Alfranseder, E., Fiedor, P., Lapschies, S., Országhová, L., and Sobolewski, P., **Indicators for the monitoring of central counterparties in the EU**, Occasional Paper Series, No 14, ESRB, March 2018.

<sup>13</sup> See D'Errico, M. and Roukny, T., **Compressing over-the-counter markets**, Working Paper Series, No 44, ESRB, May 2017.



derivatives market that provides the first empirical analysis of client clearing using transaction-level data<sup>14</sup>; (iii) an analysis of banks' credit default swap positions vis-à-vis syndicated loans<sup>15</sup>; (iv) an analysis of discriminatory pricing in the foreign exchange derivatives markets<sup>16</sup>; and (v) an analysis of the incentives for central clearing of OTC derivatives.<sup>17</sup> In parallel, the ESRB is moving towards a comprehensive, timely and structured monitoring of derivatives markets by developing comprehensive data infrastructures and novel analytical methods.

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<sup>14</sup> See Fiedor, P., Lapschies, S. and Orszaghova, L., **Networks of counterparties in the centrally cleared EU-wide interest rate derivatives market**, *Working Paper Series*, No 54, ESRB, September 2017.

<sup>15</sup> See Aldasoro, I. and Barth, A., **Syndicated loans and CDS positioning**, *Working Paper Series*, No 58, ESRB, November 2017.

<sup>16</sup> See Hau, H., Hoffmann, P., Langfield, S. and Timmer, Y., **Discriminatory pricing of over-the-counter derivatives**, *Working Paper Series*, No 61, ESRB, December 2017.

<sup>17</sup> See Fiedor, P., **Clearinghouse-Five: determinants of voluntary clearing in the European derivatives markets**, *Working Paper Series*, No 72, ESRB, March 2018.



## 2 Policies addressing systemic risk

**This section reviews the ESRB's work in the area of macroprudential policy.** Subsection 2.1 provides an overview of ESRB recommendations issued or amended during 2017, while the ESRB's contributions to the policy framework for banking and beyond the banking sector are discussed in Subsection 2.2. Subsection 2.3 concludes with a general overview of the measures adopted by Member States in the course of the review period.

### 2.1 ESRB policies

**This subsection provides an overview of the recommendations issued or amended by the ESRB in 2017.** Subsection 2.1.1 discusses amendments to the ESRB reciprocity framework, while Subsection 2.1.2 reviews the applications of the reciprocity framework over the twelve-month period. Subsection 2.1.3 considers the new Recommendation on liquidity and leverage risks in investment funds.

#### 2.1.1 Amendments to the ESRB reciprocity framework

**In 2017 the ESRB amended its reciprocity framework to further harmonise the application of materiality thresholds under the de minimis principle.** The ESRB framework adopted in December 2015 foresees the reciprocation of exposure-based measures taken by Member States.<sup>18</sup> At the request of the Member State that activates a macroprudential measure, the ESRB recommends the measure for reciprocation to all other 27 Member States, if deemed justified. These Member States may then reciprocate, optimally with the same measure. Member States have the option to exempt an individual financial service provider only if it has no material exposures to the Member State requesting reciprocation (the “de minimis” principle). To avoid potential divergences in the application of the de minimis principle by the Member States, in 2017 the ESRB reciprocity framework was amended by Recommendation ESRB/2017/4 with the aim of further harmonising the exemptions under the de minimis principle.<sup>19</sup> At the same time, the existing mandate of the ESRB in the area of reciprocity was broadened with the new task of validating the materiality threshold.

**Authorities of the reciprocating jurisdiction have discretion to apply the de minimis principle to financial service providers with non-material exposures to the identified risk in the activating jurisdiction and waive the application of the reciprocated measure for them.** The new framework foresees that the activating Member State proposes an institution-level maximum

<sup>18</sup> Reciprocity aims at extending the application of measures in one Member State to branches of foreign banks and banks providing services directly across borders. Reciprocity is important for exposure-based measures, i.e. measures that target exposures rather than specific institutions, thereby ensuring that risks are treated in the same way irrespective of which bank in which country holds the risk. For further details on the reciprocity framework, see [Recommendation ESRB/2015/2](#) on the assessment of cross-border effects of and voluntary reciprocity for macroprudential policy measures and Special Feature B entitled “The ESRB's reciprocity framework – its first year of implementation” in [A Review of Macroprudential Policy in the EU in 2016](#).

<sup>19</sup> [Recommendation ESRB/2017/4](#) amending Recommendation ESRB/2015/2 on the assessment of cross-border effects of and voluntary reciprocity for macroprudential policy measures (OJ C 431, 15.12.2017, p. 1).



materiality threshold, which means a quantitative threshold below which any exposure of an individual financial service provider to the identified macroprudential risk can be considered non-material.

**A materiality threshold of 1% of the institution's total risk exposure in the activating jurisdiction is considered appropriate as a first orientation value.** Member States should make sure that all cross-border activities conducted directly and via branches hosted in the activating jurisdiction are captured in the measurement. Situations in which the material exposure stems from many banks with small exposures might call for a calibration of the threshold below the orientation value of 1%. Also, regardless of the country's full discretion to set and calibrate the threshold in a way that safeguards its own financial stability, lower thresholds might be chosen for banking sectors and markets that are closely linked to sectors and markets in several other Member States and are therefore systemically important for the EU or certain regions.

**The proposed materiality threshold is then validated by the ESRB.** Should it be deemed inadequate, a new threshold may be suggested, and introduced in the amendment of Recommendation ESRB/2015/2 supporting the reciprocation of the measure. The materiality threshold should be considered as a maximum threshold, and the reciprocating authorities may always set a lower threshold or no threshold at all in order to acknowledge reciprocity as a matter of principle.

## 2.1.2 Applications of the reciprocity framework

**Finland requested reciprocation of a national macroprudential measure under Article 458 of the Capital Requirements Regulation (CRR) in October 2017.** The measure consists of a bank-specific floor for the average risk weight of 15%, at the portfolio level, on residential mortgage loans secured by housing units in Finland and applied to banks using the internal ratings-based (IRB) approach. Finland's request for reciprocation was motivated by the significant share of branches of foreign banks in the domestic market. In line with the amended ESRB reciprocity framework, Finland proposed a materiality threshold of €1 billion.

**The ESRB deemed the request adequate and issued a recommendation for reciprocation accordingly.**<sup>20</sup> The ESRB considered the Finnish request and assessed the materiality threshold suggested by the activating country. In January 2018 the ESRB issued a Recommendation on the recognition of the Finnish measure by other relevant jurisdictions of the European Economic Area (EEA) and its application to all credit institutions operating via a branch or providing services directly in Finland with RRE exposures to Finland in excess of €1 billion.

**The ESRB Recommendation is broader than the limited scope for reciprocation of national measures foreseen under Article 458 of the CRR.** Article 458(5) of the CRR foresees reciprocation by other Member States for branches only and not for direct cross-border exposures. Covering direct cross-border exposures would require reciprocating with equivalent measures (for example supervisory measures), which could take longer to implement. Acknowledging these

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<sup>20</sup> To include the Finnish measures in the list of measures to be reciprocated, the ESRB amended Recommendation ESRB/2015/2 with **Recommendation ESRB/2018/1**.



limitations, the ESRB gave Member States more time to implement equivalent measures than in the case of reciprocation with the same measure. Furthermore, where there are no IRB credit institutions with exposures of €1 billion or more via their branches located in Finland or via direct cross-border claims, Member States were given the option not to reciprocate. In that case, Member States were recommended to monitor the situation and reciprocate if exposures increase beyond the institution-specific materiality threshold of €1 billion.

### 2.1.3 Recommendation on liquidity and leverage risks in investment funds

**The ESRB published a recommendation to address systemic risks related to liquidity mismatches and the use of leverage in investment funds.** The recommendation, which takes into account ongoing international and European initiatives on macroprudential policy in this area, is addressed to ESMA and the European Commission. It focuses on five areas where the ESRB sees a need for guidance from ESMA to competent authorities on the operationalisation of the macroprudential elements of the current regulatory framework and/or legislative changes. It advocates a proportionate framework for managing systemic risks that can arise in, or be propagated by, the investment fund sector, while at the same time maintaining the attractiveness of open-ended investment funds for investors and facilitating collective investment.

**The part of the recommendation that focuses on risks from liquidity mismatches covers liquidity management tools, supervisory oversight and liquidity stress-testing practices.** The ESRB recommended making a wider set of liquidity management tools available to fund managers in order to increase their capacity to deal with redemption pressures under stressed market liquidity conditions. Such tools could include redemption fees and swing pricing. In order to mitigate and prevent excessive liquidity mismatches, open-ended alternative investment funds (AIFs) that hold a large amount of less liquid assets should also be required to demonstrate to supervisors their capacity to maintain their investment strategy under stressed market conditions. In order to reduce liquidity risk and strengthen the ability of entities to manage liquidity in the best interests of investors, the ESRB also recommended that ESMA develop further guidance on how fund managers should undertake liquidity stress tests.

**The recommendations that focus on leverage risks propose enhancing reporting and facilitating the operationalisation of the existing powers of authorities to limit leverage.** The ESRB recommended the establishment of a harmonised reporting framework across the EU for undertakings for collective investment in transferable securities (UCITS) so that authorities can better monitor and assess their use of leverage. It also recommended that ESMA develop guidance on a framework to assess leverage risks and on the design, calibration and implementation of macroprudential leverage limits. Such guidance would facilitate the operationalisation of Article 25 of the Alternative Investment Fund Managers Directive, which provides a macroprudential tool to limit leverage in AIFs.





## 2.2 ESRB contributions to the EU macroprudential policy framework

**This subsection provides an overview of the ESRB's contributions to the macroprudential policy framework in 2017.** Subsection 2.2.1 below mainly summarises the ESRB's activities in the area of stress testing during the review period, in addition to the response to the European Commission's consultation on supervisory reporting requirements. Subsection 2.2.2 discusses the ESRB input into various banking sector instruments, while Subsection 2.2.3 discusses the input for non-banking sectors.

### 2.2.1 General

#### a) Stress-testing scenarios for the European Supervisory Authorities

**Stress tests are important macroprudential tools.** They can help ensure the resilience of financial institutions and systems to adverse macro-financial developments. By creating transparency about vulnerabilities and how such vulnerabilities are to be addressed, they can increase confidence in individual financial institutions and the financial system as a whole.

**The ESRB has a key role in stress tests in the EU.** In particular, the regulations establishing the ESAs – the EBA, EIOPA and ESMA – require them, in cooperation with the ESRB, to initiate and coordinate EU-wide assessments of the resilience of financial institutions to adverse market developments, including via stress testing.<sup>21</sup> This cooperation has typically taken the form of the ESRB providing adverse scenarios for the stress tests of the ESAs that take as their starting point the risks identified by the ESRB. Over the review period, the ESRB provided adverse scenarios for the stress test of the banking sector by the EBA and the stress test of the insurance sector by EIOPA. These scenarios are detailed below. The scenarios that the ESRB provided in early 2017 for the EIOPA stress test of occupational pension funds were described in the ESRB's 2016 Annual Report.

**The ESRB provided the adverse macro-financial scenario for the 2018 EU-wide banking sector stress test in January 2018.** The narrative of the adverse scenario reflects the four systemic risks identified by the ESRB's General Board as representing the most material threats to the stability of the EU financial sector: (i) an abrupt and sizeable repricing of risk premia in global financial markets – triggered e.g. by a policy expectation shock – leading to a tightening of financial conditions; (ii) an adverse feedback loop between weak bank profitability and low nominal growth, amid structural challenges in the EU banking sector; (iii) public and private debt sustainability

<sup>21</sup> See **Regulation (EU) No 1093/2010** of the European Parliament and of the Council of 24 November 2010 establishing a European Supervisory Authority (European Banking Authority), amending Decision No 716/2009/EC and repealing Commission Decision 2009/78/EC (OJ L 331, 15.12.2010, p. 12); **Regulation (EU) No 1094/2010** of the European Parliament and of the Council of 24 November 2010 establishing a European Supervisory Authority (European Insurance and Occupational Pensions Authority), amending Decision No 716/2009/EC and repealing Commission Decision 2009/79/EC (OJ L 331, 15.12.2010, p. 48); and **Regulation (EU) No 1095/2010** of the European Parliament and of the Council of 24 November 2010 establishing a European Supervisory Authority (European Securities and Markets Authority), amending Decision No 716/2009/EC and repealing Commission Decision 2009/77/EC (OJ L 331, 15.12.2010, p. 84).



concerns amid a potential repricing of risk premia and increased political fragmentation; and (iv) liquidity risks in the non-bank financial sector with potential spillovers to the broader financial system (see Section 1 for a more detailed description of these risks). In the adverse scenario, the first systemic risk was assessed to be the most significant of the four and could act as a trigger for the remaining risks.

**The ESRB also designed a survey to accompany the EBA stress test to better understand second-round effects from the collective reaction of banks to a stress event.** As the EBA stress test does not capture the second-round effects of a shock to the banking sector, the ESRB designed a survey to better understand these effects. As in previous years<sup>22</sup>, the survey was sent to the 30 largest banks in the EU and the results will be analysed after the conclusion of the stress test at the end of 2018.

**The ESRB also contributed two adverse scenarios for the 2018 EIOPA stress test of the insurance sector.** These scenarios also reflect the ESRB's assessment of the prevailing sources of systemic risk for the EU financial system. In addition, the scenarios are designed to address two key vulnerabilities of the European insurance sector: (1) on the assets side, as insurers are large investors in government and corporate bonds, equity and real estate, they are particularly vulnerable to the risk of an abrupt fall in global asset prices; and (2) on the liabilities side, low risk-free interest rates increase the value of insurers' long-term liabilities, while compressing the margins between guaranteed returns on life policies and matching long-term low-risk investments. In contrast to the EU-wide insurance stress test of 2016,<sup>23</sup> where a double-hit scenario was calibrated covering the first two vulnerabilities at the same time, in 2018 two different scenarios have been designed which cover the two vulnerabilities separately.

## **b) The ESRB Secretariat's response to the European Commission's consultation – *Fitness check on supervisory reporting***

**The ESRB Secretariat published its response to the European Commission's consultation on a "fitness check" of supervisory reporting requirements for the financial sector.** The response draws on the experience in developing data infrastructures and analytical methods for monitoring OTC derivatives markets.<sup>24</sup> In its response, the ESRB Secretariat highlighted four key pillars for supervisory reporting, from the perspective of macroprudential oversight, namely: (1) accessing granular, timely and high-quality data; (2) supporting data standardisation; (3) adopting technologies to improve efficiency; and (4) enhancing the ability to monitor developments across markets, instruments and sectors.

**The response pointed out that only data at a high level of granularity can capture the complexity of integrated financial systems.** Proper monitoring of such financial systems requires

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<sup>22</sup> **Annual Report**, ESRB, 2016.

<sup>23</sup> **Scenario for the European Insurance and Occupational Pensions Authority's EU-wide insurance stress test in 2016**, ESRB, 17 March 2016.

<sup>24</sup> **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 ("EMIR") mandates the reporting to trade repositories of details of all derivatives transactions entered into by EU counterparties. The ESRB has full access to these details. The ESRB and its member institutions have pioneered the analysis of such large datasets and are continuing this work.



timely and high-frequency information. High-quality data are a common good which benefits both reporting entities and supervisors.

**Further progress on the adoption of international standards is another key element.** The collection of data on derivatives transactions mandated under EMIR is a powerful example of how granularity and standardisation allow for greater efficiency in reporting. As data are collected at a high level of granularity, authorities are able to access very detailed data without the need for counterparties in derivatives transactions to submit multiple reports and respond to ad hoc requests. Granularity and standardisation bring advantages deriving from economies of scale and scope. This, in turn, is reflected in lower costs and improved risk management.

**Technological improvements enhance the ability to understand data in a timely and sound manner and also contribute to reducing costs.** Moreover, the adoption of “big data” technologies, coupled with high granularity and standardisation, will improve the data’s coherence and reliability.

**Given the growing importance of the non-bank financial sector and the financial system’s overall interconnectedness, it is crucial that the ESRB has a comprehensive view of systemic risks.** Looking ahead, it is desirable to enhance the ESRB framework so that the information on all components of the EU financial system can be accessed in a streamlined way.

## c) ESRB contribution to the work of the European Commission’s High-Level Expert Group on Sustainable Finance

The ESRB contributed to the work of the High-Level Expert Group on Sustainable Finance (HLEG), established to provide advice to the European Commission on how to ensure the financing of sustainable growth. The HLEG considered in particular how to address risks to financial stability related to climate change. ESRB input built on the earlier work of the Advisory Scientific Committee in this regard.<sup>25</sup> The recommendations of the HLEG formed the basis of the European Commission’s Action Plan on financing sustainable growth, adopted in March 2018.

### Box 4 Report by High-Level Task Force on Safe Assets

In January 2018 the ESRB High-Level Task Force on Safe Assets published its report on the feasibility of sovereign bond-backed securities (SBBS). The report comprised two volumes: Volume I summarised the main findings of the Task Force, and Volume II provided the supporting technical analysis.

The Task Force, established in June 2016 by the ESRB General Board, conducted an in-depth investigation of the empirical and practical considerations related to SBBS. Three work streams focused on the motivation and institutional framework underpinning SBBS, regulation, and security and market design. Two technical teams also supported the work of the Task Force,

<sup>25</sup> **Too late, too sudden: Transition to a low-carbon economy and systemic risk**, Reports of the Advisory Scientific Committee, No 6, February 2016.



conducting analysis on the liquidity and legal implications of SBBS. In addition, the Task Force benefited from feedback from market participants at an industry workshop in Paris, via an online industry survey and through many bilateral meetings.

**The report provides a technical assessment of the feasibility of SBBS and their potential role in enhancing financial stability.** The securities could be created by pooling and tranching cross-border portfolios of national sovereign bonds. Both euro area-wide diversification and low risk due to contractual subordination would be embedded in senior SBBS, if the latter were properly designed. Issuance of SBBS could be arranged by private entities, subject to standardisation requirements, or by a public entity, conditional on political agreement on the appropriate institutional architecture.

**SBBS could help to reduce systemic risks, but regulatory barriers prevent the demand-led development of an SBBS market.** One necessary condition for the demand-led development of an SBBS market is for the regulatory treatment of the securities to reflect their unique design and risk properties. The level of investor demand for the securities is an empirical question which, according to the report, can only be tested in the presence of a risk-adequate treatment of the securities.

**In addition, reforms of the regulatory treatment of sovereign exposures would affect the demand for SBBS.** However this insight does not provide sufficient justification for embarking on regulatory reform, as this should be evaluated on its own merits, taking into account the broader implications. The Task Force did not attempt to undertake a holistic assessment of regulatory reform given that discussions are ongoing in other fora. Nevertheless, the report acknowledges that there is a range of views on whether reforming the regulatory treatment of sovereign exposures is necessary for an SBBS market to achieve its policy objectives and for potential risks to be contained.

## 2.2.2 ESRB contributions to the macroprudential framework for the banking sector

### a) Report on the financial stability implications of IFRS 9

**Following a request from the Committee on Economic and Monetary Affairs of the European Parliament, the ESRB published a report discussing the financial stability implications of IFRS 9 in July 2017.** IFRS 9, which became mandatory in the EU on 1 January 2018, is the new accounting standard for the classification and measurement of financial instruments. The new accounting standard was issued in response to the mandate received from the G20 in the light of the performance of accounting standards during the global financial crisis. The report analyses two main aspects of IFRS 9 from a macroprudential perspective and with a focus on banks: (1) the new approach to the classification and measurement of financial assets; and (2) the new expected credit loss (ECL) approach for measuring impairment allowances.

**The ESRB report concluded that the classification and measurement of financial assets under IFRS 9 will, in principle, be clearer and sounder than under the previous accounting**



**standard (IAS 39).** In general terms, the new criteria should not typically lead to a significant increase in the use of fair value by EU banks, at least at the aggregate level. The report identified three areas in which there are significant changes relative to IAS 39 and which, for specific banks or periods of time, could entail relevant differences, notably: (1) debt instruments including embedded derivatives will no longer qualify to have their pure debt component separated and thus measured at amortised cost; (2) gains or losses from equity instruments measured at fair value through other comprehensive income will no longer be reported in profit or loss (except for dividend income); and (3) highly liquid assets eligible for inclusion in the regulatory liquidity buffer but which, on the basis of their management during normal times, belong to a hold-to-collect business model may be measured at amortised cost, raising concerns about the emergence of unrealised fair value gains or losses if these assets need to be sold in times of acute stress.

**Regarding the new ECL approach introduced by IFRS9, the ESRB report concluded that, if soundly implemented, it will enhance transparency and facilitate an earlier and fuller recognition of impairment losses, which will result in larger loss-absorbing allowances.** To this extent, the IFRS 9 represents an improvement compared to previous accounting standards and may bring substantial benefits from a financial stability perspective. However, the ECL approach also implies reacting to new and forward-looking information as it is received, so impairment allowances may increase suddenly and significantly if aggregate economic indicators deteriorate. As a result, IFRS 9 could have certain procyclical effects derived from the cyclical sensitivity of the credit risk parameters used for the estimation of ECLs and from the shifts of exposures between stages as defined by IFRS 9. Moreover, economic fluctuations are difficult to predict and switches from expansion to contraction often occur unexpectedly. In a scenario where many banks face a simultaneous increase in ECLs, the sum of the individual measures adopted by banks to maintain their levels of capital may result in a system-wide reduction in bank lending and deleveraging pressures.

**The ESRB report included specific policy considerations to raise awareness of potential undesired financial stability implications of IFRS 9, particularly in the event of an acute crisis.** In particular, it identifies potential channels and developments through which IFRS 9 may interact with the various stakeholders involved. The channels and developments identified include, inter alia, the developments in the regulatory framework and the movements of the economy along the cycle, expressed through a number of forms: the implementation and extent of use of fair value, modelling risk, anticipated changes in lending behaviour, potential procyclicality, and the implementation of ECL for less sophisticated banks, etc.).

## **b) Report on resolving non-performing loans**

**In July 2017 the ESRB published a report on policy proposals to resolve NPLs in Europe.**

The report provides an overview of the NPL situation in the EU, including practical guidance on NPL resolution and a summary of available options.<sup>26</sup> It also identifies a range of impediments to

<sup>26</sup> The **ESRB report on resolving non-performing loans in Europe** outlines five high-level principles to be followed when designing policies to address NPLs and proposes a sequence of three steps to resolve NPLs: (1) diagnosing the scope of the NPL problem and operationally separating NPLs from the bank's performing assets; (2) subjecting the NPLs to a valuation and triage in order to identify the viable exposures for restructuring and the non-viable exposures for liquidation; and (3) removing the relevant NPLs from the banking system.



the resolution and disposal of NPLs, relating to the supply side (banks), demand side (prospective investors) and structural issues. The report underlines that resolution of European NPLs should be urgently addressed by means of a comprehensive approach and that measures should be taken to address identified impediments in parallel with actual NPL resolution.

**The report makes specific policy proposals which complement other initiatives at the EU or euro area level.**

In the short term, microprudential authorities should step up their efforts to improve banks' NPL management by enforcing compliance with the EU-wide NPL definition and ensuring the prudent measurement of NPLs (including the prudent valuation of collateral). Supervisors need to request regular updates of strategies to reduce NPLs, set targets for NPL reduction and extend the adoption of good practices to all banks. They should also ask banks with high NPL levels to report the data required for assessing their viability in a scenario in which NPLs are to be resolved. Furthermore, policymakers should develop blueprints for national asset management companies to facilitate NPL sales; EU-wide data standards for NPLs need to accompany this initiative. In the medium term, measures should concentrate on structural issues that would improve recoveries from NPLs: insolvency regimes, debt enforcement, and NPL servicing. Over a longer horizon, to avoid a future build-up of NPLs, banks need to be given adequate incentives, in particular in relation to accounting; secondary market trading platforms for NPLs may also be developed.

**In July 2017 the ECOFIN Council adopted its “Action Plan to Tackle Non-Performing Loans in Europe”.**

This Action Plan calls upon various institutions – including the ESRB – to take appropriate measures to further address the challenges of high NPL levels. In particular, it invites “the European Systemic Risk Board to develop, by the end of 2018, macroprudential approaches to prevent the emergence of system-wide NPL problems, while taking due consideration of procyclical effects of measures addressing NPLs’ stocks and potential effects on financial stability”. The ESRB established a dedicated work stream to follow up on this request.

### **c) ESRB Opinion on macroprudential structural buffers**

**In December 2017 the ESRB provided its Opinion on macroprudential structural buffers to the European Commission.**

Since the entry into force of the Capital Requirements Directive IV (CRD IV) and the CRR, more practical experience with such buffers has been gained as authorities have increasingly used the systemic risk buffer (SyRB) and the buffers for systemically important institutions.<sup>27</sup> The opinion provides proposals on how the EU legal framework for structural buffers could be enhanced in order to apply the macroprudential toolkit more effectively. This would further strengthen macroprudential policy and protect the Single Market.

**The ESRB proposed to significantly increase the caps on the buffer for other systemically important institutions (O-SII buffer).**

This increase would allow for a better delineation between the O-SII buffer and the SyRB and would also allow Member States to fully address the risks of their O-SIIs. The general O-SII buffer cap should be increased from 2% to 3%, with the possibility for designated authorities to impose buffer rates higher than 3%, subject to the European

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<sup>27</sup> The full analysis of the use of macroprudential structural buffers has been published in the [Final report on the use of structural macroprudential instruments in the EU](#).



Commission's approval. The additional O-SII buffer cap for subsidiaries of EU parent institutions also needs to be increased so that the O-SII buffer of the subsidiary would not exceed the fully phased-in O-SII or G-SII buffer<sup>28</sup> applicable to the group at the consolidated level by more than 2 percentage points. These changes should allow authorities to address the systemic risk resulting from systemically important institutions with the O-SII buffer and should avoid the use of the SyRB to address this risk.

**The ESRB also proposed to effectively upgrade the SyRB to the status of a dedicated tool that targets system-wide non-cyclical systemic risks.** The SyRB would thus become one of the main macroprudential tools, alongside the countercyclical capital buffers that address cyclical risks and the buffers for systemically important institutions that mitigate the moral hazard risks posed by such institutions. To this end, a number of changes to the present SyRB regime should be made. First, the mandatory sequencing of instruments for the activation of the SyRB should be removed. Second, the SyRB should target specific sources of structural systemic risk in a risk-sensitive manner. Thus, the SyRB should also be allowed to target specific subsets of exposures, such as sectoral exposures, and multiple SyRB applications should be allowed to address distinct risk sources, if needed. Structural buffers addressing distinct sources of systemic risk should be cumulative, in particular the SRB and the G-SII/ O-SII buffer should always be cumulative.

**Finally, the ESRB proposed some changes to the procedural framework for structural buffers.** First, the notification and approval procedure of the SyRB should be simplified. Second, automatic reciprocity for exposure-based SyRBs should be introduced, with possible exemptions, to reduce the procedural burden. Third, the transparency of the SyRB should be improved through communication and harmonised mandatory disclosure. Fourth, requirements for cooperation between national authorities on macroprudential policy should be established.

**The proposals balance greater flexibility in the use of macroprudential structural buffers with safeguards for the Single Market.** The proposals would be particularly important if Pillar 2 were to be removed from the macroprudential toolkit, in line with the European Commission's risk reduction package.<sup>29</sup> However, such a removal would clearly reduce the flexibility that national authorities have when addressing systemic risk, therefore requiring mitigation through greater flexibility in other instruments. The proposed increased flexibility in structural buffers would be balanced by scrutiny from EU institutions if higher levels of capital buffers were to be imposed. Additionally, the O-SII buffer calibration could be further harmonised through an ESRB recommendation.

## **d) ESRB Opinion on the liquidity coverage requirement provided to the EBA**

**In November 2017 the ESRB responded to an EBA report on the impact of liquidity requirements, as required under Article 509(1) of the CRR.** The EBA is mandated to report to

<sup>28</sup> The G-SII buffer refers to the buffer for global systemically important institutions.

<sup>29</sup> Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EU) No 575/2013 as regards the leverage ratio, the net stable funding ratio, requirements for own funds and eligible liabilities, counterparty credit risk, market risk, exposures to central counterparties, exposures to collective investment undertakings, large exposures, reporting and disclosure requirements and amending Regulation (EU) No 648/2012.



the European Commission annually on the possible impact of the liquidity coverage requirement in the EU. The CRR requires consultation by the EBA on the impact assessment report with a broad range of stakeholders, including the ESRB.

**The findings in the EBA report were considered informative and relevant by the ESRB, although areas for future consideration were proposed.** These included looking in more detail at the potential effects of unconventional monetary policy on the level, valuation and composition of liquid asset holdings, re-introducing analysis on currency mismatches and potentially focusing on lending to small and medium-sized enterprises and on trade financing lending.

### 2.2.3 ESRB contributions to the macroprudential framework beyond the banking sector

**The ESRB has also made progress in addressing risks to the financial system from beyond the banking sector.** The remainder of this subsection describes the contributions of the ESRB to enhancing supervision and regulation relating to insurance companies, derivatives markets and CCPs. In addition, the subsection reflects on the ESRB's work on the establishment of recovery and resolution regimes for insurance companies and CCPs as a tool to provide legal certainty in case a firm is experiencing financial difficulties.

**The ESRB proposed changes to the calculation method of the Solvency II risk-free yield curve.** Solvency II introduced a new risk-based regulatory regime for insurance improving policyholder protection. The ESRB has analysed the macroprudential consequences of certain aspects of Solvency II, such as the regulatory risk-free yield curve which is important for determining the value of insurers' liabilities. The results of the ESRB's analysis were published in a report in August 2017.<sup>30</sup> Its findings suggested that the current curve may underestimate insurers' liabilities and, thus, may generate unrealised losses. As such, the report made concrete proposals for lowering the curve and bringing it more into line with market valuation. It was also noted that market valuation of insurers' balance sheets under Solvency II might result in procyclical investment behaviour. The report suggested that such potential procyclical effects should be monitored and that further work is needed on how these effects and/or their causes could be addressed.

**The ESRB has developed an internal procedure related to its consultative role under Article 138 of the Solvency II Directive.** Article 138(4) of the Solvency II Directive introduces the possibility for the National Supervisory Authorities (NSAs) to extend the recovery period of an insurance company breaching its Solvency Capital Requirement (SCR). In the event of an exceptional adverse situation as declared by EIOPA, the NSAs have the possibility to grant insurance companies an extension of this recovery period to re-establish compliance with their SCR for up to seven years. In normal circumstances, the length can only be extended for three months on top of the six months initially available. The ESRB has been given a consultative role under Article 138. To prepare for its role under Article 138 and to be able to answer to any request for consultation from the NSAs, the ESRB has established an internal procedure. This internal

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<sup>30</sup> **Regulatory risk-free yield curve properties and macroprudential consequences**, ESRB, August 2017.





procedure also accommodates the possibility of a request for consultation from EIOPA on the exceptional adverse situation.

**The ESRB also contributed to the review of EMIR.** Building on previous reports and further experience in the application of EMIR, the ESRB published a report on the revision of EMIR in order to further enhance the effectiveness and transparency of the current framework<sup>31</sup>. In the report, the ESRB reiterated its previous support for a broad application of the clearing obligation to cover market participants that are active users of derivatives and made proposals to improve trade reporting. The report also included suggestions to clarify the existing provisions to limit the procyclicality of margin and haircut requirements and proposed to also include indirect clients, as well as clients, in these provisions.

**The ESRB took part in a consultation of ESMA on draft guidelines on anti-procyclicality margin measures for CCPs.** In its response<sup>32</sup>, the ESRB supported ESMA's efforts to improve the measures tackling the procyclicality of CCPs' margins and to enhance transparency for clearing participants by requiring CCPs to publish information on their margin models. Furthermore, it outlined proposals to improve the draft guidelines, for example to be more specific on the definition of stressed periods and the calibration of the margin floor. Beyond the scope of the consultation, the ESRB proposed to have similar guidance, for example through a change in the respective regulatory technical standards 153/2013, for the calibration of similar measures to limit the procyclicality of haircuts.

**The ESRB identified areas where legislative proposals for a recovery and resolution framework for CCPs should be refined to better address macroprudential concerns.** As CCPs are key nodes of the post-crisis financial system, a recovery and resolution regime for them is particularly important. The ESRB issued an opinion<sup>33</sup> in July 2017 that highlighted areas where legislative proposals should be refined to better address macroprudential concerns. The opinion included proposals to improve resolution tools, e.g. allowing cash calls to be, under certain circumstances, temporarily covered by initial margins to reduce the performance risk and procyclicality, and to refine, building on the international standards, the list of resolution tools available to the resolution authority. It also noted that there is a need for cooperation and coordination between resolution authorities that are responsible for banks and that are responsible for CCPs, as the distress of a CCP would typically be triggered by distress in one or more banks that are CCP clearing members.

**The ESRB advocated the development of a harmonised recovery and resolution framework for the insurance sector in the EU.** In many instances, existing regulatory intervention measures and/or ordinary insolvency procedures may suffice when an insurance company gets into trouble. However, ordinary insolvency procedures may not always be consistent with policyholder protection and financial stability objectives. Reflecting this, the ESRB published, in August 2017, a report that advocated the implementation of an effective recovery and resolution framework for the EU insurance sector.<sup>34</sup> The report argued that a harmonised approach towards recovery and resolution

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<sup>31</sup> [Revision of the European Market Infrastructure Regulation](#), ESRB, April 2017.

<sup>32</sup> [ESRB response to the ESMA consultation on draft guidelines on anti-procyclicality margin measures for CCPs](#), ESRB, February 2018.

<sup>33</sup> [Opinion on a central counterparty recovery and resolution framework](#), ESRB, July 2017.

<sup>34</sup> [Recovery and resolution for the EU insurance sector: a macroprudential perspective](#), ESRB, August 2017.



across the EU would, among others, help to manage, in an orderly way, the failure of a large cross-border insurer or the simultaneous failure of multiple insurers. Such a framework should cover the whole insurance sector and should pursue both policyholder protection and financial stability objectives. The report also promoted an extension of the existing recovery and resolution toolkit in order to increase the flexibility of supervisors dealing with failing (re)insurers and highlighted the usefulness of a discussion on how resolution should be funded.

## 2.3 Review of national measures

**This subsection provides an overview of the measures adopted by Member States during the review period.**<sup>35</sup> Given its broad mandate and EU-wide perspective, the ESRB is well placed to act as an information hub for macroprudential measures taken by Member States. The ESRB publishes any such notified measures on its website. Actions taken by Member States in the review period are discussed in this subsection according to the different types of instrument used, including reciprocating actions taken in response to requests from other Member States.

### 2.3.1 Overview of measures

**The number of domestic macroprudential measures adopted by Member States remained more or less stable compared with 2016 (see Chart 20).** The years 2017 and 2016 are more comparable than the previous years as in most Member States all the elements of the CRD IV/CRR macroprudential toolbox were available in this period. While a stable number of domestic macroprudential measures were adopted, there was a significant reduction in the number of measures reciprocating the actions of other Member States over the period 2016-17. This decline is due to the large number of reciprocating actions taken in 2016 following the Belgian RRE measure under Article 458 of the CRR and the introduction of the Estonian SyRB. In 2017 the ESRB did not recommend the reciprocation of any new measures so there was no need for any new reciprocating actions. Most Member States took some macroprudential policy action in 2017, with the majority of these measures being of a tightening nature to address cyclical risks. The most frequently used instruments were the SyRB, the loan-to-value (LTV) cap and the countercyclical capital buffer (CCyB).

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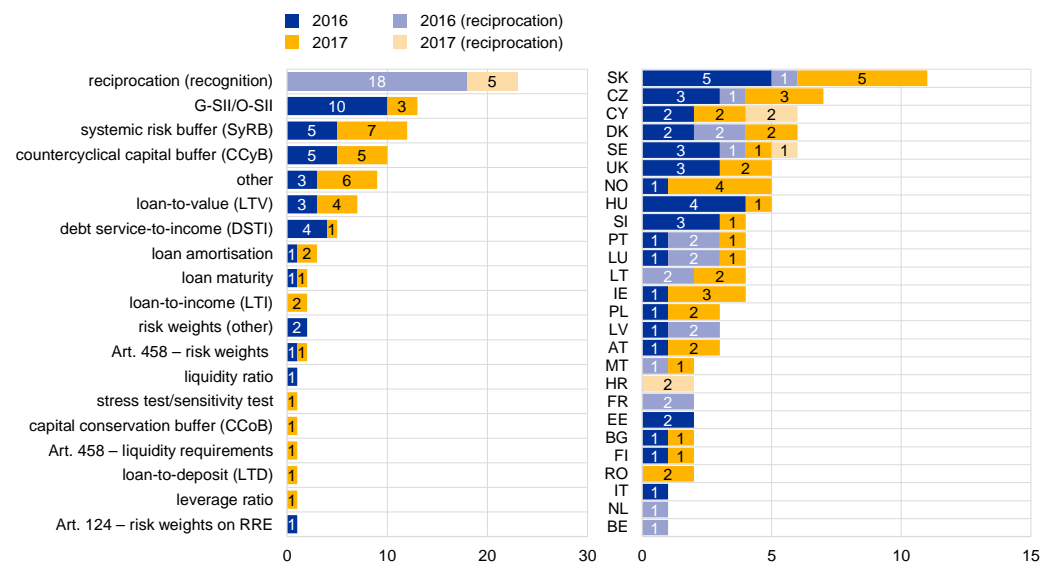
<sup>35</sup> For further details on the measures taken throughout 2017, see [A Review of Macroprudential Policy in the EU in 2017](#), ESRB, April 2018.



Chart 20

### Number of substantial measures notified to the ESRB in the period 2016-17

(number of measures by measure type (left panel) and by Member State (right panel))



Source: ESRB.

Notes: Notifications need not refer to new macroprudential measures, as they can also refer to changes to measures already in place. Substantial measures exclude measures of a more procedural or administrative nature, such as the early introduction of the capital conservation buffer (CCoB) or the exemption of small and medium-sized investment firms from the CCoB. The figure does not include unchanged CCyB rates or those set at 0%. In the case of G-SIIs/O-SIIs, the measures cover only changes in the methodology for the G-SII/O-SII identification and buffer setting (not changes in the number of G-SIIs/O-SIIs or their buffer levels resulting from the actual application of the same methodology) or changes in the phasing-in arrangements.

## 2.3.2 The countercyclical capital buffer

### a) Setting of domestic buffers

**Several Member States announced a positive CCyB rate for the first time or further increased the rate in 2017 (see Chart 21).** In response to rapid credit growth, especially in

mortgage and consumer loans, the Czech Republic decided to increase the buffer rate twice, first from 0.5% to 1% (in May) and then to 1.25% (in December). Slovakia also decided on an increase of its rate from 0.5% to 1.25% (in July), as did the United Kingdom, from 0% to 0.5% (in June) and from 0.5% to 1% (in November). For the first time, Lithuania announced a positive CCyB rate (in December), with the buffer to be set at 0.5%.

**There were five Member States (CZ, LT, SE, SK, UK), as well as Iceland and Norway, that maintained or introduced a positive buffer rate during 2017.** The CCyB is a countercyclical tool

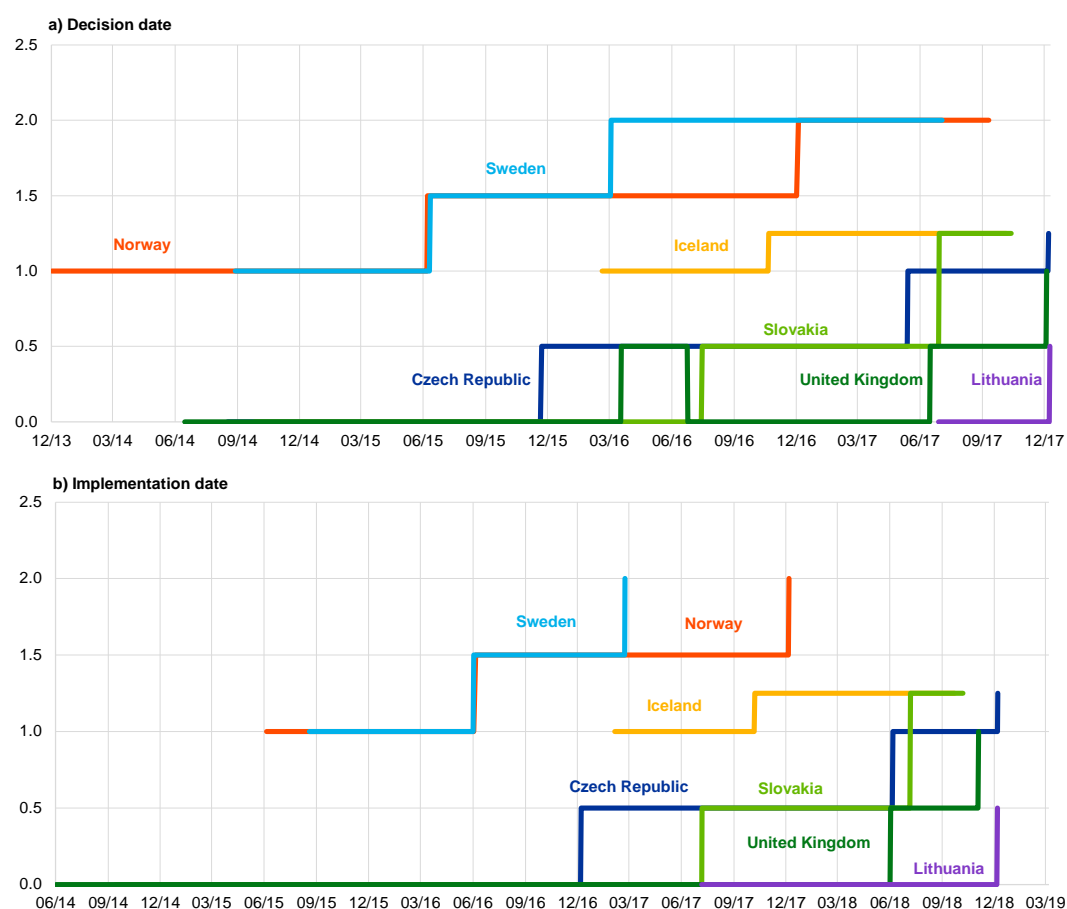
to be activated in the upward phase of the credit cycle when signals of excessive credit growth are observed. The fact that this tool is increasingly coming into focus indicates that the financial cycle is turning in a number of European countries. With the exception of the United Kingdom and Lithuania, the positive rate in these countries already came into force in 2017, taking into account that a buffer requirement generally enters into force one year after it has been decided upon by the



designated authority (see Chart 21). It is noteworthy that for these countries the credit-to-GDP gap – the benchmark indicator for setting the CCyB rate – is on average still very much in negative territory. Under the principle of guided discretion that governs the use of this instrument, authorities that set the buffer rate have the discretion to deviate from the Basel buffer guide, taking into account for example complementary indicators and/or models.

**Chart 21**  
**Countercyclical capital buffer rates – decision and implementation**

(percentages)



Source: ESRB.

Note: The United Kingdom decided to increase the buffer rate to 0.5% in March 2016, but reduced it to 0% in July 2016, before the earlier decision was due to take effect.

## b) Setting of buffers for third countries

In addition to setting domestic CCyB rates, the EU capital rules for banks also foresee the possibility of setting rates for exposures to third countries. National authorities have the right to set a CCyB rate for third countries (excluding Iceland, Liechtenstein and Norway) that domestic banks must apply when calculating their institution-specific CCyB. This right may be exercised when the third country has not set and published a CCyB or the rate is not deemed sufficient. In



addition, the ESRB may recommend the setting of a CCyB rate for third countries. The ESRB detailed its approach in a recommendation and decision<sup>36</sup> with the aim of implementing a coherent approach across the EU. Given the very large number of third countries, the ESRB, the Member States and the ECB focus on identifying and monitoring material countries and share responsibilities in that respect. In particular, the ESRB establishes to which third countries the EU banking system as a whole has material exposures and monitors developments in those countries for signs of excessive credit growth, which may result in a recommendation on setting an appropriate CCyB rate for exposures to the country in question.

**In 2017 the ESRB revised its list of material third countries, adding Singapore and Switzerland.** The new list of third countries that are material for the EU banking sector includes eight countries: the United States, Hong Kong, Singapore, Switzerland, China, Brazil, Turkey and Russia, in descending order of the size of the exposures of the EU banking sector. The ESRB did not issue any recommendations on the CCyB rate of a third country in the review period. The lists of material third countries maintained by Member States did not change substantially compared with the previous year. In 2017 the ECB and Norway provided the ESRB with their lists of material third countries for the first time.

### 2.3.3 Real estate measures

**Real estate lending remained one of the most important areas for macroprudential policymaking in 2017.** In 2016 the ESRB issued warnings to eight Member States following the identification of medium-term vulnerabilities in their RRE sector.<sup>37</sup> Several policy initiatives of Member States in 2017, some of which still require effective implementation, can be seen as a direct follow-up to these warnings. They include changes to the macroprudential toolkit (e.g. in Austria, Luxembourg and Sweden) in order to better address risks originating from this sector, as well as the activation (e.g. in Finland) or further tightening (e.g. in Belgium and Denmark) of instruments already in place. In addition to these initiatives, some Member States (e.g. Germany) have also extended their macroprudential toolkit in the absence of imminent risks by preventively creating the legal basis for new borrower-based instruments targeting the RRE sector.

**The ESRB issued three opinions under Article 458 of the CRR that supported stricter national capital measures related to the RRE sector.**

The first one concerned a Belgian measure that was scheduled to replace an earlier one, also taken under Article 458 of the CRR, which expired in May 2017.<sup>38</sup> The expired measure consisted of a general risk weight add-on of 5 percentage points for banks using the IRB approach for their Belgian retail mortgage exposures. The new measure would keep the earlier 5 percentage point add-on in place, but would complement it with a risk-sensitive component using a risk weight add-on that targets exposures with high LTV ratios.

<sup>36</sup> **Recommendation ESRB/2015/1** on recognising and setting countercyclical capital buffer rates for exposures to third countries and **Decision ESRB/2015/3** on the assessment of materiality of third countries for the Union's banking system in relation to the recognition and setting of countercyclical buffer rates.

<sup>37</sup> See the **Warnings** section of the ESRB's website.

<sup>38</sup> **Opinion ESRB/2017/1** regarding Belgian notification of a stricter national measure based on Article 458 of Regulation (EU) No 575/2013 of the European Parliament and of the Council on prudential requirements for credit institutions and investment firms, ESRB, 13 March 2017.



The ESRB gave a positive opinion on the draft measure. However, in the end the Belgian Government did not approve the draft measure and instead asked the Nationale Bank van België/Banque Nationale de Belgique (NBB/BNB) to maintain the original measure and to reassess the RRE vulnerabilities. In November 2017 the NBB/BNB announced that its updated assessment indicated the need for an additional measure and that it was considering a measure based on a credit institution's total mortgage portfolio rather than the risk profile of individual mortgage loans.

The second ESRB opinion therefore concerned a new draft measure for Belgium that consists of a general risk weight add-on of 5 percentage points for banks but now with an additional proportionate risk weight add-on obtained as a fraction (33%) of the average risk weight of the IRB bank's portfolio of retail mortgage exposures. The ESRB issued a positive opinion on the measure.

The third ESRB opinion related to a Finnish measure that was planned to come into effect in 2018.<sup>39</sup> The draft measure assigned a credit institution-specific floor of 15% to the average risk weight for residential mortgage loans of credit institutions using the IRB approach. Also in this case, the ESRB gave a positive opinion.

### 2.3.4 Systemic risk buffer

**Member States increasingly relied on the SyRB in 2017.** Finland made the necessary legal changes to add this instrument to the macroprudential toolbox. In all Member States, with the exception of Ireland and Italy, this instrument is now potentially available for use by the macroprudential authority. Poland and the Faroe Islands<sup>40</sup> introduced new SyRBs. In Romania the earlier decision to deactivate the SyRB came into effect in March 2017, but in December 2017 it was decided to introduce a new SyRB, to be applicable from June 2018 onwards. A number of other countries adjusted their existing SyRB frameworks. The changes related mainly to the level, scope or phasing-in of the buffer. Under EU law, the SyRB needs to be reviewed at least every second year. As this instrument is used to address long-term non-cyclical systemic risks, one would expect that the modalities for the use of the buffer would not change frequently.

**As a result, 12 Member States as well as Liechtenstein and Norway now have a SyRB in place, but with significant differences in their implementation modalities.** The implementation of this instrument varies significantly across countries in terms of the scope, the phasing-in arrangements and the type of risk being addressed. This is reflected in the level and range of the buffer, as well as its calculation basis (see Chart 22). This underscores the great flexibility of the SyRB in addressing a wide variety of long-term non-cyclical risks.

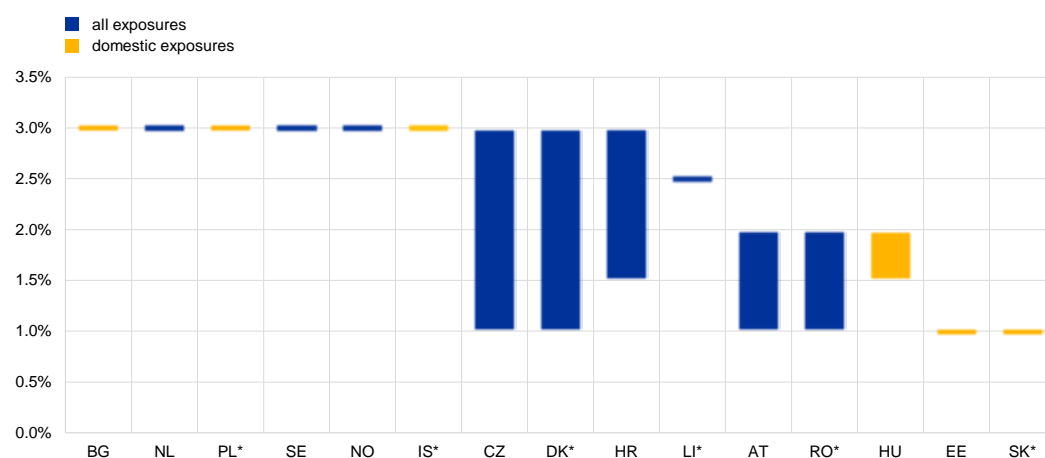
<sup>39</sup> **Opinion ESRB/2017/3** regarding Finnish notification of a stricter national measure based on Article 458 of Regulation (EU) No 575/2013 of the European Parliament and of the Council on prudential requirements for credit institutions and investment firms, ESRB, 19 July 2017.

<sup>40</sup> The Danish Minister for Industry, Business and Financial Affairs decided on 2 May 2017 to set a general systemic risk buffer rate of 1% for exposures in the Faroe Islands from 1 January 2018 onwards following a recommendation of the Systemic Risk Council of Denmark dated 30 March 2017. Although the Faroe Islands are not an EU Member State and are therefore not subject to EU legislation, the Danish Finanstilsynet is responsible for banking supervision in the Faroe Islands. Moreover, all Danish credit institutions with exposures in the Faroe Islands above DKK 200 million were requested to reciprocate the buffer.



Chart 22

### Use of the systemic risk buffer in the EU and the EEA



Source: ESRB.

Notes: The figure refers to the fully phased-in SyRB rate according to the most recent notifications. The range of SyRB levels is represented for each country using a bar, although in practice only certain values within the bar apply (i.e. there are only a limited number of discrete buffer levels). For countries in which the SyRB is applied to all banks, subject to meeting a certain minimum threshold, a 0% default rate may be applicable. In such cases, the full range of the SyRB is not represented; these cases are DK (the Faroe Islands SyRB), HU and RO. In DK, two SyRBs exist with the first applying to all credit institutions in the Faroe Islands and to Danish credit institutions with exposures to the Faroe Islands (above DKK 200 million), while a second SyRB acts as an alternative to the O-SII buffer (applied to all exposures). The two are cumulatively applied up to a potential maximum institution-specific SyRB of 4%; however, currently no entity has both SyRBs applied to it. \* refers to new or changed SyRBs, including changes to the methodology.

## 2.3.5 Buffers for systemically important institutions

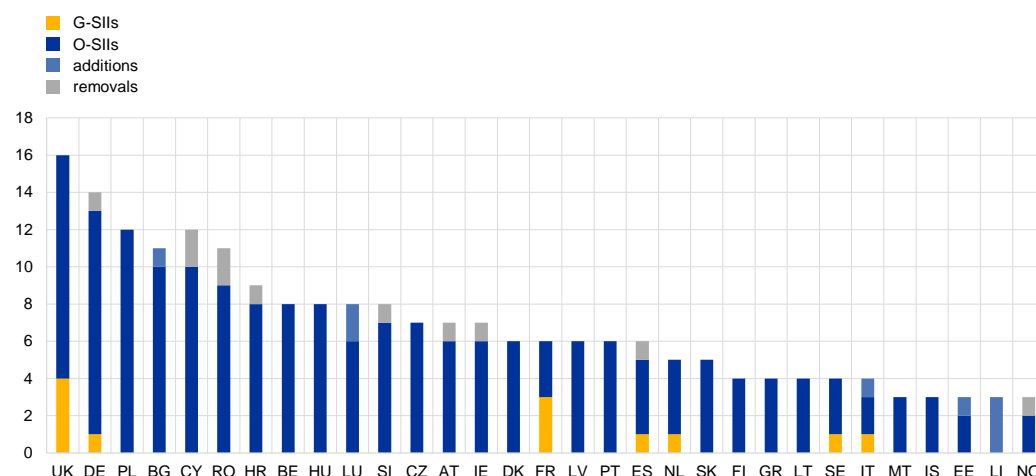
Following the annual systemically important institution (SII) identification process, several changes were made in 2017 to the list of SIIs and the frameworks for SIIs. Member States have to identify O-SIIs and G-SIIs on a yearly basis. In total, 202 SIIs have now been identified in the EU (including Norway, Iceland and Liechtenstein), ranging from 16 in the United Kingdom to three in Estonia, Malta and the three EEA countries (see Chart 23). The total number of O-SIIs changed in only 14 countries, but the list of identified institutions or O-SII buffer levels changed in 18 Member States. These changes are often the result of corporate restructuring (mergers or changes of subsidiaries into branches), changes in the systemic risk score of institutions or changes in the methodology for setting the O-SII buffers.<sup>41</sup> The number of EU-based G-SIIs decreased by one institution as the French Groupe BPCE was deleted from the list of G-SIIs. There are currently 12 G-SIIs in the EU, located in the five largest Member States as well as the Netherlands and Sweden. All G-SIIs have also been identified as O-SIIs in their home markets.

<sup>41</sup> The ECB has adopted a methodology for assessing O-SII buffers set by national authorities, in line with its responsibilities under Article 5 of [Council Regulation \(EU\) No 1024/2013](#) of 15 October 2013 conferring specific tasks on the ECB concerning policies relating to the prudential supervision of credit institutions.



Chart 23

### Number of systemically important institutions by Member State



Source: ESRB.

Notes: In the case of qualification as both a G-SII and an O-SII, the institution has been allocated to the G-SII category. Additions and removals show the changes to the total number of O-SIIs in each Member State made in 2017. The removals result either from the fact that an institution previously identified as an O-SII was not identified as an O-SII in 2017, due to its acquisition or merger with another institution, or due to liquidation or resolution. The changes shown result from notifications received in 2017 regardless of the date of application. The G-SII/O-SII identifications are to take effect immediately or in the near future.

### Given the current level and design of the caps on the O-SII buffer, Member States use various instruments to reach their target buffer level for O-SIIs.

There are marked differences across Member States regarding the level and dispersion of capital buffer rates applied to O-SIIs. Ideally, the dedicated instrument (the O-SII buffer) should be used to address the systemic risk posed by O-SIIs. However, this is not always sufficient or desirable so, in practice, national authorities also use other instruments to address such risks. In its opinion given to the European Commission, the ESRB therefore made a number of proposals on how the existing structural buffer framework could be improved (see Section 2.2).

## 2.3.6 Other measures

**Cyprus implemented a gradual easing of its national prudential liquidity requirements, with the aim of ensuring a smooth transition to the liquidity coverage requirement (LCR) under EU law.** European prudential rules require Member States to fully phase in the LCR from 1 January 2018 onwards. Until end-2017 Cyprus had national prudential liquidity requirements in place that were computed on the basis of a different methodology than the LCR and which turned out to be substantially more stringent than the latter on aggregate. The specific characteristics of these national requirements were driven by the banking sector's heavy reliance on customer deposits and the Central Bank of Cyprus' view that the LCR does not sufficiently address the inherent risk in particular categories of such deposits.

In order to ensure a smooth transition to the compulsory LCR, Cyprus started gradually relaxing its national prudential liquidity requirements in the course of 2017. Furthermore, it proposed to





implement a macroprudential liquidity buffer on top of the LCR for the year 2018 using Article 458 of the CRR. The ESRB issued an opinion on the latter measure, as required by Article 458. This opinion expressed the view that the important cliff effects following the transition to the new liquidity regime could pose financial stability risks, and thus justified the measure.

**The ESRB received a notification from France's High Council for Financial Stability (Haut Conseil de stabilité financière) of stricter requirements on large exposures to be adopted under Article 458 of the CRR.** The measure consisted in tightening limits for large exposures of French systemically important credit institutions to highly indebted large non-financial corporates that have their registered office in France. The measure, which fell under Article 458(2)(d)(ii) of the CRR, was the first instance of an authority asking to use this article to set stricter large exposure limits. As per the requirements specified in Article 458(4) of the CRR, the ESRB provided an opinion on the proposed measure to the EU Council, the European Commission and France. The opinion stated that the stricter measure at that point in time was warranted; however, the accompanying assessment<sup>42</sup> outlined a number of issues which required close follow-up by the French authorities in order to ensure the effectiveness of the measure.

## 2.3.7 Reciprocating actions taken by Member States

### a) Systemic risk buffer in Estonia

**In 2016 the ESRB recommended the reciprocation of the Estonian SyRB.** The Estonian SyRB rate of 1% for domestic exposures of all credit institutions authorised in Estonia was introduced in 2016. The Estonian authorities requested that the ESRB recommend reciprocation of the measure, motivated by a significant presence of foreign branches in Estonia (mainly from the Scandinavian and Nordic countries). An institution-specific materiality threshold of €200 million was suggested to guide the application of the de minimis principle. In June 2016 the ESRB issued its recommendation to other Member States to reciprocate the measure.

**Up to now, 14 Member States have reciprocated the Estonian SyRB.** These include Sweden and Denmark – the two Member States with the largest exposures to Estonia. Over the course of 2017 the ESRB received two further notifications from reciprocating Member States, namely Croatia and Cyprus. Together with Portugal, Luxembourg and Belgium, they decided to reciprocate the Estonian measure as a matter of principle. Finland is considering reciprocation now that its new legislation with respect to the SyRB has entered into force.

### b) National flexibility measure in Belgium

**In 2016 the ESRB recommended the reciprocation of a Belgian national flexibility measure.** The stricter national macroprudential measure introduced in Belgium, under Article 458 of the CRR,

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<sup>42</sup> See **Opinion ESRB/2018/3** regarding French notification of a stricter national measure based on Article 458 of Regulation (EU) No 575/2013 of the European Parliament and of the Council on prudential requirements for credit institutions and investment firms, ESRB, 9 March 2018.



consisted of a 5 percentage point risk weight add-on for IRB banks' exposures secured by residential immovable property in Belgium (see Section 2.3.3). The request for reciprocation and the ESRB recommendation for other Member States to reciprocate the measure were issued in March 2016.

**So far, nine jurisdictions have reciprocated the measure.** Among those are the three Member States with the largest exposures to the Belgian RRE sector, i.e. France, the Netherlands and Luxembourg. In 2017 the ESRB received two further notifications of reciprocating actions from Croatia and Cyprus. The countries reciprocated the Belgian measure in their jurisdictions in line with the ESRB reciprocity framework.<sup>43</sup> Croatia reciprocated the measure and applied the de minimis principle. The Cypriot decision follows the “reciprocation in principle” approach and subjects all credit institutions domiciled in Cyprus to the new measure.

**As the original, legally binding measure expired in May 2017, there is no longer a legal basis for reciprocating the measure.** The Belgian authorities replaced the expired measure with a non-binding recommendation and proposed a new draft measure (see Section 2.3.3). The relevant authorities of the nine reciprocating jurisdictions have not been formally replicating the expired Belgian measure with a non-binding recommendation in their jurisdictions. The ESRB removed Belgium from its list of macroprudential measures to be reciprocated.<sup>44</sup>

### c) National flexibility measure in Finland

**So far, four jurisdictions have reciprocated the Finnish national flexibility measure, which the ESRB had recommended for reciprocation in January 2018.** The measure assigned a credit institution-specific floor of 15% to the average risk weight for residential mortgage loans of credit institutions using the IRB approach (see Section 2.3.3). Sweden – the Member State with the largest exposures to Finnish real estate – reciprocated the measure in December 2017.

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<sup>43</sup> **Recommendation ESRB/2015/2** on the assessment of cross-border effects of and voluntary reciprocity for macroprudential policy measures, ESRB, 15 December 2015. According to sub-recommendation C(2) of this recommendation, Member States should introduce the same macroprudential tool used in the activating jurisdiction or implement a similar measure with an equivalent economic effect.

<sup>44</sup> The removal was implemented by **Recommendation ESRB/2018/1**, which included the Finnish Article 458 measure in the list of macroprudential measures to be reciprocated.



## 3 Ensuring implementation and accountability

**This final section provides an overview of the action taken to enhance the ESRB's accountability.** First, it explores how compliance with the ESRB's recommendations is assessed by examining the results of the follow-up processes carried out in the review period. Second, it gives an account of the ESRB's reporting to the European Parliament, including the presentations given by the Chair of the ESRB at the hearings before the Committee on Economic and Monetary Affairs, and of other institutional aspects. Finally, the section concludes with an overview of the events that were organised over the review period, as well as a reference to the publications of the ESRB.

### 3.1 Assessment of compliance with ESRB recommendations

**ESRB recommendations are not legally binding, but they are subject to an “act or explain” regime.** This means that the addressees of recommendations – such as the EU as a whole, Member States, ESAs, NSAs and the European Commission – have an obligation to communicate to the ESRB and the EU Council the actions that they have taken to comply with a recommendation, or to provide adequate justification in the case of inaction. In order to provide guidance to addressees on how to assess the implementation of ESRB recommendations, the “Handbook on the assessment of compliance with ESRB recommendations” (hereafter the “Handbook”)<sup>45</sup> was published in July 2013 and later revised in April 2016.

**The following sub-sections outline the five compliance assessments conducted over the review period.** The compliance assessments were undertaken for the entirety, or sub-parts, of the following recommendations: Recommendation ESRB/2012/1 on money market funds; Recommendation ESRB/2012/2 on funding of credit institutions; Recommendation ESRB/2014/1 on guidance for setting countercyclical buffer rates; Recommendation ESRB/2015/1 on recognising and setting countercyclical buffer rates for exposures to third countries; and Recommendation ESRB/2015/2 on the assessment of cross-border effects of and voluntary reciprocity for macroprudential policy measures.

#### 3.1.1 Recommendation ESRB/2012/1 on money market funds

**This ESRB recommendation aims to reduce the systemic risks arising from MMFs.** A recommendation was addressed to the European Commission to ensure, through EU legislation, the implementation of the change from a constant to a fluctuating net asset value model, the introduction of stricter liquidity requirements, the public disclosure of specific information by MMFs and the adoption by MMFs of enhanced obligations for reporting to supervisory authorities.

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<sup>45</sup> [Handbook on the assessment of compliance with ESRB recommendations](#), ESRB, April 2016.



**The overall assessment of the recommendation is divided into two different stages.** In the first stage, the ESRB considered the compliance of the legislative proposal of the European Commission with the recommendation. In the second stage, the ESRB analyses the EU MMF Regulation, which was adopted under the ordinary legislative procedure.<sup>46</sup> The second stage of the assessment should not be considered as a formal assessment given that the European Parliament and the EU Council are not addressees of the recommendation. Instead, this stage, which is ongoing, is an evaluation of the content of the MMF Regulation, taking into consideration the provisions set forth in the recommendation.

### **3.1.2 Recommendation ESRB/2012/2 on funding of credit institutions (update of Summary Compliance Report)**

**In October 2017 the ESRB concluded a compliance assessment of sub-recommendation A(5) of Recommendation ESRB/2012/2,** under which it was recommended that the EBA coordinate the assessment of credit institutions' funding plans at the EU level, including their plans to reduce reliance on public sector funding sources. In addition, an assessment of the viability of such plans for the EU banking system, on an aggregated basis, was to be conducted by the EBA. The compliance assessment, which was a follow-up to the assessment of the remainder of Recommendation ESRB/2012/2 conducted in 2016, resulted in the implementation of said sub-recommendation by the EBA being assessed as fully compliant.

**The ESRB decided not to carry out a further assessment of sub-recommendation E(4).** Under sub-recommendation E(4), the EBA is assigned the role of assessing whether there are other financial instruments that generate encumbrance and would benefit from the identification of best practices in national frameworks. Since no best practices regarding other financial instruments were identified by the EBA by the set deadline, and considering the EBA's ongoing work on asset encumbrance, it was decided not to perform a further assessment of this sub-recommendation.

**Accordingly, the Summary Compliance Report was updated** to reflect the above-mentioned additional inputs. The Summary Compliance Report was published on the ESRB's website in March 2018.<sup>47</sup>

### **3.1.3 Recommendation ESRB/2014/1 on guidance for setting countercyclical buffer rates**

**This recommendation provides guidance on setting countercyclical buffer rates, with the aim of establishing a common approach across the EU.** The role of the ESRB in providing such guidance is set forth in Article 135 of Directive 2013/36/EU. In particular, the recommendation provides guidance to designated authorities by listing a set of principles which are to be adhered to when assessing and setting the appropriate countercyclical buffer rates applicable in the respective Member States. Moreover, it provides guidance on other topics of relevance when setting a

<sup>46</sup> **Regulation (EU) 2017/1131** of the European Parliament and of the Council of 14 June 2017 on money market funds (OJ L 169, 30.6.2017, p. 8).

<sup>47</sup> See **Summary Compliance Report**, ESRB, March 2018.



countercyclical buffer rate: (i) the measurement and calculation of the credit-to-GDP gap; (ii) the calculation of the benchmark buffer rate and the buffer guide; (iii) the variables that indicate the build-up of system-wide risk associated with periods of excessive credit growth; and (iv) the variables that indicate that the countercyclical buffer should be maintained, reduced or fully released.

**The deadline for addressees to report to the ESRB, the EU Council and the European Commission on the level of implementation of the recommendation was 30 June 2016.** The assessment of compliance with this recommendation is ongoing (it commenced in May 2017) and is expected to be concluded by September 2018.

### **3.1.4 Recommendation ESRB/2015/1 on recognising and setting countercyclical buffer rates for exposures to third countries**

**This recommendation aims to promote a coherent approach across the EU for recognising and setting countercyclical buffer rates for exposures to third countries in order to prevent an uneven playing field and regulatory arbitrage.** The recommendation is intended to ensure that designated authorities recognise countercyclical buffer rates set by third-country authorities, set countercyclical buffer rates for exposures to third countries and lower these countercyclical buffer rates when risks in a particular third country abate or materialise. Exposures of a Member State's domestic banking sector to third countries could result in potentially significant losses if a third country, to which a Member State's domestic banking sector has material exposures, were to enter an economic downturn following a period of excessive credit growth.

**Following the timeline set out in the recommendation, the ESRB conducted an assessment of sub-recommendations B(1) and B(2) and recommendation D.**<sup>48</sup> Recommendation B is designed to ensure that national designated authorities (NDAs), when exercising their powers to set a countercyclical buffer rate for exposures to a particular third country, set a rate at the same level. According to sub-recommendation B(1), each NDA should have a methodology to identify material third countries annually. Under sub-recommendation B(2), the NDA should monitor risks from excessive credit growth in material third countries at least annually, unless these countries are already monitored by the ESRB in accordance with Decision ESRB/2015/3.<sup>49</sup> Recommendation D is intended to ensure that NDAs amend their strategies and communication framework so as to encompass decisions on recognising and setting countercyclical buffer rates for exposures to third countries.

**The degree of compliance with sub-recommendation B(1), sub-recommendation B(2) and recommendation D was overall high.** In view of the fact that reports from addressees on compliance with the remainder of the recommendation are to be submitted by 31 December 2020,

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<sup>48</sup> The deadline for addressees to provide information on the level of implementation of sub-recommendations B(1) and B(2) and recommendation D was 31 December 2016. Reports on the implementation of recommendation A, sub-recommendation B(3) and recommendation C are due by 31 December 2020; therefore, these were not part of the latest assessment of the implementation of the recommendation.

<sup>49</sup> See [Decision ESRB/2015/3](#) on the assessment of materiality of third countries for the Union's banking system in relation to the recognition and setting of countercyclical buffer rates, ESRB, 11 December 2015.



it is envisaged that the Summary Compliance Report will be published once the compliance assessment with respect to the rest of the recommendation is concluded.

### **3.1.5 Recommendation ESRB/2015/2 on the assessment of cross-border effects of and voluntary reciprocity for macroprudential policy measures**

**This recommendation aims to promote a coordinated policy approach across borders within the EU and to prevent financial service providers from circumventing national macroprudential measures.** In particular, the recommendation focuses on the assessment of cross-border effects of relevant activating authorities' own macroprudential policy measures, ahead of the request for reciprocity. Moreover, it sets out the procedures to be followed both when submitting a request for reciprocity and when giving notification of reciprocity of other relevant authorities' macroprudential policy measures. Finally, the recommendation contains a continuously updated list of macroprudential policy measures adopted by other relevant authorities and recommended by the ESRB for reciprocity.

**The assessment of the follow-up to the recommendation started in the first quarter of 2018 and will be based on the information provided by the addressees by the 30 June 2017 deadline stipulated in the recommendation.** The exercise is expected to be completed by December 2018.

## **3.2 Reporting to the European Parliament and other institutional aspects**

### **3.2.1 Reporting to the European Parliament**

**The ESRB reports regularly to the European Parliament on its activities pursuant to Article 19 of the ESRB Regulation.**<sup>50</sup> In line with its accountability and reporting obligations, the Chair of the ESRB attends hearings before the Committee on Economic and Monetary Affairs of the European Parliament (ECON). These hearings are public and are transmitted by a webcast accessible via the ESRB's website.

**The introductory statements of the ESRB's Chair and Vice-Chairs are published on the ESRB's website.** These statements provide the Members of the European Parliament (MEPs) with an overview of the ESRB's stance on current systemic risks arising from the different financial sectors and on the macroprudential policy options recommended.

**At the hearings, the ESRB Chair presents policy initiatives that have been adopted in the course of the year, with a view to providing MEPs with first-hand information on the**

<sup>50</sup> **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 (OJ L 331, 15.12.2010, p. 1).



**underlying rationale for such initiatives.** The main points of the two most recent hearings are summarised below.

**At the hearing on 29 May 2017 before ECON, the Chair of the ESRB discussed the ESRB's work on systemic risks beyond banking** and highlighted risks identified in the second EU Shadow Banking Monitor,<sup>51</sup> namely:

- the liquidity and excessive leverage risks among some types of investment funds which either invest in less liquid assets while offering daily redeemable shares, or which are highly leveraged;
- the leverage and liquidity risk in the context of the use of derivatives and securities financing transactions; and
- the interconnectedness and contagion risks, both across different parts of the financial sector and within the shadow banking system, as potential channels for amplifying systemic stress.

**The Chair of the ESRB noted that there was a need to establish a comprehensive and flexible macroprudential toolkit for the non-bank financial sector;** instruments such as margin and haircut requirements for derivatives and securities financing transactions, as well as liquidity and leverage requirements for investment funds, should be further investigated and the design of recovery and resolution regimes for CCPs and insurance corporations should have a macroprudential profile. Finally, the Chair of the ESRB mentioned the publication of the review of macroprudential policy in 2016.<sup>52</sup>

**At the hearing on 20 November 2017 before ECON, the Chair of the ESRB** focused on four topics:

- developments in the macroprudential policy framework, in particular as regards the use of the countercyclical capital buffer and real estate instruments;
- the ESRB report on the financial stability implications of IFRS 9<sup>53</sup>;
- the ESRB's contributions to the policy framework beyond banking, namely the ESRB opinion on the draft Presidency proposal on a recovery and resolution regime for CCPs and the ESRB stance as regards a recovery and resolution framework for insurers; and
- the ESRB's focus on analysing and monitoring the EU derivatives markets.

**The Chair of the ESRB also noted that the ESRB was conducting a risk analysis of EU commercial real estate markets.** The analysis confirmed that significant data gaps exist for the sector, hampering macroprudential monitoring. Therefore, the ESRB Chair strongly encouraged the relevant authorities to work towards implementing the ESRB Recommendation on closing real estate data gaps.<sup>54</sup>

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<sup>51</sup> **EU Shadow Banking Monitor**, No 2, ESRB, May 2017.

<sup>52</sup> **A Review of Macroprudential Policy in the EU in 2016**, ESRB, April 2017.

<sup>53</sup> **Financial stability implications of IFRS 9**, ESRB, July 2017.

<sup>54</sup> **Recommendation ESRB/2016/14** on closing real estate data gaps, ESRB, 31 October 2016.



In addition to the public hearings, the Chair holds confidential discussions on the work of the ESRB with the Chair and Vice-Chairs of ECON, when appropriate.

### 3.2.2 The institutional framework

The organisational structure of the ESRB comprises a General Board, a Steering Committee, an Advisory Scientific Committee (ASC), an Advisory Technical Committee (ATC) and a Secretariat. The ESRB is currently chaired by the President of the ECB, Mario Draghi. The composition of the Steering Committee changed during the period under review: the term of office of Luis M. Linde, Governor of the Banco de España, finished in December 2017. The General Board, at its 25th regular meeting, appointed Philip R. Lane, Governor of the Central Bank of Ireland, as Chair of the ATC for a three-year term. The first ATC meeting chaired by Governor Lane was held in August 2017. Professor Javier Suarez took up the role of Chair of the ASC on 1 March 2018. The previous Chair was Professor Richard Portes, who became Vice-Chair of the ASC on the same date.

From 1 April 2017 until 31 March 2018 there were 33 active working groups within the ESRB. Overall, 126 meetings and 357 teleconferences were organised to perform the tasks assigned to them.

The ECB supports the ESRB. The day-to-day business of the ESRB is carried out by its Secretariat. The Head of the ESRB Secretariat is Francesco Mazzaferro and the Deputy Head is Tuomas Peltonen. In accordance with Council Regulation (EU) No 1096/2010<sup>55</sup> the ECB ensures the functioning of the Secretariat of the ESRB and thereby provides the ESRB with analytical, statistical, logistical and administrative support. In 2017 the ECB provided the ESRB with support in the form of 60.6 full-time equivalent staff. Of these, 28.8 persons were employed within the Secretariat and 31.8 persons provided other forms of support. The direct costs incurred by the ECB amounted to €9.3 million. The indirect costs for other support services shared with the ECB (e.g. human resources, IT, general administration) are in addition to this amount. Over the same period, other member institutions of the ESRB provided approximately 64.7 full-time equivalent staff for analytical support within the context of ESRB groups and ESRB group chair positions.

On 31 March 2017 the General Board of the ESRB adopted Decision ESRB/2017/2 amending the Rules of Procedure of the ESRB<sup>56</sup>, in view of the Decision of the EEA Joint Committee No 198/2016<sup>57</sup> and Council Decision (EU) 2016/117<sup>58</sup>. Thereby, the ESRB Regulation was

<sup>55</sup> 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 (OJ L 331, 15.12.2010, p. 162).

<sup>56</sup> Respectively, Decision of the European Systemic Risk Board of 31 March 2017 amending Decision of the European Systemic Risk Board of 20 January 2011 adopting the Rules of Procedure of the European Systemic Risk Board (ESRB/2017/2), OJ C 124, 21.4.2017, p. 3, and Decision of the European Systemic Risk Board of 20 January 2011 adopting the Rules of Procedure of the European Systemic Risk Board (ESRB/2011/1), OJ C 58, 24.2.2011, p. 4, as amended by Decision of the European Systemic Risk Board of 12 October 2016 amending Decision of the European Systemic Risk Board of 20 January 2011 adopting the Rules of Procedure of the European Systemic Risk Board (ESRB/2016/13), OJ C 437, 25.11.2016, p. 8.

<sup>57</sup> Decision of the EEA Joint Committee No 198/2016 of 30 September 2016, OJ L 46, 23.2.2017, p. 1.

<sup>58</sup> Council Decision (EU) 2016/1171 of 12 July 2016 on the position to be adopted, on behalf of the European Union, within the EEA Joint Committee concerning amendments to Annex IX (Financial Services) to the EEA Agreement, OJ L 193, 19.7.2016, p. 38.





incorporated into Annex IX (Financial Services) to the EEA Agreement and participation in the ESRB was opened up to representatives of relevant authorities from Iceland, Liechtenstein and Norway, beyond the scope of Article 9(5) of the ESRB Regulation but with specific limitations concerning the discussion of the situation of individual institutions or EU Member States.

## 3.3 ESRB events and publications

### 3.3.1 Events

**In 2017 the ESRB organised a number of conferences and workshops as part of its work aimed at fostering discussion on macroprudential policy.** In April 2017 a workshop on designing macroprudential policy tools and assessing their effectiveness took place, organised by Magyar Nemzeti Bank, in collaboration with the Centre for Economic Policy Research and the ESRB. The aim was to facilitate a dialogue between policymakers and researchers in order to deepen the collective understanding of the effectiveness of macroprudential policy. In June 2017 the ESRB, in conjunction with the ECB and the International Monetary Fund (IMF), held a workshop on macroprudential policymaking for the real estate sector. The ESRB also organised a conference on systemic risk analytics in collaboration with Suomen Pankki (Bank of Finland) and the RiskLab at the Arcada University of Applied Sciences. The main objective of the conference was to adopt methods and techniques from other disciplines which use computer-intensive approaches, novel data sources, visual representations or interactive interfaces, among others, for systemic risk identification and assessment. Finally, at the second ESRB Annual Conference, panellists engaged in debate on the legal perspectives of macroprudential regulation, on the challenges and future of banking in the EU, on addressing NPLs in the EU banking sector, on identifying and assessing risks in the shadow banking system and on macroprudential policy beyond banking (see Box 5).

#### Box 5

#### ESRB Annual Conference on 21 and 22 September 2017

On 21 and 22 September 2017 the ESRB held its second Annual Conference. The conference included two keynote speeches, two policy panel discussions and three sessions. The records are available on the ESRB's website.

In the welcome address, the Chair of the ESRB, Mario Draghi, highlighted what further work needs to be done to maintain financial stability. While the emergence of a more resilient post-crisis banking sector was acknowledged, it was noted that the interaction between monetary and macroprudential policy remains one of the major concerns in the post-crisis era. Furthermore, consideration was given to addressing “the remaining legacies of the crisis” through the effective resolution of already impaired assets and better accounting for future impaired assets. The growing importance of the non-bank financial sector, in addition to the findings of the ESRB's EU Shadow Banking Monitor, highlight the cross-border nature of the banking and shadow banking systems, thus stressing the necessity for international cooperation in monitoring and addressing cross-sectoral risks.



Considering areas impeding the recovery of certain Member States, the Vice-President of the European Commission, Valdis Dombrovskis, presented the Commission's Action Plan adopted by the Council in July 2017 aimed at addressing NPLs. The four key areas to be addressed are: (1) enhancing supervisory policies; (2) introducing structural and legal reforms; (3) fostering secondary markets for NPLs; and (4) restructuring the banking sector. Tobias Adrian, Director of the IMF's Monetary and Capital Markets Department, discussed the relations between macroprudential policy and financial vulnerabilities. It was proposed not to underestimate changes in financial conditions, provided that they have measurable effects in amplifying economic volatility, as they may adversely impact GDP growth through a number of economic channels.

These keynote speeches set the scene for policy panel debates which focused on the legal perspectives of macroprudential regulation and on the conduct of macroprudential policy beyond banking. Discussants focused on the most effective legal models for the conduct of macroprudential policies, including the cross-border aspects of adopting and enforcing legal instruments. In particular, the legal issues associated with the resolution of systemic institutions and obstacles to the effective exchange of information and coordination between authorities in different jurisdictions were highlighted. Furthermore, the operationalisation of existing tools beyond the banking sector, the development and prioritisation of new macroprudential tools, as well as the challenges and opportunities associated with their implementation, were explored.

At the conference, papers on the implications of three specific topics were presented, namely: (1) the challenges and future of banking in the EU; (2) addressing NPLs in the EU banking sector; and (3) risk monitoring in the shadow banking system. Three main insights emerged. First, technological developments and the persisting low interest rate environment were identified as the main challenges for maintaining or improving profitability in the EU banking sector. Second, the multiple dimensions of NPLs make tackling them a key priority to restore the sustainability of the banking system in certain Member States and require adequate corrective actions. Third, there is a need to systematically define what shadow banking is and subsequently to gather the relevant data to inform the development of an appropriate risk monitoring framework.

Finally, the 2017 ESRB Research Prize in memory of Ieke van den Burg was awarded to Marco D'Errico and Tarik Roukny for their research paper on "Compressing over-the-counter markets", which was presented at the conference.

### 3.3.2 Publications

**The ESRB's publications are available on its website. They include namely warnings, recommendations, opinions, compliance reports, commentaries, occasional papers, ESRB reports, working papers and other ESRB publications.**

A list of all of the publications (including legal instruments) published on the ESRB's website from 1 April 2017 to 31 March 2018 can be found in the annex.



# Annex

## Publications on the ESRB's website from 1 April 2017 to 31 March 2018

### Recommendations

**14/02/2018**

Recommendation of the European Systemic Risk Board of 7 December 2017 on liquidity and leverage risks in investment funds (ESRB/2017/6)

**13/02/2018**

Recommendation of the European Systemic Risk Board of 8 January 2018 amending Recommendation ESRB/2015/2 on the assessment of cross-border effects of and voluntary reciprocity for macroprudential policy measures (ESRB/2018/1)

**15/12/2017**

Recommendation of the European Systemic Risk Board of 20 October 2017 amending Recommendation ESRB/2015/2 on the assessment of cross-border effects of and voluntary reciprocity for macroprudential policy measures (ESRB/2017/4)

### Opinions

**16/03/2018**

Opinion of the European Systemic Risk Board of 9 March 2018 regarding French notification of a stricter national measure based on Article 458 of Regulation (EU) No 575/2013 of the European Parliament and of the Council on prudential requirements for credit institutions and investment firms (ESRB/2018/3) and the related report

**15/03/2018**

Opinion of the European Systemic Risk Board of 16 February 2018 regarding Belgian notification of a stricter national measure based on Article 458 of Regulation (EU) No 575/2013 of the European Parliament and of the Council on prudential requirements for credit institutions and investment firms (ESRB/2018/2) and the related report

**07/12/2017**

Opinion of the European Systemic Risk Board of 7 December 2017 regarding Cypriot notification of a stricter national measure based on Article 458 of Regulation (EU) No 575/2013 of the European Parliament and of the Council on prudential requirements for credit institutions and investment firms (ESRB/2017/5) and the related report

**30/08/2017**

Opinion of the European Systemic Risk Board of 19 July 2017 regarding Finnish notification of a stricter national measure based on Article 458 of Regulation (EU) No 575/2013 of the European Parliament and of the Council on prudential requirements for credit institutions and investment firms (ESRB/2017/3) and the related report



**29/06/2017**

Opinion of the European Systemic Risk Board of 13 March 2017 regarding Belgian notification of a stricter national measure based on Article 458 of Regulation (EU) No 575/2013 of the European Parliament and of the Council on prudential requirements for credit institutions and investment firms (ESRB/2017/1) and the related report

## **Compliance reports**

**05/03/2018**

ESRB/2012/2 on funding of credit institutions: Follow-up – Summary Compliance Report (update)

## **Occasional papers**

**29/03/2018**

Occasional Paper No 14 entitled “Indicators for the monitoring of central counterparties in the EU” by Emanuel Alfranseder, Paweł Fiedor, Sarah Lapschies, Lucia Országhová and Paweł Sobolewski

**31/07/2017**

Occasional Paper No 13 entitled “A new database for financial crises in European countries” by Marco Lo Duca, Anne Koban, Marisa Basten, Elias Bengtsson, Benjamin Laus, Piotr Kusmierczyk, Jan Hannes Lang, Carsten Detken (editor) and Tuomas Peltonen (editor)

**17/07/2017**

Occasional Paper No 12 entitled “Assessing the cyclical implications of IFRS 9 – a recursive model” by Jorge Abad and Javier Suarez

## **ESRB reports**

**27/02/2018**

Final report on the use of structural macroprudential instruments in the EU

**17/08/2017**

Regulatory risk-free yield curve properties and macroprudential consequences

**17/08/2017**

Recovery and resolution for the EU insurance sector: a macroprudential perspective

**17/07/2017**

Financial stability implications of IFRS 9

**11/07/2017**

Resolving non-performing loans in Europe

**29/05/2017**

EU Shadow Banking Monitor, No 2, May 2017



**21/04/2017**

Revision of the European Market Infrastructure Regulation

**13/04/2017**

A Review of Macroprudential Policy in the EU in 2016

## **Working papers**

**13/03/2018**

Working Paper No 72 entitled “Clearinghouse-Five: determinants of voluntary clearing in European derivatives markets” by Paweł Fiedor

**01/03/2018**

Working Paper No 71 entitled “Resolving a Non-Performing Loan crisis: the ongoing case of the Irish mortgage market” by Fergal McCann

**01/03/2018**

Working Paper No 70 entitled “The variance risk premium and capital structure” by Babak Lotfaliei

**19/02/2018**

Working Paper No 69 entitled “When gambling for resurrection is too risky” by Divya Kirti

**16/02/2018**

Working Paper No 68 entitled “Business cycles and the balance sheets of the financial and non-financial sectors” by Alonso Villacorta

**29/01/2018**

Working Paper No 67 entitled “Positive liquidity spillovers from sovereign bond-backed securities” by Peter G. Dunne

**29/01/2018**

Working Paper No 66 entitled “How effective are sovereign bond-backed securities as a spillover prevention device?” by David Cronin and Peter G. Dunne

**29/01/2018**

Working Paper No 65 entitled “Sovereign bond-backed securities: a VAR-for-VaR and Marginal Expected Shortfall assessment” by Maite De Sola Perea, Peter G. Dunne, Martin Puhl and Thomas Reininger

**16/01/2018**

Working Paper No 64 entitled “Short-selling bans and bank stability” by Alessandro Beber, Daniela Fabbri, Marco Pagano and Saverio Simonelli

**16/01/2018**

Working Paper No 63 entitled “Banks’ maturity transformation: risk, reward, and policy” by Pierluigi Bologna



**15/12/2017**

Working Paper No 62 entitled “The demand for central clearing: to clear or not to clear, that is the question” by Mario Bellia, Roberto Panzica, Lorian Pelizzon and Tuomas Peltonen

**15/12/2017**

Working Paper No 61 entitled “Discriminatory pricing of over-the-counter derivatives” by Harald Hau, Peter Hoffmann, Sam Langfield and Yannick Timmer

**15/12/2017**

Working Paper No 60 entitled “Crises in the modern financial ecosystem” by Giovanni di Lasio and Zoltan Pozsar

**01/12/2017**

Working Paper No 59 entitled “ETF arbitrage under liquidity mismatch” by Kevin Pan and Yao Zeng

**15/11/2017**

Working Paper No 58 entitled “Syndicated loans and CDS positioning” by Iñaki Aldasoro and Andreas Barth

**15/11/2017**

Working Paper No 57 entitled “Why are banks not recapitalized during crises?” by Matteo Crosignani

**01/11/2017**

Working Paper No 56 entitled “A macro approach to international bank resolution” by Dirk Schoenmaker

**20/10/2017**

Working Paper No 55 entitled “Collateral scarcity premia in euro area repo markets” by Massimo Ferrari, Claudia Guagliano and Julien Mazzacurati

**15/09/2017**

Working Paper No 54 entitled “Networks of counterparties in the centrally cleared EU-wide interest rate derivatives market” by Paweł Fiedor, Sarah Lapschies and Lucia Országhová

**01/08/2017**

Working Paper No 53 entitled “Two Big Distortions: Bank Incentives for Debt Financing” by Jesse Groenewegen and Peter Wierts

**14/07/2017**

Working Paper No 52 entitled “Asset Encumbrance, Bank Funding and Fragility” by Toni Ahnert, Kartik Anand, Prasanna Gai and James Chapman

**14/07/2017**

Working Paper No 51 entitled “The missing links: A global study on uncovering financial network structures from partial data” by Kartik Anand, Iman van Lelyveld, Ádám Banai, Soeren Friedrich, Rodney Garratt et al.



**30/06/2017**

Working Paper No 50 entitled “Equity versus bail-in debt in banking: an agency perspective” by Caterina Mendicino, Kalin Nikolov and Javier Suarez

**30/06/2017**

Working Paper No 49 entitled “Wholesale funding dry-ups” by Christophe Pérignon, David Thesmar and Guillaume Vuilleme

**14/06/2017**

Working Paper No 48 entitled “Banking integration and house price comovement” by Augustin Landier, David Sraer and David Thesmar

**14/06/2017**

Working Paper No 47 entitled “The real effects of bank capital requirements” by Henri Fraisse, Mathias Lé and David Thesmar

**09/06/2017**

Working Paper No 46 entitled “Simulating fire-sales in a banking and shadow banking system” by Susanna Calimani, Grzegorz Hałaj and Dawid Żochowski

**09/06/2017**

Working Paper No 45 entitled “Use of unit root methods in early warning of financial crises” by Timo Virtanen, Eero Tölö, Matti Virén and Katja Taipalus

**02/05/2017**

Working Paper No 44 entitled “Compressing over-the-counter markets” by Marco D’Errico and Tarik Roukny

**02/05/2017**

Working Paper No 43 entitled “Coherent financial cycles for G7 countries: Why extending credit can be an asset” by Yves S. Schuler, Paul P. Hiebert and Tuomas A. Peltonen

**03/04/2017**

Working Paper No 42 entitled “A dynamic theory of mutual fund runs and liquidity management” by Yao Zeng

**03/04/2017**

Working Paper No 41 entitled “Financial frictions and the real economy” by Mario Pietrunti

### **Other ESRB publications**

**28/02/2018**

ESRB response to the ESMA Consultation Paper on draft guidelines on anti-procyclicality margin measures for CCPs

**27/02/2018**

Opinion to the European Commission on structural macroprudential buffers



**31/01/2018**

Adverse scenario for the EBA 2018 EU-wide banking sector stress test

**29/01/2018**

Report of the High-Level Task Force on Safe Assets

**20/12/2017**

ESRB risk dashboard, Issue 22, December 2017

**28/09/2017**

ESRB risk dashboard, Issue 21, September 2017

**31/07/2017**

European financial crises database

**28/07/2017**

ESRB Annual Report 2016

**25/07/2017**

Opinion on a central counterparty recovery and resolution framework

**29/06/2017**

ESRB risk dashboard, Issue 20, June 2017





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