



EUROJÄRJESTELMÄ
EUROSYSTEMET

RESEARCH NEWSLETTER

4/2008

Contents

Editorial

Improving the quantitative performance of the standard labour market matching model: introducing heterogeneity among new and existing matches

Overlapping claims and the possibility of financial contagion: exploring the Finnish interbank markets

The economic impact of corruption

Conferences and seminars

Recent Bank of Finland research publications

Forthcoming publications

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Publisher

Bank of Finland

ISSN 1796-9131
(online)

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www.bof.fi/bofit_en

Editorial

Although the tools for doing macroeconomics and, more specifically, business cycle analysis have undergone radical changes during the last twenty five years or so, it still feels right to argue that much of the ongoing macroeconomic research on fluctuations can be regarded as inquiries into the aggregate implications of various imperfections. In this context, Olivier Blanchard, in his review of the current state of macroeconomics, sets out a series of questions that greatly shape the way we still do macro. Apart from nominal rigidities, like slowly adjusting nominal prices, what are the frictions that matter most for macro? How do they affect the dynamic effects of different shocks? How do they introduce at least the possibility of additional shocks? What do we know about these dynamic effects and how important are these shocks?

Of course, the original real business cycle models were free of these frictions and focused on the business cycle implications of aggregate technology shocks in models with optimizing agents and fully flexible prices. However, there has been a convergence of views among business cycle researchers that technological shocks may not be the main drivers of business cycle fluctuations and that aggregate demand factors need to be given a greater role in our models to be able to account for the observed fluctuations of the key macroeconomic quantities at the business cycle frequency.

Although progress in modelling macroeconomic fluctuations has been impressive, our basic models for doing monetary business cycle analysis are not complete and a lot of work remains to be done in order for these models to pass the

tests of providing a fully satisfactory basis for eg policy advice. New empirical puzzles and challenges keep emerging, and often ad hoc assumptions and empirically non-validated elements need to be incorporated into these models in order for them to match required macroeconomic regularities. Moreover, it is only quite recently that a serious effort has been made to explore the asset pricing implications of our standard monetary business cycle models and to subject the models' empirical implications to stringent econometric tests. These acid tests should be regarded as critical both for the successful development of the underlying models and for understanding their macroeconomic implications in full.

Perhaps an even more striking characteristic of our basic model for doing monetary policy analysis, the new-Keynesian (NK) model, is that there is no unemployment. Movements in employment take place along the labour supply schedule, either at the intensive margin through variations in hours worked or at the extensive margin through households' decisions on labour market participation. One may argue that this is a misleading description of actual labour market outcomes in most countries. The natural question is then how to think about and introduce unemployment into the NK model.

Fortunately, a lot of progress has taken place on this front, too. More specifically, we can build rigorous equilibrium models of labour market behaviour based on labour market search and incorporate these models into our basic monetary business cycle models to provide the required microeconomic foundations for unemployment in these models. In labour markets subject to search frictions, unemployment results from the fact

that these markets are decentralized, with, at any given moment in time, some workers searching for a job and some firms with vacancies looking for workers. The implication is that there is always some unemployment and vacancies. From the point of view of macro fluctuations, the important question is what the implications of labour market search frictions are for the dynamics of key macro variables and, in particular, whether the dynamics are different from those generated by the standard models based on the representative agent approach to labour markets. Differences do emerge, but more research is needed to make us more confident that they are both qualitatively and quantitatively important and to make the research effort worth taking.

Jouko Vilmunen

Improving the quantitative performance of the standard labour market matching model: introducing heterogeneity among new and existing matches

The experience and knowledge economists have hitherto accumulated from using existing monetary business cycle models to quantitatively account for the various observed features of business cycle dynamics suggests a key role for labour markets. Hence, economists are not only interested in documenting the empirical behaviour of wages, employment and unemployment, but also in building models that help them as well as policymakers to understand the forces that shape these outcomes and in using the models to assess the effects of changes in policies and institutions. Naturally, the usual framework of supply and demand in a frictionless labour market is useful for thinking about and

discussing some labour market issues.

However, as emphasized by Rogerson et al¹ many important questions are not easily addressed with the standard frictionless labour market model. For example, why do unemployed workers sometimes choose to remain unemployed by turning down job offers? What determines the lengths of spells of employment and unemployment? How can we simultaneously have unemployed workers and unfilled vacancies? How can apparently homogeneous workers in similar jobs end up earning different wages? What are the trade-offs faced by firms in paying different wages? And so on.

The labour market search and matching framework provides a rigorous yet tractable approach for addressing these questions. This theory is built on the idea that trade in the labour market is costly and takes time. In the core of this thinking there is also the notion that there is no centralized market where buyers and sellers of labour meet and trade under the supervising eye of an auctioneer or guiding force of an invisible hand at a single price as assumed in classical equilibrium theory. Instead, frictions originating from imperfect information, heterogeneity of firms and workers and lack of coordination disrupt the ability to form employment relationships. The quantity of idle resources in the labour market, in the form of unemployed workers and vacant jobs, measures the extent of such disruption.

In its simplest form, a labour market matching model focuses on the interaction between unemployment and job creation. Higher productivity increases the return on job creation and thereby increases the rate of job creation. On the other hand, a higher rate of job creation makes it easier for unemployed workers to find jobs, and this reduces unemployment. This accounts for the observed counter-cyclical unemployment dynamics or pro-cyclical behaviour of job creation. None of the above reasoning

¹ Rogerson R, Shimer, R and Wright, R (2005), Search Theoretic Models of the Labor Market: A Survey, Journal of Economic Literature vol. XLIII, p. 959–988.

suggests, however, that the supply-and-demand paradigm is useless because of its lack of realism, since, as also argued by Rogerson et al in their survey, this paradigm is obviously useful for studying many issues in labour economics. The point is that it is not well suited for discussing questions such as those mentioned above.

In the context of labour market search models, one much-discussed question that has shaped debate over the success of these models is the quantitative performance of the basic Mortensen-Pissarides (1994)² matching model in accounting for the key features of labour market outcomes. Shimer (2005)³, for example, goes beyond investigating qualitative features of the basic matching model and follows the research programme on dynamic equilibrium models with Walrasian frictionless markets and explores whether or not a calibrated matching model of the labour market is quantitatively consistent with observed aggregate fluctuations.

Somewhat surprisingly, Shimer summarizes his findings by arguing that a reasonably calibrated matching model with endogenous destruction is not able to generate enough volatility in unemployment and cannot explain the strong pro-cyclicality of the job-finding rate. Moreover, the model fails to generate a negative correlation between vacancies and the unemployment rate, ie a well-behaved Beveridge curve. The implication, then, seems to be that the matching model stops short of replicating the cyclical behaviour of its two key elements, unemployment and vacancies.

However, in this debate over the quantitative performance of the basic matching model, match heterogeneity has received surprisingly little attention. Surprisingly little, since eg microeconomic evidence clearly suggests that dynamics

associated with productivity across plants displays important heterogeneity. More specifically, the existing evidence indicates that productivity differences at the plant level are wide and persistent, that entrants tend to be less productive than the average incumbent and that the probability of a plant closure is inversely related to its productivity. Moreover, the literature on job creation points to important plant level differences in the cyclical behaviour of job creation and job destruction along a plant's life cycle. Fresh new evidence on wages suggests, on the other hand, that, relative to wages in existing employment relationships, wages of new entrants display greater responsiveness to the state of the economy or labour markets.

The empirical evidence alluded to above seems to clearly suggest that the basic labour market matching model has to be extended and modified to allow for match heterogeneity. In their forthcoming Bank of Finland discussion paper, *Productivity and Job Flows: Heterogeneity of New Hires and Continuing Jobs in the Business Cycle*, Juha Kilponen and Juuso Vanhala address the problem of match heterogeneity by introducing into the basic labour market matching model a simple vintage-type structure with two types of firm-worker pairs. In order to match observations on match heterogeneity, Kilponen and Vanhala posit that new matches are on average less productive than existing ones, thereby also subjecting new matches to more frequent destruction. This latter implication of their assumption is consistent, in particular, with the observed inverse relationship between the probability of plant closure and productivity.

The authors also assume, again in accordance with the empirical evidence, that newly created matches are more responsive to aggregate productivity or technology shocks than existing matches. This is an important feature of the model, as it makes it possible for the model to generate persistent productivity differences between new and existing matches in response to fluctuations in

² Mortensen, D – Pissarides, C (1994), Job creation and destruction in the theory of unemployment, *Review of Economic Studies* 61, p. 397–415.

³ Shimer, R (2005), The Cyclical Behavior of Equilibrium Unemployment and Vacancies, *The American Economic Review* 95, No. 1, p. 25–49.

aggregate technology as well as to generate more pro-cyclical wages for new matches as compared with old ones. Kilponen and Vanhala rightly observe that one of the underlying ideas of the assumption that new matches are more responsive to aggregate technology shocks is that new hires enjoy productivity associated with the latest technology vintage or that young firms adopt more flexible organizations to cope with greater risk and to exploit new growth opportunities. This interpretation suggests that young firms respond more and possibly with different margins to business cycle shocks than old ones, an idea that has also been put forward elsewhere in the literature.

Kilponen and Vanhala show, indeed, that they are able to extend the basic matching model in an empirically consistent way. More specifically, they demonstrate that their model produces a well-behaved Beveridge curve despite endogenous job destruction. Model simulations also indicate that the model narrows the gap between the volatility of the model's labour market variables and actual data.

From the point of view of the underlying economic logic of the model, the interesting discovery of the authors is that persistent productivity differences across matches generated in the model shift employment adjustment from the job destruction margin towards the job creation margin. This point is worth emphasizing, as some of the existing research suggests that one way to improve the empirical performance of the matching model is to reduce the excess sensitivity of job destruction to fluctuations in aggregate technology.

Costs related to job destruction have been offered as one mechanism that moderates job destruction. Kilponen and Vanhala rely on match heterogeneity to contain the job destruction margin. The mechanism works as follows. An aggregate productivity shock creates a temporary but persistent productivity difference between the two types of matches. After a positive and

persistent technology shock, this creates an incentive for firms to create new productive vacancies and destroy the old matches that are temporarily less productive. Although employment adjustment does take place through the job destruction margin, this adjustment margin is less important than in the standard model. Moreover, contrary to many existing contributions, Kilponen and Vanhala do not need to introduce rigid wages to boost the volatility of employment and vacancies or to capture the dynamic correlation between output and labour market variables. As the authors point out, match heterogeneity implies that the wages of new hires are more responsive to aggregate technology shocks than the wages of existing matches. Furthermore, temporary shifts in the composition of new and old matches partly drive fluctuations in aggregate wages.

Finally, the important question, particularly from the point of view of monetary policy, is the macroeconomic implications of matching heterogeneity. To answer this question, Kilponen and Vanhala embed their labour market matching model in a standard new-Keynesian monetary business cycle model displaying forward looking inflation and output dynamics – a new-Keynesian Phillips curve and forward looking IS curve – with the central bank following an interest rate rule à la Taylor.

The simulations of the full model indicate that quantitatively matching heterogeneity does not seem to change the dynamic aggregate effects of monetary policy shocks compared with model simulations without matching heterogeneity. However, allowing for heterogeneous matches gives rise to a more muted employment response of the new matches relative to the corresponding new-Keynesian macromodel without matching heterogeneity. This more muted response is mirrored by a stronger impact of job destruction in the new matches. The impact of heterogeneity on the dynamics of old matches is small: this also drives the aggregate results, given that most of the

dynamics in the aggregate labour market variables is driven by old matches.

All in all, the authors have produced a very interesting and important extension of the basic matching model whose empirical performance marks an improvement over the standard model. Their analysis strongly encourages researchers to use labour market search models to address questions relating to the dynamics not only of labour markets, but also, and maybe more importantly, of the aggregate economy. Taking the aggregate perspective naturally raises questions about the effects and transmission of policy shocks as well as about optimal policy design.

Overlapping claims and the possibility of financial contagion: exploring the Finnish interbank markets

The current prevalence of financial crises makes it tempting to conclude that the financial sector is unusually susceptible to shocks. One possible theory says that we do not need large shocks to understand financial crises, since small local shocks in a particular part of the financial system can be spread by contagion to the rest of the financial sector and then infect the larger economy. Financial contagion could consequently be seen as a process by which e.g. a problem or crisis that begins in one region spreads to an economically linked region.

In some cases the basis of this contagion is informational. Recent literature has argued that asymmetric information can give rise to contagion between countries that are affected by common fundamentals. Think of asset markets in two different countries, for example. A change in prices may result from a common shock that affects asset values in both countries or it may be generated by an idiosyncratic shock that either has no effect on asset values or that affects only one of the two countries. Because of asymmetric information, the idiosyncratic shock can be mistaken for a common shock, a fall in prices

in one country may lead to a self-fulfilling expectation that prices will fall in the other country. In that case, a costly and welfare reducing instability could possibly arise in the second country because of an unrelated crisis in the first country.

Naturally, this is not the only type of contagion. Allen and Gale (2007)⁴ explore another type, the possibility of which arises from the overlapping claims that different regions or sectors of the banking system have on one another. In this set up, if one region suffers a banking crisis, the other regions suffer a loss because their claims on the troubled region fall in value. Sufficiently strong spillover effects will then cause a crisis in the troubled region's economic neighbours, so that in the extreme case a systemic event can result as the crisis passes from region to region infecting an increasing part of the financial system and maybe even the larger economy.

To understand the possibility of contagion through interlinkages the background literature offers some interesting models and thought experiments which nicely highlight the role of liquidity or liquidity preference in the process generating contagious effects. Think of consumers facing uncertainty about their intertemporal consumption preferences so that they are uncertain about the amount of savings they have to generate for consumption both tomorrow and further ahead. Once this uncertainty is resolved, the economy consists of early and late consumers.

Uncertainty about consumption preferences creates demand for liquidity. Now, banks have a comparative advantage in providing liquidity. Consumers deposit their income in the banks, which invest it on behalf of the depositors, and, in exchange, depositors are promised funds for consumption at each subsequent period,

⁴ Allen, F and Gale, D (2007), *Understanding Financial Crises*, Calendron Lectures in Finance, Oxford University Press.

depending on when the depositors choose to make withdrawals.

Banks' investment possibilities consist of short and long assets. The former pays next period a return of one unit, while the latter can be liquidated in the next period for a return of less than one unit or held to maturity for a return of more than one unit. Thus, liquidating the long asset is costly, so this is not very useful for providing consumption for those consumers who want to consume early.

Imagine now that the economy consists of a number of regions and that the number of early and late consumers fluctuates randomly in each region. Regional demand for liquidity thus fluctuates, but the aggregate demand for liquidity is constant. The key feature in this set up is that it allows for interregional insurance, as regions with excess liquidity provide liquidity for regions short of liquidity.

One way to organize the provision of liquidity is through the exchange of interbank deposits. The implied interregional holdings of deposits work well as long as there is enough liquidity in the banking sector as a whole. Once there is excess demand for liquidity, however, the financial linkages created by these crossholdings may prove disastrous. Crossholdings are useful for allocating liquidity within the banking system, but they cannot increase the aggregate amount of liquidity. Consequently, if the economy-wide demand for liquidity exceeds the stock of short-term assets, the only way to increase it and, ultimately, consumption is to liquidate long-term assets. However, there are limits to such liquidation without provoking a bank run. If a run on a bank takes place, those banks holding deposits in the defaulting bank will suffer a capital loss, which may render them incapable of meeting their commitments to provide liquidity in their regions. Thus, crossholding of deposits is the mechanism through which a local financial crisis spreads by contagion in other regions.

Whether and to what extent a financial crisis spreads depends critically on the pattern of inter-connectedness generated by the crossholdings. An interbank network can be characterized as complete if each region is connected to all other regions, and incomplete if each region is connected only to a possible small subset of other regions.⁵ In a complete network, the amount of interbank deposits that any bank holds is spread relatively evenly over a large number of banks so that the initial impact of a financial crisis in any one region may be attenuated. On the other hand, the initial impact of a financial crisis in an incomplete network is concentrated in the few neighbouring regions, with the result that they succumb to the crisis relatively easily. The crisis prompts a premature liquidation of long-term assets in the regions being infected, implying a consequent loss of value, so that previously unaffected regions find that they, too, are affected. There is a free rider problem in explaining the process of contagion, as each bank is trying to meet external demand for liquidity by drawing down its deposits in other banks. While banks in this process are effectively passing the buck to other banks, the end result is that all the interbank deposits disappear and no one gets additional liquidity.

More often than not, a reluctance of banks to lend to each other and tightened lending policies in interbank markets are symptomatic of an increasing risk of an emerging or an already ongoing process of a contagious financial crisis. Hence, an important question is if we can by using actual interbank market data identify processes possibly related to contagious crises, and, if so, which banks and how large crossholdings are most critical for the potential emergence of a contagious financial crisis.

An interesting forthcoming Bank of Finland discussion paper, *Financial Interlinkages and Risk of Contagion in the Finnish Interbank Market* by Mervi Toivanen takes steps to answer these questions. The author uses current data from the Finnish interbank market as well as data from the crisis

⁵ Allen and Gale (2007), p. 263.

period in the first half of the 1990s to evaluate through simulation methods the likelihood of contagion in the current state of the market and to evaluate the ability of the methods she employs to detect interlinkages in the problem period of the early 1990s which most likely would have triggered contagious effects resulting in a banking crisis.

As Toivanen observes, many empirical studies on financial crises and contagion have concentrated on (national) banking systems, basically following one of two approaches. One uses simulation methods to study the effects of a bank failure. Often such simulation studies conclude by not being able to disregard significant contagion effects, but also find adverse systemic outcomes in the form of eg substantial weakening of the banking sector unlikely.

The second approach focuses on a wide variety of shocks and other sources of risk. This approach incorporates alternative methods from simulation to the application of standard risk management techniques to study the effects of contagion, but the common feature of these exercises is the network structure of banks' interbank exposures. Descriptive studies of the banking sector's counterparty risks as well as studies building on distance-to-default indicators to analyse contagion risks should be included in the second approach.

Toivanen points out in her study that, since Finnish banks do not have to disclose their counterparties, very little is known about the actual structure of bilateral exposures in Finland and how these financial linkages impinge upon the contagion risk. Consequently, to carry out her simulation exercise, Toivanen needs to generate bilateral exposures or the whole distribution of interbank loans and deposits. She exploits an existing methodology by Upper et al⁶ to generate bilateral exposures through

⁶ Upper, C and Worms, A (2004), Estimating bilateral exposures in the German interbank market: Is there a danger of contagion? *European Economic Review* 48:4, p. 827–849.

maximized entropy. Entropy is heavily used in information theory, where it measures the uncertainty associated with a random variable. More specifically, Shannon entropy, as it is called in information theory, quantifies, in the sense of expected value, the information contained in a message or, equivalently, the average information content one is missing when one does not know the value of the random variable.

It is this latter characterization of entropy that gives us the intuition behind the method of maximizing entropy in the present context: interbank loans and deposits are spread over banks as equally as is consistent with their observed interbank exposures. This is a close analogue to the concept of 'complete interbank network' referred to above, where the basic idea is that banks symmetrically hold claims on all other banks in the economy, conditioned on the size-structure of the banks.

Toivanen shows in her simulation study that the risk of a contagion that results in a banking crisis is very low in the current state of the Finnish interbank markets. More specifically, five deposit banks out of ten are potential triggers for contagion, but the breadth and depth of the contagion depends on the first failing bank. In addition to large commercial banks, some of the middle-sized banks are also capable of triggering a contagion with systemically important implications. Of some interest is the result that the five banks identified by Toivanen as potential triggers for contagious effects retain their status in this respect across different time periods.

Upon repeating the simulations on data prior to the early 1990s, the author concludes that the risk of a systemically important contagion increased in the banking sector from 1988 to 1990. Moreover, in comparison with the historical evidence the method of maximum entropy is able to pick up those financial institutions that posed a threat to the stability of the Finnish banking system. All in

all, the analysis as well as the results presented in Toivanen's forthcoming paper are very interesting and contribute importantly to our understanding of financial crises as well as to our tools for analysing and monitoring the evolution of the state of the financial system. As this study should be seen as part of a wider research agenda aiming to gain deeper understanding of the process and effects of contagion and financial crises, further research efforts are clearly welcome.

Jouko Vilmunen

The economic impact of corruption

Corruption affects the functioning of society in a number of ways. Many studies suggest it hampers economic growth. For example, corruption may reduce investment by increasing the required return. On the other hand, corruption may also have a positive economic impact through facilitating financial transactions if, for example, the legal system does not function particularly well.

Several research projects exploring the causes and consequences of corruption are currently under way at BOFIT. The results of these studies will be published this year in the BOFIT Discussion Paper series.

A study entitled 'Exports and Corruption: A Disaggregated Examination' by Rajeev K Goel and Iikka Korhonen looks at the relationship between the structure of exports and corruption in more than 130 countries. The study assumes that the raw material base of each country is reflected in both the structure of exports and corruption. Countries export products in which they have a relative advantage. It has been frequently noted that a large oil sector in the economy seems to increase corruption. Pumping oil from the ground is an activity that is relatively easy to supervise and requires a considerable number of official permits in most countries. This factor alone can easily contribute to

corruption. In addition, struggles over the use of oil revenues seem to heighten the sensitivity of political systems to corruption. This study examines how the share of total exports taken by different products correlates with corruption. It certainly appears to hold true that the more a country exports oil, the more corrupt its economy will be. At the same time, exports of agricultural products would seem to reduce corruption. Freedom in economic and political decision-making reduces corruption, as can be expected. It also appears that the corruption-inducing effect of energy products is the greatest in countries where corruption already plays a major role. It would thus appear that particularly countries dependent on exports of energy products should pay attention to the issues of political and economic freedom if they wish to reduce corruption.

A different perspective on corruption is offered in a study by Pierre-Guillaume Méon and Laurent Weill entitled 'Is corruption an efficient grease?' The authors look at the impact of corruption on economic efficiency in 54 developed and developing economies. Their study shows that the impact of corruption on economic efficiency, and thereby on the standard of living, is not necessarily straightforward. If the institutional structures of a country are not highly developed, corruption may in fact boost economic activity, because companies do not have to use so much time and resources on complying with complicated and conflicting rules and regulations. It must be noted, however, that in countries with developed institutions corruption always appears to lessen the efficiency of the economy. In addition, it is of course possible that it is beneficial for authorities in less developed countries to keep the permit procedure complicated, as this allows them to increase their personal income.

In conclusion, the relationship between corruption and economic efficiency is not always simple. This notwithstanding, it appears that most countries would benefit from reducing corruption or at least developing their

institutions in such a way that corruption is not needed to address their deficiencies.

Iikka Korhonen and Aaron Mehrotra

Conferences and seminars

The presentations for the recent conference 'Innovation and Intellectual Property in Financial Services' are available on the conference site at http://www.suomenpankki.fi/en/tutkimus/konferenssit/aiemmat_konferenssit/cepr2008. This annual Bank of Finland Research and CEPR (Centre for Economic Policy Research) conference was this time arranged jointly with the Federal Reserve Bank of Philadelphia.

In March 2009 the Bank of Finland Institute for Economies in Transition (BOFIT) will host an international seminar on the long-term growth potential of the Russian and Chinese economies. The call for papers will be posted soon on the conference website at http://www.bof.fi/bofit_en/tutkimus/tyopajat/tyopajat.

On 4–5 June 2009, the Research Unit and SUERF (Société Universitaire Européenne de Recherches Financières) will jointly host a conference in Helsinki. The conference will focus on housing markets. The call for papers will open by the end of the year 2008 at <http://www.bof.fi/en/tutkimus/konferenssit>.

The following seminars are open to all interested parties.

Bank of Finland Research Seminars:

Thur, 6 Nov 2008, 13.30–15.00. Prof. Matti Suominen. Helsinki School of Economics. Arbitrage Capital and Currency Carry Trade Returns.

Thur, 4 Dec 2008, 13.30–15.00. Ph.D. Christian Haefke. Institute for Advanced Studies Wage Rigidity and Job Creation.

Thur, 8 Jan 2009, 13.30–15.00. Ass. Prof. Yrjö Koskinen. Boston University.

Please register in advance via Marjut Salovuori at seminars@bof.fi. For further information visit the seminar site <http://www.bof.fi/en/tutkimus/konferenssit/tutkimusseminarit/>.

BOFIT seminars:

Tues, 4 Nov 2008, 10.30. Zuzana Fungacova. BOFIT and GERGE-EI, Pargue. Determinants of bank interest margins in Russia: Does bank ownership matter?

Tues, 18 Nov 2008, 10.30. Ho Chun-Yu, Georgia Institute of Technology and BOFIT. Market structure, welfare and banking reform in China.

Tues, 2 Dec 2008, 10.30. Aaron Mehrotra ja Iikka Korhonen (BOFIT). Real exchange rate and oil: Case of energy producers.

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

Science Night, 8 Jan 2009 – 'Evolution'

The Bank of Finland will once again be participating in the biennial Science Night to be held on 8 January 2009. Presentations on this year's topic, 'evolution', will be given in Finnish by the Bank's researchers and economists between 5 and 10 pm at the Bank of Finland Museum on Snellmaninkatu.

For more information please visit the Science Forum website at <http://www.tieteenpaivat.fi/engl.html>. Information will also be posted on the Bank's website later this year.

Recent Bank of Finland research publications

Bank of Finland Discussion Papers

Fabrizio Saprgoli – Paolo Zagaglia: The co-movements along the forward curve of natural gas futures: a structural view, BOF DP 26/2008.

Massimiliano Marzo – Silvia Romagnoli – Paolo Zagaglia: A continuous-time model of the term structure of interest rates with fiscal-monetary policy interactions, BOF DP 25/2008.

Massimiliano Marzo – Paolo Zagaglia: Determinacy of interest rate rules with bond transaction services in a cashless economy, BOF DP 24/2008.

Paolo Zagaglia: Money-market segmentation in the Euro area: what has changed during the turmoil? BOF DP 23/2008.

Kari Kemppainen: Integrating European retail payment systems: some economics of SEPA, BOF DP 22/2008.

Helvi Kinnunen: Government funds and demographic transition – alleviating ageing costs in a small open economy, BOF DP 21/2008.

Efrem Castelnuovo – Luciano Greco – Davide Raggi: Estimating regime-switching Taylor rules with trend inflation, BOF DP 20/2008.

Tuomas Takalo – Tanja Tanayama: Adverse selection and financing of innovation: is there a need for R&D subsidies? BOF DP 19/2008.

Mika Vaihekoski: History of finance research and education in Finland: the first thirty years, BOF DP 18/2008.

Esa Jokivuolle – Kimmo Virolainen – Oskari Vähämaa: Macro-model-based stress testing of Basel II capital requirements, BOF DP 17/2008.

BOFIT Discussion Papers

Anatoly Peresetsky: Market Discipline and Deposit Insurance in Russia, BOFIT DP 14/2008.

Maria Ritola: Price convergence and geographic dimension of market integration: Evidence from China, BOFIT DP 13/2008.

John Bonin – Iftekhar Hasan – Paul Wachtel:

Banking in transition countries, BOFIT DP 12/2008.

Alicia García-Herrero and Daniel Santabárbara: Does the Chinese banking system benefit from foreign investors?, BOFIT DP 11/2008.

Forthcoming publications

Bank of Finland Discussion Papers

Iftekhar Hasan – Loretta J Mester: Central Bank Institutional Structure and Effective Central Banking: Cross-Country Empirical Evidence.

Sherrill Shaffer – Iftekhar Hasan – Mingming Zhou: New small firms and dimensions of economic performance.

Alistair Milne – Geoffrey Wood: The bank lending channel reconsidered.

Alistair Milne – Geoffrey Wood: Shattered on the rock? British financial stability from 1866 to 2007.

Jukka Lassila – Tarmo Valkonen: Population ageing and fiscal sustainability in Finland: a stochastic analysis.

Leonardo Becchetti – Rocco Ciciretti – Iftekhar Hasan: Corporate Social Responsibility and Shareholder's Value: An Empirical Analysis.

BOFIT Discussion Papers

Tuuli Koivu – Aaron Mehrotra – Riikka Nuutilainen: McCallum rule and Chinese monetary policy.

Iikka Korhonen – Svetlana Ledyeva: Trade linkages and macroeconomic effects of the price of oil.

Anatoly Peresetsky – Alexander Karminsky: Models for Moody's bank ratings.

Laurent Weill: How Corruption Affects Bank Lending in Russia.

Rajeev K. Goel – Iikka Korhonen: Exports and Corruption: A Disaggregated Examination, Zuzana Fungáčová and Laura Solanko: Risk-taking by Russian banks: do location, ownership and size matter?

Alexei Karas – Koen Schoors – Gleb Lanine: Liquidity matters: Evidence from the Russian inter-bank market.

Juuso Kaarevirta – Aaron Mehrotra: Business surveys and inflation forecasting in China.
Olga Garanina: What Beyond Oil and Gas? Russian Trade Specialisation in Manufactures.
Andrei Shumilov: Performance of Business Groups: Evidence from Post-Crisis Russia.

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<http://lists.repec.org/mailman/listinfo/nep-cba>