

## ■ Summary of the Sveriges Riksbank workshop on 'Housing markets, monetary policy and financial stability'

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*As part of the commission of inquiry into the risks in the Swedish housing market set up by the Executive Board of the Riksbank in February 2010, the Riksbank held a workshop on 'Housing markets, monetary policy and financial stability' in Stockholm on 12 November 2010. There were over 100 attendees and 14 guest speakers, including Charles Goodhart, Franklin Allen and Kenneth Rogoff, at the workshop which was introduced by Governor Stefan Ingves.*

*Below is a summary of the presentations and discussions in each of the four sessions of that workshop.*

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## Session 1: Real estate markets and financial stability

Philip Davis (NIESR) began the session with a presentation on 'International developments in housing markets – lessons for Sweden'. Recent trends in 12 OECD countries were assessed (it was noted that care should be taken when drawing conclusions as housing markets are not homogenous because of differences in structural features across countries). It was noted that there was coordination of the house price 'boom-bust cycle' in recent years in some OECD countries, and that the scale and duration of the increase in the build-up to the recent 'bust' was greater than in the average boom period. Over the long-run, housing debt-to-income ratios were shown to be increasing in most of the selected countries and housing investment to GDP ratios were generally falling. The change in housing investment-to-GDP was shown to be highly correlated with the change in house prices. There was also a review of research showing house prices to have an explanatory power for consumption, the national fiscal position and banking crises. This suggests that house prices may be an important factor for macroprudential policy.

The discussant, Peter Englund (Stockholm School of Economics), considered whether central banks should be concerned with house prices. A panel regression on 14 OECD countries over 17 years (and covering 12 crises) showed that house prices can be used to predict banking crises. It was suggested that there was no obvious direct link between house prices and crises (so it is not immediately clear that house prices can cause crises). However, research suggests there is an indirect link through the impact of house prices on consumption. Therefore, it was suggested that policy makers may wish to affect house prices in order to control cycles in housing collateral.

Nancy Wallace (University of California, Berkley) presented on 'Real estate price measurement and financial stability crises', which evaluated the potential financial stability implications of mortgage lenders using the 4 major US real estate price indices (2 residential and 2 commercial) for risk management purposes. The indices were shown to produce downwardly biased estimates of expected real estate price growth and volatility, and they also lead to biased estimates of the correlation between real estate prices and interest rates and the distribution of real estate prices (e.g., skewness). This may have financial stability implications because mortgage lenders rely on the biased estimates for risk management purposes. As a result, there is a need for investment in real estate price indices in the US. In particular, it is important to move away from using indices based on the repeat-sales methodology towards the hedonic methodology. Some Swedish house price indices, being hedonic, were considered superior than US indices but there is room for improvement (eg they should not be based on assessed values).

The discussant, Kristopher Giradi, focused on (i) the size of the downward bias on the expected growth of house prices caused by repeat-sales indices and (ii) the potential impact of underestimating house price volatility on estimating mortgage default risk. The results of a recent paper were shown that find the size of the bias in the estimation of expected house price growth using repeat-sales indices to be considerable. Multiple sources for the bias were outlined. Similarly, the downward bias in estimating house price volatility using repeat-sales indices has recently been estimated to be large. However, the effect that this has on the estimation of mortgage borrowers' default risk, a key estimate for risk management purposes, is not certain. Underestimating house price volatility could cause the default risk for mortgages to be underestimated (because it underestimates the probability of borrowers falling into negative equity) or overestimated (because it underestimates the probability that future house price increases could take a borrower out of negative equity).

## Session 2: Asset prices, financial stability and monetary policy

Kenneth Rogoff (Harvard University) gave a presentation, 'Asset prices, financial stability and monetary policy', based on findings from a recent paper he co-authored with Franklin Allen (who, in session 3, presented additional findings from the paper). Leverage was proposed as a key driver of financial crises – house price bubbles are just one manifestation of the problem. In the build-up to the recent crisis, low long-term interest rates and volatility helped drive up asset prices and increase equilibrium leverage levels. A problem for policymakers is that it is difficult to introduce financial frictions into standard economic models and, when they are introduced, they are difficult to estimate because of non-linearity. The potential problems in the build-up to this crisis were not missed: in 2004 and 2008 the IMF identified risks in many of the housing markets that have since suffered a significant downturn. But it is difficult for policymakers to act against low probability events. These difficulties create a danger that responsibility for macroprudential policy will be shifted between authorities. It was suggested that central banks may be good at implementing macroprudential policy, as they are experienced in identifying the key risks involved.

The discussant, Jean Rochet (Universität Zürich), provided comments on the Allen and Rogoff paper as a whole. It was suggested that a clearer stance was needed on key issues, such as on the range of macroprudential tools required and whether there should be instruments that 'lean against the cycle'. And it is worth considering whether it would be beneficial for the macroprudential authorities' mandate to relate to smoothing the cycle rather than preventing the build-up of systemic risk, given the difficulty of predicting financial crises. There was also a general discussion of methods for modeling the build-up of financial bubbles and

for preventing bubbles. Whilst bubbles are almost incompatible with the rational expectations hypothesis, it is possible to obtain bubbles in overlapping generations models. Bubbles can also occur from irrational behaviour. It was proposed that the most convincing explanation is that bubbles build-up due to bad regulation or low refinancing rates and they burst due to some exogenous event. Three approaches to the use of monetary policy to affect bubbles were outlined: (1) that central banks should react to asset price movements if they are expected to affect inflation; (2) monetary policy should be used to tackle asset price bubbles i.e. “lean against the wind”; and (3) monetary policy is not required to respond to asset price bubbles, if macroprudential instruments are used effectively.

Cladio Borio (Bank for International Settlements) gave a presentation on ‘Credit in monetary and (macro) prudential policy’. It was suggested that credit was at the heart of the recent crisis. Hence policymakers have recently focused on developing macroprudential policy. The problem of finding useful indicators for macroprudential purposes was discussed. It is difficult to find a single indicator that is useful for predicting the build-up of systemic risks and for signaling when there is financial distress. The most promising leading indicators of financial distress exploit the fact that typical financial indicators appear strong when systemic risks are building (e.g., when risk premia and volatility are low). One such indicator was discussed: joint positive deviations from historic norms of credit-to-GDP (a very rough measure of economy-wide leverage) and asset prices (a very rough measure of the likelihood and size of asset price reversal). It was shown that using this indicator to guide the build-up of countercyclical capital buffers (with the release of buffers determined by signs of stress, e.g., credit terms, and losses) would have caused buffers to be built-up in the US and certain European countries ahead of the recent crisis. However, macroprudential tools are unlikely to be sufficient as it is unclear whether they could prevent the build-up of financial imbalances. Consequently, monetary policy may also need to play a role, as it clearly acts on credit conditions and asset prices and is less easy to arbitrage than macroprudential policy. One possible approach is to lengthen the monetary policy horizon.

The discussant, Stefan Gerlach (Goethe Universität), agreed with much of the presentation but focused his discussion on areas of possible disagreement. First, the information content of credit-to-GDP and asset price gaps was debated. Results of a recent study showed that credit and asset price gaps reduce the predictive power of certain econometric models for estimating inflation and output in 18 OECD countries between 1986 and 2008. So it is unclear whether they are useful indicators for macroprudential policy purposes. Second, it was questioned whether monetary policy should be used to supplement macroprudential policy. Monetary policy is too blunt a tool and using it to lean against excessive credit or asset price

growth is likely to be costly. It was proposed that the focus should instead be on developing a macroprudential framework that works.

### Session 3: Housing markets and alternative public measures

Franklin Allen (Wharton) began the session with a presentation on 'Macro-prudential tools and regulation – an international perspective', which complemented Kenneth Rogoff's earlier presentation on their joint paper 'Asset prices, financial stability and monetary policy'. Global imbalances and loose monetary policy have been proposed as key contributors to the housing bubble that preceded the recent financial crisis but it was argued that we need a more detailed understanding of how bubbles develop to inform policy. Four general theories for explaining the formation of bubbles were outlined: infinite horizon models, asymmetric information models, agency problem models and behavioral models. But the theories need to be developed further if they are to contribute to the policy debate. An understanding of how bubbles develop is important because the policy should be to stop bubbles forming as they are difficult to handle once they have started. Monetary policy and control of credit can have a role in handling bubbles in small, homogeneous countries but in large, heterogeneous economies macroprudential policy is probably required. Possible macroprudential tools to deal with a potential housing bubble include: mandatory reductions in LTV ratios, increases in taxes on real estate transfers, increases in annual real estate taxes, and direct restrictions on real estate lending. However, it was noted that some of these policies have been used in China in the past but they appear to have failed to be effective in major cities.

The discussant, Lucy Ellis (Reserve Bank of Australia), presented her assessment of the five key points she selected from the Allan and Rogoff paper. It was argued that there was little empirical support for loose monetary policy being a key driver of the housing bubble. For example, the deviation of actual monetary policy from the Taylor rule does not appear significant enough to have caused the systemic problems that arose in the US. And the part played by global imbalances in the build-up of the bubble is also not clear. Instead an alternative story was posited. In this explanation of the crisis, systemic risks were allowed to build-up through bad *microprudential* supervision which allowed bad assets to be created, widely distributed and funded short-term. So the appropriate response to the crisis is to improve microprudential policy as well as to introduce macroprudential policy.

The next presentation, by Cho-hoi Hui (Hong Kong Monetary Authority), summarized Hong Kong's experience with the loan-to-value (LTV) ratio, which has been in place since 1991. In an econometric study of four countries with LTV ratios and nine without, it was shown that the use of LTV ratios is effective in reducing the sensitivity of mortgage delinquency rates to falls in property

prices and GDP. In addition, it was shown that the mortgage insurance program introduced in Hong Kong in 1999, which protects banks from credit losses on the proportion of mortgage loans over the 7 percent LTV ratio, does not reduce the effectiveness of the LTV ratio. It is therefore proposed that LTV ratios are an effective macroprudential tool and that mortgage insurance programs can mitigate the liquidity constrain imposed by maximum LTV ratios, without reducing the effectiveness of the policy.

The discussant, John Hassler (Stockholm University), commented on the results of the econometric study. It was argued that many factors could affect the sensitivity of mortgage delinquency rates (e.g., personal bankruptcy regulations) and it would be useful to investigate whether such factors influenced the results. Turning to the theory, it was argued that whilst LTV ratios should probably reduce banks' risk exposure, it is probably more meaningful to focus macroprudential tools on households' ability to repay rather than house prices. However, LTV ratios could also be used for consumer protection purposes or to control credit growth. But to control credit growth there are likely to be better tools than an LTV ratio, e.g., monetary policy, mortgage taxes or property taxes.

The final presentation of the session was given by Howell Jackson (Harvard Law School) on "Who should be responsible for macroprudential tools". First, there was discussion of what is macroprudential risk, what are the different transmission channels through which systemic risks can emanate from an institution's failure and what are possible macroprudential tools to address systemic risks. Next there was an overview of the different governance approaches to macroprudential policy being pursued in the US, UK and EU. Finally, there was discussion of the regulatory framework in Sweden. It was shown that the Finansinspektionen (the Swedish FSA) has low staff numbers (per capita) relative to the financial regulators of other developed economies and, given its broad mandate, it has relatively limited resources to dedicate to microprudential oversight. In addition, relatively few of its employees have advanced training in disciplines relevant to prudential oversight. The relevant expertise is often found in the other Swedish authorities but the Finansinspektionen has the information and tools.

The discussant, Charles Goodhart (London School of Economics), outlined a number of challenges to setting up and conducting macroprudential policy. It was agreed that in Sweden the Finansinspektionen is under-resourced and is unable to offer competitive salaries so has a high staff turnover. Ideally those with regulatory powers should have the analytical capacity to use the powers but at the moment in Sweden, the Riksbank has the analytical capacity but the tools lie with the Finansinspektionen. Considering the design of macroprudential policy more generally, there should be greater discussion of how we can ensure that there is

sufficient incentive to use macroprudential tools. This is challenging because it is difficult to identify potential risks and estimate when they might crystallise. Current indicators of systemic risk are complex and uncertain. On top of this, the use of macroprudential tools can be easily criticized as it will be difficult to determine whether they have helped prevent a risk or merely dampened benign economic activity. The failure to introduce countercyclical buffers under Pillar II of Basel II illustrates the difficulty of using such tools. One possible solution is to set out specific thresholds at which the macroprudential authority must act or explain its decision to not act.

#### Session 4: Panel discussion – How do we avoid that real estate prices drive future financial crises?

The final session of the conference was a panel discussion involving Claudio Borio, Lucy Ellis, Stefan Gerlach and Nancy Wallace. Lucy Ellis began the discussion by looking at where risks to the financial system emanate. She proposed that commercial real estate and construction and development, not residential housing, are typically the key risks to financial stability (although this was not the case in the US in this crisis). Households typically do not default on mortgages in significant numbers unless prompted by a large increase in unemployment. Therefore, vulnerabilities in household balance sheets typically will not initiate a crisis, but they can exacerbate one. It was proposed that the effective conduct of microprudential policy is key to preventing risks in the commercial real estate and construction and development sectors, and can also help avoid house price crashes. It is important that the scope of prudential and consumer protection regulation is comprehensive, and that asset-based lending is prohibited and tax policies to promote home ownership avoided. Central banks should have a role in the regulation because they look at data differently from microprudential supervisors and are well respected public bodies that can help manage public expectations about the development of house prices. It was also proposed that the macroprudential instruments currently under debate are mostly microprudential instruments that are used for another objective, and it is not clear that macroprudential instruments are required by countries that set their own domestic monetary policy.

Claudio Borio argued that central banks need to be aggressive and long-term in their response to banking crises. However, there is a cost to such actions because monetary policy is a blunt tool so can have unintended consequences on other aspects of the economy (e.g., on the exchange rate). The authorities' optimal policy response will vary depending on the type of recession or crisis faced. Many recessions in the past not involving a financial crisis saw high levels of inflation but in this crisis inflation was low going into the crisis (and has remained low). The financial crisis evident in this crisis is likely to lead to a larger and longer recession

because the scale of the pre-crisis boom has created a large debt-overhang and disrupted the financial system, which has made monetary policy less effective. To recover from the crisis requires the economy to rebalance but low interest rates delay this.

Nancy Wallace discussed a number of issues related to the US mortgage market. She highlighted the efforts currently underway to improve consumers understanding of the risk of loan products by expressing risk with one indicator. And whilst there is not a sufficient market for debt-to-equity swaps on mortgages in the US at the moment, if debt restructuring become more common-place it will be important to educate homeowners given the financial complexity of these transactions. It was also noted that in the US, like Sweden, mortgage interest payment are tax deductible, which disproportionately benefits high-income earners. And there was discussion of how some of the major mortgage lenders in California are not regulated.

Stefan Gerlach ran through a number of his key points from the workshop. First, stronger microprudential policy is required to help 'bullet-proof' the financial system. Policy should respond gradually to the emergence of vulnerabilities, as it is easier to spot vulnerabilities than predict crises. Monetary policy is not the right tool for addressing system-wide risks so there is a need for macroprudential policy. And macroprudential policy should be introduced gradually. The macroprudential governance arrangements are important – they must be clear and sound. It should be recognized that macroprudential and monetary policy are connected so cannot be conducted independently. Low interest rates can create risks to financial stability but are sometimes warranted. Financial supervision and regulation should be tightened when risks are low. Finally, we should not forget the importance of non-financial factors, such as the bankruptcy code, recourse to loans and tax policy.