

## Vítor Constâncio: Financial stability – measurement and policy

Speech by Mr Vítor Constâncio, Vice-President of the European Central Bank, at the high level conference on “Financial stability – methodological advances and policy issues”, Frankfurt am Main, 14 June 2012.

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Ladies and gentlemen,

After a productive day, it is with great pleasure that I welcome you to this dinner. Before we get started, let me offer a few thoughts regarding macro-prudential research, the current stage of financial stability analysis at the ECB and policy conduct in Europe.

The sources and the propagation of the financial crisis highlighted the need for putting in place robust policy infrastructures to safeguard financial stability and for macro-prudential policies to address systemic risk. In this light, new institutions have been put in place, such as the European System of Financial Supervision and the Financial Stability Oversight Council in the United States, and regulatory reforms are taking shape, notably Basel III and a host of other initiatives under the leadership of the Financial Stability Board.

This progress notwithstanding, it needs to be kept in mind that in the macro-prudential field we are in a much less comfortable position than in the monetary policy field, in particular concerning widely accepted scientific foundations and long experience with tested policy instruments.

Against this background, I will start by providing a brief overview of the recent macro-prudential research. I will then focus on some of the main analytical tools for financial stability analysis at the European Central Bank (ECB). I will conclude by referring to a key aspect of our future regulatory framework in Europe, namely the set of macro-prudential policy instruments embedded in the Capital Requirements Directive (CRD) IV, and how these instruments should be made compatible with the requirements for both safeguarding financial stability and further developing the Single Market for financial services.

### 1. Progress in macro-prudential and financial stability-oriented research

The theoretic foundations in the macro-prudential field are still at a largely rudimentary state compared to other research areas. This notwithstanding, significant advances in macro-prudential research have been made in recent years; in particular fuelled by the lessons learnt during the financial crisis which underscored the need to take a more systemic view to monitoring and assessing risks and vulnerabilities within the financial system and beyond.

The papers presented at today and tomorrow’s conference provide some useful snapshots of the recent academic advances in the field of macro-prudential, and more broadly, financial stability analysis.

One promising area of research deals with ***early warning models and systemic risk indicators***, which was the theme of Sessions I and II this morning.

In recent years the value of early warning indicators has increased thanks to improved methodologies and the use of less exploited data sources. It should also be added that from a policy perspective the focus has been shifted somewhat from predicting crises to predicting growing imbalances and highlighting underlying vulnerabilities. As I believe was also

illustrated by Atish Ghosh this morning, this change of focus has most likely contributed to the greater effectiveness of new early warning tools.<sup>1</sup>

Recent research shows how the predictive information can be improved by using individual balance sheet data of financial firms combined with traditional macro-financial variables. As for example illustrated by Claudio Borio and co-authors and by Alessi and Detken, the merit of private credit and liquidity gaps and the role of global variables in early warnings has been confirmed, while the performance of bank solvency and liquidity ratios in this regard is still under debate.<sup>2</sup>

For what concerns systemic risk indicators, valuable information for policy-makers comes from the measurement of the current level of systemic financial stress. A popular means of assessing the systemic importance of a financial institution is to look at the sensitivity of its value at risk (VaR) – i.e. its tail dependence – to shocks to the whole financial system. This has been proposed by the CoVaR approach of Adrian and Brunnermeier or by similar models of cross-sectional measures, like the Co-Risk used by the IMF and based in CDS premia<sup>3</sup> or the Systemic Expected Shortfall (SES) predicted by the Marginal Expected Shortfall (MES) of an institution and its leverage developed by Acharya and co-authors and by Brownless and Engle.<sup>4</sup> CoVar calculations are being used by the FSOC in the US. We at the ECB use different types of indicators to try to gauge systemic risk as I will explain in a moment.

A key element of this kind of systemic risk indicators is to account for *the network relations and clusters* of systemic risk spillovers, as for instance demonstrated by Nikolaus Hautsch and Kay Giesecke in their presentations this morning.<sup>5</sup> Importantly, allowing for interconnectedness may also help improving the predictive power of early warning models. This is clearly illustrated by the ECB presentation this morning by Peltonen et al<sup>6</sup> which shows the usefulness of adding contagion to a regular Early Warning Systems improves the performance of the model proving that it would have been successful in predicting bank distress when the financial crisis was approaching.

A second important research area deals precisely with ***the assessment of contagion risks***, which was addressed in Session III. Contagion within the financial system can occur in several ways, as illustrated by Franklin Allen this afternoon.<sup>7</sup> Most commonly, shock propagation within the financial system is thought to occur via interbank networks or via

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<sup>1</sup> See IMF (2010) “The IMF-FSB Early Warning Exercise: Design and Methodologies Toolkit”, September.

<sup>2</sup> See e.g. Borio, C. and P. Lowe (2002), “Asset prices, financial and monetary stability: Exploring the nexus”, BIS Working Paper No. 114; Borio, C. and M. Drehmann (2011), “Towards an operational framework for financial stability: “fuzzy” measurement and its consequences”, BIS Working Paper No. 284.; Alessi, L. and C. Detken (2009), “Real-time early warning indicators for costly asset price boom/bust cycles”, ECB Working Paper No. 1039.

<sup>3</sup> IMF (2009) “Assessing the systemic implications of financial linkages” *Global Financial Stability Report*, April 2009, pages 73–110.

<sup>4</sup> See, for instance, Adrian, T. and M. Brunnermeier, “CoVaR” (2008), Federal Reserve Bank of New York Staff Reports, No 348, September; Acharya, V.V., L.H. Pedersen, T. Philippon and M. Richardson (2010), “Measuring Systemic Risk”, New York University Working Paper; Brownless, C.T. and R.F. Engle (2010), “Volatility, Correlation and Tails for Systemic Risk Measurement”, New York University Working Paper.

<sup>5</sup> See Hautsch, N., J. Schaumburg and M. Schienle (2012), “Financial network systemic risk contributions”, working paper.

<sup>6</sup> See Betz, F., Oprica, S., Peltonen, T.A., Sarlin, P (2012) “Predicting bank distress and identifying interdependencies among European Banks”, mimeo.

<sup>7</sup> See Allen, F., A. Babus and E. Carletti (2012), “Asset commonality, debt maturity and systemic risk”, *Journal of Financial Economics*, Vol. 104, pp. 519–534.

common asset exposures. Depending on the structure of the network, even small shocks to central hubs in the network can result in serious propagation throughout the system.

In most cases, during normal times, financial network structures are typically fairly robust to shocks and thus allow for a better diversification of risk. However, this notwithstanding, shocks to particular elements of the network can trigger major contagion within the system. This is a key feature of the so-called “robust yet fragile” complex networks; also alluded to by Doyne Farmer this afternoon.<sup>8</sup>

From a broader financial stability perspective, it is however not sufficient to be able to monitor systemic risks and their potential spillover effects within the financial system were they to occur. Financial stability analysis, and macro-prudential policy actions, is as much about assessing the implications of ruptures in the financial system on the wider economy. From this viewpoint, the development of **macro-financial models linking financial instability and the performance of the economy** is of the essence.

The global financial crisis has revealed important deficiencies of the standard macroeconomic models in capturing financial instabilities. Realistic characterisations of such instabilities include bank defaults, financial market illiquidity, extreme events, and related non-linearities. Especially, the modelling of bank defaults within a general equilibrium framework is crucial to allow for a proper characterisation of financial instability. However, none of these elements feature in the macroeconomic models regularly used for forecasting and monetary policy analysis and only recently has more emphasis been given to better developing the role of financial sectors in these models.

Another fundamental link which until recently has been missing in macro-financial models is to allow for heterogeneity, and interlinkages, between the agents within the financial sector. Against this background, efforts by economists such as Gertler and Kiyotaki to incorporate interbank markets within Dynamic Stochastic General Equilibrium (DSGE) models are much welcome.<sup>9</sup> Also worth noting is the model by Goodhart, Kashyap et al which includes the presence of a shadow banking system holding securitised assets issued by the traditional banking system that are subject to default.<sup>10</sup>

A lot of attention, for example illustrated in the analysis by Adrian-Shin<sup>11</sup>, has also been devoted recently to the debt and leverage ratios of financial intermediaries and to their variation over the business cycle. In answering to the question of which financial frictions matter, Adrian, Colla and Shin (2012)<sup>12</sup> point to the importance of including in a model with financial-real feedbacks the pro-cyclical leverage cycle and the co-existence of loans and bonds that tend to be substitutes in a recession even if spreads on both tend to increase. Geanakoplos has shown that variations in leverage have a huge impact on asset prices potentially contributing to economic bubbles and busts.<sup>13</sup> Leverage cycles have only recently started being incorporated in macro-financial models. One prominent example is the model

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<sup>8</sup> See Caccioli, F., J.D. Farmer, N. Foti and D. Rockmore (2012), “Stability of the Austrian banking system”, unpublished paper.

<sup>9</sup> See Gertler, M. and N. Kiyotaki (2010), “Financial intermediation and credit policy in business cycle analysis”, in B. Friedman and M. Woodford (eds.), *Handbook of Monetary Economics*, Edition 1, Volume 3, October.

<sup>10</sup> See Goodhart, C.A.E., A. Kashyap, D.P. Tsomocos, and A.P. Vardoulakis (2012), “Financial Regulation in General Equilibrium”, NBER Working Paper No. 17909.

<sup>11</sup> See Adrian, T. and H.S. Shin (2010), “Financial intermediaries and monetary economics”, in B. Friedman and M. Woodford (eds.), *Handbook of Monetary Economics*, Edition 1, Volume 3, October.

<sup>12</sup> Adrian, T., Colla, P. and Shin, H. S. (2012) “Which financial frictions? Parsing the evidence from the financial crisis of 2007–09” Federal Reserve Bank of New York, Staff Reports, revised version March 2012.

<sup>13</sup> See Geanakoplos, J. (2009), “The leverage cycle”, in D. Acemoglu, K. Rogoff and M. Woodford (eds.), *NBER Macroeconomics Annual*, Vol. 24.

by Brunnermeier and Sannikov which includes time-varying margin requirements set by financial intermediaries and thus exacerbates the impact of asset prices over the business cycle as they trigger “margin spirals” that may cause long-lasting adverse feedback loops between the financial sector and the real economy.<sup>14</sup>

A final research area which I would like to highlight concerns the interactions between **macro-prudential policies**, including financial regulation, and other policies such as monetary policy as well as the impact these policies might have on the financial system and the real economy. Monetary policy impacts in a fundamental way financial stability: it affects asset prices; influences liquidity conditions and has a bearing on risk taking since low short term interest rates lead directly to expectation of profitable exploitation of a steeper yield curve and consequently tend to increase leverage with more risk.<sup>15</sup> As Adrian and Shin (2009) underline what is significant in this “risk-taking channel” (Borio and Zhu (2008)<sup>16</sup>) is that the short term interest rate has a direct effect on monetary and financial conditions not waiting for the indirect effect on medium term rates.

On the other hand, looking to historical experiences with macro-prudential tools, being dynamic provisions in Spain or loan-to-Value ratios in Korea, or to the implications of different models, one conclusion we can draw is that those instruments are not sufficiently strong to tame the financial cycle. One interesting aspect of the model by Goodhart, Kashyap et al (2012) , that I already quoted, is precisely that its simulations show that none of the analysed instruments (dynamic provisions, loan-to-value ratios, capital requirements, liquidity coverage ratios and margin requirements on repos used by shadow banks), would not be enough, even combining some of them, to smooth the financial cycle. The difficulty comes from the fact that the boom brings large increases in asset prices and this provides a misplaced sense of wealth improvements and a temptation to further leveraging. In this context, they nevertheless conclude that dynamic provisioning and liquidity requirements can be the more effective tools but still insufficient as the Spanish experience shows. Banks became more resilient but the bubble was not prevented.

All these points indicate that there must be a role for monetary policy to address financial stability considerations even when the priority target of monetary policy is price stability as this goal is affected in the medium term by financial instability. Traditionally monetary policy is only concerned about price stability, particularly in the inflation targeting regime, even if central banking has since the XIX century cared for financial stability in the form of lender-of-last-resort for banks in times of liquidity distress. This asymmetric policy of only “mopping-up” with liquidity in financial market downturns but ignoring the risks of the upside booms creates moral hazard and provides a significant “liquidity subsidy” to the financial sector.

The arguments against doing otherwise have been centred in the difficulty of “identifying bubbles” or in the danger of “pricking bubbles”. Nevertheless the on-going debate is not anymore about “pricking bubbles” but concerns the inclusion of financial conditions in the optimal monetary rules as in the models developed by Christiano, Motto, Rostagno (2009),

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<sup>14</sup> See Brunnermeier, M. and N. Sannikov (2012), “A macroeconomic model with a financial sector”, Working paper.

<sup>15</sup> See Adrian, T. and H.S. Shin (2010), “Financial intermediaries and monetary economics”, in B. Friedman and M. Woodford (eds.), Handbook of Monetary Economics, Edition 1, Volume 3, October.; Maddaloni, A. and Peydro, J.-L. (2010), “Bank risk-taking, securitization, supervision and low interest rates: evidence from US and Euro area lending standards”, Review of Financial Studies, <http://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp1248.pdf>; Jimenez, G., Ongena, S., Peydro, J.-L. and Saurina, J. (2012), “Credit Supply and Monetary Policy: Identifying the Bank Balance-Sheet Channel with Loan Applications”, American Economic Review, <http://www.tilburguniversity.edu/webwijs/files/center/ongena/preprints/jopsc.pdf>.

<sup>16</sup> See Borio, C., Zhu, H. “Capital regulation, risk-taking and monetary policy: a missing link in the transmission mechanism?” BIS WP n. 268, December.

Curdia and Woodford (2010) or Gertler and Karadi (2011)).<sup>17</sup> The new models are nevertheless not mature enough and do not include all relevant financial frictions. A pure “leaning against the wind” policy is possible but has limitations although, in any case, monetary policy should become less asymmetric and complement the indispensable regulatory and macro-prudential policies.

While these reflections only provided a snapshot of the plethora of research currently being undertaken in the field of financial stability analysis, in my view these are some of the key elements. It also broadly reflects our own efforts here at the ECB to further develop and implement an appropriate financial stability analytical toolkit. This is the topic to which I now turn.

## 2. The ECB’s tools for financial stability analysis

Beyond the academic research, a lot more analytical macro-prudential work is undertaken here at the ECB, as it’s the case at other central banks. Our main aim with this work is to be in a position to carry out systemic risk assessments in real time, directly and regularly supporting policy discussions. For this purpose, we have at our disposal a number of tools and techniques to help us form a comprehensive view of prevailing systemic risks and to help assessing and quantifying the impact of these risks, were they to materialise, on the banking sector and ultimately on the real economy.

More concretely, we structure our financial stability analysis in the usual way with three broad elements. The first entails an **identification of important sources of system-wide vulnerabilities** based on an analysis of the individual and collective strength of the different parts of the financial system – institutions, markets and infrastructures. The second is an **assessment of the potential costs** – to the real economy – should some combination of the identified risks and vulnerabilities materialise. A proper indicator of systemic risk should entail both of these properties, the probability of an adverse event occurring and the potential impact of such an event occurring. A last element is methodologies examining **network fragilities** and **contagion**.

Starting with the identification of potential sources of systemic risk, our analysis focuses on **two broad types of indicators**:

The first set of indicators **characterise the current state of financial stress** in the financial system, i.e. indicators that works as “thermometers” of the level of tension in the financial system. As crises tend to exhibit many different manifestations, it is obvious that no single metric can gauge the current level of systemic stress. In practice, we cross-check and report on a variety of complementary indicators. Let me mention a few examples.

One class of approaches employed in practice here at the ECB can be classified as “**market based indicators**” – that is, with a focus on signals from both financial markets and financial institutions. At least four examples of distinct indicators in this category can be mentioned. First, general financial market stress is quite accurately captured by the so-called coincident indicator of systemic stress, or “CISS”, which succinctly synthesises the interaction of stress across key market segments also taking into account explicitly the correlation structure of different segments.<sup>18</sup> A second indicator in this class of measures focuses specifically on systemic stress within the banking sector – examining the onset of systemic stress through

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<sup>17</sup> See Christiano, L, Motto, R., and Rostagno, M (2010) “Financial factors in economic fluctuations” ECB WP n. 1192; Cúrdia, V. and M. Woodford (2010) “Credit spreads and monetary policy” *Journal of Money Credit and Banking*, 42 (6, Supp.); Gertler, M. and P. Karadi (2010) “A model of unconventional Monetary Policy”, mimeo.

<sup>18</sup> See Holló D, M Kremer and M Lo Duca (2012), “CISS – a composite indicator of systemic stress in the financial system”, ECB Working Paper No 1426 (March).

the lens of joint probabilities of default on the basis of CDS pricing of financial institutions.<sup>19</sup> A third group of market based indicators focus squarely on liquidity conditions – either in specific market segments (e.g. the money market) or across financial market segments.<sup>20</sup> Lastly, novel methods such as self-organising financial stability maps provide an alternative means of gauging systemic stress through visual means – thereby providing a useful complement to numerical signalling methodologies.<sup>21</sup>

Another separate class of indicators we regularly report characterising the current state of financial stability can be classified as “*structural indicators*” – that is, examining potentially excessive leverage and credit developments – as well as disequilibria in specific asset price segments in specific economies or sectors. Examples of indicators in this category are numerous, but clearly encompass models of credit booms as well as various estimates of valuation in real estate markets.<sup>22</sup> Both such sets of indicators can provide indications of buildup of imbalances but suffer from one drawback. Assumptions need to be made about what defines excessive developments. These assumptions, accordingly, must be robust as otherwise they risk being challenged by addressees of policy recommendations.

The second set of indicators more explicitly strives to ***predict vulnerable states of the financial system***, i.e. early warning indicators – be in the form of univariate indicators, multivariate models or early warning *systems*. The key feature of all the categories of early warning indicators is that their signals are evaluated in an early warning framework, thus historically measuring the performance in terms of correctness and timeliness of the signals, potentially taking into account the relative preferences of the policy maker between type 1 and type 2 errors. This is an active field at the ECB – a representative example in this respect would be the work of Alessi and Detken arguing that the global credit gap is the most robust early warning indicator for costly aggregate asset price booms or the work of Lo Duca and Peltonen building on systemic risks stemming from a combination of domestic and global macrofinancial vulnerabilities.<sup>23</sup>

Of course, the triggers and exact timings of crises are extremely difficult to predict. However, the underlying vulnerabilities, at least based on past experiences, seem often to be detectable – one needs to at least control for “known knowns” or “known unknowns”. Indeed, many crises follow a very similar pattern featuring excessive leverage. Accordingly, the fact that early warning seems possible has practically become part of the layman’s lexicon – not least given widespread even popular appeal of analyses on historical crises (e.g. Reinhart-Rogoff). Despite these strides, much remains to be done until policymakers can be fully confident enough to implement and make use of robust early warning systems.

Let me move to ***the assessment tools***. One of the major tools to perform financial stability assessments is ***stress testing***, primarily of the banking sector, but also conducted for the insurance sector – including sensitivity and scenario analyses. Stress testing tools allow for evaluating the impact on banking sector solvency of severe, but plausible macro-financial

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<sup>19</sup> See, for instance Box 8 in the June 2012 ECB Financial Stability Review, “Systemic Risk Measure – A portfolio probabilistic perspective on measuring default risk”.

<sup>20</sup> See regime-switching methodology in Box 4 of the June 2012 Financial Stability Review, “Addressing stress in interbank markets and the role of unconventional monetary policy measures” and general liquidity indicator in Box 9 in ECB, Financial Stability Review, June 2007, “Understanding financial market liquidity”.

<sup>21</sup> See P. Sarlin and T.A. Peltonen, “Mapping the state of financial stability”, ECB Working Paper Series, No 1382, 2011.

<sup>22</sup> On credit, see for instance Schwaab B, S Koopman and A Lucas (2011), “Systemic risk diagnostics: coincident indicators and early warning signals” ECB Working Paper No 1327 (April); for commercial property prices, see Box 6 in the December 2011 ECB Financial Stability Review or for residential property prices, see Box 3 in ECB, Financial Stability Review, June 2011.

<sup>23</sup> See Lo Duca M and T Peltonen (2011), “Macro-financial vulnerabilities and future financial stress: assessing systemic risks and predicting systemic events”, ECB Working Paper No 1311 (March).

scenarios that reflect key systemic risks. On this basis, we use our (top-down) stress test tools **to rank the impact of prevalent macro-financial risks** in order to gauge the resilience of the banking sector.

The top-down, or macro-prudential, stress-testing framework developed by the ECB has proven particularly valuable during the financial crisis and the euro area sovereign debt crisis. Systemic risks emerged, intensified and evolved rapidly, calling for a flexible and operational tool that could deliver quantified impact assessments in a timely fashion. The tool is comprehensive enough to cover individual banks and it incorporates real-financial interactions as well as network models to assess contagion risk.

These features notwithstanding, and despite its increasing prominence in financial stability analysis and communication, **stress testing has its limits**. Notably, even state-of-the-art stress testing frameworks are characterised by substantial methodological limitations.

The **major challenges** facing stress testers today range from dealing with the inevitable subjectivity related to scenario building, how to model and integrate in a consistent way within the framework elements, such as endogenous bank responses, interbank spillover and macroeconomic feedback effects. Many of the available models also have difficulties capturing well the often non-linear tail risk effects that the scenarios are typically meant to reflect. Finally, stress test results are **only as good as the data available**, which in particular for central banks and other macro-prudential authorities without supervisory access is a key deficiency.

Finally, let me add that even though our top-down stress testing framework is far from perfect and suffer from many deficiencies, it has proved a useful tool to challenge the more granular bottom-up approaches, such as the EBA EU-wide stress tests, and especially to detect outlier responses by individual banks in the latter case.

The last broad element of ECB financial stability analysis is the rapidly burgeoning literature on **contagion**. I reviewed some ECB work in this area in a speech last October.<sup>24</sup> In that speech, I mentioned several analytical perspectives we use to examine contagion in all its forms relevant for the ongoing sovereign crisis in the euro area – highlighting models capturing the interaction between sovereigns, as well as that between sovereigns and banks. Such models make use of multiple techniques to uncover contagion – namely, multivariate frequency decompositions, regime-switching approaches and exploiting generalised measures of risk aversion in entity-specific frameworks. Clearly, the issue of contagion is not distinct from that of **network analysis**. While work in this area is broad, I can point to some recent ECB work featured in our latest Financial Stability Review – in which tools and results are presented regarding applications of network analysis both for actual collateral holdings and simulated interbank networks.<sup>25</sup> Ultimately, work in this field remains still relatively nascent and I am sure more highly relevant applications will follow with time.

### **3. The macro-prudential policy framework and instruments in the EU Single Market**

Let me now turn to the design of a macro-prudential policy framework and the definition of a policy toolkit that is expected to be available for authorities to address the identified systemic risks in Europe.

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<sup>24</sup> See “Contagion and the European debt crisis”, Keynote lecture by Vítor Constâncio, Vice-President of the ECB at the Bocconi University/Intesa Sanpaolo conference on “Bank Competitiveness in the Post-crisis World” Milan, 10 October 2011.

<sup>25</sup> See Special Feature C of the June 2012 ECB Financial Stability Review, “Evaluating interconnectedness in the financial system on the basis of actual and simulated networks”.

Since the outbreak of the financial crisis, policy makers have gradually placed more and more emphasis on a macro-prudential approach of financial regulation. The first step in this process was the establishment of the Financial Stability Board as a global coordinating body which was followed by setting up authorities with explicit macro-prudential mandates at the national level as well. An important milestone in this process was the establishment of the ESRB in Europe last year. Besides its role in facilitating discussion on macro-prudential mandates and institutional set-up at the national level, the ESRB plays a key role in developing a toolkit of macro-prudential policy instruments that national authorities can use within the European legal framework.

In this context, a major policy challenge Europe is currently facing is the implementation of the Basel III standards in a way that would allow authorities to use policy tools for macro-prudential purposes as well. I would like to highlight in this regard that Basel III already includes some elements of a specific macro-prudential toolkit, such as the counter-cyclical capital buffer, which requires banks to build up capital buffers in periods of excessive credit growth. These buffers can then be released in stress situations, which would help institutions to avoid becoming constrained by regulatory requirements and may thus enhance their ability to maintain lending activity.

However, when having a closer look at the Basel III agreement, we have to acknowledge that most elements of the new framework are traditionally considered as micro-prudential in nature. The capital and liquidity rules are designed so as to address risks at the level of individual institutions. Still, depending on how these instruments are calibrated, they could, in principle, be also used to address macro-prudential concerns and mitigate systemic risks. This is a topical issue from a policy perspective in Europe, given that discussions are at their final phase on the implementation of Basel III through the so called “CRD IV”, which includes a proposal for a directive and a regulation. Importantly, the regulation will introduce a new feature in financial regulation, namely that the prudential standards laid down in this legislative proposal will be directly applicable in all EU member states.

You may already be aware of the concerns that have recently been raised by some authorities and member states with regard to their ability to use the policy tools falling under the regulation for macro-prudential purposes. Concretely, they claim that, if capital and liquidity rules and other micro-prudential instruments are introduced as elements of a “single rulebook”, this would imply a “maximum harmonisation” of prudential requirements. Consequently, member states may be legally prevented from adopting more stringent rules, even if systemic risks would justify that.

I share these concerns. However, I would also like to highlight some issues that I consider as a prerequisite for the conduct of efficient macro-prudential policy in a single market.

First, as regards the “single rulebook”, the ECB has expressed on many occasions its support towards this approach. We have underlined that the “single rulebook” contributes to a consistent implementation of prudential measures in the Single Market, improves transparency and ensures a level playing field for financial institutions. By avoiding regulatory arbitrage and distortions to competition, the “single rulebook” is also beneficial from the perspective of financial integration in Europe.

At the same time, however, let me also underline significant risks to financial stability can emerge when systemic risks identified at the national level may impact other jurisdictions through spillover effects and common exposures of financial institutions. It is therefore of paramount importance that national authorities have the possibility to impose, in a well identified subset of instruments, more stringent rules than those defined by the regulation.

Given that member states may well be at different stages of the economic and financial cycle within Europe, and there are also significant differences in the structural features of the financial sector across EU countries, authorities should have the control over an appropriate set of tools to address both the cross-sectional and the time dimension of systemic risks as well.

In my view, the appropriate macro-prudential regime in a single market should have three main features:

First, adjustments in the prudential rules for the identified subset of instruments should only be possible in the direction of **strengthening** the harmonised minima. These instruments could include capital and liquidity ratios, leverage and limits to large exposures (Loan-to-Value or Debt-to Income ratios are not limited by the CRD IV).

Second, **only calibrations** should be subject to upward adjustment, while definitions should remain intact so as to ensure that ratios are comparable across institutions and countries, thus respecting the principle of a single EU rulebook.

Third, this macro-prudential regime should be subject to **strict safeguards**, under the ex-ante coordination of the ESRB in order to avoid, or at least to minimise, possible unintended consequences and spillover effects. These safeguards should include the identification and assessment of the macro-prudential concerns in the respective countries both by national authorities and the ESRB, in particular when spillover effects are expected. Furthermore, the implementation of macro-prudential measures should be subject to close monitoring and regular evaluation by the ESRB as well as to disclosure requirements.

I'm of the view that if these principles are respected, we can set up a framework that would enable us to mitigate the build-up of excessive risks in the financial system and to contribute to the smooth functioning of the financial system and the Single Market in Europe.

Against this backdrop, let me finally say a few words about the recent developments in this field in Europe.

First, after months of extensive discussion in European bodies and forums, a **compromise** has been reached at the European Parliament on 14 May and at the last ECOFIN meeting on 15 May on CRD IV. This is a very important development and I look forward to successful dialogues between the Council, the Parliament and the Commission. Rapid progress and agreement on clear rules of the game are crucial also with a view to meeting the G20 commitments on the timely and comprehensive implementation of Basel III.

Third, as regard the proposed regulation as approved by the Council, the compromise text now includes elements that would allow national authorities to apply measures falling under the "single rulebook" for macro-prudential purposes. Overall, this is a welcome development. My critical remark in this regard is that the text of the regulation should state clearly that only the calibrations or quantitative limits can be tightened while definitions should remain intact, since this is the only way to ensure direct comparability or prudential ratios across the EU. I also think that the list of measures was enlarged too much and, for instance, in this context I do not agree with the proposal that the **risk weights** of certain exposures can be changed as this would distort comparability of such ratios across member states.

Let me conclude by saying that finding the right balance between the principle of a "single rulebook" and the required flexibility to implement macro-prudential measures at the national level is and remains a key policy challenge for decision makers in Europe. However, looking at the developments in financial markets and the recent policy initiatives in this field, I'm convinced that the establishment of an efficient and well-functioning macro-prudential framework may substantially contribute to the smooth functioning of the single market and the strengthening of the financial stability framework. The latter would be particularly beneficial for the euro area where the risks to financial stability can be transmitted even faster than elsewhere and a lack of trust in part of the financial system can be felt across the entire currency area. Safeguarding financial stability in the euro area demands a euro area-wide perspective where an effective macro-prudential framework – on the preventative side – is accompanied by a well-functioning resolution mechanism – on the crisis management side.

In that respect, as you know, the ECB supports the establishment of a financial union for the euro area, based on three elements: a European deposit insurance scheme, a European

Resolution Fund and a euro area banking supervisory authority. Very briefly, this would entail: first, a single deposit insurance scheme that applies to all banks of the euro area so as to avoid unfair competition; second, that a subset of euro area financial institutions that are systemically important or operating significantly cross-border would be subject to a European Resolution Fund; and third, that the same subset of systemically important financial institutions would be subject to a euro area banking supervisory authority. The Resolution Fund would be only for institutions at the point of non-viability that need to be resolved and not for bailouts of “going concerns” so as to minimize the need for public funds. The possible moral hazard risks of having a single deposit guarantee to all banks without many of them being subject to European supervision would have to be addressed, for instance, by imposing that after the need for paying insurance the country where that would have happened would have to contribute at least with 50% of the replenishment of the fund.

Besides contributing to a clear commitment to the future of the euro project one key benefit of all these arrangements would be to ensure that the euro area banking and financial system can be separated from the financial situation of the sovereigns. With this a major step would be accomplished to overcome the present European crisis by consolidating in a concrete way the future of our monetary union.