Real and Financial Linkage and Monetary Policy:

Summary of the 2011 Annual International Conference Organized by the Institute for Monetary and Economic Studies of the Bank of Japan

by Ryo Kato, Nobuyuki Oda, Nao Sudo, and Tomoo Yoshida

I. Introduction

The Institute for Monetary and Economic Studies (IMES) of the Bank of Japan (BOJ) held its 2011 Annual International Conference, entitled "Real and Financial Linkage and Monetary Policy," on June 1 and 2, 2011, at the BOJ Head Office in Tokyo.[1] The conference sought to shed light on the interaction between the financial markets, the real economy, and monetary policy. The conference involved some 100 distinguished participants from academia, international organizations, and central banks.[2]

The conference began with opening remarks, delivered by the Governor of the BOJ, **Masaaki Shirakawa**. The honorary adviser of IMES, **Maurice Obstfeld** (University of California at Berkeley), gave the keynote speech. **Charles A. E. Goodhart** (London School of Economics) presented the Mayekawa Lecture. Each of the five sessions consisted of a paper presentation and two designated discussions, followed by floor discussions. The conference concluded with a policy panel discussion.

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1. The conference organizers express their sincere gratitude to Maurice Obstfeld and Marvin Goodfriend, the honorary advisers; to Kazuo Ueda, the chief councillor; and to all other conference participants for thought-provoking presentations and discussions. The views expressed in this paper do not necessarily reflect the views of the BOJ.

2. See Appendix 1 for the program. See Appendix 2 for a list of participants; their affiliation is as of June 1–2, 2011.

II. Opening Session

In his opening remarks,[3] **Shirakawa** began by expressing his sincere gratitude for the support that the nation had received from overseas after the Great East Japan Earthquake and briefed participants on the current developments in the Japanese economy following the disruption. He proposed a threefold research agenda, consisting of bubbles, demographic change, and natural disasters, to refocus macroeconomics and called for further studies in line with the agenda. Regarding the first item, bubbles, he first reviewed the past experiences of the United States and Japan. Based on his review, he indicated that an increase in the monetary base was not met by a proportional rise in the price level in due course and stressed that understanding of the intricacy underlying financial systems and credit markets was essential for implementing monetary policy. Next, he pointed out that demographic change crucially affected aggregate demand, business cycles, and possibly bubbles, by elaborating on the life-cycle consumption pattern and the consequence of voters' aging through the social choices. He underscored that demographic change had received insufficient attention in preceding analyses of bubbles. Lastly, he reaffirmed that natural disasters were tail risks for economies and discussed the best practices in terms of inventory management and risk concentration. The costs of reduced inventory and over-concentration were manifested in the recent disruption in the aftermath of the earthquake. Looking ahead, economists and policymakers were expected to design better and more broadly defined public risk-sharing systems to ensure better preparation for disaster risks. He concluded his remarks by calling for further research on the three key issues that he had specified.

III. Keynote Speech: International Liquidity: The Fiscal Dimension[4]

Obstfeld discussed international implications of financial crises in an attempt to outline a better-designed international liquidity provision framework. He first reviewed the historical development of international liquidity provision, noting that the system in the 1970s had been built upon the gold-U.S. dollar link and had contained the risk of U.S. fiscal bankruptcy. He then discussed how the international liquidity provision framework, previously relevant mainly for developing countries after the 1970s, had become increasingly important for developed countries in light of the global financial crisis. For example, under the recent and ongoing financial integration, financial market instability could easily necessitate drastic fiscal expenditure to bail out financial institutions, and the snowballing liquidity risks stemming from the expanding gross liability position could precipitate a sovereign debt crisis. In tackling the challenges to ensure liquidity provision *in extremis*, he warned against individual, non-cooperative reserve management, as it could result in collective over-accumulation of reserves and excess volatilities in exchange rates. To ensure coordinated liquidity provision, he suggested (1) enhancing credit lines based on Special Drawing Rights (SDRs) or (2) extending

3. For details, see Shirakawa (2011).
4. For details, see Obstfeld (2011).

multilateral swap agreements among central banks. Noting that financial integration and stability came at the cost of national autonomy, he concluded by stating that the issue of who would endure the fiscal burden of sustaining these systems required careful resolution. For either option, he highlighted the importance of the fiscal burden that could shore up the effective international liquidity provision framework. He concluded his speech with a call for upgrading of the governance of the International Monetary Fund (IMF) to enhance global financial stability.

IV. The Mayekawa Lecture: The Role of Default in Macroeconomics[5]

Goodhart advocated incorporating nontrivial defaults in macroeconomics in an attempt to revamp the existing framework rather than fully abandoning it as suggested by William R. White in the previous year's Mayekawa Lecture. First, he criticized modern macroeconomic theories, which had failed to incorporate the concept of default correctly into themselves. He suggested modeling default as an endogenous consequence of the optimizing decisions of the debtors who struck the right balance between the costs and benefits of being in default. Second, he discussed the predictability of financial crises or bubbles, which might result in systemic defaults. He acknowledged the difficulty of quantifying the tail risk, which was rare but devastating once it took place, in the prevailing econometric models. He noted that the application of the prediction was an open question even if central bankers predicted a bubble and succeeded in implementing measures to prevent its bursting. This was because a crisis might appear in a different manner (Goodhart's law) and central bankers might face political opposition if they took measures to counter a boom. Lastly, he summarized his views on possible and desirable resolution schemes for the failure of global systemically important financial institutions (G-SIFIs), compared with conventional schemes such as fiscal bailout or compulsory mergers with a stronger financial institution. He organized the possible alternatives into three groups—(1) improving the liquidation process based on "living wills," (2) making bondholders liable, and (3) reforming Prompt Corrective Action—while he noted admittedly that each scheme had some disadvantages that needed to be overcome.

From the floor, **Axel A. Weber** (formerly, Deutsche Bundesbank) suggested the need for global cooperation on the tax regime on banks, because much of the complexity involving banks could be traced back to their tax-reduction incentives. **Goodhart** replied that such cooperation was unlikely to occur. **Marvin Goodfriend** (Carnegie Mellon University) pointed out some models that had already incorporated the concept of default, and referred to the possibility of readily incorporating default in such a way that there was an *ex ante* cost of default and absence of default in equilibrium *ex post*. **Goodhart** replied that the probability of default should be the key element in determining the *ex ante* cost of default. **Jean-Pierre Danthine** (Swiss National Bank) remarked that realism was not the objective of economic modeling and the model should

5. For details, see Goodhart and Tsomocos (2011).

be judged on the basis of its implication at the analytical level. **Goodhart** expressed an alternative view that economics was supposed to be a science and must include empirical realism. **Gary B. Gorton** (Yale University) commented that one of the reasons for the absence of default in macroeconomics was the lack of consensus on the role of the financial system, partly because the United States had not experienced a global financial crisis for a lengthy period of time, from 1934 to 2007. **Goodhart** replied that during the period several global financial crises had in fact arisen, such as the crises in Mexico, Argentina, and Brazil, and emphasized the significance of default contagion.

V. Paper Presentation Sessions

A. Bubbles, Banks, and Financial Stability[6]

Kosuke Aoki (University of Tokyo) explored the implication of asset price bubbles for the real economy. Using a dynamic general equilibrium model that explicitly incorporated borrowing constraints, he argued that bubbles had a positive economic effect as the bubbles could ease borrowing constraints on condition that they were salable. Once the bubbles burst, however, output dropped, because the borrowing constraints tightened. He stressed that the economic downturn tended to intensify when the bubble was held by banks rather than entrepreneurs. Considering the various types of bubbles that existed, he stated that identifying the bubble which caused the severe economic consequence was essential in practice, and proposed that the ratio of money or credit to GDP could be used as an early warning indicator of such a bubble that "must be prevented at all costs."

The first discussant, **Piti Disyatat** (Bank of Thailand), called for a micro foundation regarding why bubbles arose with the aim of enhancing the results and suggested elaborating on the two-way interactions of credit and bubbles. From a policy perspective, he stressed the importance of welfare analysis of bubbles, suggesting that banks' leverage might be considered as a useful instrument for macroprudential policy. The second discussant, **Christopher J. Waller** (Federal Reserve Bank of St. Louis), argued that ideally the banks should be modeled as agents which mitigated fundamental frictions in the economy rather than those which generated the friction as modeled in the paper. He also indicated that the bubbles in Aoki's model were "good bubbles," because they drove out low-productive entrepreneurs as long as they persisted. In a similar context, he raised concerns regarding the model's implications for bubbles, pointing out that the model fully supported government intervention to reinflate the bubble once it had burst. Against this backdrop, he wondered whether the bubbles considered in Aoki's model might differ qualitatively from the two recent bubbles in the United States, the dotcom bubble and the housing bubble, both of which had notably hampered the U.S. economy.

From the floor, **Atif R. Mian** (University of California at Berkeley) pointed out that most of the bubble-holders in the recent financial crisis in the United States were households rather than banks. **Kiyohiko G. Nishimura** (BOJ) recommended investigating the difference between the IT bubble and the property bubble by incorporating a property market into the model explicitly to highlight the importance of irreversibility of

6. For details, see Aoki and Nikolov (2011).

property investment. **Ippei Fujiwara** (BOJ) asked whether smoothing of the aggregate fluctuation improved the social welfare in the model. **Aoki**, replying to the comments on the welfare implication of bubbles, acknowledged that the bubble was welfare-improving as far as sustained and that this implication would be called into question once the probability of the bubble's bursting was incorporated.

B. Collateral Crises[7]

Gorton identified uncertainties regarding the collateral values for credit as a source of boom-bust cycles, using a model in which firms borrowed funds from households against collateral. With this basic idea, he assumed that in his model the quality of collateral was uncertain for both firms and households and it was costly to assess the true value. As a result, the model gave rise to two regimes: in the first, households never scrutinized the true value of collateral (an information-insensitive regime), while in the second households acquired the true value of collateral by paying an additional cost (an information-sensitive regime). He stressed the unique trade-off between the two regimes. Under the former regime, the lack of information acquisition might enhance lending and yield a socially more desirable outcome than the latter regime. The longer the economy remained under the former regime, however, the greater the fraction of collateral left unscrutinized, increasing the economic fragility to adverse shocks. Consequently, the size of the scarring effects of an adverse shock could vary remarkably depending on the length of the information-insensitive regime prior to the adverse shock.

In his comments, the first discussant, **Kazuhiko Ohashi** (Hitotsubashi University), inquired what paralleled the model's collateral and how the model should be used in understanding the recent financial crash. He also commented that in the actual economy the collateral value and economic activity were importantly interrelated, while the model assumed that they were independent from each other. The second discussant, **Javier Suarez** (CEMFI), extending Gorton's arguments, pointed out that a consideration of whether or not to scrutinize the country's finances might be useful in determining the policy package of the sovereign crisis in the euro area.

A series of questions about the model's applicability to practice, in particular about haircuts, emerging markets, credit default swaps, and rating agencies, were raised from the floor. In addition, **Reuven Glick** (Federal Reserve Bank of San Francisco) noted that the *ex ante* government initiatives could help to achieve the preferable outcomes in terms of information acquisition. **Frank Smets** (European Central Bank) indicated that fund borrowers might have an incentive to intentionally produce bad collateral by themselves. **Gorton**, admitting that the model did not explicitly incorporate a government sector, stressed that policy analysis based on the model needed to be carried out carefully.

C. International Recessions[8]

Fabrizio Perri (University of Minnesota) presented a two-country model with firms' borrowing constraint, focusing on the implication of a financial shock to the global

7. For details, see Gorton and Ordoñez (2011).
8. For details, see Perri and Quadrini (2011).

financial market for the global economy. When the expected liquidation price of firms' real assets fell (financial shocks), their production declined because the value of the current collateral assets dropped and the borrowing constraint suppressed hiring production input. When international financial integration was achieved, effects of a financial shock on the asset price were synchronized across countries and propagated to economic activities in both countries, although the impacts on economic activities might differ across countries depending on the labor market rigidity. He pointed out that the model's implication was consistent with the cross-country observations about financial variables and real variables during the financial crisis.

The first discussant, **Paolo Pesenti** (Federal Reserve Bank of New York), agreed with Perri on the indistinguishability of country-specific shocks and common global shocks under the full integration of the global economy. The second discussant, **Etsuro Shioji** (Hitotsubashi University), argued that the international spillover during the last crisis had taken place primarily through the trade linkage amplified by the inventory adjustments in each country rather than the financial linkage.

In a related context to Shoji's comment, **Tsutomu Watanabe** (Hitotsubashi University and University of Tokyo), from the floor, argued that the trade collapse was explained in part by a deterioration in trade credit supply, which could be interpreted as disruption in the financial factor. **Obstfeld** pointed to the worldwide housing boom that took place in the run-up to the crisis and the subsequent synchronized bust. Bearing this in mind, he asked whether these observations could be consistently explained within the model's framework. **Fujiwara** pointed out that the literature on the international business cycle agreed broadly on incomplete financial markets as a realistic assumption to account for economic dynamics in normal times. Based on this fact, he encouraged the construction of coherent models to explain crises as well as non-crisis business cycles. **Mian** inquired about the model's implication for emerging markets, where considerably high growth rates in output as well as in credit were maintained even after the crisis. **Perri** reaffirmed the points made by Pesenti and argued in addition that a key contribution of the paper was to have shown that financial integration restricted certain expectations about financial prices and made them common across countries.

D. Bank Overleverage and Macroeconomic Fragility[9]

Ryo Kato (BOJ) discussed whether laissez-faire banking systems could achieve efficient allocations in an attempt to explore broad policy implications, including macroprudential policies and monetary policy. To this end, he proposed an overlapping-generations model in which a laissez-faire banking sector raised funds by issuing short-term debt while investing the funds in illiquid assets. Based on the model in which Arrow-Debreu securities were not available, he argued that laissez-faire banking systems in general tended to be overleveraged and expose the economy to inefficient, high crisis risks owing to pecuniary externalities. Rational banks under perfect competition underestimated the marginal cost of raising leverage, which at the margin resulted in over-accumulation of capital and lower-than-expected capital prices. He proposed a new measure, marginal systemic risk (MSR), to assess macroeconomic exposure

9. For details, see Kato and Tsuruga (2011).

to systemic risks and explained why a positive MSR would point to an inefficiently elevated crisis risk.

In the ensuing discussion, **Smets**, the first discussant, applauded the introduction of an endogenous probability of bank runs in a dynamic macroeconomic model. However, he questioned the practical applicability of the model on a number of points, noting (1) challenges in empirical work on MSR; (2) potential oversimplification of banks' balance sheets, such as inseparability of capital and liquidity, deposit and repo funding, and lack of deposit insurance; and (3) the exogenous determination of the fire sale price. Subsequently, **Aleh Tsyvinski** (Yale University) delivered the second discussion, which more or less contrasted with Smets' views, by primarily calling for streamlining to construct a more crystal-clear theory. **Tsyvinski** crystallized the source of pecuniary externalities in a general context: incorporation of prices into the production side of the economy. Combined with this, an incomplete market and an aggregate shock resulted in distortion and, as a particular example, inefficiently elevated crisis risks in Kato's model. Against this backdrop, **Tsyvinski** suggested simplifying the model to obtain richer policy implications.

Obstfeld prompted open discussion among the floor by pointing out a nonpecuniary source of externalities in reality: he wondered whether expectations concerning the authorities' intervention in a systemic situation would ill-incentivize banks to take on excessive risks. **Perri** suggested examining links between regulations in place and crisis probabilities across jurisdictions. **Choongsoo Kim** (Bank of Korea), in part, reiterated Smets' call for more practical models and measures for applications in the real world. **Aoki** asked for a clarification of the welfare implications of the model. In response, **Kato** first stressed the yet-to-be filled gap lingering between micro theory and practice over the macro models with banks. To fill the gap, he argued that MSR could be used in empirical work, if combined with (1) a benchmark set outside the box or (2) a well-calibrated structural model. He wrapped up by noting that the welfare loss of a crisis could be larger than predicted by the canonical models in macroeconomics.

E. Foreclosures, House Prices, and the Real Economy[10]

Mian investigated how much, if any, the foreclosure sales reduced housing prices and durable goods purchase, including residential investment, by looking into the state level and the zip-code level data in the United States. He emphasized the importance of controlling the reverse causality from the housing prices to the foreclosure, rather than the other way around, which could give rise to a biased estimation result. To this end, he first focused on the cross-state variations in the judicial process for foreclosure sales. Then, he reported that foreclosure sales took place more frequently in the non-judicial states, where no judicial process was required, and confirmed that the more frequent foreclosure sales in the non-judicial states exacerbated housing market downturns. With the estimation results, he concluded that the foreclosure sales accounted for a sizable portion of the declines in housing prices and durable goods purchase during the financial crisis.

The first discussant, **Jonathan Kearns** (Reserve Bank of Australia), pointing out that most of the housing boom took place in the southern and western United States,

10. For details, see Mian, Sufi, and Trebbi (2011).

stressed that controlling for the state characteristics was essential to capture the true relationship between the foreclosures and the housing prices. He added that a judicial process to foreclose might delay, rather than prevent, foreclosure and so the economic consequences. The second discussant, **Watanabe**, remarked that house price indices and foreclosures might not be related, since the effects stemming from foreclosures were usually removed from house price indices. He also noted that fluctuations in housing prices in Japan during the 1980s were greater than those in the current U.S. economy while the number of foreclosures per month was much smaller than in the United States, pointing out that the foreclosures might not be important in accounting for cross-country differences.

From the floor, **Goodfriend** and **Perri** stressed the need for a structural model to distill the policy implications from the paper's results. **Goodhart**, inquiring what caused the judicial difference across states, pointed out the possibility that people were encouraged to engage in housing and mortgage lending in the non-judicial states and therefore the backlash was greater. **Goodhart** and **Waller** recommended that the recourse versus non-recourse difference be used as another instrument variable. **Glick** also suggested the use of the length of time to foreclosure as an instrumental variable, since these lengths differed across states and could affect the cost of foreclosure. **Mian**, touching on the issue of legal origins of the judicial process, stressed these legal frameworks were set long before the current crisis and did not explain credit boom before the crisis.

VI. Policy Panel Discussion

In the panel discussion chaired by Goodfriend, Kim, Nishimura, Weber, and **Janet L. Yellen** (Board of Governors of the Federal Reserve System) stated their views on real and financial linkage and monetary policy, and the general discussion among the floor followed.

Goodfriend kicked off the panel by underscoring the importance of mutual exchanges of views between academics and policymakers. Regarding financial stability, he posed a question as to what central banks should and could do without endangering their fundamental principles such as price stability and central bank independence.

A. Panelist Speeches

Kim expressed his views on how to empower monetary policy going forward. He argued that the recent global crisis posed challenges for the conventional monetary policy framework, in particular, inflation targeting. He reaffirmed that crisis prevention was less costly than crisis resolution and, on this ground, he suggested empowering monetary policy with macroprudential policy measures. In the area of governance, he affirmed that central banks needed to be involved in macroprudential policy, because such policy would broadly complement monetary policy. He then introduced South Korea's two key macroprudential policy measures for addressing issues regarding global liquidity and capital flows. First, he argued that the cap on foreign exchange derivatives positions was expected to discourage speculative foreign exchange

transactions and curb excessive accumulation of short-term external debts. Second, he argued that its macroprudential levy on banks' non-deposit foreign exchange liabilities would be implemented from the second half of 2011 and was expected to improve maturity mismatches and enhance foreign exchange funding stability.

Nishimura emphasized the necessity of understanding and identifying excessive bullishness and bearishness in a variety of markets in the context of policy responses to stabilize the economies. He indicated that the existing economic theories were insufficient in this respect to better forestall asset price bubbles and to expedite a rapid recovery. Given his emphasis on excessively unstable investor sentiment, he proposed two ideas in an attempt to better understand and identify the high volatilities. First, on the theoretical side he introduced the idea of surprise-aversion, arguing that a small deviation from the neoclassical paradigm could lead to a very different and more realistic view about investor sentiment. Considering heterogeneous investors who held differing regrets about their forecast errors, he showed that agents who were averse to negative (positive) surprises tended to report lower (higher) values than the mathematical expectation as their forecast, looking bearish (bullish). He also showed that complexity amplified the bias in reporting. Second, on the empirical side he cited a paper on financial cycle indexes as an early warning indicator of excessive optimism and pessimism.[11] He argued that the leading index predicted the BNP Paribas shock 14 months ahead and the lagged index distinguished economic lulls from financial crises.

Weber posed two questions at the outset. First, he asked how the real and financial linkage had come into action during the recent financial crisis. He indicated that the financial disruptions had been passed on to the real economy globally. He then argued that prompt and synchronized monetary policy responses including unprecedented responses had succeeded in containing the adverse feedback loop between the financial system and the real economy. Second, he asked what lessons had been learned from the financial crisis. He echoed Kim by flagging the importance of crisis prevention and called for broader policy measures than the single tool, interest rate policy. He argued that ensuring financial stability necessitated its own tools, touching upon the macroprudential approach. In this regard, he clearly noted that monetary policy should remain focused on price stability and should not be overburdened with other objectives. Finally, he criticized the overemphasis on higher inflation targets, price-level targeting, and the zero lower bound of nominal interest rates.

Yellen discussed the Federal Reserve's assessments of potential financial imbalances. She argued that vigilance in monitoring was particularly important when monetary policy had been accommodative for a lengthy period. To detect increasing financial imbalances, she stated that the Fed continuously monitored various indicators for financial imbalances, showing charts such as price-to-earnings ratios and credit spreads. Regarding syndicated leverage loans, she pointed out that pension and mutual funds were contributing to the recent recovery and, apart from refinancing, new money demand was still weak. Against this backdrop, she described a new survey by the Fed, the Senior Credit Officer Opinion Survey on Dealer Financing Terms, enacted in June 2010, which aimed to enhance monitoring developments in leverage outside

11. See Kamada and Nasu (2011).

the traditional banking sector. In addition, judging from developments in repo markets, she noted that the recovery in leverage was still relatively limited. Finally, she discussed whether monetary policy should be used to combat financial imbalances. She supported the use of monetary policy only when the buildup of dangerous imbalances was detected and prudential steps were ineffective, reaffirming that monetary policy should remain a last resort.

B. General Discussions

Goodfriend began by posing questions to each panelist. He asked Kim about the intended mechanism behind South Korea's macroprudential levy. **Kim** explained that the levy rates were set depending on maturities to curb short-term borrowings of foreign capital. **Goodfriend** asked Nishimura what central banks could do about human nature. **Nishimura** answered that bullishness and bearishness could be influenced by the reward structure as well as human nature, and that changes in the reward structure could contribute to stabilizing financial markets. **Goodfriend** asked Weber about the risk that tough regulations on depository institutions would shift financial intermediation into shadow banking. **Weber** answered that regulations and supervisions should be conducted on the basis of types of business lines, rather than by institution. Finally, **Goodfriend** asked Yellen about desirable regulation and supervision on insurance companies and pension funds that had fixed long-term liabilities. **Yellen** answered that insurance companies had their own set of regulators and that the Fed had discussed financial stability implications with the regulators.

Subsequently, the panel was opened to questions from the floor. Regarding Weber's doubt about the importance of the zero lower bound, **Obstfeld** expressed surprise and concern, noting that other available tools would entail political problems. **Yellen** added that other tools had limitations and risks. **Nishimura** pointed out that in the implementation of other tools such as unconventional policy, communication with financial markets as well as the public became difficult. **Weber** replied that, in principle, the academic debates overemphasized the limitations of the zero lower bound.

Jorg Decressin (International Monetary Fund) and **Jean-Pierre Landau** (Bank of France) asked about the potential benefits and risks associated with wider mandates for central banks. **Pesenti** pointed out that excessive responsibilities and objectives could bring central banks into a quasi-fiscal area. **Weber** argued that because fiscal policy entailed long decision lags, prompt decisions on monetary policy could act as a "fire brigade" during crises. In this regard, he added that long-term commitment of fiscal policy was essential. In view of financial stability and price stability, he noted that the two mandates had been considered to be complements of each other, but there were times when they conflicted with each other. He suggested that an appropriate instrument should be selected, noting that interest rate policy appeared to be a last resort, as Yellen had argued, but earlier action might be needed. **Yellen** opined that she was reluctant to add the financial stability mandate to the price stability mandate for central banks.

Regarding indicators for financial imbalances, **Mian** asked about the importance of households' leverage and the distribution of leverage across agents. He also asked whether wage growth should be taken into account in measuring inflation. **Yellen** answered that households' leverage as well as wage growth was continuously monitored

by the Fed and the distribution of leverage was worth being considered. Touching upon the European Central Bank's (ECB's) monetary analysis, **Weber** argued that the risk management approach in monetary policy required more attention than in the past, in particular, under a benign policy environment.

Robert Woods (Bank of England) asked whether macroprudential instruments should and could be operated more by rules than by discretion. **Yellen** stated that she would prefer rules to discretion. In a related context, she supported higher capital standards, liquidity standards, and other requirements to strengthen the resilience of the financial system against shocks as well as built-in mechanisms of countercyclical capital buffers, because they would work like automatic stabilizers and minimize the reliance on discretionary supervisory action.

Regarding institutional aspects of central banks, **Shirakawa** asked how to strengthen human capital to deal with macroprudential policy. **Weber** answered that central banks already possessed high-quality research departments, while fiscal policy might be flagged as an area that could be enhanced by additional human capital. Regarding the governance of macroprudential policy, **Wang Xin** (People's Bank of China) asked about the division of labor between central banks and regulatory bodies. **Kim** answered that macroprudential policy was not a substitute for monetary policy and regulations, reaffirming the view that macroprudential policy should be used as an addition to monetary policy.

On South Korea's levy on banks' non-deposit foreign exchange liabilities, **Landau** inquired about the comparison with other policy measures. **Kim** stated that the levy was intended not only to curb maturity mismatch but also to rein in exchange rate volatility. **Danthine** asked about the effectiveness of the levy. **Kim** answered that its effect had yet to be seen, because the levy had not been activated. However, regarding the cap on foreign exchange derivative positions, he assessed that it had reined in short-term capital inflows into South Korea. **Pier Carlo Padoan** (Organisation for Economic Co-operation and Development) asked how to reconcile the trade-off between capital market openness and instability. **Kim** emphasized the need for a distinction between capital control policy and macroprudential policy, noting that the levy was categorized as the latter.

Regarding international monetary policy coordination, **Aoki** said that international coordination was considered to be more important in practice than in theory, and inquired about missing elements in theory. **Nishimura**, agreeing with Aoki's view, pointed out the importance of legal and institutional aspects of financial linkages in determining people's behaviors. Regarding Nishimura's remark, **Frank Packer** (Bank for International Settlements) suggested that excessive bullishness and bearishness could be related to time-varying risk appetite and aversion.

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APPENDIX 1: PROGRAM

Wednesday, June 1, 2011

Morning

Opening Session

Chairperson:	**Tomoo Yoshida**, Bank of Japan
Opening Remarks:	**Masaaki Shirakawa**, Bank of Japan

Keynote Speech: International Liquidity: The Fiscal Dimension

Keynote Speech:	**Maurice Obstfeld**, University of California at Berkeley

Session 1: Bubbles, Banks, and Financial Stability

Chairperson:	**Jean-Pierre Danthine**, Swiss National Bank
Paper Presenter:	**Kosuke Aoki**, University of Tokyo
Discussant:	**Piti Disyatat**, Bank of Thailand
Discussant:	**Christopher J. Waller**, Federal Reserve Bank of St. Louis

Session 2: Collateral Crises

Chairperson:	**Reuven Glick**, Federal Reserve Bank of San Francisco
Paper Presenter:	**Gary B. Gorton**, Yale University
Discussant:	**Kazuhiko Ohashi**, Hitotsubashi University
Discussant:	**Javier Suarez**, CEMFI

Afternoon

The Mayekawa Lecture: The Role of Default in Macroeconomics

Chairperson:	**Kazuo Ueda**, University of Tokyo
Lecturer:	**Charles A. E. Goodhart**, London School of Economics

Session 3: International Recessions

Chairperson:	**Pier Carlo Padoan**, Organisation for Economic Co-operation and Development
Paper Presenter:	**Fabrizio Perri**, University of Minnesota
Discussant:	**Paolo Pesenti**, Federal Reserve Bank of New York
Discussant:	**Etsuro Shioji**, Hitotsubashi University

Session 4: Bank Overleverage and Macroeconomic Fragility

Chairperson:	**Jean-Pierre Landau**, Bank of France
Paper Presenter:	**Ryo Kato**, Bank of Japan
Discussant:	**Frank Smets**, European Central Bank
Discussant:	**Aleh Tsyvinski**, Yale University

Thursday, June 2, 2011

Morning

Session 5: Foreclosures, House Prices, and the Real Economy

Chairperson:	**Ryuzo Miyao**, Bank of Japan
Paper Presenter:	**Atif R. Mian**, University of California at Berkeley
Discussant:	**Jonathan Kearns**, Reserve Bank of Australia
	Tsutomu Watanabe, Hitotsubashi University and University of Tokyo

Policy Panel Discussion

Moderator:	**Marvin Goodfriend**, Carnegie Mellon University
Panelists:	**Choongsoo Kim**, Bank of Korea
	Kiyohiko G. Nishimura, Bank of Japan
	Axel A. Weber, Deutsche Bundesbank (formerly)
	Janet L. Yellen, Board of Governors of the Federal Reserve System

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