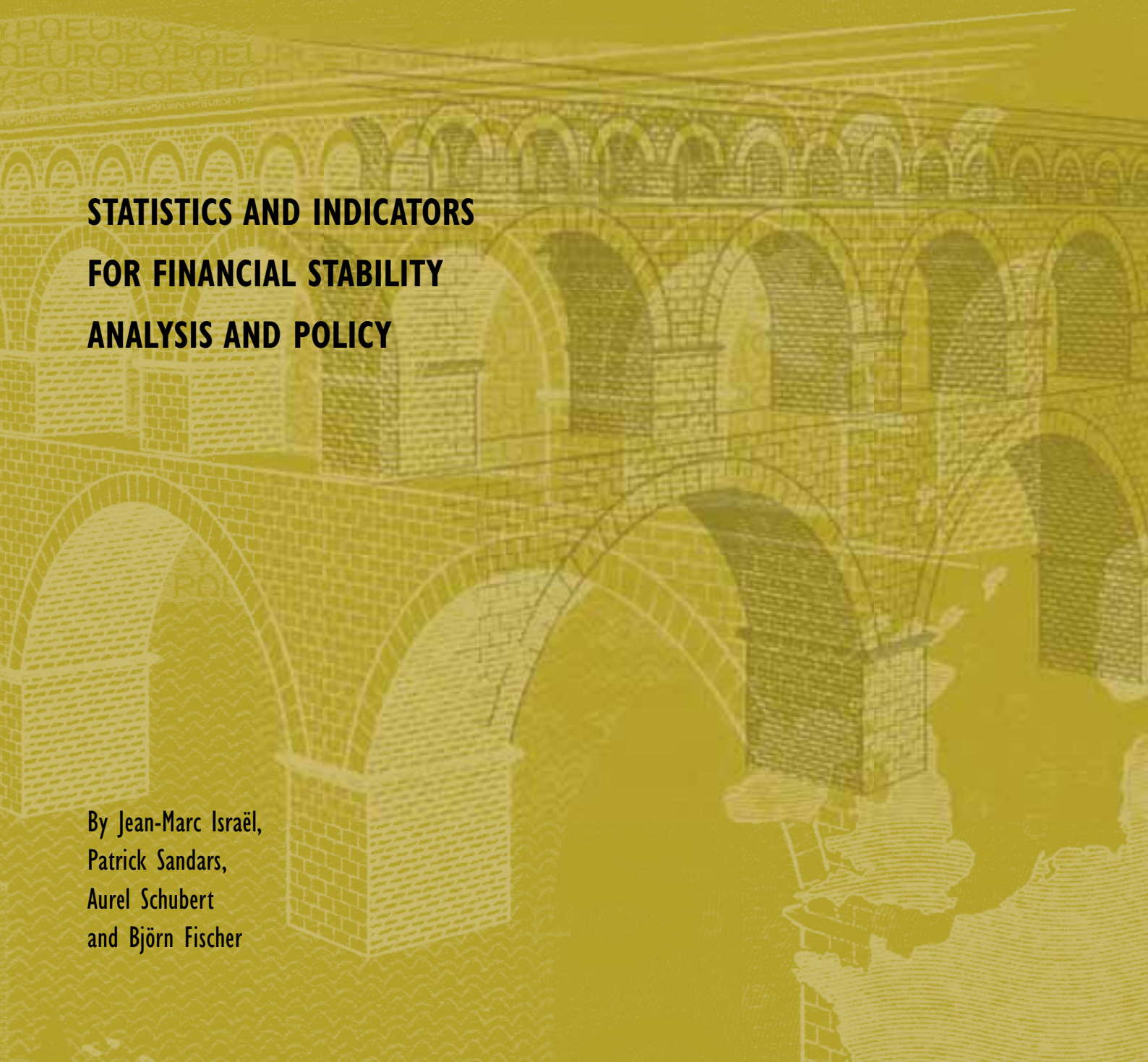
EUROPEAN CENTRAL BANK
EUROSYSTEM

OCCASIONAL PAPER SERIES
NO 145 / APRIL 2013

STATISTICS AND INDICATORS FOR FINANCIAL STABILITY ANALYSIS AND POLICY



By Jean-Marc Israël,
Patrick Sandars,
Aurel Schubert
and Björn Fischer

EUROPEAN CENTRAL BANK

EUROSYSTEM

OCCASIONAL PAPER SERIES

NO 145 / APRIL 2013

STATISTICS AND INDICATORS FOR FINANCIAL STABILITY ANALYSIS AND POLICY[1]

By Jean-Marc Israël, Patrick Sandars, Aurel Schubert and Björn Fischer

In 2013 all ECB publications feature a motif taken from the €5 banknote.

This paper can be downloaded without charge from http://www.ecb.europa.eu or from the Social Science Research Network electronic library at http://ssrn.com/abstract_id=2245606.

1 *Opinions expressed herein are those of the authors only. They do not necessarily reflect the views of the European Central Bank. The authors gratefully acknowledge the useful comments received from Cristina Abascal, Anna Maria Agresti, Stefano Borgioli, Joao Veiga and Rui Sa Pereira. They also warmly thank Laura McQuillan for her very effective assistance.*

Address
Kaiserstrasse 29
60311 Frankfurt am Main, Germany

Postal address
Postfach 16 03 19
60066 Frankfurt am Main, Germany

Telephone
+49 69 1344 0

Internet
http://www.ecb.europa.eu

Fax
+49 69 1344 6000

Information on all of the papers published in the ECB Occasional Paper Series can be found on the ECB's website, http://www.ecb.europa.eu/pub/scientific/ops/date/html/index.en.html. Unless otherwise indicated, hard copies can be obtained or subscribed to free of charge, stock permitting, by contacting info@ecb.europa.eu

ISSN 1607-1484 (print)
ISSN 1725-6534 (online)
EU catalogue number QB-AQ-13-012-EN-C (print)
EU catalogue number QB-AQ-13-012-EN-N (online)

CONTENTS

ABSTRACT

Timely and accurate data are key to the preparation of macro-prudential policy recommendations and decisions by the ESRB, as well as to monitoring policy decisions in terms of their impact on, or transmission to, the financial and non-financial economy. This paper illustrates the work that has been carried out by the European Central Bank, the European Systemic Risk Board and the European Supervisory Authorities over a period of more than two years from 2010 to 2012 to prepare, develop, implement and manage the initial set of statistical and supervisory information necessary to support the European Systemic Risk Board, from its inception in January 2011. The paper also touches on the statistical information that is provided to support the financial stability function of the European Central Bank.

JEL code: G21, G22, G28, E60

Keywords: financial stability statistics, financial statistics, systemic risk, macro-prudential framework analysis

LIST OF ABBREVIATIONS

BIS	Bank for International Settlements
CBD	Consolidated Banking Data
COREP	Common Reporting
CRD	Capital Requirements Directive
CRR	Capital Requirements Regulation
EBA	European Banking Authority
ECB	European Central Bank
EIOPA	European Insurance and Occupational Pensions Authority
ESAs	European Supervisory Authorities
ESCB	European System of Central Banks
ESMA	European Securities and Markets Authority
FINREP	Financial Reporting
FSB	Financial Stability Board
IFRSs	International Financial Reporting Standards
IMF	International Monetary Fund
JGD	Joint Group on Data Requirements
LBIGs	Large Banking and Insurance Groups
MFI	Monetary financial institution
MiFID	Markets in Financial Instruments Directive
UNECE	United Nations Economic Commission for Europe

NON-TECHNICAL SUMMARY

This paper describes the methodological and practical work performed in order to develop appropriate datasets and indicators to meet the needs arising from the creation of the new macro-prudential policy framework within Europe. In particular, it focuses on the statistical and other data-related deliverables provided in preparation for the establishment of the European Systemic Risk Board and during its initial two years of existence. It also indicates how the cooperation between European and national stakeholders has so far led to coherent, effective and efficient data reporting and exchange, and how consistency with developments at international level has been assured. It concludes that close coordination remains the key for the future, and that coordination should also be reinforced in governance and legal frameworks.

The paper does not, nor does it intend to, cover the prospect of an EU banking union. The potential for synergies under such a framework is, however, relevant – including in the spirit of minimising the reporting burden placed on financial institutions. Hence, it is clear that the work done to collect, produce and disseminate quantitative data and related methodological explanations in order to support financial stability assessments will, to some extent, also be of importance in supporting micro-prudential supervision. However, the latter requires, among other things, specific data vis-à-vis aggregated and individual counterparties so as to assess risks and their possible concentration.

I INTRODUCTION

"Official data and surveys from many countries across the EU indicate some overall stabilisation in financial conditions [of banks] in the early part of this year. […] The [European Systemic Risk Board] has called upon its partners within the European System of Financial Supervision – supervisory authorities at the national and EU level – to regularly collect detailed, ex ante information from banks and other key players in the system, and report it to the ESRB. The General Board will review the latest developments – and their implications". Draghi (2012)

The mandate of central banks is focused on price stability, an area in which the central banks are usually accorded sufficient independence – on legal and operational grounds – to make decisions with respect to the conduct of monetary policy. Maintaining price stability is the clear mission of the European Central Bank (ECB). The ECB is led by its Governing Council, which is entrusted with independence for its decision-making in this field (see the Treaty on the Functioning of the European Union[1]). The ECB, assisted by the national central banks (NCBs) of the euro area, is also responsible for collecting the necessary statistics to support its functions (Article 5 of the Protocol on the Statute of the European System of Central Banks and of the European Central Bank (Statute of the ESCB)).

The efforts of central bank statisticians during the preparations for (stage Three of) Economic and Monetary Union (EMU) (1994-98) and during the initial eight years of EMU's existence (1999-2006) focused very clearly on delivering the statistics necessary for the conduct of monetary policy, including, in liaison with the European Commission (Eurostat) and national statistical institutes, the delivery of macroeconomic and public finance statistics.

In addition, the Treaty conferred upon the European System of Central Banks (ESCB) the responsibility for contributing to the maintenance of the stability of the financial system (Article 127(5)). In pursuance of this mandate, the ECB has been publishing since 2004 a semi-annual financial stability review (the FSR). This review has traditionally drawn on a wide range of ECB statistics supplemented by commercially and publicly available information including data on the financial positions of large and complex financial institutions. Furthermore, as a direct consequence of the financial crisis, the ECB is now also closely associated with the work of the newly created European Systemic Risk Board (ESRB), providing substantial analytical, statistical, logistical and administrative support to the ESRB. This involvement is a clear acknowledgement of the pivotal role that the ECB has taken on over time in monitoring financial stability and in supporting and helping to maintain financial market resilience.

The financial crisis has led the ECB to place a higher priority on financial stability concerns, which has had a direct impact on data requirements. While the proximate causes of the financial crisis beginning in August 2007 lie within the US housing and financial markets, the build-up of substantial global macroeconomic imbalances may have also contributed significantly. Growing current account deficits, especially in the United States and some EU countries, have contrasted with large current account surpluses in some other EU countries, in the oil-exporting economies and in many East Asian economies, notably China. The availability of reliable, accurate and timely statistics has been crucial to the assessment of all these developments.

1 OJ C 83 of 30.3.2010.

As a result of the crisis, two dramatic changes have occurred which have refocused the demand for data in support of financial stability analysis, as follows:

- The comprehensive (residency-based) statistics used for the two pillars of monetary policy assessment (i.e. economic and monetary analysis) have been scrutinised in much greater depth and detail. This has led to strong attention being paid to credit aggregates broken down by industry, credit predictors like the bank lending survey or credit lines developments, and securities issuance (funding) and holdings (asset diversification). The timeliness of these statistics has also been of the utmost importance in serving policy needs at times when market rumours and anecdotal evidence could have led to imperfect information for decision-making.

- Supervisory (country-based) data showing exposures and interconnectedness have increased in prominence for the assessment and mitigation of risks and contagion effects. Aggregated datasets supporting both micro- and macro-prudential assessments and potential recommendations are, however, not yet timely and comparable.

The residency-based datasets have been subject to significant harmonisation efforts across countries, in conformity with international statistical standards, in particular the *revised System of National Accounts 1993* and *2008* and in *Europe the European System of Accounts 1995 (ESA 95) and 2010*; the international standards have ensured both data comparability across countries – including outside the European Union – and the ability to aggregate country data at the level of broader economic areas, thereby permitting an assessment of developments in the euro area, for example, where relevant. As this paper will indicate, beyond their original purposes these residency-based data are also relevant for financial stability analysis.

Conversely, the home country-based supervisory dataset collected at the level of the consolidated entity had until the crisis focused on usage at the level of individual institutions to serve the purposes of micro-prudential supervision. This made the comparability across institutions uncertain within a country, and more so across countries (for example owing to different practices for valuing illiquid assets). The increasing need for supervisory data to support macro-prudential surveillance makes it all the more important for these data to be comparable across the supervised entities. This in turn gives added urgency to the work towards common international and European standards (on data content, but also on enhancing frequency and timeliness of the data) coordinated among the main stakeholders concerned (in particular central banks and supervisory authorities at national and European level).

The global financial crisis has highlighted the need for better data for the monitoring and managing of the build-up of risks to financial stability. Work in this area has particularly accelerated following the Lehman Brothers collapse in September 2008, as the breadth and depth of the effects of the crisis led to the identification of important data gaps that policy-makers were convinced had to be closed. This work is well coordinated at international level under the umbrella of the G20 and the Financial Stability Board (FSB). Still, the idiosyncrasies of the European Union warrant the development there of some additional statistical and supervisory reports, while still minimising the reporting burden.

This paper describes the methodological and practical work performed to develop appropriate datasets to meet the needs arising from the creation of the new macro-prudential policy framework within Europe. In particular, it focuses on the provision of deliverables that were required in preparation for the establishment of the ESRB and during its initial two years of existence. It also

indicates how the cooperation between European and national stakeholders has so far led to coherent, effective and efficient data reporting and exchange and how this work has been kept consistent with developments at international level. It concludes that close coordination remains the key for the future, and that coordination should also be reinforced in governance and legal frameworks.

2 STATISTICAL RESPONSE TO THE FINANCIAL CRISIS

2.1 THE EUROPEAN APPROACH

"At first glance, central banks have emerged as the great winners [of the crisis] among policy institutions. They have been rightly hailed as saviours of the global financial system: their swift and internationally coordinated action, through liquidity support and interest rate cuts, prevented the system's implosion. And they have gained much broader powers: no one questions any longer their crucial role in financial stability, which is being hard-wired in legislation, while some are regaining the regulatory and supervisory functions lost in previous decades.

And yet, beneath this glittering surface, the picture is less reassuring. […] Price stability has proven no guarantee against major financial and macroeconomic instability. Central banks have found themselves reaching well beyond interest-rate policy, aggressively deploying their balance sheet in a variety of "unconventional" monetary policies. […] Central banks face a threefold challenge: economic, intellectual and institutional. […] They will need a new compass to sail in largely uncharted waters."[2]

This assessment sets the scene: financial stability and systemic risk surveillance form part of the central banking mission, and, in particular in the context of the Statute of the ESCB, have been included among the functions of the ESCB – see Article 127(5) of the Treaty, which stipulates that "The ESCB shall contribute to the smooth conduct of policies pursued by the competent authorities relating to the prudential supervision of credit institutions and the stability of the financial system."[3] This article remained unchanged from Article 105 of the Treaty in force at the start of EMU.

The crisis has led to a greater depth of exploration, in the literature and in central banking operations, of systemic risk and the interdependencies between monetary policy and financial stability.

"Systemic risk in the financial system is […] an externality that an individual institution, through its actions, imposes on others. As commonly understood, this externality takes two forms. The first is the joint failure of institutions at a particular point in time resulting from their *common exposures* to shocks from outside the financial system or from *interlinkages* among intermediaries. The second is what has come to be known as *procyclicality*. […] Common exposures and interlinkages create the risk of joint failure. Assessing their importance means focusing on both how risk is distributed and how the system responds to either an institution-specific shock or to a common shock that damages everyone. In the first case, we need to assess the risk of contagion through credit or funding exposures on the one hand, and the possibility of asset fire sales on the other. In the second case, systemic effects would arise as a direct consequence of similarities in the structure of institutions' balance sheets and funding patterns.

In the context of systemic risk, procyclicality is about the progressive build-up of financial fragility exacerbating booms and the consequent increase in the risk of catastrophic collapse. As costly experience has taught us, the financial sector can endogenously generate systemic risk in ways that are often difficult to capture. […] Taking all of this together, the implication is that traditional measures of aggregate risk tend to look lowest precisely when risk is at its highest."[4]

2 See Borio (2011), p. 1.
3 OJ C83, 30.3.2010, p. 47.
4 Cecchetti, Fender and McGuire (2010), p. 3.

"Central banks have a stake in macro-prudential policy due to their various roles in financial stability, and because successful macro-prudential policy can help stabilise the economy. But questions surround how macro-prudential policy should be defined and how its instruments should be operated."[5] As an illustration, "[s]ince money is the balance sheet counterpart to bank lending, the most procyclical components of money correspond to the incremental lending at the peak of the financial cycle. As such, these procyclical components of money are most likely to be associated with bank lending that will reverse abruptly when the cycle turns."[6]

A key element that has helped central banks in their response to the financial crisis is the prior availability of a wide range of macroeconomic, monetary and financial statistics. While these statistics were not designed to assess exposures at individual institution level and could not show the potential interlinkages and contagion effects required for a macro-prudential assessment, they have been in ever greater use with the broadening and deepening of the crisis, for the following reasons:

(i) these data provided policy-makers and markets with a timely picture, broader than that provided by only market leading indicators; while a close monitoring of the latter is useful, including for policy-making bodies, they are skewed towards large market participants, and spillover effects may distort the analysis of underlying developments; hence timely (e.g. weekly with a one-week lag or monthly with a one-month lag) statistics enable a more comprehensive picture to be drawn;

(ii) with the crisis, business cycles are structurally distorted, which makes econometric modelling increasingly difficult; this leads analysts and policy-makers to shift the focus from mechanical forecasting to statistics, with a view to assessing economic and financial developments in the very recent past, adding expert judgement for the near future.

A key action taken in response to the crisis was the adoption of the report by an expert group under the leadership of Jacques de Larosière and the subsequent adoption of four regulations of the Council of the European Union establishing the European System of Financial Supervision, comprising the ESRB and the European Supervisory Authorities (ESAs)[7]. In this context, policies have become more concrete, both in terms of actions and concerning the definition and collection of the necessary datasets to support these actions. A summary of the first year of activity of the ESRB, as can be found in its Annual Report 2011, which provides a comprehensive picture, as well as an overview of the data-related factors which are a prerequisite for monitoring and assessing systemic risks.[8]

5 Kohn (2010).
6 Kim et al. (2012).
7 *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);*
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);
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);
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).
8 See European Systemic Risk Board (2012a).

2.2 INTERNATIONAL DEVELOPMENTS

The European initiatives in response to the crisis have occurred in parallel to developments at international level, most recently under the auspices of the G20. Indeed, the report published in 2011 by the FSB, the International Monetary Fund (IMF) and the Bank for International Settlements (BIS) describes steps that have been taken, nationally and internationally, in developing macro-prudential policy frameworks. The report also highlights the scope for further progress in the identification of systemic risk, in the collection and analysis of data, in assessing the performance of newly introduced tools and in the establishment of institutional arrangements for the conduct of policy.[9]

Certainly, systemic crises are often not confined to a single economy. In a globalised world, spillover effects may have an impact on other economies, and make their vulnerabilities more (quickly) unsustainable. Furthermore, the regulation and supervision of the financial sector cannot be undertaken independently at national level. Indeed, the financial industry will bypass restrictions all the more if only one national economy tries to impose new rules. There are more chances of success and efficiency through close coordination that enables cross-border developments to be tackled and global solutions to be found.

In turn, this has implications for data requirements and collection. In particular, the development of global solutions is more likely to ensure the establishment and maintenance of a level playing field, including in terms of the reporting burden. Examples of important differences that already existed in reporting systems prior to the crisis can be found in the coverage of the banking sector, in the definition, regulation and supervision of "shadow banking", and in the supervision of the insurance sector, etc.

In this context, an important element is the need to factor in the international initiatives undertaken under the auspices of the G20 to address data gaps identified as a response to the crisis. These initiatives, based on 20 recommendations endorsed by the G20,[10] closely involve the ECB. Most notably from the perspective of macro-prudential supervision, the ECB has been closely associated with and has participated in the FSB working group on the development of reporting templates for data on global systemically important financial institutions (recommendations 8 and 9). The ECB has also been closely associated with further work carried out to identify and measure cross-border exposures, including through its contribution to the work on enhancing the BIS international banking statistics (recommendation 5) and through the preparation of a template for the cross-border exposures of financial and non-financial corporations that draws on statistics already published by the BIS, ECB, IMF and the Organisation for Economic Co-operation and Development (OECD) (recommendation 14). Finally, the ECB has followed closely the IMF's work to develop and enhance a set of Financial Soundness Indicators. In concrete terms, work is underway to bridge the gap between those indicators related to "Deposit-Takers" and the supervisory templates (for Common Reporting (COREP) and Financial Reporting (FINREP)) under development by the European Banking Authority (EBA), with the aim of improving cross-country comparability across the Financial Soundness Indicators compiled at European level.

9 Financial Stability Board, International Monetary Fund and Bank for International Settlements (2011).
10 Financial Stability Board/International Monetary Fund (2011).

A typology of the risks to be better measured was proposed by the IMF and the FSB.[11] In addition, a guide published by the United Nations Economic Commission for Europe (UNECE) sought to assess the impact of the financial crisis on macroeconomic statistics, highlighting actions that were taken by the ECB and ESCB to address some data gaps.[12] The guide, compiled by a group of senior statisticians, emphasises how the update of the System of National Accounts (SNA) was carried out in a way that ensured the reflection of economic developments and globalisation over the recent decades. An appendix focuses in particular on the financial markets and their developments, including during the early stages of the crisis, and how the ECB and national central banks in the EU further developed their statistics. Indeed, beyond its main task of conducting monetary policy for the euro area, the ECB is closely involved in meeting the statistical needs of the ESRB. These actions are summarised in part 3 of this paper.

A point worth noting is the need to distinguish between the underlying methodological framework used for macroeconomic analysis and the framework used for financial stability analyses. An important factor in such a distinction relates to multinational enterprises, in particular in the financial sector. For various reasons, corporate groups are not easily identifiable in practice and it may be difficult to obtain data for groups whose activities are not closely integrated. Moreover, many conglomerates are too large and heterogeneous to be treated as single units, and their size and composition may be continually shifting over time as a result of mergers and takeovers. Financial groups have many large cross-border affiliates and branches; also, many banking groups may diversify into other sectors, such as insurance, or even non-financial sectors. Hence, the residency and sector approach followed by national accounts reflects the economic activity of these groups in a fragmented manner. For this reason, financial stability analysis combines economic data with risk-based indicators, with the latter calculated on a consolidated basis.

Overall, much progress has been made in collecting data for the analysis of economic and financial developments, including in the light of the crisis. This work has also served to enhance the international and European conceptual framework for financial stability statistics.

11 Financial Stability Board, International Monetary Fund and Bank for International Settlements (2011).
12 UNECE (2011).

3 PREPARATORY WORK FOR MEETING THE ESRB'S DATA REQUIREMENTS

Changes in the overall economic situation can lead to the emergence of systemic risks, triggering changes in market expectations. This can arise from several factors, for example significant and lasting changes in trend in the price of assets such as real estate. In order for these risks to be monitored, quantitative information needs to cover these economic phenomena, as well as market developments (prices and volumes of transactions, and outstanding amounts) and key indicators covering individual financial institutions (under micro-supervision, or outside the regulatory perimeter). This information is indeed crucial to the detection of the root cause of a potential or actual crisis, as well as to the subsequent assessment and monitoring of possible contagion effects.

To identify systemic risks, both aggregated and individual data from systemic components of the financial system are of paramount importance. Aggregated data is needed to recognise overall trends and common risk exposures in the system, whereas data at individual financial institution level is better for an understanding of the interlinkages of systemic players, risk concentrations in the system and how risks could spread and feed back into the real economy. Against this background and owing to the need to assess exposures and risks not only at sector/country level, but also at institution (group) level for, at least, large and complex institutions on a consolidated basis, efforts are being made to bridge and if possible reconcile differences in statistical, accounting and supervisory concepts and definitions and to deliver new, complementary datasets, which will still need to be further harmonised.[13]

3.1 INITIAL PREPARATION: IDENTIFICATION OF ESRB DATA NEEDS

The first phase of the preparatory work in the summer of 2010 consisted in identifying the underlying statistical data needed to compile a first set of important indicators, and addressing data gaps. Starting in the second quarter of 2010, the ECB prepared for the inception of the ESRB, knowing that the regulations that would create the ESRB and ESAs were still in the making and would only be adopted later in the year. A key task performed concerned the formulation of the data requirements. This was coordinated by a group of senior ECB managers representing relevant ECB business areas, under the leadership of the Directorates General Financial Stability and Statistics. The group identified requirements for a core dataset for macro-prudential analysis in the EU and assessed the extent to which the indicators could be compiled on the basis of available data, identifying gaps and providing ways to close the most relevant gaps in the short and longer term. Its report was considered as an important and constructive step in building up the methodological framework and setting the priorities for addressing data gaps.

For the purposes of this work, the core indicator set was grouped into four subsets:

1. macroeconomic backdrop, monetary conditions and sectoral imbalances;
2. market measures of credit risk, asset valuations and financing conditions;
3. performance, balance sheet strength information, and fragilities stemming from structure;
4. indicators for financial intermediation and market infrastructure.

13 See European Central Bank and European Banking Authority (2012).

For each of these subsets, indicators were identified and assessed as individual time series. The economic content of the data deliverables was centred on the EU. Given the need to make comparisons both between the EU and other areas and within the EU, and at the same time the potential necessity to assess risks at country level or for multiple countries, high quality data must be available for EU aggregates as well as for individual EU countries. Coverage of relevant global aspects important for the ESRB is also necessary, with information on selected major non-EU economies required in order to identify external sources of systemic risk. Furthermore, institution-based quantitative indicators for EU Large Banking and Insurance Groups (LBIGs) as well as some coverage of key global financial institutions are needed. Information predominantly collected by the ESCB, mainly for euro area monetary policy purposes, does not fully support EU macro-prudential analysis as needed for the ESRB.[14] An assessment of the core indicator set was made in mid-2010, as follows.

1. The macroeconomic backdrop, monetary conditions and sectoral imbalances

Owing to their use for monetary policy purposes, the availability, timeliness and quality of the data for these indicators is in general rather good, for euro area as well as EU aggregates, and at country level. A similar assessment can be made of data for the most important non-EU countries. Data gaps and quality issues mainly exist in relation to residential and in particular commercial property prices. With regard to sectoral imbalances, indicators measuring aggregate imbalances have very good coverage of data for the euro area, with some gaps for non-euro area and non-EU countries.

2. Measures of credit risk, asset valuations and financing conditions

A large set of indicators has been identified that can be broken down according to market measures of credit risk, asset valuations, market liquidity, investor and bank risk appetite, and funding activity. The general availability of data, mainly stemming from commercial sources, is in principle relatively good, although data quality is unknown and access to the relevant information may be cumbersome. For several indicators, licensing contractual issues need to be reviewed and flexible aggregation tools developed and made available in order to compile meaningful macro-prudential aggregates from the available granular data, as for example from security-by-security systems and information on default frequencies.

3. Performance, information on balance sheet strength, and fragilities stemming from the financial structure

These indicator categories refer largely to EU bank financial performance, balance sheet strength, and fragilities stemming from the financial structure, including interconnectivity. Remaining categories pertain to the insurance sector and to other financial intermediaries. In the short term, 36 indicators were identified for compilation at individual group level using publicly available financial statements. For most of the remaining datasets, aggregate country-level data for EU banks are available for main categories from the Consolidated Banking Data, although with relatively poor timeliness and low frequency. From the reporting period of June 2010 onwards, based on an agreement between the ESCB's former Banking Supervision Committee and the Statistics Committee, a core dataset was made available on a semi-annual basis. For the insurance sector, aggregate balance sheet data became available according to a "short-term approach"[15] as of mid-2011.

14 For this purpose, data gaps were defined according to several dimensions: data availability, data quality, frequency, timeliness, level of detail (including geographical breakdown), comparability with indicators from other major economies outside the EU, confidentiality restrictions, licensing restrictions for use and dissemination (in particular to parties outside the ESCB) and, finally, availability in ECB databases to guarantee automation (not least for the information pack) and data access as appropriate. Furthermore, quality is assessed against purpose from both a short-term and a medium-term perspective.

15 Such a short-term approach means that national central banks report the best proxy data, as available at national level. Some effort is made to make the data comparable across countries. However, no additional data is collected from respondents.

However, a consistent dataset for LBIGs could not be compiled in that context, nor could certain key breakdowns in aggregated data be provided.

Distributional indicators for systemically-relevant institutions, including indicators of interconnections and common exposures, have yet to be developed. Currently, only public or commercial information on individual institutions is available (mainly public quarterly financial reports and information from commercial sources with limited breakdowns, lack of harmonisation and uncertain quality).[16] Using published quarterly reports, it was possible to compile information from a restricted sample of LBIGs comprising an extended set of 36 large EU banks and 27 large EU insurance groups, mainly collected on a manual basis.

4. Indicators for financial intermediation and infrastructure

Core indicators measuring financial intermediation are to a considerable extent based on information from resident credit institutions, such as balance sheets, and information from the ECB's Bank Lending Survey. Main shortcomings relate to the data on country breakdowns of banking group activity.[17] Currently, this information is gathered annually on an ad hoc basis for the lending activities of a restricted sample of banks, based on publicly available balance sheet data (annual reports, with detailed breakdowns). Many indicators are based on very different concepts of financial intermediation, as host-country unconsolidated data from monetary financial institutions (MFI) balance sheet data are mixed with geographically (but not sector) consolidated data from the BIS international banking statistics, fully consolidated data from commercial sources and aggregated (partially) consolidated data from supervisory sources.

A major gap in the current financial stability analysis is the lack of detailed indicators on market infrastructures. Proposed indicators for ESRB use in the short term relate to the size and importance as well as the operational performance of financial market infrastructures. Those indicators in particular relate to daily transaction values and volumes, peak day values, market shares and breakdowns of daily values by size of individual transactions and distribution of system activity during the day. This quantitative information could be complemented with additional qualitative insights of overseers, subject to the establishment of the appropriate information-sharing arrangements.

Work in this area confirmed the importance of utilising the currently available ESCB statistics, subject to extending the original focus from the euro area as a single economic area to cover as far as possible all EU countries and to include country aggregates. It also emphasised the need to re-use the *Centralised Securities Database*, which is a reference database of securities issued, as well as the *Register of financial institutions and affiliates*. Furthermore, it is proposed that new datasets on *securities holdings* be used, broken down by ESA 95 sector and by individual large groups, and that the re-use of *central credit registers*, which are available in most EU Member States, be considered to support the analysis of credit claims and credit risk analyses.

16 This has so far been made available for the preparation of the ECB`s Financial Stability Review (FSR) and Banking Stability Report 2009/10 (BSR).

17 BIS consolidated banking statistics provide users with a detailed geographical breakdown, but there is no detailed breakdown by asset classes. See http://www.bis.org/statistics/consstats.htm

3.2 IDENTIFICATION OF DATASETS AND INDICATORS

In a second phase, in the second half of 2010 the ECB, the (then Preparatory) ESRB Secretariat and the so-called Level 3 Committees (subsequently replaced by the ESAs) established an ad hoc Joint Group on Data Requirements (JGD) made up of high-level representatives of the sponsoring organisations. The aim of the JGD was to coordinate the preparation of a broader set of data to be delivered to the ESRB as well as to the ESAs. For this purpose, deliverables were to be provided both in the short term (meant as the initial two years of the ESRB, namely 2011 and 2012) and in the longer term (2013-14 and beyond). The JGD also proposed a procedure for addressing ad hoc requests for aggregated information received from the ESRB, especially for those that could require the collection of data from the financial industry.

The JGD identified further datasets and indicators that would be needed to serve the ESRB's data requirements as well as to establish appropriate data flows with the ESAs. In its report approved by the ECB and ESAs in summer 2011, the JGD presented foreseeable data exchanges in the interests of supporting the tasks of the ESRB and the ESAs. The JGD identified the datasets that would be available from the start or in the near future at the ESAs and at the ECB. Important findings were made regarding the exchange of available data in the short term and enhanced data flows in the longer term. This included a data gaps analysis in relation to the ESRB's additional information needs from a longer term perspective, for example the need for increased data harmonisation, breakdown, frequency and timeliness.

The JGD report provided guidance on the time frame, size, content and time criticality of data flows expected in the short and medium term. Based on these findings and following the agreement of the Boards of Supervisors of the respective ESAs, work has already begun on the part of the ESAs to collect and exchange data to meet the ESRB's short-term needs and subsequent longer-term requirements. The JGD report also covers the implementation and enhancement of the technical facilities for exchanging unstructured and structured data, the definition of common data exchange format(s) and the procedures around management of access to the data collected and compiled.

(i) CONFIRMING THE DATA NEEDS

The JGD's principle purpose was to identify the datasets that would be required to support the ESRB's macro-prudential analysis. However, the JGD also had the task of establishing which statistical datasets the ESAs would be interested in receiving from the ECB. The ultimate purpose was to ensure effective and efficient data flows between the ECB, ESRB and ESAs.

ESRB data needs: the JGD identified a certain number of key indicators to be made available by the ESAs and the ECB in the short term to support the ESRB in its risk analyses. In addition to covering the current content of the so-called White Book as described below (including the Consolidated Banking Data), it was envisaged that these indicators would include in particular quarterly "key risk indicators" for two samples of 36 and 56 large EU banks on a consolidated basis, as well as annual indicators for 27 large EU insurance undertakings. In order to better assess "tail risk", dispersion measures for the indicators were provided. Some data were also intended to be made available on financial markets and infrastructures. An initial set of data was made available at the time of the first meetings of the ESRB's General Board and its main sub-structures. Further indicators of banks' major exposures and liquidity are to be made available in the longer term.

Moreover, in the absence of harmonised data on banks' exposures broken down by sector and country within the FINREP framework, data on consolidated exposures are being collected within the ESCB, at least as an interim solution, drawing on the national contributions to the BIS international banking statistics.

Looking to the longer term (at the time of the JGD report this meant 2013 and beyond), a broader range of requirements was identified by the JGD, involving the collection of more harmonised data of a higher quality, including in terms of frequency and timeliness. It was considered that such data should in due course be made available on **banks** (based on COREP, FINREP and Large Exposures templates under the forthcoming binding implementing technical standards for supervisory reporting applied at least to banks that adhere to International Financial Reporting Standards) and on **insurance** undertakings (based on Solvency II templates). Data on financial conglomerates may become available following the recent update of the related directive.[18] In addition, it is envisaged that frequent and high quality data on **securities and markets** will complement these data. The quality, availability and timeliness of these data and the timing of their introduction will depend very much on the adoption by the European Commission of the standard reporting formats within the binding technical standards that the EBA has proposed for introduction under the forthcoming fourth amendment to the Capital Requirements Directive (CRD) and the new Capital Requirements Regulation (CRR).[19] The introduction of the standardised reporting templates to be completed by banks and by insurance undertakings was initially envisaged for 2013. Subsequent delays will have a direct impact on the data delivery to the ESRB and thereby on the sound identification and analysis of macro-prudential risks.

It is worth noting the relevance of ECB datasets initially geared towards monetary analysis. These datasets, which conform to a very large extent with international statistical standards,[20] are harmonised across countries, timely and detailed. Although they are residency-based (while supervisory reports are instead home-based and often consolidated) and focus on outright transactions (while supervisory reports focus on exposures and risks), they are subject to frequent and in-depth use, including for financial stability purposes, as they are readily available and enable an analysis focused on specific countries, which allows an analysis of systemic risk (arising from these economies, and/or spillover effects). This relevance was recognised in Decision ESRB/2011/6 of 21 September 2011 on the provision and collection of information for the macro-prudential oversight of the financial system within the Union,[21] Annex 1 of which explicitly sets out several ESCB datasets that need to be made available to the ESRB. The ESRB has issued numerous further requests for, and some Decisions relating to, more (non-published) details in these and other related ESCB datasets. A Box in the ESRB annual report 2011 also explains the importance of these data.[22]

ESAs' data needs: Efforts to provide ESRB data in order to support the ESAs have focused around the ECB making ECB/ESCB statistics available, in view of its role of providing statistical support to the ESRB. In addition to the broad range of publicly available data from the ECB,[23] a range of

18 Directive 2011/89/EU of the European Parliament and of the Council of 16 November 2011 amending Directives 98/78/EC, 2002/87/EC, 2006/48/EC and 2009/138/EC as regards the supplementary supervision of financial entities in a financial conglomerate (*OJ L 326, 08.12.2011*, p. 113).

19 See also http://www.eba.europa.eu for further details.

20 The revised System of National Accounts (1993 and, following an on-going upgrade, 2008) and the European System of Accounts (1995 and 2010).

21 *OJ C 302, 13.10.2011*, p.3.

22 European Systemic Risk Board (2012a).

23 Statistics on MFI balance sheet items (monetary financial institutions, i.e. mainly banks, but also money market funds and a few other institutions), investment funds, MFI securitisation and financial vehicle corporations (securitisation vehicles), insurance corporations and pension funds balance sheets, MFI interest rates, securities issues, payments systems, euro area accounts, government finance and, to be made available in the future, statistics on securities holdings.

additional (country) breakdowns that are currently not published by the ECB are being made available to the ESAs. In addition, the JGD fulfilled a data request for ESAs to receive information of ECB/NCB-provided funding and received collateral.

Furthermore, detailed reference data on securities issued are available to the ECB/ESCB via the CSDB. Subject to licensing arrangements made with the commercial sources, these high–quality data could also be made available to the ESAs and ESRB. The ESCB statistics will be complemented by data on securities holdings (to replace the existing experimental dataset), forming yet another important and very detailed set of harmonised and complete data.

(ii) REGULAR EXCHANGE OF AGGREGATED DATA

The plans for the exchange of aggregated data were set out in the JGD report. Decision ESRB/2011/6 largely drew from the recommendations of the JGD report in order to establish the exchange of aggregated data in the initial years (2011 to 2013). Other datasets sourced from the ESAs, for example arising from the binding technical standards for supervisory data collected from banks and insurance companies as well as on securities and some derivatives markets, and new datasets made available by the ECB, may at a later stage be envisaged.

Level of aggregation and related dispersion measures: To ensure that aggregates present sufficient breakdowns or details to meet the requirements for a proper systemic risk analysis, the JGD identified specific criteria for aggregating and disseminating that would ensure the safeguarding of the confidentiality of institution-level information. Similarly, the JGD identified dispersion measures that support the assessment of interconnectedness and risk concentrations. Procedures were agreed to ensure that such measures will also not allow the identification of individual institution information. The rules applied for the identification of confidential data are set out in the box below.

Box

DEFINITION OF CONFIDENTIAL DATA

Confidential data are defined as those for which descriptive or quantitative information on individual legal persons can be identified, where this information has not been made public by the said legal person or by public authorities. Statistical data are confidential by nature when they refer to less than three legal persons. If one out of three institutions represents 85% or above of the respective market share (national or European), there is a *predominance case* and the corresponding data are also confidential. Confidential data can be transmitted between institutions under a legal act allowing it or with prior explicit consent of the legal person itself.

The degree of confidentiality has an impact on the access to and dissemination of data, as follows.

(i) *Aggregates*, including dispersion measures, are usually free for publication (unless under embargo – see below).

(ii) *Non-publishable aggregated data (including dispersion measures*) are usually considered not confidential, though access is limited owing to data quality, ownership (e.g. by national central banks) or licensing arrangements with commercial data providers.

(iii) *Institution-level data*: in principle the exchange of individual entity-level information is strictly limited under the regulations establishing the ESRB and the ESAs[1]. The procedure for the exchange, storage and access of institution-level data under strict protection safeguards is set out later on in this paper and is part of the formal agreement between the ESRB and the ESAs on the exchange of information. Some firm-level data on annual accounts or mergers and acquisitions may be made publicly available, e.g. under the Transparency Directive (see footnote 30). Such data may still be seen as confidential as long as they are collected under a statistical or supervisory framework, under some national laws. Conversely, Council Regulation (EC) 2533/98 of 23 November 1998 concerning the collection of statistical information by the European Central Bank[2] states that data that are made public via other sources are no longer considered as confidential. A review of these restrictions may be considered, for example in the light of the work of the FSB towards making a distinction in the reporting by "global systemically important banks" between "institution-to-institution" data and "institution-to-aggregate" data. Whereas the former would contain very sensitive information on bilateral exposures across institutions, the latter is the basis for financial statements (balance sheets and profit and loss data) that are usually published and, hence, can hardly be seen as having the same level of confidentiality.

Data under embargo refer to aggregates as referred to in (i) above. Such data are meant for publication (and are not confidential by nature), but they need to be processed in a careful manner until after their publication. Access to these data should thus be restricted during the embargo period.

Dispersion measures (average, median, first and third quartiles, minimum and maximum) can be compiled for a minimum of five institutions when referring to publicly available data (e.g. based on the IFRSs) and for a minimum of six institutions when there is a need to protect underlying confidential firm-level data.

1 See footnote 8.
2 OJ L 318, 27.11.1998, p. 8.

Exchange and processing of aggregated data: The JGD identified and tested the practical IT means to exchange, process and disseminate data. The receiving authorities have agreed to implement sound procedures to detect and **protect confidentiality**, separately flagging those data that are public or publishable as distinct from those that are either not yet publishable or are non-publishable confidential institution-level data. Concerning aggregated data provided for the support of the ESRB, there is a general agreement for them to be processed by the ECB, following standardised procedures in case there is a need to protect confidentiality. Furthermore, data are disseminated to the ESRB's General Board and sub-structures. This is done via the indicators provided to support the surveillance material made available at each General Board meeting (via the "White Book") and also via the indicators in the ESRB's risk dashboard made available within the ECB's *Statistical Data Warehouse*.

(iii) REGISTERS OF INSTITUTIONS AND INSTRUMENTS

Registers provide a basic infrastructure to support the compilation of some statistical data and also have a direct value for analysis – for example, the combination of individual securities and credit/deposit data with the group composition of banks or insurance corporations may enable analysis of interlinkages in funding and asset (risk) management. The ESAs are charged with setting up registers of entities in the longer term. The ECB has launched an ESCB project aiming to set up a broad **EU register of financial institutions** in 2013, and it also maintains **a securities reference database**. Work has started to ensure cross-fertilisation between the future ECB/ESCB and ESA registers. Cooperation may in particular ensure that the concepts and definitions used for the data in both registers are similar or, at least, compatible.

The work undertaken on the registers is intended to facilitate the exchange of data and also to help minimise reporting costs, whilst ensuring a consistent and effective dissemination of relevant information to the ESRB. Data exchange on institutions and instruments, including to the extent possible financial groups' composition, would also be beneficial. A critical aspect in the development of registers will be the creation of standard identifiers of entities and instruments. Here, the prospect of a Legal Entity Identifier and, more broadly, of a Reference Data Utility would assist in feeding the registers with timely and consistent data. Work on the development of such standards is encouraged and supported by relevant stakeholders, notably the European Commission and the ECB.[24]

(iv) AD HOC SURVEYS

The main aim is to ensure that to the extent possible the data requirements of the ESRB are met via the regular exchange of aggregated information. Nevertheless, the ESRB does have a need for aggregated data on an ad hoc basis. In order to address these ad hoc requirements, a procedure has been established, which may possibly translate into ad hoc surveys/data collections by the ESAs or the ECB/ESCB. This procedure distinguishes between two phases: the first – the *investigation phase* – aims to analyse the ESRB data request and the extent to which it could be covered with existing data (e.g. at ESAs, within the ECB/ESCB or from market sources). Only if such data or any appropriate proxy is not already available, is a second phase – the *data collection phase* – to be launched, which entails an ad hoc survey being set up and run. In the event of such a survey investigating a specific phenomenon in greater depth by using existing data (e.g. a breakdown of credit exposures), the time required to respond to the request might be a few weeks; in the event of the survey exploring phenomena for which only limited quantitative data is available, the preparation and running would take more time and effort. Overall, for each request the need for an ad hoc survey is to be strictly assessed. Furthermore, the surveys must be based on a sound methodological framework and focused on the relevant data sources while, at the same time, avoiding excessive interaction with reporting agents in order to minimise the reporting burden.

(v) EXCHANGE OF INSTITUTION-LEVEL INFORMATION

The ESRB is also permitted to make ad hoc requests for supervisory data on an individual institution, i.e. information that is not in summary or aggregate form. If the ESRB requests individual information, Regulation (EU) No 1092/2010[25] (Article 15) requires it to provide a reasoned request

24 Financial Stability Board (2012).
25 See footnote 8.

explaining why data on the respective individual financial institution is deemed to be systemically relevant and necessary, considering the prevailing market situation. Before each request for individual information, the ESRB shall duly consult the relevant ESA in order to ensure that the request is justified and proportionate. The procedure for the exchange, storage and access of such data has been established by the JGD based on Regulation (EU) No 1092/2010 (Article 15) and has been formalised by an agreement between the ESAs and ESRB, so as to adequately handle confidentiality with due regard for the high sensitivity of these data. The procedure consists in analysing the request, often at the level of the ESRB's Advisory Technical Committee or one of its sub-structures, and involving statisticians, to assess if data are available that directly meet the need or can be used as a proxy. If not, a proposal is made to launch an ad hoc survey, while minimising the burden of reporting agents by assessing existing datasets (at least of national authorities of EU Member States) and focusing the collection of additional data on institutions considered as main actors (based on available sources).

(vi) FURTHER ACTIONS

Based on its work to identify the datasets and indicators needed to serve ESRB requirements and data flows with the ESAs, the JGD recommended further actions, in particular those listed below.

- Work on the part of the ESAs and the ECB towards *delivering short-term datasets*, in addition to the provision on a semi-annual basis of existing Consolidated Banking Data compiled by the ECB for all banks. New data cover: quarterly key risk indicators for large EU banks (aggregated data including dispersion measures) about 100 calendar days after the end of the quarter; fast-track aggregated large EU insurance groups data; aggregated results from the European Securities and Markets Authority (ESMA); and all ESCB statistics, including national breakdowns, subject to the assent of national central banks. This work was completed in 2012.[26]

- Further work on the part of the European Banking Authority (EBA) and the European Insurance and Occupational Pensions Authority (EIOPA) towards *standard supervisory reporting formats* (FINREP/COREP/Large Exposures for ***banking groups***, and Solvency II for ***insurance***). The EBA and EIOPA agreed to pursue this, with the support of all stakeholders. The original aim was for data to be available by 2013.

- Based on an update of the relevant directive, work towards the adoption of standard reporting by ***pension funds***, including information on assets measured in a similar way to the assets of insurance undertakings according to Solvency II. This work is currently underway.

- The delivery of standard indicators on ***securities and market*** developments and infrastructure, based on the databases and other financial markets data available at ESMA; possible delivery of *standard publicly available firm-level information* by issuers.

- On-going work by stakeholders (EIOPA, ESMA and ECB/ESCB) towards the *sharing of information on registers of securities, institutions and credit* and the identification of *large financial institutions* and the composition of their *groups*.

26 Some delays were observed in the delivery by the ESAs, due to organisational and technical issues. Only the ESCB statistics were delivered in full on time.

– Cooperation between the European Commission, ESMA and the ECB/ESCB with the aim of adapting the Transparency Directive[27] to ensure that the information already required on listed companies can be more easily used in database management. This would be an important element.

– Work on the part of the ESAs (including via the Joint Committee), the ESRB and the ECB, as appropriate, to create a template for integrated reporting by large *financial conglomerates*.

The JGD also encouraged the following actions. First, further coordination among the institutions involved. This materialised in the creation of the Contact Group on Data, under the auspices of the ESRB Steering Committee, in November 2011 (see below). Second, the implementation by stakeholders of sound procedures for the *detection and protection of confidentiality and the exchange of aggregated data*, separately flagging those data that are public or publishable and those that are not, or not yet, publishable; and the implementation in due course of specific flagging and procedures for confidential firm-level data, to protect their status. Third, the running of the *procedure for ad hoc data requests from the ESRB*, re-using available data or proxies to the extent possible, or deriving information from these data to make any supplementary data collection focused both in terms of scope and in terms of the institutions/markets called upon for reporting. The ESAs, ESRB Secretariat and ECB/ESCB committed to analysing feedback from ESRB ad hoc requests in order to fine-tune and further enhance procedures for ad hoc surveys. For the latter purpose, it would be highly useful, as stated in Decision ESRB/2011/6, to actually develop best practices for ad hoc surveys based on the introduction of feedback mechanisms and the sharing of information on methodologies among all parties involved.

Overall, the positive and constructive climate observed in the JGD and its two sub-working groups contributed greatly to the sound, effective and efficient preparation and operation of data delivery. Direct contacts were also initiated across the institutions involved, helping to ensure that the provision of data is as timely as possible, avoiding duplications and eventually minimising the reporting burden on the financial industry.

An important complement to the (often confidential) supervisory reports is publicly available information (most large banking groups ought to at least comply with "Pillar 3"[28] and with the Transparency Directive). Much work has also been carried out to ensure a certain level of integration between supervisory and statistical reports (via the Joint Expert Group on Reconciliation for banks[29] and a joint expert group involving EIOPA, and in liaison with representatives of the insurance industry).

In order to take forward the work initiated by the JGD, the joint ESRB/ESCB/ESAs Contact Group on Data (CGD) was established. The creation of the CGD was originally proposed in the JGD report as a means to pursue cooperation among important stakeholders on data-related issues concerning the ESRB. Its mandate is determined by the ESRB Steering Committee, and it is currently chaired by the ECB's Director General of Statistics, with the Secretariat ensured by a representative of the ESRB Secretariat, and a membership that reflects the composition of the ESRB Steering Committee. The CGD usually meets twice a year and may also organise written procedures and

27 Directive 2004/109/EC of the European Parliament and of the Council of 15 December 2004 on the harmonisation of transparency requirements in relation to information about issuers whose securities are admitted to trading on a regulated market and amending Directive 2001/34/EC (*OJ L 390, 31.12.2004*, p. 38).
28 See http://www.bis.org
29 See European Central Bank and European Banking Authority (2012).

teleconferences to address urgent issues. It reports to the ESRB Steering Committee on progress made in regular and ad hoc reporting and in achieving its objective to avoid duplication and undue burdening of the financial industry. Concrete examples of the work of the CGD are its coordination of the implementation of the three ESAs' technical standards, the running of ad hoc surveys for ESRB purposes and the setting up of registers of financial institutions.

4 DELIVERY OF FIT-FOR-PURPOSE STATISTICS AND INDICATORS

"It is a capital mistake to theorize before one has data. Insensibly one begins to twist facts to suit theories, instead of theories to fit facts."(Sherlock Holmes)

In view of the importance of providing available data on a regular basis to support the work of the ESRB from the very beginning, some immediate time critical work was required to provide short-term solutions for data deliveries. In particular, the short period available to establish an institutional framework for the ESRB meant that urgent work was required to ensure the availability of statistics for the ESRB's macro-prudential policy. These short-term requirements needed to be decided even before a clear benchmark was fully developed concerning policy objectives, strategies, instruments and transmission mechanisms for macro-prudential policies in the EU. This was indeed necessary, as the lead-time needed to set up robust reporting systems is in general a number of years, including the preparation and implementation of regulations regarding the reporting agents.

Within the ECB and by using the available structures of the ESCB, the following principles were established for the immediate work ahead of the establishment of the ESRB.

- Re-use and optimise to the extent possible existing (monetary policy, micro-prudential or commercial) datasets. For this purpose, make data available whenever possible on a country-by-country basis, improving the quality of data even for smaller countries and for EU countries not part of the euro area, for which the collection of harmonised ECB statistics is not mandatory, but recommended under the regulations.

- Prepare procedures ensuring confidentiality in the collection, transmission, storage, analysis and dissemination of micro- and when necessary macro-prudential information. In this context, seek maximum coordination of statistical frameworks and data exchanges at international levels, with secure transmission channels to the European Commission, the IMF, the FSB, the BIS and the three ESAs.

- Optimise existing and invest in future granular data collection systems for securities (linking this to the availability of statistics on securities issues and holdings, by utilising reference data on securities drawn from the Centralised Securities Database) and granular data collection systems for loans (in particular through the active use of credit registers), in order to reduce reporting agents' costs and ensure quick and flexible delivery, and responsiveness to fast-changing analytical needs.

- In order to provide statistics fit for use in systemic analysis and macro-prudential risk assessment, mix established and high quality information collection with regular but time critical and flexible information collection from market and commercial sources; also develop channels and methodologies for ad hoc information.

In addition to these principles, practical requirements called for a phased approach in setting up the information flow to the ESRB. In particular, reliance on the ESCB statistical framework for collecting and disseminating ESRB-related statistics was foreseen for the first years of the ESRB. During this phase, only limited regular data flows could be expected from the ESAs, given the relatively basic infrastructure for data handling within the ESRB. The relevant ESCB structures, in particular the Statistics Committee and the former Banking Supervision Committee and its

successor the Financial Stability Committee, were expected to play a key role. In particular, priority was given to extended statistical datasets designed for monetary policy purposes, an effective use of commercial data sources, and aggregated supervisory data collected by the two committees via short-term approaches.

Concerning the reliance on data used for monetary policy purposes, particular weight was given to the harmonised set of statistics on MFI balance sheet indicators,[30] the MFI interest rate statistics,[31] the statistics on financial vehicle corporations engaged in lending,[32] the statistics on investment funds[33] and the statistics on payment institutions and payment instruments. In addition, quarterly data on insurance corporations and pension funds collected on a best-effort basis, together with annual and semi-annual consolidated banking data, were identified as a core set of statistics for immediate use for ESRB purposes.

In order to provide a short overview of the data deliveries in the first phase, three examples are provided below, covering:

a) short-term enhancements in the Consolidated Banking Data;

b) ESCB data involvement in the ESRB recommendation on foreign currency lending;

c) the use of ESCB statistics for the analysis of the shadow banking system;

a) Enhancements in the Consolidated Banking Data

A concrete example of improvements can be seen with the dataset of Consolidated Banking Data (CBD), which cover information for banks in all EU countries on a consolidated basis. Before the creation of the ESRB, this dataset provided structural information on an annual basis with a publication delay of between eight and nine months for the year-end data.[34] Whereas the coverage of all countries in the EU and the type of data, i.e. CBD, matched data needs, shortcomings in these structural statistics for policy use by the ESRB become obvious. Although the CBD dataset was highly detailed, the annual frequency did not allow for the analysis of developments from a macro-prudential standpoint during the course of the year. (Whilst recognising the regulatory differences, it may be noted here that the US Federal Deposit Insurance Corporation collects financial statement data from insured commercial banks and savings banks on a quarterly basis, and the collected call reports are also made available to the general public. A comparable collection of the same information at a quarterly frequency is not feasible for the CBD population under current national regulatory regimes.)

It was thus agreed that the CBD data would be collected for a subset of core indicators on a semi-annual basis, encompassing indicators on profitability and efficiency, balance sheet indicators relating to banks' funding sources, indicators on loan portfolio and non-performing loans developments, and solvency capital indicators. In addition to the higher data collection frequency,

30 As laid down in Regulation ECB/2008/32 of 19 December 2008 concerning the balance sheet of the monetary financial institutions sector (recast) (*OJ L 15, 20.1.2009*, p.14).

31 As laid down in Regulation ECB 2009/7 of 31 March 2009 amending Regulation (EC) No 63/2002 (ECB/2001/18) concerning statistics on interest rates applied by monetary financial institutions to deposits and loans vis-à-vis households and non-financial corporations (*OJ L 94, 8.4.2009*, p. 75).

32 As laid down in Regulation ECB/2008/30 of 19 December 2008 concerning statistics on the assets and liabilities of financial vehicle corporations engaged in securitisation transactions (*OJ L 15/1, 20.1.2009*, p. 1-13).

33 As laid down in Regulation ECB/2007/8 of 27 July 2007 concerning statistics on the assets and liabilities of investment funds (*OJ L 211, 11.8.2007*, p. 8-29).

34 Borgioli et al. (2013).

the publication lag was cut to half of the lag for the annual data. In this respect, efforts of the ESCB and the relevant committees (the Statistics Committee and the former Banking Supervisory Committee) enabled the core set of indicators for the second quarter of 2010 to be made available for the first meeting of the ESRB General Board on 21 December 2010, allowing a structured discussion on the situation of the banking system already at the inauguration meeting. Along with improvements in the data frequency and timeliness of the CBD, annual data was enhanced in order to allow improvements in the harmonisation of national definitions.

Whereas the enhancements in both dimensions increased the work of supervisors and central banks, at the same time they substantially reduced the need for ad hoc exercises, in particular regarding potential ESRB needs, or at least provided an improved benchmark against which necessary ad hoc data collection exercises could be evaluated. In this respect, assessed overall, the benefits clearly outweighed the costs.

b) Data needs for the recommendation on foreign currency lending

The policy tools available to the ESRB include recommendations addressed to EU Member States, national supervisory authorities or European Supervisory Authorities. The first recommendation published by the ESRB on 11 October 2011 covered lending in currencies other than the legal tender of the relevant country ("foreign currency lending").[35] The recommendation reflected financial stability concerns arising from foreign currency lending to the non-financial private sector, leading to mismatches between the currencies in which the sector receives its income and those in which it pays back loans, thus making it more vulnerable to unfavourable movements in the exchange rate. Such vulnerabilities could have systemic consequences for countries as well as cross-border effects via contagion.

In order to assess such risks, the ESRB could rely fully on harmonised MFI balance sheet statistics from the ECB (in particular those established in Regulation ECB/2008/32), which are not only available for euro area countries but also for most non-euro area EU countries, where this regulation has the form of a recommendation. The MFI balance sheet regulation allows a nearly full coverage of the reporting sector, including statistics on a monthly basis broken down by domestic currency and foreign currency of lending. These statistics include lending breakdowns by sector (into households, non-financial corporations, insurance corporations, pension funds and other financial institutions), by purpose, and by original maturity, and thus allow the identification in great detail of potential risks. On a quarterly basis, a more detailed breakdown into major foreign currencies is available, providing data on those currencies for which foreign currency lending is of particular importance. Overall, although designed for monetary policy purposes, these ESCB statistics provided a fit-for-use framework on which the ESRB could base its first recommendation.

c) The use of ECB statistics for the analysis of the shadow banking sector

Shadow banking has been recognised worldwide as one of the possible main causes for concern, including by the IMF, the EU and US supervisory authorities, and central banks.[36] It is well recognised that detailed assessments are required of how to modify current supervisory frameworks so as to incorporate the shadow banking sector. In particular, the strengthening of the current supervisory frameworks for banks and insurance corporations might provide incentives for regulated entities to again shift part of their business into the shadow banking sector. This sector is thus likely to amplify pro-cyclicality and systemic risks in general via its maturity and/or liquidity

35 Recommendation of the European Systemic Risk Board of 21 September 2011 on lending in foreign currencies (ESRB/2011/1). (OJ C 342, 22.11.2011, p. 1).

36 See Bakk-Simon et al. (2012).

transformation, relying often on short-term uninsured funds. Whereas in particular off-balance-sheet transactions of shadow-banking institutions are of high relevance, and limited information is available on these, monitoring the balance sheet indicators of such institutions is of high importance as well. In terms of providing a rough monitoring tool for shadow banks, ECB statistics again provided a unique source of information in order to gain an overview of this sector.

In particular, residency-based statistics on investment funds as collected under Regulation ECB/2008/30 provide a breakdown of investment funds by purpose, distinguishing hedge funds from bond funds, equity funds and mixed funds. Furthermore, detailed statistics on assets and liabilities are available from this source, allowing the monitoring of hedge funds, at least as regards on-balance-sheet positions and transactions. In addition, a detailed register, covering over 46,000 investment funds in the EU, provides a full overview of the industry within the euro area and, in part, the EU.

A second source of statistics providing a useful overview of other financial intermediaries (OFIs) heavily engaged in the repo market are the regular MFI balance sheet statistics as collected under Regulation ECB/2008/32. Within this framework, it is possible to monitor repos between banks and non-bank financial intermediaries, further broken down into central counterparties as well as types of OFI. A monthly monitoring of the size of this market and the monthly flows is thus possible.

One further sector of interest in the analysis of the shadow banking sector is that of money market funds. Money market funds are of interest for financial stability and thus the ESRB, especially since the intensive episode of stress during the financial crisis in 2008 on both sides of the Atlantic, leading to substantive changes in the definition of such funds and the regulatory perimeters. In this respect the Financial Stability Board not only classified money market funds as a component of the shadow banking system, but also requested the International Organization of Securities Commissions (IOSCO) to prepare policy recommendations by July 2012.[37] A unique source of information for this sector, covering detailed monthly statistics of the asset as well as liability side of its balance sheet, is offered again by the MFI balance sheet statistics collected under Regulation ECB/2008/32.

Finally, securitisation schemes are important activities of the shadow banking sector. Such schemes vary within and across debt securities markets. They can be grouped into three broad types. The first type of scheme, usually known as on-balance sheet securitisation, involves the issue of debt securities backed by an income stream generated by the assets which remain on the balance sheet of the debt securities issuer (the original asset owner), typically as a separate portfolio. The issuance of debt securities provides the original asset owner with funds. In the second type, called true-sale securitisation, the original owner transfers assets from the balance sheet to a vehicle, which issues debt securities to finance the acquisition. Interest payments and principal repayments on the loans meet the coupon payments and principal repayments on the debt securities. Synthetic securitisation, the third type of securitisation, involves a partial or total transfer of credit risk related to a pool of assets without a transfer of the assets themselves. The original asset owner buys protection against possible default losses on the pool of assets using a portfolio of credit default swaps adjusted to the owner's desired level of credit-risk protection.

For an overview of the market and the institutions involved, it could be said that the best source of harmonised statistics on securitisation schemes are the data arising from Regulation ECB/2008/32,

37 For a detailed analysis see European Systemic Risk Board (2012b).

which concerns MFI balance sheet data covering securitisations undertaken by banks, and from Regulation ECB/2008/30, which concerns financial vehicle corporations engaged in lending, covering the securitisation vehicles themselves.

Overall, ECB statistics prepared for monetary policy purposes were available for immediate use by the ESRB for financial stability purposes and macro-prudential policy purposes, although for a number of items a solution remained to be found, in particular for off-balance-sheet transactions.

DELIVERABLES OF THE ECB

The "White Book", first compiled in December 2010, is one of the main regular internal products of the ECB as part of the statistical support to the ESRB. The White Book is a stand-alone input into the risk surveillance material for the ESRB produced by the ECB and therefore supports the policy discussion. The White Book is the result of the close cooperation between the ECB's Directorate General Statistics and Directorate General Financial Stability, and currently includes contributions from other ECB business areas, as well as from the ESAs. This statistical product comprises a set of key financial stability charts and tables with detailed data. It covers a wide range of indicators, classified under the headings of key financial intermediary macro risk, credit risk, market risk, liquidity and funding, interlinkages, profitability, and solvency. Data from the ESAs are also included.

The ESRB risk dashboard is an input instrument for the ESRB's macro-prudential analysis consisting of a set of quantitative and qualitative indicators to identify and measure systemic risk in the EU financial system. It is one of the main sources of input to support the General Board's discussion on risks and vulnerabilities. The development of the risk dashboard, with a wide range of statistics and financial market indicators, required extensive preparatory work within the ESCB and ESRB, with the analysis and assessment of systemic risks culminating in the publication of an ESRB risk dashboard for the first time on 20 September 2012. Since then, the dashboard has been published on a regular basis, i.e. after each ESRB General Board meeting, on the website of the ESRB. The technical work behind the dashboard is carried out by the ECB, given its long-standing expertise and the aforementioned well-established harmonised data sources, as well as its data handling procedures.

The *ESRB risk dashboard* is one of the core communication instruments of the ESRB, as it provides transparent background information to the public at large about the risks and vulnerabilities in the financial system. Sources that are combined for this purpose range from the ESCB to the European Commission, the European Statistical System,[38] the ESAs and the respective national authorities. In addition, commercial sources are used to complement official information. The presentation of the information is broken down into the same six main areas as the White Book, i.e. indicators of the following: interlinkages and composite measures of systemic risk, macro risk, credit risk, funding and liquidity, market risk, and profitability and solvency, covering a sample of large banking groups and large insurance groups.

An "Analysis of the National Banking System" of each of the 27 EU Member States is currently under preparation with the aim of supporting a more in-depth reflection on national

38 The European Statistical System is the partnership between the EU's statistical authority, which is the European Commission (Eurostat), and the national statistical institutes and other national authorities responsible in each Member State for the development, production and dissemination of European statistics. This partnership also includes the European Economic Area and European Free Trade Association countries.

differences within the European banking sector, also facilitating a more structured discussion on macro-prudential issues that would be difficult to assess using EU-level data only. The semi-annual report will be composed of two core parts: a concise analysis of the national banking systems and their vulnerabilities, and a statistical section containing a set of national banking indicators common to all EU countries. It will also include, where appropriate, a thematic section complementing these two core parts. A mock-up was presented to the ESRB's Advisory Technical Committee at the end of 2012, and regular semi-annual reports are planned as from May 2013. It is worth noting that most indicators are derived from the Consolidated Banking Data and have thus already been made public, e.g. on the ECB or ESRB websites.

DELIVERABLES OF THE ESAS

- EBA quarterly Key Risk Indicators

The Key Risk Indicators (KRIs) compiled by the EBA consist of a set of 53 indicators, which are required by the EBA for its own monitoring of the EU banking system, covering solvency, credit risk, asset quality, profitability, and the balance sheet structure of large banking groups. The primary objective of this set of indicators is to support the data users in terms of risk assessment and prioritisation, although some are also useful in assessing banks' business models. The KRIs stem from FINREP and COREP templates and are broadly consistent with the CBD.

Decision ESRB/2011/6 specifies that based on datasets from a sample of large banking groups, the EBA should report to the ESRB the complete set of 53 indicators. Regarding frequency and timeliness, the KRIs are collected on a quarterly basis, with the EBA receiving data from national supervisory authorities by the end of the quarter after the reference date. The EBA compiles the required ratios, calculates distribution measures and correlations among indicators, and transmits them to the ECB's Directorate General Statistics, in line with the ECB's statistical support to the ESRB. The EBA aims to transmit the information within five working days of collecting the data from national authorities.

- EIOPA annual/quarterly fast-track survey data

Decision ESRB/2011/6 specifies the two datasets to be reported to the ESRB by EIOPA. The fast-track reporting dataset contains profit and loss and solvency data for the aggregate of large insurance groups in the European Union on a quarterly basis, and is complemented by the annual regular reporting dataset with aggregated information for the entire population of insurers collected on a solo basis. While the latter is directly available on the EIOPA website, since July 2011 the former has been transmitted to the ESRB via the ECB.

Moreover, as a result of its successful cooperation with the ECB, since July 2012 EIOPA has been transmitting dispersion measures for some of the indicators for the large insurance groups in the European Union on a quarterly basis. Indeed, the recently published ESRB risk dashboard includes a set of indicators based on the quarterly fast-track dataset, but utilised only on a semi-annual basis, in order to account for the variations in the sample that have arisen because several insurers report only on a semi-annual basis.

- ESMA indicators

Decision ESRB/2011/6 specifies the datasets to be transmitted on a quarterly basis by ESMA from the Markets in Financial Instruments Directive (MiFID)[39] database and the reference data system database.

The dataset sourced from the MiFID database contains information regarding the name and designation of the Member State of the competent authority that has authorised the "systematic internalisers", the multilateral trading facilities, the regulated market and the central counterparty clearing houses. While the information transmitted from the reference data system refers to quarterly data on the number of shares admitted to trading in the European Economic Area markets, it is included in the White Book by country and by market.

ESMA has been transmitting quarterly data to the ECB, in line with the ECB's role as provider of statistical support to the ESRB Secretariat, since May 2011.

39 Directive 2004/39/EC of the European Parliament and of the Council of 21 April 2004 on markets in financial instruments amending Council Directives 85/611/EEC and 93/6/EEC and Directive 2000/12/EC of the European Parliament and of the Council and repealing Council Directive 93/22/EEC (OJ L 145, 30.4.2004, p. 1). See OJ C 302 13.10.2011, p. 3-11.

5 CONCLUSION

This paper has shown that timely and accurate data are key to the preparation of policy recommendations and decisions, as well as to monitoring policy decisions in terms of their impact on, or transmission to, the financial and non-financial economy. It has presented a large part of the work that was undertaken from 2010 to 2012 to develop, implement and produce the set of statistical and supervisory information necessary to support the ESRB from its inception in January 2011, and has described the resulting close coordination between the ECB, the ESRB and the ESAs. It has explained that a close alignment with developments at the international level, and especially within the framework of the G20, has also been an essential feature of this work.

Further work is needed to meet the ESRB's longer term requirements, in particular regarding granular information on credit, possibly to be derived from central credit registers or similar loan-level databases – either that already exist or that are being set up in national central banks or other national authorities. An important approach at the juncture of the review of the ESRB, currently under preparation by the European Commission, will be to distinguish between sensitive confidential information, e.g. institution-to-institution exposures, and institution-to-aggregate data that may be published via other sources, such as financial statements in the form of balance sheet data or the profit and loss account.

This paper does not address the prospects for the provision of data to support a banking union. It is clear that the experience gained, in delivering data and in terms of the cooperation between various national and European authorities within the ESCB and European System of Financial Supervision, will be invaluable for work relating to such further developments. This would be a matter, though, for another paper.

REFERENCES

Bakk-Simon, K., Borgioli, S., Giron, C., Hempell, H., Maddaloni, A., Recine, F. and Rosati, S. (2012), "Shadow banking in the euro area: an overview", *Occasional Paper Series*, No 133, European Central Bank, April.

Borgioli, S., Gouveia, A.C. and Labanca, C. (2013), "Financial stability analysis – insights gained from the consolidated banking data for the EU", *Occasional Paper Series*, No 140, European Central Bank, January.

Borio, C. (2011), "Central banking post-crisis: What compass for uncharted waters?", *Working Paper Series*, No 353, Bank for International Settlements.

Borio, C. and Shim, I. (2007), "What can (macro-)prudential policy do to support monetary policy?", *Working Paper Series*, No 242, Bank for International Settlements.

Cecchetti, S., Fender, I. and McGuire, P. (2010), "Toward a global risk map", *Working Paper Series*, No 309, Bank for International Settlements.

Cerutti, E., Claessens, S. and McGuire, P. (2012), "Systemic risk in global banking: what can available data tell us and what more data are needed?", *Working Paper Series*, No 376, Bank for International Settlements.

Draghi, M. (2012), Introductory statement at the hearing on the ESRB before the Committee on Economic and Monetary Affairs of the European Parliament, Brussels, 31 May.

European Central Bank/European Banking Authority (2012), *Bridging the reporting requirements regarding ESCB balance sheet and interest rate statistics with EBA Guidelines on FINREP, COREP and Large Exposures*, Second Edition, March.

European Systemic Risk Board (2012a), *Annual Report 2011*.

European Systemic Risk Board (2012b), "Money market funds in Europe and financial stability", *Occasional Papers of the ESRB*, No 1, June.

Financial Stability Board (2012), *Progress note on the Global LEI Initiative,* October.

Financial Stability Board, International Monetary Fund and Bank for International Settlements (2011), *Macroprudential policy tools and frameworks – Update to G20 Finance Ministers and Central Bank Governors*.

Financial Stability Board/International Monetary Fund (2011), *The Financial Crisis and Information Gaps: Implementation Progress Report*, http://www.imf.org/external/np/g20/pdf/063011.pdf

Kim, H.J., Shin H.S. and Yun, J. (2012), "Monetary aggregates and the central bank's financial stability mandate", Princeton University Paper for the Federal Reserve Conference on Central Banking: Before, During, and After the Crisis, 23-24 March.

Kohn, D. (2010), "Macroprudential instruments and frameworks: a stocktaking of issues and experiences", *Committee on the Global Financial System Papers*, No 38 (Preface).

United Nations Economic Commission for Europe (UNECE) (2011), *The Impact of Globalization on National Accounts*, joint work by UNECE, Eurostat, and the Organisation for Economic Co-operation and Development, under the chairmanship of Statistics Netherlands.

ISSN 1607-1484