

The ESRB at 1

Report on the SUERF/Deutsche Bundesbank/IMFS Conference held in Berlin on 8–9 November 2011

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Among the many lessons drawn from the current financial and economic crisis there is a consensus view that policy makers need to pay much closer attention to macro-financial developments, i.e. to stability of the financial system as a whole, in addition to stability of individual financial firms. In 2009, the de Larosière report recommended, among other things, that a Union level body be established with a mandate to oversee risk in the financial system as a whole. This led to the creation of the European Systemic Risk Board (ESRB), which is part of the European System of Financial Supervision (EFSF), on 16 December 2010; with the inaugural meeting of the General Board of the ESRB being held on 20 January 2011. The seat of the ESRB is in Frankfurt am Main and its Secretariat is ensured by the European Central Bank (ECB), and the ESRB's President is the ECB President. The ESRB shall contribute to the prevention or mitigation of systemic risks to financial stability in the Union.

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SUERF – The European Money and Finance Forum, the Deutsche Bundesbank and the Institute for Monetary and Financial Stability (IMFS) took the opportunity of the first anniversary of this new institution to organise a joint conference in Berlin on 8-9 November 2011. The purpose of this event was to take stock of first experiences with the ESRB; to discuss current issues in the field of macroprudential supervision, including the integration of macro-financial elements into macroeconomic models, the measurement and indicators of systemic risk, macroprudential tools and their effectiveness; and to identify forthcoming challenges for the ESRB and macroprudential supervision at large.

Hermann Remsperger, Chairman, Stiftung Geld und Währung, in his opening welcome address raised several pressing questions regarding macrofinancial stability: first, is the ESRB’s organisational structure conducive to its effectiveness, and will its recommendations be effective in the absence of strong mandates for financial stability at the individual member state level? Second, how good is our ability to detect macro-financial risks? Third, how much do we know about the transmission of, and the interaction between, various macroprudential instruments? How will policy makers overcome their bias towards inaction, e.g. when it comes to activating counter-cyclical buffers? And, finally, how should the line be drawn between central banks’ price stability and financial stability objectives? Can they be separated any longer?

Catherine Lubochinsky, President of SUERF, thanked the co-organisers for their excellent cooperation and generous support in making the conference possible. The conference topic serves as an excellent example of how SUERF can provide useful contributions by bringing together the major constituencies involved in the design of macroprudential supervision: from central banks and supervisors, financial practitioners and academic economists.

Helmut Siekmann, President of the Institute for Monetary and Financial Stability, thanked the organisers for putting together an interesting program. He remarked that systemic financial stability has long been an underrated issue, as has financial instability emanating from unsound public finances. Financial crises and the necessity to deal with them can also place severe threats upon central bank independence.

Stefan Gerlach, Deputy Governor, Central Bank of Ireland, introduced the keynote speaker Martin Hellwig, Max-Planck-Institute and ESRB, who spoke about

“Systemic Aspects of Risk Measurement and Risk Management: Lessons from the Financial Crisis”. In the past, systemic risk was used to justify regulation which could not be justified otherwise. According to Hellwig, it is an illusion to measure systemic risk, and in fact, any risk. With regard to why banks are so exposed to interest rate risk, he pointed out that in the past, banks’ asset-liability managers had claimed that interest rate risk, being a market risk, was not relevant for the bank book. This stance neglects the systemic relevance of large-interbank-credits: while individual banks appear may be nearly fully maturity-matched, the system as a whole is not: Funding through money markets has also in the past caused bank failures. That individual banks are nearly fully hedged does not prevent the system as a whole from being exposed to substantial systemic risk. System risk is often not straightforward to detect. It may lie in the correlation of counterparty credit risk and the risk of the underlying assets. Typically this is neglected in risk assessments, and “market discipline” cannot correct the problem, since the information is not available. Repo borrowing and lending has been used as a mechanism for inflating short positions. Long transaction chains from investors to e.g. real estate credit involves many potential failures and risks. The neglect of systemic aspects resulted in delusion about maturity transformation and delusion about liquidity risks. All in all, therefore, the crisis has several causes: subprime loans as an initiator of the crisis (recently, the sovereign debt crisis acted as a new initial shock); the fragility of financing structures (excessive maturity transformation, liquidity transformation and leverage, shadow banks) as magnifiers; and self-enforcing downward dynamics based on the interplay of asset price declines, fair value accounting, the inadequacy of bank capital, deleveraging, and asset price declines.

Before and during the crisis, various forms of misbehaviour happened: yield hunger, excessive maturity transformation, market share focus, improper risk modelling, lack of understanding of nonstationarities and correlations, a lack of understanding that there are risks not covered in models, and improper risk control. EU and national capital requirements legislation on purpose attaches zero risk weighting to sovereign debt, while this is not stipulated in Basel regulation, and it was always obvious that this is incorrect. Regulators tolerated loopholes in regulation and reporting. Politicians see banks as a source of funds and rely on central banks to deal with stability problems. Hellwig identified several flaws in the de-

sign of the financial system: lack of accountability and liability in mortgage origination and securitization, excessive securitization and intransparency of financial vehicles, governance biases towards return on investment, insufficient capital requirements imposed by regulation, procyclicality of regulation, and a lack conceptual understanding of the dynamic effects of regulation and its implementation. In fact, not much has changed in response to the crisis: There is still a lack of capital, and procyclical dynamics are again at work. An assessment of the effects of regulation on the economy needs to adopt a general equilibrium view. Systemic risk and macro risk are not the same. Systemic risk may be due to common exposures or from systemic interdependence due to information contagion, domino effects through contracts, fire sales and asset prices, and the breakdown of market making functions.

There are several reasons as to why risks are not “measurable”: the model based economizing on equity capital was wrong because many risks were not incorporated in the models. Risk correlations (among mortgage backed securities due to a common dependence on the same underlying factors, such as interest rates, real estate prices etc.; among counterparty credit risk and underlying risks in hedge contracts) are poorly understood. Time series are non-stationary, credit risks are endogenous and change over time. There is a lack of information about system risk exposure. Deleveraging, asset prices and bank balance sheets interact in nonlinear ways. In the absence of counterparties it is not even clear that equilibrium exists at all.

Hellwig concluded that regulatory reform should follow a few principles: Risk control of banks and of regulators do not pursue the same objective. Regulation should contain elements which are robust against “wrong” models. Regulation should reduce or better yet eliminate bubble and crisis enhancing elements of regulation. While for countercyclical macroprudential policy judgement is indispensable, the possibility of judgement mistakes by supervisors must be factored in when designing the supervisory architecture and the governance of supervisors.

The following policy panel, which was moderated by **Mark Schieritz**, *Die Zeit*, was opened by **Philipp M. Hildebrand**, President, Schweizerische Nationalbank. He highlighted two fundamental flaws of the financial system before the financial crisis: first, capital and liquidity buffers were far too low. Second, systemic risks

had been grossly underestimated. Monetary policy geared towards price stability is an important ingredient for a stable macroeconomic development but it does not avoid excesses in the financial system, it can even, as the BIS has pointed out, can even provoke financial system instability. Before the crisis, the received wisdom was that interest rate policy is too blunt an instrument to avoid the build-up of risks in the financial system. After the crisis, a new consensus has emerged that central banks need an appropriate toolkit and more specific formal competence to mitigate the build-up of such risks in the first place. In Switzerland, for example, there is a big gap between the actual role the Swiss National Bank had to play during the crisis, which involved taking on enormous risks on its balance sheet, particularly with regard to the rescue of UBS in October 2008, and on the other hand the absence of any specific and formal competence to prevent financial instability. This gap must be closed by giving macroprudential tools and competences to central banks. This need is all the more compelling given the very low level of interest rates in many countries, which is likely to stay for some time. Past experience has shown that long periods of very low interest rates can ultimately be associated with excessive credit creation and the build-up of financial imbalances. The risk of that happening is particularly acute for countries where the financial system as a whole is functioning reasonably well, such as Canada, Sweden and Switzerland.

We have a lot yet to learn, the challenges are formidable. It is more difficult to detect *ex ante*, in real time emerging problems and then to decide about appropriate tools, the appropriate timing and the right dosage in their use. There are no easy mechanical rules. We have also to be extremely careful about the interaction between countercyclical macroprudential policy and traditional monetary policy, since these two set of tools are in many ways deeply related. Macroprudential tools can amplify, neutralize or undermine interest rate policy. The starting point for setting up a macroprudential framework is likely to differ from one country to another, depending on history, previous crises experiences, and legal, institutional setups and mandates, so there is no easy one-size-fits-all solution. Yet, similar to central bank’s experience with inflation targeting, a consensus will likely have emerged in 10 years’ time about the principles of macroprudential surveillance and tools.

In Switzerland, the new central bank law of 1984 gave the SNB a fairly classic legal mandate “to contribute to

financial stability”, without and specific competencies, tools, and responsibilities. The formal responsibility for financial supervision and stability lies with FINMA, with a focus, as is the case with most supervisory agencies, on intrusive and far-reaching micro-prudential regulation. Clearly, the SNB’s financial stability arsenal needs to be enhanced, to augment the resilience of the banking system and to moderate its pro-cyclical behaviour. Given its inevitable role of lender of last resort, the SNB will play an active role in financial crisis managing. In light of this reality and the vast potential costs of such a crisis, including risks on the balance sheet of the SNB, the SNB should have a clearer and more developed formal role in preventing crises from emerging in the first place. Work is currently being done in this direction in Switzerland. These enhanced competences should rest on two pillars: First, the SNB needs to have full access to bank data, which is not the case now. Second, the SNB should have a say on regulation with a direct bearing on financial stability. In particular, it should be the SNB’s responsibility to mandate a countercyclical capital buffer as set out in Basel III.

Summing up, Hildebrand emphasised that price stability must remain the key objective of central bank mandates. If central banks are to play a role in crisis prevention, they need additional, separate macroprudential instruments. By design, experience, and by trial and error, central banks are best equipped to be in charge of macroprudential supervision. But if they are to fulfil this role properly, they must be equipped with the necessary mandate and instruments. The worst combination would be an implicit or explicit expectation that the central bank will fulfil that role, without the appropriate mandate and the necessary instruments.

Stephen G. Cecchetti, Bank for International Settlements, addressed the challenges involved in “Measuring systemic risk”. To examine systemic risk, four phenomena require measuring: first, common exposures, e.g. aggregate exposure to USD mortgage-backed securities or European sovereign debt; second, leverage, which implies that small price movements can induce insolvency; third, maturity transformation, which can, e.g. if refinancing is concentrated in short-term markets, in the event of liquidity runs amplify shocks; and finally, cross-border linkages, which can amplify and propagate shocks, e.g. if cross-border capital flows suddenly come to a halt or are reversed, or in case of cross-border spill-overs of a drying up of wholesale funding. In the run-up to the crisis, e.g.

non-US banks’ funding of long-maturity assets through short-term USD liabilities obtained in interbank and foreign exchange swap markets made them vulnerable. In the crisis, funding liquidity and market liquidity dried up simultaneously, implicitly lengthening the effective maturity of assets and shortening the effective maturity of liabilities. Another consequence of this development was that long-USD-banks, being unable to roll over their foreign exchange swap funding, were forced into the spot foreign exchange market to close these positions. The resulting increase of the demand for USD drove the strong appreciation of the USD in the months following the collapse of Lehman Brothers.

The fact that most financial markets are opaque in the sense that investors are unable to identify concentrated positions at the system level implies that they cannot appreciate the possible impact of a large and rapid unwinding in the event of a shock. This, in turn, hinders correct market pricing. Better data are crucial both for crisis prevention and crisis management. Joint analysis of data covering many institutions’ balance sheet positions, including breakdowns by instrument, counterparty country and type, currency and maturity, can uncover common exposures, concentrated funding patterns and system-level leverage and maturity transformation. By aggregating confidential data in meaningful ways and disseminating them to market participants, market pricing and discipline can be improved. For crisis management, policy makers need to make fast decisions about the systemic relevance of financial institutions: data on bilateral exposures between financial institutions is thus crucial (and was lacking e.g. in the days preceding the Lehman crisis).

Cecchetti concluded that currently, no national supervisor has a global perspective, there is a lack of infrastructure for sharing confidential data, so as a result there is no adequate system-level view and analysis. At the BIS, two statistical initiatives currently under way hope to improve the situation. First, the Committee on the Global Financial System has been working on enhancing the BIS’ international banking statistics, e.g. to capture most international linkages, albeit at the level of national banking systems rather than individual bank offices; this will help in assessing the stability of cross-border capital flows. Second, the G-20 Financial Stability Board data gaps process creates several bank-level datasets to be stored and analysed in a central data hub.

Stefan Ingves, Governor, Sveriges Riksbank, Chairman of the Basel Committee on Banking Supervision and of

the Advisory Technical committee of the ESRB, offered reflections on the ESRB after 10 months of existence. The institutional framework is in place, and the new institution is fully operational and has issued its first public recommendations. The ESRB's Secretariat is provided by the ECB. Its General Board has 65 members, of which 37 may vote. The Steering Committee has 14 members, and is assisted by an Advisory Technical Committee with 62 members and an Advisory Scientific Committee with 16 members. The ESRB is embedded in a network of globally active institutions in charge of systemic stability. The Financial Stability Board works, inter alia, on globally active systemically important financial institutions, on shadow banking and OTC derivatives. The Bank for International Settlements provides inter alia inputs on capital adequacy, liquidity rules, and counter-cyclical buffers. Macroprudential, micro-prudential and monetary policies may mutually reinforce each other but may also enter into conflict, thus calling for co-ordination and a clear division of responsibilities.

The ESRB's strategy for the current crisis includes four main components: a pro-active adoption and implementation of credible, sustainability-oriented fiscal programmes and policies; coordinated action by EU supervisors to strengthen bank capital, including backstops, and a need for transparent and consistent valuations of sovereign exposures; a full and speedy implementation of measures to counter contagion risks; and coordinated and consistent communication by all policy-makers. The ESRB is currently dealing with foreign exchange lending, EU banks' funding in foreign currencies, especially USD, and the use of macroprudential instruments at the national level. The ESRB started at an extremely turbulent period. To be successful, it needs to provide high-quality and timely risk assessments and to communicate effectively. The addresses in turn need willingly accept warnings and follow recommendations by the ESRB.

Alberto Giovannini, Unifortune Asset Management, raised the question about progress in our understanding of the financial system and of solving problems in the financial system. Quick and fast information about major financial institutions' balance sheet positions and exposures is crucial in a financial crisis. To the extent that the global financial system has become more complicated, crisis resolution has become more difficult. We are currently trying to learn the lessons from the crisis but are only half way through. Supervisory institutions have insufficient information to truly address problems. The

fact that the various Financial Stability Reports in their data and analysis usually focus on prices rather than quantities, is a good indicator of the persisting lack of information and understanding. The BIS was the first institutions putting more emphasis on quantities with its international banking statistics. Monetary authorities are stuck in a low interest-rate trap: persistently negative real interest rates are a symptom of the malaise of our financial system. The 2007/2008 crisis has reminded us that market failure is very important in financial markets, rather than efficient and self-stabilizing. Past bank-runs could be treated by well-known instruments. Also securities markets are subject to runs. These are multiple-equilibria market failures. No single actor in current complex and interlinked financial markets follows simple linear behavioural patterns. Therefore also financial market prices behave by their nature in a non-linear manner.

The multitude of transactions in securities and derivatives markets implies huge counterparty exposures. If markets dry up, the system fails. The role of collateral, and more generally the means of payment in financial markets, is not sufficiently understood; we should monitor this more closely. The CCP initiative is crucial in controlling the transmission of stress across markets more efficiently in the future. Current measures are useful insofar as they improve incentive structures of financial firms, and provide additional information for decision-makers active in financial markets. Trade repositories, by collecting key information on over-the-counter derivatives trades, provide an important function in mitigating the opacity of OTC derivatives markets but they may raise important legal issues such as ownership of information and conflicts of interest, not only in the private sector but also among authorities. The issue of liquidity dry ups is not sufficiently covered in recent initiatives; money market mutual funds should be regulated more tightly and be transformed into "narrow savings banks", ABS should be set up by "narrow-funding banks" also subject to strict rules. The proposal for a securities transaction tax may be justified on fiscal grounds; but the objective to create disincentives for transactions that do not enhance the efficiency of financial markets fails to see that the liquidity of securities markets is there to save capital; if markets become more costly to trade in banks require more capital. These proposals suffer under fundamentals flaws in basic economic thinking.

The second keynote was given by **Jens Weidmann**, President, Deutsche Bundesbank, on the topic of "Managing

macroprudential and monetary policy – a challenge for central banks”. The crisis was, among other things, also caused by a long period of very low interest rates. In the future, therefore, monetary policy has to monitor more closely the build-up of financial imbalances, because the latter may ultimately have a bearing on price stability. Monetary analysis, with its medium to long-term perspective, will gain in importance in the future, and enable monetary policy to extend its horizon and behave more symmetrically over the cycle. However, monetary policy needs to be supplemented with macroprudential policy, which, in order to fulfil the expectations, needs to have an individual set of effective instruments: it needs to have tools to detect early on risks, be able to issue warnings and recommendations, and the latter need to be translated into actual policy action. Macroprudential authorities need a clear mandate. Central banks are ideally suited to fulfil this task, given their expertise and the necessary coordination between monetary and macroprudential policies. However, central banks’ primary objective to safeguard price stability must not be jeopardized. Countercyclical capital buffers will make it possible to “lean against the wind” of emerging financial imbalances, which is particularly important in EMU, given the asymmetry of many shocks across EMU countries. While final decisions on macroprudential policies should be taken at the national level, a purely national perspective would be misleading, given externalities, spillovers etc. The ESRB has a central and important role to play in this respect.

The Euro Area sovereign debt crisis shows that stability-oriented monetary and financial stability policies alone cannot ensure monetary, financial and macroeconomic stability. Sound public finances and a sound and competitive real macroeconomic is paramount. Monetary policy must not be overburdened in solving the crisis; if it takes on too many tasks, price stability may be endangered and incentives for the necessary structural reforms will be watered down. The prohibition of monetary financing is one of the most important achievements in central banking of the last decades: it reflects many governments’ short-sighted incentives to monetize debt, weakens central bank credibility, undermines the incentives for sound public finances, and ultimately risks destabilizing the currency. In EMU, it furthermore collectivises sovereign risks among euro area countries’ taxpayers, and is equivalent to issuing Eurobonds. It circumvents democratic decisions: Only national parlia-

ments have the democratic legitimacy to make such decisions. Also proposals to involve the Eurosystem in leveraging the ESFS would violate the monetary financing prohibition. Germany’s most important contribution to crisis resolution is that it remains an anchor of stability in EMU. Problem countries need to take the necessary steps to stabilize their public finances, and international help needs to be conditioned by progress in this regard. In the longer term policy makers need to decide which direction EMU should take: one option would be to return to the founding principles of the system but with enhanced mechanisms and incentives to ensure solid public finances; the alternative is to centralise fiscal responsibilities towards the EU.

Session 1, chaired by **Jens Ulbrich**, Deutsche Bundesbank and SUERF, dealt with theoretical and empirical models linking financial stability and the performance of the economy. The first paper, presented by **Alexandros Vardoulakis**, Banque de France, with the title “Financial Regulation and General Equilibrium”, explores how different types of financial regulation could combat many of the crisis developments observed in 2007 to 2009. The general equilibrium model they use for this purpose includes both a banking system and a shadow banking system. Shadow banks are less risk averse and face lower default costs than conventional banks: therefore, they use bigger leverage and less portfolio diversification. When households default, this triggers forced selling by shadow banks. Five different policies for countering defaults, credit crunches and fires sales are assessed: limits on loan to value ratios, bank capital requirements, bank liquidity coverage ratios, bank dynamic loan loss provisioning, and margin requirements on repo agreements used by shadow banks. They find that leaning against the wind to reduce credit expansions and house price booms via regulation is not easy: large asset price increases during the boom yield capital gains to owners, which improves their equity and lowers the loan to value ratio on their mortgages. High home prices improve bank capital ratios as mortgages become less risky and bank equity is raised. Thus, during a boom imposing higher loan to value requirements, raising capital standards, and raising margin requirements on repo loans enough to slow down credit expansion and house price increases is difficult. By contrast, dynamic provisioning and liquidity requirements are found to effectively support “leaning against the wind”. Given many complex interactions between agents, no single regulatory tool is sufficient to offset the many

distortions arising from a default. Multiple sources of inefficiency require multiple tools to correct for them. Capital alone is unlikely to be sufficient.

Philipp Hartmann, European Central Bank and SUERF, gave a presentation on “Macrofinancial models linking financial stability and the performance of the economy”. We have seen a number of failures recently: first, inadequate risk management - correction is under way. Second, financial regulation failed to lean against bubbles and prevent crisis – again, reforms are under way. Third, fiscal governance proved to be insufficient – here, some correction is under way. Also the economics profession needs to reform substantially. Economic theory ultimately shapes policy, as could be seen in the area of monetary policy. We need to reach a similar state in financial stability. The question now is how to integrate widespread financial instability into macroeconomic policies. There are three important elements causing widespread financial instability: big shocks, contagion, and the build-up of substantial imbalances leading to abrupt unravelling. We need to look at these issues in an integrated encompassing way. Why did economics fail to avoid the crisis? Financial frictions are missing from macro models. Work to remedy this is now on going - financial sectors are now being included. However, other important phenomena are so far still largely neglected: defaults and break downs, non-linearities, a distinction between stable and unstable financial intermediaries rather than just one agent per sector, and non-rational expectations. Against this background, Hartmann called for a “new finance macro synthesis”. He then outlined the objectives, main lines of work and working method and organisation of the Eurosystem Macroprudential Research (MaRs) Network. One example of the work achieved so far is a composite coincident indicator of systemic stress, covering several markets.

The third paper of the session, presented by **Stefano Neri**, Banca d’Italia, addressed “Financial intermediation and the real economy: implications for monetary and financial stability prices”. The pre-crisis New-Keynesian models were suitable for developed economies during normal times with a stable steady state. The crisis showed many of the underlying assumptions were wrong. The main missing elements were: financial intermediation, insolvency, default, liquidity. The crisis is an opportunity to modify the current framework. Intensive research has been on-going since 2009. But to include non-linearity, there is need to simplify strongly in other areas. All

existing models fall short of modelling systemic risk. New models require a lot of time, while policy makers need timely answers. Until new models become available, the most promising intermediate solution is to modify existing DSGE models and use them for policy analysis. The authors use such a model to answer what was the impact of the crisis on activity, whether monetary and macroprudential policies should cooperate, and whether macroprudential policies could be used to lean against financial cycles. They find that the 2009 recession was almost entirely caused by adverse shocks to the banking sector. The sharp reduction in policy rates attenuated the strong and negative effect of the crisis on the euro area economy. In normal times, macroprudential policy yields small benefits. If the monetary and macroprudential authorities do not cooperate, policy tools are extremely volatile. Benefits are sizeable when the economy is hit by financial shocks and when the two authorities cooperate. As regards leaning against the financial cycle by the macroprudential authority, they find that tighter capital requirements can be effective in containing the expansion of lending.

In his dinner speech, **Jürgen Stark**, European Central Bank, addressed the link between “Macroprudential policies and financial integration”. The growing integration of financial markets has raised issue of contagion and regulation. Without such far-reaching integration, the costs of the crisis might have been considerably lower. The recent crisis had several causes: high credit growth, an under-pricing of risk, wrong incentives triggered by securitisation and the resulting complexity and opaqueness. The ESRB was established to ensure the necessary macroprudential dimension to supervision. While the ESRB is closely linked to the ECB, it is nevertheless distinct and separate. It does not change the ECB’s statutory mandate. Fiscal policies are still a national competence. As distressed fiscal policy spills over, national fiscal policies need to be embedded in a firm rules-based framework. Recent reforms go in the right direction but are insufficient. These causes the crisis to escalate further and hinders effective crisis management. Ultimately, there further fiscal integration will be needed. There may also be a case for a single financial supervisor across EU countries. The banking system is a vital part of economic infrastructure. Disruptions can inflict big costs. The financial sector’s nature as a public good justifies strict regulation. The new regulatory framework is a major achievement. But more interaction between macro and

microprudential supervision is needed. Further steps are necessary towards integration in the area of supervision are therefore necessary, as will be the creation of a fiscal union and a “financial union”.

Session 2, chaired by **Ernest Gnan**, Oesterreichische Nationalbank and SUERF, was devoted to “Empirical models on the causes, transmission channels and the real impact of the financial crisis”. The session was opened by **Elod Takats**, Bank for International Settlements, who presented his work – together with Christian Upper from the BIS - on “Deleveraging and Growth”. The question their paper tries to address is the impact of private sector deleveraging in the aftermath of a crisis. Given that the build-up of the crisis involves excessive credit growth and increasing leverage of the private sector accompanying private consumption and real estate booms one should expect that the correction of the crisis involving deleveraging goes along with a more muted recovery of the real economy. Investigating that hypothesis in a cross- country panel analysis the authors do not find any robust correlation between private sector deleveraging and the strength of the economic recovery. This lack of correlation itself is robust over different specifications. Their explanation for this somewhat surprising result – given the prominent fears of the impact of necessary deleveraging for economic prospects – is that a focus on aggregate debt figures is misleading. Leveraging before a crisis involves capital misallocations, correcting these developments frees resources to be used in areas supportive to growth. Thus, it would be necessary to distinguish between “good” and “bad” deleveraging, a distinction that certainly deserves merit in qualifying currently flourishing fears of the on-going correction of highly leveraged positions. In addition, the authors find that growth-enhancing structural reforms play an important role for recovery processes after financial crises.

Claudia Buch, University of Tübingen, gave a paper on “Macroeconomic factors and microeconomic bank risks”. The authors try to identify how macroeconomic shocks are transmitted to bank risks and other banking variables. In that regard, the heterogeneity of banks plays an important and not-well understood role in the responses of individual banks to macroeconomic shocks. Using a factor augmented VAR the study finds that bank ending increases on average after expansionary macroeconomic shocks and average bank risk declines. While this is true on average there is also important heterogeneity among banks. Their findings have implications for banking re-

gulation: regulators should focus on macroeconomic factors and regulative efforts in the form of capital and liquidity requirements directed towards macro influences deserve more prominence. Moreover, their methodological approach might entail some fruitful applications in regulatory stress tests aiming at identifying macro-micro linkages.

The third paper of the session, presented by **Bin Li**, International Monetary Fund, was devoted to “Creditless Recoveries”. The authors tackle the issue of recovery processes that are characterized by the absence of usual patterns of credit growth. They can be expected to play a role after financial crises when the private sector needs to deleverage and/or banks have to reduce excessive leverage positions. Thus, in a sense their paper poses a very similar question to the first paper of this session. Their answer, however, stands in some contrast to the findings presented by Takats: Creditless recoveries occur after banking crises and the recovery of the real economy is usually more protracted than in these cases. Driving factors for these developments are bank-supply related factors. Taken together, the empirical analyses of the dependencies between financial crises, deleveraging processes and recovery strength deserves more detailed research. Central in that respect would be to identify beneficial deleveraging compared to harmful deleveraging and to gain further insights into the supportive role of structural reforms in the recovery process.

Session 3, chaired by **Thilo Liebig**, Deutsche Bundesbank, was devoted to “Measuring Systemic Risk”. **Laurent Clerc**, Banque de France, opened the session with a paper on “Measuring aggregate risk: can we robustly identify asset boom-bust cycles? Implications for macroprudential policies”. As a response to the financial crisis, several initiatives have taken place to develop macroprudential regulation to prevent systemic risk and the built-up of financial imbalances. Crucial to the success of such policy is the ability of the macroprudential authority to identify in due time the development of these imbalances, which are generally associated to asset-price boom-bust cycles. In his paper, we investigate the extent to which it is possible to detect asset-price booms according to alternative identification strategies and we assess their robustness. Based on these different strategies, the authors infer the probability that an asset-price boom turns into an asset-price bust. In addition, they try to disentangle costless or low-cost from costly asset-price booms. Clerc presented some evidence that house price booms are

more likely to turn into costly recession than stock price booms. Resorting both to a non-parametric approach and a discrete-choice (logit) model, he analyzed the ability of a set of indicators to robustly explain costly asset-price booms. According to the results, real long-term interest rates, total investment, real credit and real stock prices tend to increase the probability of a costly housing-price boom, whereas real GDP and house prices tend to increase the probability of a costly stock-price boom. Regarding the latter, credit variables tend to play a less convincing role. Interestingly, the credit-to-GDP gap indicator sometimes put forward in the literature does not seem to be a robust leading indicator of asset price booms.

Ester Faia, University of Frankfurt, presented a paper on “Attributing Systemic Risk to Individual Institutions”. She took as a starting point the pervasiveness of interlinkages in current financial systems. Understanding the nature and driving forces of these cross-dependencies is crucial to gain insights in systemic aspects of risks and to set the right regulatory incentives to tackle the accompanying problems. In her model she analyses these issues within a network context focussing on balance sheet exposures that form the links between nodes in a network of interconnected banks. Systemic effects in such a model context have their roots in network externalities and network models are well-suited to analyse those interlinkages. Regulatory implications to internalise externalities in network structures are well-known to economists in the form of Pigouvian taxes. However, concrete regulatory implications in the form of a mechanism design still have to be developed.

The session was concluded by **Jon Danielsson**, London School of Economics, with a presentation on “Dealing with systemic risk when we measure systemic risk badly”. Danielsson, thus, provided a thorough analysis of the criticism raised by Hellwig in his keynote about our (in)ability to identify and measure systemic risk properly. He confirmed the pessimism raised by Hellwig with regard to some of the currently most prominent measures used by financial market participants. In his conclusion remarks he remarked that current measures of systemic risk are quite bad, and are barely distinguishable from random noise. The interesting question from a policy point of view then arises of how to deal with such a sober conclusion. As potential costs to society are large when regulators focus on a wrong model he concludes that – besides other factors – the focus on point forecasts are plainly wrong. Dealing with estimation and model risk

requires confidence intervals. We should not fall into the illusive trap of numbers that gives a pretend precision to current measures of systemic risk that does not in actual fact exist.

Session 4, chaired by **Jürgen Pfister**, BayernLB and SUERF, discussed “Macroprudential instruments to contain system risk”. The session was opened by **Francesco Mazzaferro**, ESRB Secretariat, with a paper on “Macroprudential instruments for containing systemic risk: the ESRB view”. Mazzaferro took as a starting point the deficiencies that had emerged in the financial crisis in the macroprudential frameworks in the EU and elsewhere in the world. He described in detail the process of setting up the ESRB at the European level as part of a broader framework for macro and microprudential supervision on a European level. The scope of the ESRB is extensive: its macroprudential oversight covers not only banks, but all financial intermediaries, markets, products and infrastructures that may cause systemic risks to financial stability. The ESRB’s focus in that regard is one of systemic risks.

The ESRB, however, has only limited tools at hand to address these issues. Of particular importance to note, it has no binding powers for macroprudential policy, but is instead endowed with the instruments of warnings and recommendations. These warnings and recommendations can be addressed to the EU as a whole or to specific member states. As such, they are not legally binding but follow the philosophy of “Act or Explain”.

Right from the beginning, the ESRB has been thrown into a crisis-driven financial environment. Thus, while not being a typical crisis management institution, the first steps of the ESRB nevertheless have had to take into account the difficult state of the European financial system. It should then come as no surprise that the ESRB in its first year has been very active in issuing warnings and recommendations on a broad range of topics (forex loans, USD funding of European banks, implementation of decisions agreed upon at different European summits). The ESRB can also support member states in developing a toolkit of macroprudential instruments, not least as such a toolkit is somewhat underdeveloped in Europe. All in all, the first year of the ESRB has been an active and fruitful one. But important work remains to be done before a robust and effective macroprudential framework in the EU can emerge.

The euro area view was juxtaposed by **Simon Hall**, Bank

of England, who gave an overview of the “Development of macroprudential policy in the UK”. In the light of the crisis the UK regulatory framework also underwent significant change. With regard to macroprudential supervision, the Bank of England has gained importance similar to other central banks as far as a macroprudential mandate is concerned. The newly established Financial Policy Committee (FPC) under the roof of the Bank of England is one of the central elements in a reformed regulatory framework. The FPC’s tasks are to identify and monitor systemic risks, but also to take actions to reduce them. The FPC clearly resembles the same kind of challenges all macroprudential watchdogs face, namely to gain a proper understanding of the nature, measurement and development of systemic risks. This means that “terra incognita” has to be conquered and macroprudential functions have to be reconciled with the traditional goals of a central bank in safeguarding price stability. In that respect an effective toolkit will have to be implemented, but also a communication strategy will have to be designed for the general public and the parliamentary legitimized institutions by which accountability will be guaranteed and a common understanding about macroprudential issues is built. Simon Hall made clear that these issues do not differ from the ones identified by Francesco Mazzaferro for the ESRB. However, designing and implementing a macroprudential mandate at the national level is certainly less complex than at the European level, where initiatives have to respect the ultimate sovereignty of member states.

Volker Wieland, Institute for Monetary and Financial Stability, concluded the conference by asking whether we will have made progress in terms of predicting and/or warning of financial crises by the time that further “anniversary conferences” are held, and whether we will be able to do better in terms of maintaining financial stability and moderating booms and busts in the real economy. He acknowledged that for the current crisis professional forecasters erred by a wide margin. While our understanding of the interlinkages between real and financial sectors of the economy will certainly improve and while also our understanding of the nature of systemic risk will progress we should not rely on automatic improvements on these fields. Wieland argued that similar to the progress made in designing robust monetary policy frameworks the new strand of macroprudential analysis should also focus on a pluralistic modeling approach. But pluralism should by no means imply losing scientific rigor. In the end, it is all about fitting empirical benchmarks and identifying policy recommendations that are robust to model uncertainty. In that regard, the macroprudential approach could and should learn from the research agendas of monetary policy frameworks over the past decades. The latter have increasingly focused on comparability and robustness. And given the large uncertainty of models in the macroprudential realm interlinking the real, monetary and financial sectors such an approach would be even more appropriate for policy advice in macroprudential issues.

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