

" RESEARCH NEWSLETTER "

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I. FRIDAY SEMINARS

Research papers, presented and discussed in "Friday Seminar Series" during the second half of 2014, addressed various issues related to: business cycles in South-East Europe, real convergence of Albania to EU members, construction of new indicators, such as the natural unemployment rate, etc. A detailed summary of the papers follows in the next section:

The emergence of a European region: Business cycles in South-East Europe from political independence to World War II, by Prof. Matthias Morys, Lecturer of Economics, University of York.

Relying on dynamic factors methodology, the paper studies the business cycle dynamics in five South-East European countries (Austria-Hungary, Bulgaria, Greece, Romania, Serbia/Yugoslavia). The study provides evidence on a steadily increasing synchronisation as part of a pan-European business cycle, especially before 1913. A regional business cycle (including and radiating from Germany)

emerged in the interwar period. These dynamics were largely driven by trade, involving initially England, France and Germany but increasingly centred on Germany. The results also show that the Balkan countries travelled a long way from an economic backwater of Europe in the 1870s to a much more integrated part of the European economy six decades later.

Endrit Yzeiraj, Research Department, presented the paper on "Business cycles synchronisation, as a measurement of Integration in South-Eastern Europe". The results show that supply and demand-side shocks for the regional economies are weak, while demand-side shocks are more synchronised than the supply-side shocks. An explanatory factor of these findings relates to the role of the trade channel, compared to other structural channels.

"QUO VADIS ALBANIA? REAL CONVERGENCE TO EU MEMBER STATES", BY EGLENT KIKA, MONETARY POLICY DEPARTMENT

The paper assesses the real convergence in terms of GDP per capita for Albania and EU member countries, by employing a broad dataset for the period 1995-2012. The cross-section dimension of the dataset is exploited to determine the degree of unconditional convergence and establish a range of velocity in years to full convergence. In addition, the characteristics of the data in the panel serve to determine the importance of individual growth components following the neoclassical growth theory and the conditional growth approach. Results show that investment, employment and productivity levels play an important role in explaining divergence among countries across all specifications. Effects of investment and productivity levels are of a larger magnitude, when Albania is included in the regressions. Also, institutional development and human capital endowment are crucial determinants only when explaining development differences between Albania and the rest of the countries.

**“MODERN MONETARY POLICY”,
BY PROF. LARS E.O. SVENSSON,
STOCKHOLM SCHOOL OF
ECONOMICS**

During this presentation, prof. Lars E.O. Svensson addressed issues on monetary policy, which rests on three main pillars: a) a sensible mandate; b) independence; c) accountability. He focused on the flexible inflation targeting regime, as the best practice of the monetary policy, by firstly addressing the three main pillars of this regime. The presentation followed with the practical aspect of this regime, paying attention to: starting point of the key interest rate, policy decision-making, and publication of such decision, inflation

forecast and the factors which might have affected the forecast. Some of central banks, which implement the inflation targeting regime are: The Reserve Bank of New Zealand, Bank of Canada, Riksbank, Czech National Bank, Federal Reserve, as well as other central banks in emerging economies. A monetary policy committee, as highlighted by Prof. Svensson, is a better idea than a single decision-maker (personal risk). Lastly, institutional accountability requires: a) transparency; b) thorough external evaluation; c) respect of institutional independence by the parliament and the government.

**“NATURAL UNEMPLOYMENT RATE –
A REDUCED FORM APPROACH”, BY
ENIAN ÇELA AND LORENA SKUFI,
RESEARCH DEPARTMENT**

The paper, featuring a methodology known as “reduced form” approach, assesses the natural unemployment rate series based on the NAIRU concept and the eventual unemployment gap in the case of Albania. A state-space model is applied to estimate the Philips Curve for inflation differentials with the natural rate of unemployment derived via Kalman Filter. The latter is modelled as a pure random-walk with constraints on the error term. For the period under review 1998-2012 (quarterly frequency), the model reports a substantially negative gap in the earlier part of the sample. The gap has gradually shrunk and even turned positive after 2003.

**“RATIONAL MAP OF ECONOMIC
TRANSITION IMPACT ON
ENTERPRISES IN THE CENTRAL
AND EASTERN EUROPE: THE CO-
WORD ANALYSIS”, BY MARGERITA
TOPALLI, RESEARCH DEPARTMENT**

This paper aims at contributing to the continuous debate of researchers, managers and policy-makers about the impact of economic transition on the enterprises in Central and Eastern Europe. The paper consists in a broad review of literature in this field of research, where the use of the "Co-word analysis" helped select 2,053 relevant documents, and draw the main concepts discussed in them. In the framework of this seminar, special

focus was paid to the presentation of the different stages of the methodology, the way how data are collected, and conclusions are derived and interpreted. By employing this methodology, the paper provides guidelines for the continuous development of this research field, making possible the identification of the main areas for further research. making possible the identification of the main ways for future researches.

II. RECENTLY CONCLUDED RESEARCH PAPERS

"NATURAL RATE OF UNEMPLOYMENT-REDUCED FORM APPROACH", BY ENIAN ÇELA AND LORENA SKUFI, RESEARCH DEPARTMENT

This paper introduces an alternative approach also defined as a reduced form approach. The presented technique is based upon a Phillips curve state-space model where the NAIRU type natural rate of unemployment is derived from the Kalman filter. The model is estimated with different combination of the explanatory variables. The generated series were applied on the production function to obtain GDP potential and output gap in the period 1998- 2012. According to the different approaches, the natural rate of unemployment turned to be much lower compared to the actual value in the early going, whilst the gap has gradually closed. In the period 2003-2009, the natural rate was slightly lower or equal to the actual rate. After 2009, the rate was again below the actual producing a negative output gap.

"CHALLENGES OF IMPLEMENTING BASEL II", BY LINDITA VRIONI, RESEARCH DEPARTMENT

Basel II aims at harmonising the regulatory capital to risks undertaken by banks, by promoting risk management practices, particularly those related to credit risk. The new Regulation of the Bank of Albania "On capital adequacy ratio", entered into force on 31 December 2014, imposes banks to use Standardised Approach to calculate credit risk. The paper aims at providing an analysis of two implementation options, Standard Approach and IRBF (Internal Rating-Based Foundation Approach) through the discussion of costs and profits for each approach. The paper suggests using the information available in the Credit Registry, founded since 2008, for a better assessment and management of credit risk.

"LOAN LOSS PROVISIONS AND PROCYCLICALITY: EVIDENCE FROM BANKS IN ALBANIA", BY ELONA DUSHKU, RESEARCH DEPARTMENT

AND ARGITA FRASHËRI, FINANCIAL STABILITY AND STATISTICS DEPARTMENT

The paper aims at assessing the behaviour of loan loss provisions for banks in Albania during 2004-2014, by taking in consideration the discretionary and non-discretionary components of loan loss provisions (LLP) and the real economic growth. Assessments confirm the fact that banks have practiced income smoothing and the relation between provisioning and economic growth is cyclical. The material analyses how the banks' size and capitalisation level affects the behaviour of banks towards loan loss provisioning.

"FISCAL POLICY, OUTPUT AND FINANCIAL STRESS IN CASE OF DEVELOPING AND EMERGING EUROPEAN ECONOMIES: A THRESHOLD VAR APPROACH", BY GERTI SHIJAKU, RESEARCH DEPARTMENT

This paper investigates and analyses the interrelationships between fiscal policy, output and financial stress during economic slowdown episodes and stress in the financial market. This material analyses the impact of fiscal policies for ten developing Central, Eastern and Southern-Eastern European countries, during the period 2000-2013, by employing the Threshold VAR approach. Results suggest that a strong inertia exists in the behaviour of fiscal policy, especially during high stress regime. Firstly, the

worsened fiscal position has a relatively low effect on output and on the financial market conditions, independently of the financial stress degree. Secondly, the improved economic activity effects against fiscal position are higher and materialise faster during the lower financial stress regime. The study concludes that developments in financial markets have higher effects on the macroeconomic indicators.

"RE-VISITING THE MOENTARY TRANSMISSION MECHANISM IN THE CASE OF ALBANIA", BY GERTI SHIJAKU, RESEARCH DEPARTMENT

Monetary transmission mechanism has been an integrated part of empirical and analytical study at the Bank of Albania, , trying to identify the effect of the traditional interest rate and exchange rate channels on output and inflation. However, after the global financial and economic crisis, little is known about the macroeconomic effects and pass-through effects of conventional monetary policy changes and how this instrument distinguishes from the central bank balance sheet policies. The main question addressed in this paper focuses on estimating the macroeconomic and pass-through effects of monetary policy instrument changes. The paper aims to provide new empirical evidence for the optimal monetary policy related to inflation and output. The paper addresses these questions through a Structural Model of Autoregressive Vectors for the Albanian economy.

III. RESEARCH PAPERS IN PROGRESS

“A NEW FISCAL MODEL: ESTIMATION OF THE MAIN LINE ITEMS OF REVENUE AND EXPENDITURES, DEFICIT AND DEBT”, BY LORENA SKUFI AND ENIAN ÇELA, RESEARCH DEPARTMENT

The material aims to develop and solve this type of model by balancing the general macro-economic requirements and the particular fiscal characteristics of the Albanian economy. Estimations are conducted separately for revenues, expenditures, budget deficit and public debt. The estimated lines for revenue include: value added tax, excise duties, custom duties, personal income tax and special funds. On the other hand expenditures feature transfers and domestic debt interest payments. By adding together revenue and expenditure we model overall budget deficit and additionally, the overall public debt which is further subdivided into domestic and foreign. The individual equations are estimated using VECM methodology for the period 1996-2012. The model itself is solved with the Gauss-Siedel algorithm.

“EFFECTS OF ECONOMIC CRISIS ON POTENTIAL GDP: THE ALBANIAN CASE”, BY ENDRIT YZEIRAJ AND ESIDA ABAZAJ, RESEARCH DEPARTMENT

This study aims to assess how potential GDP has evolved in Albania, with the main focus on the long global financial post-crisis period. Measuring potential GDP, particularly in the period of low economic growth, has a considerable importance to monetary policy, which

should stimulate the economy at the right degree, while avoiding the risk of inflationary pressures. By employing the state-space models in this study, the study uses data on GDP, employment series, and inflation in order to distinguish the cyclical movements and short-term trends in economy. The study is based on the main assumption that economic series move under the impact of a common cyclical shock, while on the other hand they have long-term independent trends. State-space models have the ability to properly model immeasurable variables as cycles and trends. Results suggest that potential GDP growth rate in Albania has decreased from that in 2000s.

“IMPACT OF MACROECONOMIC FACTORS ON CREDIT RISK”, BY MERI PAPA VANGJELI, RESEARCH DEPARTMENT

The recent crisis showed that the fragility of the financial system is not only a consequence of endogenous factors, but also of developments which occur in the macroeconomic and financial environment. The purpose of this paper is to analyse the relationship between factors which characterise the macroeconomic environment (such as: Gross Domestic Product, house prices, exchange rate, interest rate, total loans to private sector), and credit risk to which the Albanian banking system is exposed to. The applied methodology consists in the estimation of a Vector Error Correction Model, which allows investigating the relationships between these indicators and the speed at which each of them adjusts to the long-run equilibrium.

“RE-ESTIMATION OF THE MACROECONOMIC MODEL FOR ALBANIA, MEAM, 2014”, BY ILIR VIKA, ENIAN ÇELA, ESIDA ABAZAJ AND LORENA SKUFI, RESEARCH DEPARTMENT

The material aims to re-estimate the macroeconomic model of the Albanian economy, MEAM, by employing a quarterly dataset, for the period 1996-2012, while maintaining a similar structure to the actual version. The need for the process of re-estimation emerged due to the publication of the latest data for national account indicators, and due to the revisions some time series used in the model were subject to. Although the current model structure was maintained, some of the indicators are replaced (foreign demand, potential output, and natural unemployment rate), and some new relationships are introduced (relative prices, interest rate in consumption equation, etc). A set of simulations are run (monetary policy shocks, exchange rate depreciation, increase in external prices, increase in fiscal expenditures, etc) to test the performance of the model.

“CONDITIONAL DENSITY ESTIMATION. A GENERALISATION OF CONDITIONAL DENSITY. APPLICATION ON ECONOMIC DATA”. BY ALTIN TANKU AND KLITI CECA, RESEARCH DEPARTMENT

This paper aims to provide a natural generalization of the conditionality concept on the density estimates for multi-dimensional densities. This way of modelling of random vectors enables users of such methodology to realize shocks to these densities under one and multi-dimensional condition.

PARAMETRISATION IN THE MODELS BASED ON ESTIMATED DENSITIES. A GENERAL APPROACH”, BY ALTIN TANKU AND KLITI CECA, RESEARCH DEPARTMENT

The purpose of the paper is to provide various ways of parameterization in models built using the concept of estimated densities. In this framework, this paper aims to build general functional forms in order to establish relationships between the derivative of conditional expectations curves and conditional distributions of the estimated densities. Authors are also working on constructing general matrices in linear forms.

IV. ARTICLES

This section briefly summarises some articles and papers published by the Bank of Albania or other central banks to provide an overview on research topics published during July - December 2014.

“MEASURING FINANCIAL SYSTEMIC STRESS IN THE CASE OF DEVELOPING AND EMERGING EUROPEAN ECONOMIES”, BY GERTI SHIJAKU, RESEARCH DEPARTMENT

This article develops a financial systemic stress index and examines episodes of financial stress for developing and emerging economies in the Central, Eastern and South- Eastern European countries during 2001-2013. The financial stress index is built to gauge financial stress in four main markets: banking market, money market, exchange market and real estate market. The obtained index is used to determine the threshold of the financial systemic stress for these countries.

http://www.bankofalbania.org/web/Bulletin_of_the_Bank_of_Albania_H_I_2014_7154_2.php, pages 127- 139

“BEHAVIORAL ECONOMICS AND MACROECONOMIC MODELS”, BY JOHN C. DRISCOLL, STEINER HOLDEN, THE FEDERAL RESERVE BOARD

Over the past 20 years, macroeconomists have increasingly incorporated results from behavioural economics into their models. The authors argue that doing

so has helped to improve some of the underpinnings of the New Keynesian model, especially consumption, the formation of expectations and determination of wages and employment. Also, the paper discusses more broadly the advantages and disadvantages of using behavioural economics features in macroeconomic models.

<http://www.federalreserve.gov/pubs/feds/2014/201443/201443abs.html>

“GLOBALISATION, PASS-THROUGH AND THE OPTIMAL POLICY RESPONSE TO EXCHANGE RATES”, BY MICHAEL B DEVEREUX, JAMES YETMAN, BANK FOR INTERNATIONAL SETTLEMENTS

The purpose of this paper is to examine how monetary policy should respond to nominal exchange rates in a New Keynesian model of an open economy, which allows for a non-trivial role for sterilised intervention. The paper develops the argument against the backdrop of the evolving policy-making environment of Asian economies. Sterilised intervention can be a potent tool that offers policymakers an additional degree of freedom in maximising global welfare. The paper finds out that the gains to sterilised intervention are greater when goods market integration is low and exchange rate pass-through is high. However, increased financial internationalisation reduces the effectiveness of sterilised intervention, as the international policy trilemma becomes more relevant.

Unsterilised intervention may also have a role to play, although the potential welfare gains from this are generally smaller.

<http://www.bis.org/publ/work450.pdf>

“FINANCIAL INCLUSION AND OPTIMAL MONETARY POLICY”, BY AARON MEHROTA, JAMES YETMAN, BANK OF INTERNATIONAL SETTLEMENTS

Limited access to the formal financial sector is a common feature of the economic environment in many emerging market and developing economies. In this paper, the authors scrutinise how the level of financial inclusion affects welfare-maximising monetary policy. The theoretical framework is based on Galí, López-Salido and Vallés (2004). In this model, only financially included households are able to borrow and save to smooth consumption in the face of income volatility. The authors show that optimal monetary policy implies a positive relationship between the share of financially included households and the ratio of output volatility to inflation volatility. The authors find strong empirical support for the model’s predictions using a broad cross-country dataset on financial inclusion. The empirical results are driven primarily by central banks with a high

degree of autonomy in their monetary policy decisions, which might be most likely to set monetary policy optimally

<http://www.bis.org/publ/work476.pdf>

“MONEY GROWTH AND CONSUMER PRICE INFLATION IN THE EURO AREA: A WAVELET ANALYSIS”, BY MARTIN MANDLET AND MICHAEL SCHARNAGL, DEUTSCHE BUNDESBANK

This paper studies the relationship between money growth and consumer price inflation in the euro area using wavelet analysis. Wavelet analysis allows accounting for variations in the money growth-inflation relationship both across the frequency spectrum and across time. The authors find evidence of strong co-movements between money growth and inflation at low frequencies with money growth as the leading variable. However, the analysis of time variation at medium-to-long-run frequencies indicates weakening of the relationship after the mid-1990s which also reflects in a deterioration of the leading indicator property and a decline in the cross wavelet gain.

http://www.bundesbank.de/Redaktion/EN/Downloads/Publications/Discussion_Paper_1/2014/2014_11_24_dkp_33.pdf?__blob=publicationFile

V. OTHER ACTIVITIES

TECHNICAL SEMINAR

In the framework of the Medium-Term Development Strategy of Research at the Bank of Albania, the Research Department organises informative technical seminars and/or workshops on various issues, and phenomena of interest. A summary of seminars held during July-December 2014, is provided in the following.

“INTRODUCTION TO YADA PROGRAM”, BY MERI PAPA VANGJELI, RESEARCH DEPARTMENT

This seminar introduced the YADA program, its main tools, functions, and role in generating results, which are useful in the monetary policy decision making. The presentation provided instructions on how to construct a DSGE-VAR model in YADA and how to conduct various operations with it. More specifically, the seminar described how to obtain unconditional and conditional forecasts, impulse responses, variance decompositions, and correlations among model indicators. Graphs were also constructed in order to better understand each of the above operations.

“OVERVIEW ON THE TRANSMISSION OF THE MONETARY POLICY”, BY ALTIN TANKU, ILIR VIKA, ELONA DUSHKU AND ENDRIT YZEIRAJ, RESEARCH DEPARTMENT

The presentation provided an analysis on the mechanism of the monetary policy transmission in the case of Albania, mainly after the global financial crisis, by

assessing the transmission and response elasticity to shocks in the base instrument. The experience of other countries was part of the discussion, paying attention to the available policies and instruments of central banks to deal with monetary issues. The analysis aimed to judge from an overall equilibrium viewpoint, by considering other important aspects of the macro-financial equilibrium.

CONFERENCE ON “FINANCIAL SECTOR DEVELOPMENT: POLICIES TO PROMOTE AND STRENGTHEN LOCAL CAPITAL MARKETS”, GENEVA. 2-3 OCTOBER, 2014

The purpose of the conference was to share recent research work and policy experience among the central banks involved in the program, academics and policy makers from other institutions. This year's edition of BCC conference focused on the problems encountered by the financial markets in emerging countries. Particular attention was paid to the post-crisis recovery and the lessons learned by the policymakers during this period.

Bank of Albania staff participated with two research papers in the conference.

“House prices in Albania: Deviation from Equilibrium?” by Endrit Yzeiraj, Research Department.

“Assessment of Bank Lending Determinants in Central and South-Eastern European Countries”, by Erjona Suljoti and Sofika Note, Monetary Policy Department.

VISIT BY PROFESSOR LARS. E. O. SVENSSON AT THE BANK OF ALBANIA

In the framework of Bilateral Assistance and Capacity Building for Central Banks Program, on 20-22 October 2014, Prof. Lars Svensson held a series of lectures on his research papers to the Bank of Albania's staff.

Lars E.O. Svensson, currently Affiliated Professor at the Institute for International Economic Studies in Stockholm University, is one of the most renowned academics of scientific research for his publications on specialised journals on monetary policy, inflation targeting regime, and international macroeconomics.

During his three-day visit, Professor Svensson held a series of lectures on "Inflation Targeting" regime. Also, he held an open lecture on the Modern Monetary Policy. The lecture was attended by a broad range of participants from commercial banks, other international institutions in Albania and the Bank of Albania.

THE 8TH REGIONAL WORKSHOP "ECONOMIC RESEARCH IN SOUTH-EASTERN EUROPE", DECEMBER 2014

The Institute for Economic and Banking Studies hosted for the eighth consecutive year, the regional workshop "Economic Research in South-Eastern Europe". The aim of this activity is to serve as a co-operation bridge between researchers and policy makers in our region, to provide contribution in deepening the economic research in the region and to increase the knowledge on certain characteristics of our economies.

This year, the activity was organised in collaboration with the Bilateral Assistance and Capacity Building for Central Banks Program (BCC).

The 8th Research Workshop for the South-Eastern Europe was hosted in Tirana, on 3-4 December 2014, with the participation of two keynote speakers. Prof. Ralph de Haas, Deputy Director of Research at the European Bank for Reconstruction and Development, who delivered a speech on "Global Banking and Financial Stability", and Prof. Thorsten Beck, Professor of banking and finance at Cass Business School in London Cass, who delivered a speech on "Cross-border banking: opportunities and challenges".

The topic of this workshop was: "Global banks and international shock transmission", divided into the following sub-issues:

- Financial globalization and its consequences on the transmission of macroeconomic fluctuations;
- Exposure to international funding in the Central and Eastern European (CEE) banking systems and liquidity shocks during the crisis;
- Central bank policies counteracting the effects of the financial crisis. Coordination among central banks and other supervisory authorities in the region;
- Role of monetary policy in the financial stability of the region during the recent crisis.

In the following, there is a list of some of the studies introduced in this workshop:

- Challenges of implementing the Basel II (Lindita Vrioni – Bank of Albania).
- Re-matching empirical analysis with the theory: where does Central Bank Financial Strength matter for Inflation? (Julien Pinter – Amsterdam University, Paris 1 Panthéon Sorbonne).
- Constructing a House Price Index for Albania (Delina Ibrahimaj - Bank of Albania).
- Natural rate of unemployment – Reduced form approach (Enian Çela, Lorena Skufi (Bank of Albania).
- Re-estimation of the Macroeconometric Model of Albania, MEAM, 2014 (Ilir Vika, Enian Çela, Esida Abazaj, Lorena Skufi – Bank of Albania).
- The Competitiveness of Albanian products and the sectorial J–Curve (Alban Pllaha - Bank of Albania).
- Fiscal policy, output and financial stress in developing and emerging European economies: a Threshold VAR approach (Gerti Shijaku - Bank of Albania).
- Estimating Potential GDP during the Crisis: The Albanian Case (Endrit Yzeiraj, Esida Abazaj - Bank of Albania).
- Credit Booms and Busts in Emerging Markets: The Role of Bank Governance and Risk Management (Alin Marius Andrie, Martin Brown - Alexandru Ioan Cuza University of Iasi, Rumani, University of St. Gallen, Switzerland).
- Credit Cycles and Capital Flows: Effectiveness of Macroprudential Policy Framework in Emerging Countries Ahmet Faruk Aysan, Salih Fendoğlu, Mustafa Kılınç (all Central Bank of the Republic of Turkey), Sümeyye Yıldız (University of California, Santa Barbara).
- Determinants of house prices from a demand perspective in Albania (Erjona Suljoti - Bank of Albania).
- Structural and cyclical determinants of bank interest rate pass-through in Eurozone Aurélien Leroy (Laboratoire d'Économie d'Orleans, France), Yannick Lucotte (ESG Management School, Paris).
- Re-visiting the monetary transmission mechanism in the case of Albania (Gerti Shijaku - Bank of Albania).
- Spillovers from Euro Area and U.S. Credit and Demand Shocks: Comparing Emerging Europe on the Basis of a GVAR Model Ludmila Fadejeva, Martin Feldkircher, Thomas Reininger- Latvijas Banka; Oesterreichische Nationalbank).
- Transmission of external shocks in assessing debt sustainability, the case of Macedonia (Danica Unevska Andonova, Dijana Janevska Stefanova - National Bank of the Republic of Macedonia).
- A new fiscal model: The estimation of main line items of revenue and expenditure, deficit and debt (Lorena Skufi, Enian Çela - Bank of Albania).
- Mapping the evolution of the impact of economic transition on the enterprises in Central and Eastern Europe (CEE): Co-Word Analysis (CWA) (Margerita Topalli; Silvester Ivanaj - Bank of Albania; ICN Business School, Nancy, France).
- Determinants of loan interest rates in Bulgaria: the role of euro area money market rate and impact of the domestic business climate (Mihail Mihaylov - Bulgarian National Bank).

- Loan Loss Provisions: Evidence from banks in Albania (Elona Dushku, Argita Frashëri - Bank of Albania).

LINKS:

Banca d'Italia <http://www.bancaditalia.it/studiricerche>

Banco de Espana <http://www.bde.es/informes/be/docs/docse.htm>

Bank of England <http://www.bankofengland.co.uk/publications/workingpapers/index.htm>

Bank of Finland http://www.bof.fi/en/julkaisut/bofit_julkaisut/index.htm

Bank of Greece <http://eng.bankofgreece.gr/en/publications/research.asp>

Czech National Bank <http://www.cnb.cz/en/research/>

Deutsche Bundesbank http://www.bundesbank.de/vfz/vfz_diskussionspapiere_2009.en.php

European Central Bank <http://www.ecb.int/home/html/researcher.en.html>

Oesterreichische Nationalbank http://www.oenb.at/en/presse_pub/research/research.jsp

Federal Reserve <http://www.federalreserve.gov/econresdata/default.htm>

BIS Central Bank Research Hub <http://www.bis.org/cbhub/index.htm>

International Journal of Central Banking <http://www.ijcb.org/>

National Bureau of Economic Research <http://www.nber.org/>

International Monetary Fund <http://www.imf.org/external/pubind.htm>

BIS Central Bank Research Hub <http://www.bis.org/cbhub/index.htm>

International Journal of Central Banking <http://www.ijcb.org/>

National Bureau of Economic Research <http://www.nber.org/>

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