Bank of Finland
RESEARCH NEWSLETTER 3 · 2010

Contents

Financial crises and economic growth 1
Challenges of the global crisis to macroeconomic theory and international finance 2
Russian banking sector displays both similarities and differences 8
Conferences and seminars 10
Recent Bank of Finland research publications 11
Forthcoming discussion papers 12

Editor
Head of Research
Jouko Vilmunen
Monetary Policy and Research
Research Unit
research@bof.fi

Bank of Finland
PO Box 160
FI-00101 Helsinki
Phone +385 10 8311
www.bof.fi

Head of Research (BOFIT)
Iikka Korhonen
www.bof.fi/bofit

ISSN 1796-9131 (online)

Financial crises and economic growth

A lot has been written about banking crises or, more generally, about financial crises incorporating, in particular, different and often widely debated views of their possible causes and of the magnitude of economic disruptions that accompany these extreme events. There is an emerging consensus among theoretical macroeconomists, applied economists using macroeconomic models and tools and policymakers that we need to extend our toolbox of macroeconomic models to incorporate financial imperfections into our models of business cycle fluctuations. Not only would this enable us to better understand the macroeconomic effects financial frictions at the business cycle frequency, but also to better capture those features of the interaction between financial market behaviour and the macroeconomy that have the potential to explain the emergence of financial instabilities, crises and macroeconomic disruptions. The particular aspect of this interaction between financial and macroeconomic instabilities that, despite a fair amount of empirical evidence suggesting a relationship, has received surprisingly little theoretical attention, relates to the potential effects of banking crises on economic growth.

It is not too difficult to see theoretically how banking crises could affect economic growth. On the one hand, we need models where the banking system matters for real allocations and, on the other hand, where banking crises e.g. in the form of bank runs affect capital formation. Actually, it is not only the case where actual banking runs affect capital formation, but also, perhaps even more so, the case where the possibility of a banking run changes decisions made by economic agents in a way that potentially affects capital formation and economic growth which is interesting.

The long-run effect of the possibility of bank runs depends critically on how we model the actions of banks in a growth context. In models where the path of real output is history-dependent, e.g. in the famous Ak model of endogenous growth, a bank run necessarily has a permanent real effect. This implies, in particular, that the true cost of a crisis is much larger than short-run estimates of output losses would indicate. Also, long-run growth rate and, hence, the level of real output over time, will be affected once banks reshuffle their portfolios.

One important implication of the above analysis is that much of the costs of a bank run falls on future generations, whose preferences are not taken into account by banks currently funding their long-term investments e.g. by competing for deposits. Often, the socially optimal

policy in this context offers less risk sharing among the current generation of agents and places more weight on measures that increase the growth rate of the economy. Recent theoretical research suggests, furthermore, that the underlying intergenerational externalities can be surprisingly large in the sense that even if the social decision maker places little weight on future welfare, socially optimal policy is strongly biased against future bank runs and favours measures that reduce the probability of such adverse events.

Clearly much more research is needed for us to be able to draw robust conclusions about the effects of banking crises on economic growth and to be able to filter out the relevant policy implications and to place the policy recommendations on more solid premises. Currently, we have not reached such a state of affairs. A particular example from current research that challenges one's intuition should highlight this point well: if a representative bank's funding choice, e.g choice of deposit contract, affects the probability of a future bank run, banks hold less liquid portfolios. The intuition underlying this surprising result comes from the idea that in order to reduce the probability of a run, banks must reduce the expected payoff from running relative to the payoff from waiting. By placing more funds in investment – capital formation – and less in highly liquid assets, banks manage to increase the payoff from waiting and, hence, to provide stronger incentives for agents not to run. Consequently, lower liquidity not only reduces the probability of bank runs, but also leads to more capital formation and to higher growth rates. However, as said, this example cautions against generalizing one's intuition too much. Further research is needed to ascertain the robustness of examples like this one and to increase our understanding of the interaction between financial crises and economic growth.

Jouko Vilmunen

Challenges of the global crisis to macroeconomic theory and international finance

The Bank of Finland and Banca d'Italia jointly organized a conference honouring Pentti Kouri's scientific contributions to economics. The conference, held at the always exciting hotel Kalastajatorppa on June 11, focused on the three focal areas of Pentti Kouri 's research efforts: Macroeconomics and the Great Depression; Exchange Rates and Global Adjustment; and Financial Stability and Growth. In addition to professor and Nobel prize winner Edmund Phelps, a number of other distinguished international guests participated in the conference as speakers, commentators, and naturally as former fellow students, colleagues and co-authors.

Mario Draghi, Banco d'Italia

The one-day conference was divided into four sessions, the first three focusing on the above-mentioned research areas, and the last session, a panel, providing the audience with some food for thought on current policy challenges. The structure of each of the first three

sessions included a speaker, two discussants and questions and comments from the floor. During the lunch break, the governor of the central bank of Chile, José De Gregorio, delivered a speech on macroeconomics, policymaking and the crisis.

Macroeconomics and the Great Recession

The first morning session began with *Edmund Phelps* presenting his views on the factors leading to the most recent financial crisis and global economic recession, as well as developments in housing prices in the US. In the background model referred to in his presentation, self-fulfilling expectations play a key role, because housing prices in the model keep rising as long as households and speculator expect them to do so. Exogenous shifts in expectations generate business cycle movements as well as swings in housing prices. The inherited excessively heavy debt burden forces households and firms to cut their consumption and investment, thus reducing aggregate activity. Phelps further emphasized that his model approach does not include a key role for either financial markets or rational expectations, the latter being an unduly restrictive and unrealistic assumption.

Although *James Galbraith,* in his comments to Phelps, agreed in principle that it is possible to explain the observed swings in the US housing prices without reference to financial factors, he insisted that since financial markets have occupied a central role in recent economic developments, we should not dismiss them. He also suggested that some of the lending practices that prevailed in the financial markets effectively exploited gray areas of the law and were not far from being illegal. *Assar Lindbeck,* on the other hand, focused his comments on implications of the crisis for monetary and fiscal policy. In his opinion, monetary policy should aim not only at price stability but also at financial stability. Then again, Keynesian-type expansionary fiscal policy during a recession will be possible only if fiscal policy is properly disciplined during economic upswings.

A number of questions and comments were raised by the audience. *Björn Wahlroos* argued that US legislation has, ever since the 1970s, encouraged banks and other financial institutions to extend credit to low income households. *Alexander Swoboda* made the point that the (semi-)criminal practices prevailing in the US financial and housing markets only added momentum to the factors leading to the crisis; they could not alone have triggered the crisis. *Bengt Holmström* referred to the paradoxical features generated by moral hazard - safer system, weaker incentives for agents to manage risks - and pondered the idea of introducing a certain amount of uncertainty to the economy in the post-crisis period. *Assar Lindbeck* argued that some of the built-in features of modern financial systems, eg limited liability and bailing out beliefs, contribute to moral hazard problems. Previously these features were balanced by tight supervision, which has however been loosened over time.

Exchange rates and global adjustments

The second session focused on exchange rates and global adjustment. *Giancarlo Corsetti* presented results from his model of optimal monetary policy in an open economy. The key question was whether the optimal feedback monetary policy rule should be extended to include open economy variables and factors such as real exchange

rates, terms of trade or even global imbalances. Simple open-economy New Keynesian macromodels produce a negative answer to this question. Hence these models suggest that the standard Taylor rule is optimal. By implication then, the difference between the actual interest rate and the corresponding natural interest rate should depend only on inflation and output gap. Corsetti argued that this standard result changes once i) consumers in different countries do not share the same preferences, ii) agents are exposed to different country-specific shocks and iii) financial markets are incomplete, so that agents cannot fully hedge against country-specific shocks. The main policy implication from this theoretical setup is that the optimal interest rate rule should include the above-mentioned open economy features.

In his comments to Corsetti, *Jorge Braga de Macedo* noted that Corsetti's work could be seen as a continuation of the 1970s work by Pentti Kouri. *Ignazio Visco* agreed with this perspective and suggested that Corsetti's model could be extended to incorporate multiple assets. He further noted that not only Corsetti's work but also other similar research suggests a more comprehensive mandate for central banks: in addition to price stability, central banks should monitor and react to asset prices and global imbalances.

Olivier Blanchard, Tor Jacobsson and Jorma Ollila

Not much time remained for questions and comments from the floor. *Olivier Blanchard* emphasized the importance of Corsetti's analysis from the perspective of raising highly important and difficult questions for policy makers and academics to ponder. Is inflation targeting after all the right framework for monetary policy? He was somewhat sceptical as to whether it is as easy to apply Corsetti's approach to closed economies, as suggested by Corsetti. If monetary policy responds to various wealth effects, central banks would seem to be assuming a role that has traditionally belonged to fiscal and social policy.

Macroeconomics, policymaking and the crisis

In his lunchtime speech *José De Gregorio* presented his thoughts on the interaction of changes in the global economy; macroeconomics and economic policy; economic models and theories; and crisis prevention and management. His overarching observation was that there have been major changes in the global economy. Not only has the inter-connectedness of national economies increased, but so too has the vulnerability of individual economies, an outcome mainly of deeper financial market integration. Regarding the changes in macro-economics and economic policy, De Gregorio emphasized the policy implications of rational expectations and time or dynamic inconsistency, which set the stage for the debate over rules versus discretion and the general objective of favouring flexible rules (constrained discretion). He also emphasized the possible tensions between analytical rigour in macroeconomic modelling versus realism and flexibility. He pointed out that although one of the lessons from the crisis is that formal economic models have only a limited capacity to capture complex real world problems and phenomena, financial economics, if anything, should have been able to tell us that unsustainable imbalances were building up in the financial system.

De Gregorio dedicated the rest of his speech to crisis prevention and crisis management. His main message here was that, rather than identifying the main cause of crises, the principal challenge for economic policy is to find measures that will increase the resilience of

financial system and to minimize the costs of financial crises. It is important, he said, that methods for predicting future crises as well as earlier warning systems be further developed, although it may be virtually impossible to find a unique information set that is useful in the event of an upcoming crisis. A number of indicators exist, but it is not enough to simply study those indicators. Information on risk exposures incorporated in those indicators should be filtered and aggregated to obtain a more systematic picture of the fragilities and vulnerabilities threatening the financial system. Stability reports are an example of such a filtering and aggregation process.

Financial Stability and Growth

In the first afternoon session *Francesco Giavazzi* and *Alberto Giovannini* focused on the role of the financial system for the design and implementation of monetary policy. Francesco Giavazzi was the first to present results from their joint study on financial stability and growth, where the main research question relates to factors that are able to explain the fragility of the financial system and that increase our understanding of the interaction between the fragility of the financial system and monetary policy. He emphasized that the fragility of the financial system lies deeper than the shocks that appear as asset price bubbles. Giavazzi argued that fragility follows from role of the financial system in liquidity transformation. He concluded his part of the presentation with the main monetary policy implication of the simple model that drives their analytical results: in the context of a potential liquidity crisis, the appropriate *ex ante* and *ex post* monetary policy measures are of opposite signs. Higher interest rates are needed prior to the crisis, to restrain banks from excessive use of short-term funding, while accommodative monetary policy or lower interest rates are needed in a possible liquidity crisis, to minimize the adverse effects of the crisis on the real economy.

In his part, Giovannini emphasized the significance of liquidity transformation and asymmetric information from the perspective of financial crises, since financial market development has brought networks and channels of influence that, in combination with secured debt management, can contribute to the emergence of costly (in economic terms) liquidity crises. Giovannini further concentrated on the scarcity of liquidity and its effects on the real interest rate. He argued that the true (shadow) price of liquidity, which is crucial, is determined by the average marginal productivity of capital over normal and crisis times. The perceived (shadow) price of liquidity is, on the other hand, determined by the marginal productivity of capital in normal times. In his notes on reforming the financial system, Giovannini favoured, in addition to the more standard instruments, the use of centralized counterparties and construction of a system for compiling and distributing information on systemic risks.

Bengt Holmström was the first of two to comment on the presentation of Giavazzi and Giovannini. On the fragility of the financial system, he argued that the 1930s deposit insurance system has been effective in preventing bank runs and securing the numerous small deposits in banks. But the fact that the financial system suffered a crisis now could be explained by an increased significance, due to financial market developments, of private money or market liquidity, especially of repo markets, because repo markets have performed essentially the same functions as a deposit insurance system.

Furthermore, repo markets constitute a huge wholesale market for collateralized deposits, where the demand for triple A collateral is satisfied through securitization. This is consistent with the rapid pre-crisis increase in securitized assets. Holmström concluded by commenting on alternative means to reduce the fragility of the financial system. This is by no means straightforward, as a safer system paradoxically increases agents' willingness to take on more risk. Ex ante regulation is at best imperfect and subject to regulatory arbitrage, whereas for ex post regulation crisis resolution mechanisms are important. A less concentrated banking sector could conceivably make it easier to manage crises.

In his comments to Giavazzi and Giovannini, Philip Lane noted first that the main message from their analysis is that low interest rates contribute to excessive risk-taking, to short-term indebtedness and to increasing the likelihood of financial crisis. After reviewing some of what he thought were the basic drivers of the most recent crisis, he argued that a financial crisis is usually preceded by a period of intensive financial market innovation, this time well reflected eg in the process of securitization in the US. On the other hand, the introduction of the euro greatly increased the supply of credit across the countries of Europe. According to Lane, the important question here is what would have been the proper interest rate for optimally managing the effects of the financial innovations. Important issues for financial regulation include minimizing counterparty risks, managing systemic risks and possibly placing constraints on banks activities.

Among the comments from the general audience, *Björn Wahlroos* argued that, as regards managing the effects of financial innovation, the real problem is that the markets are able to reward the best professionals in excess of what central banks can do. *Alexander Swoboda* thought the idea of ex ante and ex post interest rates moving in opposite direction is interesting and wondered whether this dynamic is symmetric. *Assar Lindbeck* pondered about which is less costly, trying to reduce the bubbly asset price or bursting the asset price bubble.

Current policy challenges

Guillermo Ortiz and Bengt Holmström

In the final session, *Guillermo Ortiz* was the first to present his views on the current policy challenges. He focused on the main policy implications of the most recent crisis, saying that these policy measures can be classified into the most urgent ones and those aimed at securing long-run growth. Naturally, the policy measures need not be independent. According to Ortiz, Europe is suffering from a slower and more uneven recovery, which tends to make the policy challenges in Europe even more difficult. One further problem regarding efficient decision making in the euro area, Ortiz argued, is that, apart from the ECB, the policy institutions are designed for managing processes, not for making decisions. Financial market turbulence in Europe further complicates recovery, and contagious sovereign debt problems and uncoordinated regulatory measures increase the uncertainty as to future financial regulation. Although he acknowledged a lack of strong political will, Ortiz called for international coordination in setting standards for regulatory measures for the financial markets.

Patrick Honohan, in the panel discussion, focused on the interaction between fiscal policy and banking sector behaviour. He argued that a lack of sufficient attention being paid to such interaction

explains some of the fiscal policy problems and challenges facing Europe. He illustrated these problems via the Irish experience, where low post-entry nominal and real interest rates sustained a belief in constantly rising housing prices. A credit boom and bank lending in particular further contributed to the boom in housing prices. According to Honohan, the credit cycle in Ireland amplified the volatility of tax revenues. Although some of the tax revenues were funded, changes in the tax system implied a greater dependence of tax revenues on speculative sources, ie on volatile movements in asset prices. Consequently, once asset prices collapsed, a big hole emerged in fiscal revenues. On the other hand, the effect of banks on fiscal balances was clearly felt in Ireland, once banks started to rack up heavy losses, and uncertainty about banks' future losses has generated risks concerning the sustainability of public finances. The central bank of Ireland has tried to dispel the uncertainty by requiring banks to perform stress tests and to increase their capital buffers. In concluding, Honohan reiterated his point that the interaction between the state of the banking sector and public finances is an extremely interesting research agenda for future research.

In his contribution to the discussion of current policy challenges, *Olivier Blanchard* presented some interesting estimates of the required (future) austerity measures generated by the increase in public sector indebtedness among the G20 countries. For the period 2008 – 2015, it was estimated that the ratio of aggregate public sector debt to (PPP-weighted) GDP in G20 countries will increase by 39 percentage points. Most of this increase, 19.2 percentage points, is due to losses in tax revenues. The net interest rate burden - the difference between the real interest rate and GDP growth rate - explains 7.5 percentage points of the increase. According to Blanchard the estimates suggest that the future saving requirements of the public sector, ie the ratios of primary budget surplus to GDP, are indeed non-trivial in many countries, given the assumption underlying the estimates that the public debt to GDP ratio will stabilize at 60 per cent. For the specific case of the US, the public sector savings requirement amounts to 11 - 12 per cent by 2020, and the measures already agreed are estimated to generate savings of up to 4 - 5 per cent by 2015. There is, however, great uncertainty about the actual amount of savings needed in addition to those entailed in decisions already made. Blanchard concluded his presentation by presenting simulation results on the global effects of the increase in the US saving rate. The simulated dynamic effects tend to be smoother when the saving rate of the emerging markets falls and their currencies appreciate relative to the US dollar.

In his panel presentation, *Seppo Honkapohja* offered some interesting remarks on public sector consolidation and its effects on economic activity and growth. He started by noting that concerns over the increase in public sector indebtedness reflect the third phase of the global financial crisis. The two preceding phases were the (initial) financial market crisis and its spillover into a global recession. He argued that two things are needed to solve the public sector debt problem: future primary budget surpluses and economic growth. Current estimates of the public sector austerity measures are large. On the issue of economic effects of public sector consolidation, Honkapohja pointed out that the short-term effects tend to be smaller for smaller fiscal multipliers and for larger and more persistent consolidation needs. Over the longer-term, the potential growth-enhancing effects of public sector consolidation depend in part on the

initial sate of the public sector debt and are more likely to be realized if consolidation is implemented via cuts in non-productive expenditure items. Honkapohja concluded by noting that public sector consolidation usually takes place over a number of years, and it is not obvious that public sector debt will fall after a crisis. The major challenge associated with public sector consolidation is to anchor private sector expectations and to avoid policy mistakes during the consolidation process.

Of the questions and comments from the floor, *Olli Rehn* brought up three cases that argue against Ortiz's claim that policy making institutions in the euro area are designed for the managing process rather than for making decisions: the decision to support the financial markets in Greece and the euro area; the ongoing public sector consolidation wave in the euro area; and measures to monitor public sector imbalances more closely. *Edmund Phelps* noted that decisions not to consolidate the public sector will also generate uncertainties. *Tuomas Saarenheimo* asked for clarification of the notion of a credible public sector consolidation plan, while *Assar Lindbeck* argued that the stability and growth pact is deficient in that it lacks the Pigouvian mechanism whereby the punishment for excessive public sector deficits is not related to the size of the deficits.

Seppo Honkapohja responded by acknowledging Phelps's claim that failure to consolidate generates uncertainties and noted that advocating the reducing of deficits by raising taxes does not address the question of which taxes should be raised. Different tax instrument have different economic effects. *Olivier Blanchard* noted that public sector consolidation typically becomes more difficult under growing public indebtedness and that we are constantly struggling with the notion of a credible public sector consolidation plan. *Patrick Honohan* argued that the credibility of consolidation plans and its positive long-term growth effects will be strengthened if consolidation comes with major political benefits and that not consolidating implies large political costs. *Guillermo Ortiz* also emphasized the importance of anchoring private sector expectations, while *Olli Rehn* noted that the rebuilding of confidence will take time.

Jorge Braga de Macedo concluded the conference by stating the obvious - that Pentti Kouri would have had much to say about all the topics discussed in the conference.

Jouko Vilmunen

Iikka Korhonen

Russian banking sector displays both similarities and differences

The global economic crisis also hit hard the Russian economy. Russian GDP dropped by 7.9% last year. Unlike in many other countries, the Russian banking sector has weathered the contraction of economic activity fairly well. Although lending increased rapidly in the latter part of the last decade, the stock of bank credit did not reach a particularly high level. In Russia, too, the authorities have been willing to safeguard the banking sector’s liquidity in a variety of ways. Deposit insurance

and the rapid closure of some small banks have underpinned public confidence in the banking system. It is also noteworthy that the state continues to own a significant part of the banking sector.

In recent years, BOFIT has conducted a great deal of research on the Russian banking sector. This research has required the establishment of a very detailed database on Russian banks' balance sheets and income statements. Studies have focused on clarifying, for example, the competitive situation in the Russian banking system and the impact of ownership on bank efficiency and interest rate margins. Closure of several banks in Russia in 2000–2007 has also enabled us to examine the impact of the market structure on the probability of a bank encountering problems.

The BOFIT Discussion Paper BOFIT DP 12/2009 (Zuzana Fungáčová and Laurent Weill: How market power influences bank failures: Evidence from Russia) looks into the impact of competition on financial stability. The dominant view sees a detrimental impact of competition on the stability of the banking sector, but the relevant literature also presents a variety of views. This discussion paper provides the first investigation of the role of competition on the occurrence of individual bank failures. Competition is measured by the Lerner index. The Russian banking industry is a unique example of an emerging market that has undergone a large number of bank failures in recent years. The findings of this study clearly support the view that tighter bank competition is detrimental for banking-sector stability. This result is robust to tests controlling for the measurement of market power and the definition of bank failure, the set of control variables, and nonlinear specification of the relationship. The normative implication of the findings is therefore that measures that increase bank competition could lead to a reduction in financial stability. If these findings can be generalised across other countries – emerging economies in particular – the policy implications for those countries will be apparent: a slightly lower level of competition may have to be tolerated for the sake of financial stability.

A more recent BOFIT study, BOFIT DP 3/2010 (Zuzana Fungáčová, Laura Solanko and Laurent Weill: Market power in the Russian banking industry), examines the determinants of banks' market power by analysing bank competition in Russia. Competition and its determinants are measured using market power calculated by means of the Lerner index. As earlier studies on bank competition have focused only on developed countries, this paper provides a unique opportunity to compare bank competition in emerging markets with the situation prevailing in developed countries. The finding is that in 2001–2007 there was only a moderate tightening of bank competition. The mean Lerner index for Russian banks is of the same magnitude as in earlier studies on developed countries. The study suggests that there is no difference in market power between state-controlled and private banks, or between foreign-owned banks and domestic banks. Thus it is not clear that foreign bank entry has raised the level of competition in the Russian banking market. However, this may have increased stability in the Russian banking sector, as suggested by an earlier study on bank risks. Another conclusion of the study is that regional market concentration, banks' risk-taking and bank size determine bank competition as measured by the Lerner index.

BOFIT economists continue to do research on the Russian banking sector, although the focus is expanding to other emerging economies. The next concern will be the operations of Russian banks

and their coping with the crisis of 2008–2009. A detailed set of data on these years provides a good opportunity for exploring, for example, the impact of public measures on bank behaviour during periods of crisis.

Iikka Korhonen

Conferences and seminars

In June, the Bank of Finland and Banca d'Italia jointly organized a conference honouring Pentti Kouri's scientific contributions to economics, 'Challenges Of The Global Crisis To Macroeconomic Theory And International Finance'. The presentations given at the conference are now available at the conference site.

In October, the Bank of Finland (Research Unit and BOFIT) and the CEPR (Centre for Economic Policy Research, London) will jointly host a scientific conference,' Banking in emerging economies', co-organized by Rensselaer Polytechnic Institute, Lally School of Management & Technology (New York).The programme will soon be available at the conference site.

Bank of Finland Research Seminars

Wed 4 Aug 2010 10.00–11.30
Rauhankatu 19, Auditorium
Ph.D. Jonathan Heathcote
Federal Reserve Bank of Minneapolis
(Topic TBA)

Thursday 2 September 2010 13.30–15.00
PhD Erkko Etula
Federal Reserve Bank of New York
(Topic TBA).

Thursday 7 October 2010 13.30–15.00
PhD Jirka Slacalek
European Central Bank
(Topic TBA)

Thursday 4 Nov 2010
Prof. Markku Kaustia
Aalto University School of Economics
(Topic TBA)

Research seminars are open to all interested parties. Please register in advance with Marjut Salovuori at seminars@bof.fi by noon of the preceding day. For further information please visit the seminar site.

BOFIT seminars

Wed,18 August 2010 10:30
Mingming Zhou
University of Colorado at Colorado Springs and BOFIT
Political Connections and Going Public: Do Institutions Matter? (Joint with Bill B. Francis, Iftekhar Hasan and Xian Sun).

For further information please visit the seminar site http://www.bof.fi/bofit_en/tutkimus/seminaarit/tiistai. Please register in advance via Liisa Mannila (firstname.lastname@bof.fi, + 358 10 8312268).

Recent Bank of Finland research publications

Bank of Finland Research Discussion Papers

Macroeconomic research

13/2010
George W Evans – Seppo Honkapohja – Kaushik Mitra: Does Ricardian Equivalence hold when expectations are not rational?

12/2010
Juha Kilponen – Torsten Santavirta
New evidence on implicit contracts from linked employer-employee data

BOFIT Discussion Papers

14/2010
Asel Isakova:: Currency substitution in the economies of Central Asia: How much does it cost?

13/2010
Aaron Mehrotra and Alexey A. Ponomarenko:: Wealth effects and Russian money demand

12/2010
Alexey A. Ponomarenko, Sergey A. Vlasov:: Russian fiscal policy during the financial crisis

11/2010
Michael Funke, Hao Yu: The emergence and spatial distribution of Chinese seaport cities

10/2010
Aaron Mehrotra and José R. Sánchez-Fung: China's monetary policy and the exchange rate

9/2010
Allen N. Berger, Iftekhar Hasan, Iikka Korhonen and Mingming Zhou: Does diversification increase or decrease bank risk and performance? Evidence on diversification and the risk-return tradeoff in banking

8/2010
Alexei Karas, William Pyle and Koen Schoors: The effect of deposit insurance on market discipline: Evidence from a natural experiment on deposit flows

7/2010
Vladimir Sokolov:: Bi-currency versus Single-Currency Targeting: Lessons from the Russian Experience

6/2010
Yu-Fu Chen, Michael Funke and Nicole Glanemann: Off-the-record target zones: Theory with an application to Hong Kong's currency board

Forthcoming discussion papers

Bank of Finland Research Discussion Papers

Patrick M Crowley – Aaron Schultz:
A new approach to analyzing convergence and synchronicity in growth and business cycles: Cross recurrence plots and quantification analysis

Juha-Pekka Niinimäki:
Moral hazard in the credit market when the collateral value is stochastic

Karlo Kauko:
The feasibility of through-the-cycle ratings

Subscriptions to electronic alerts for Bank of Finland research publications

Bank of Finland website
http://www.bof.fi/en/julkaisut/sahkoisten_julkaisujen_tilaaminen/index.htm.
SSRN (Social Science Research Network) http://hq.ssrn.com/Pub_Login.cfm?iacm=y.
RePec (Research Papers in Economics; NEP, new economics papers on central banking)
http://lists.repec.org/mailman/listinfo/nep-cba.