

RESEARCH NEWSLETTER AT THE BANK OF ALBANIA

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I. FRIDAY SEMINAR

During July – December 2016, the papers presented at the Friday Seminar Series focused on:

“Differences between balance of payments and foreign trade statistics”, by Neraida Hoxhaj, Financial Statistics Department.

The seminar aimed to introduce the methodology of data submitted in the balance of payments, their interpretation and also the explanation of the methodological differences between these statistics and those of foreign trade published by INSTAT.

“Banking concentration and stability – the case of the Albanian banking system”, by Gerti Shijaku, Research Department.

The paper tests the links between the banking concentration and stability in the case of Albania, based on the data of the individual banks during 2008-2015. The estimation of the econometric model is based on the General Method of Moments approach, (GMM). The results confirm that during and after the latest global

financial crisis, an increase of the banking system concentration, measured through the HHI index, is translated in its fragility. Also the results show that the country’s macroeconomic performance is a key factor that determines the stability of the banking system in Albania.

“Financial contracts: banks versus banks” by Dr Iftekhar Hasan, Professor at “Gabelli” School of Business at Fordham University, New York.

The paper analyses the determining factors of the financial contracts of 1854 loans, given by 530 commercial banks, in 42 countries during 1995-2009. The obtained results indicate that loan pricing is affected by the regulation of the banks, the structure of the market, the quality of the institution as well as the difference that exists between lenders and borrowers in the various countries. Furthermore, the results show that macro-prudential regulations are effective in reducing the costs of the banks, particularly in the countries where the borrowers have a high risk profile, when the banking industry

is highly concentrated, or countries that have weak institutions.

“The use of artificial neural networks to forecast the exchange rate”, by Blerina Vika, Kozeta Sevrani, Faculty of Economics, University of Tirana, and Ilir Vika Research Department.

This study contributes to the literature of artificial neural networks highlighting how powerful and useful they can be as a tool in the economic decision-making process. It examines the validity of Non-linear Autoregressive Networks (NAR), compared with the ARIMA models, which are commonly used as reference in forecasting the exchange rate. As demonstration, the authors have used the exchange rate of the dollar against the euro, as an asset rather volatile and highly traded on international

financial markets, yet highly contested in the literature, due to frequent deviations from its balance levels suggested by the economic theories.

“Methodology of financial accounts”, by Refika Fejzo, (Financial Statistic Department).

This seminar was aimed at presenting the methodology on “Financial accounts”, which represent a presentation of financial relations between different sectors of the economy and between them and the rest of the world. Financial accounts provide an overview on the operations and structure of the financial system and show the main channels used to obtain and invest financial resources, constituting an important source of information for the analysis of monetary policy and financial stability.

II. RECENTLY CONCLUDED RESEARCH PAPERS

“The rational map of the impact of privatization on companies in Central and Eastern Europe (CEE): Co-Word Analysis (CWA)” by Margerita Topalli, Research Department, and Silvester Ivanaj, Associate Professor, ICN Business School, Nancy, France.

The paper uses the scientific-metric technique of Co-Word Analysis to build a rational map, which serves to identify current and future areas of research on the effects that the privatisation has had in Central and Eastern Europe during 1989-2016. The identification of the areas is based on the analysing of 1393 scientific papers with editorial board that deal with this topic. From the database analysis emerged 53 key subjects that explain that the privatisation of enterprises

in CEE has resulted through its influence on: capital, corporate governance, management, ownership, performance, politics, reforms, restructuring, the right of ownership, etc.

“Banking concentration and stability – the case of Albania”, by Gerti Shijaku, Research Department.

This paper analyses the impact of bank concentration on banking sector stability, in Albania. The study is conducted through the General Method of Moments (GMM) for the period 2008 – 2015. Results provide supportive evidence consistent with the concentration-fragility view. This effect is greater for small banks, which at the same time are more sensitive also to

macroeconomic conditions. Large banks are less sensitive to macroeconomic conditions and capital level, but are more exposed to operational efficiency.

“Risk and competition in the Albanian banking system” by Elona Dushku, Research Department.

The paper analyses the relationship between competition and credit risk based on the data of individual Albanian banks during 2004-2014. The literature identifies two theoretical views on competition and financial stability: the first point of view, supported by Markus (1984), Keely (1990), Allen and Douglas

(2004) is that increased competition brings increased financial instability. The second view of Boyd and De Nicolo (2005) is that increased competition in the banking system positively affects banking stability. There is also the view of Martinez-Miera and Repullo (2008), where the link between credit risk and competition is non-linear. Empirical results in the case of banks in Albania confirm the view of Markus (1984), Keely (1990), Allen and Douglas (2004) on the relation between the total credit risk and competition measured by the Lerner index. Whereas after the recent financial crisis, the results show a non-linear relation between credit risk and competition.

III. RESEARCH PAPERS IN PROGRESS

“Banking stability and competition – evidence from the Albanian banking system”, by Gerti Shijaku, Research Department.

The key purpose of the regulations on banking prudence to reduce the stimulus of banking risk often coincides with the restriction of competition between banks, although many theoretical and empirical studies actually argue that increased competition leads to lower levels of bank risk. This study analyses the dynamic relation between competition and financial stability in Albania during 2008 – 2015. This study prongs in two directions. First, the harmonized banking stability index is not based on the Z-Score or on the ratio of non-performing loans. In their place, we use a more exclusive indicator that is based on the CAELS criteria. Second, we use the Boone indicator, as a better indicator of banking competition.

“Building of a DSGE model for the Albanian economy”, by Altin Tanku, Ilir Vika, Elona Dushku, Research Department.

This research project aims at specifying and estimating a dynamic, stochastic model of general equilibrium, DSGE (Dynamics, Stochastic, General Equilibrium Model), which will reflect the characteristics of the Albanian economy. The purpose of this model is to improve the discussions and the macro-economic analyses of the Central Bank through the identification of the different sources of structural shocks; forecasting and evaluating the key macro-economic indicators, as well as the use of experiments to evaluate different policies. The advantage of using these models is that they are based on microeconomic theory to determine the behaviour of firms, households and financial intermediaries. Second, these models have in the structure

elements of asymmetric information, prices and wages adjusted by not fully flexible, as well as other structural shocks that play an important role in the economy. Third, the model is estimated as a system of equations, not as individual equations.

“Parameterization in the conditions of density estimation – an application of the economic indicators”, by Altin Tanku and Kliti Ceca, Research Department

The material aims to use the results from the two-dimensional density assessment method for the estimation of the economic phenomena by proposing comparison and parameterization methods in the raised models. Concretely, the model is applied for the estimation of the changes in the monetary transmission mechanism from interest rate and currency to inflation. The study presents a formal analysis on the change of the transmission mechanism based on the two-dimensional test Kolmogorov – Smirnov (KS). The methodology is applied in two cases where particular interest represents the estimation of the change in the transmission mechanism for the Albanian economy after the financial crisis. It remains to be realized the application of selected scenarios for the

generating of the matrix parameters and the description of functional relationships between economic indicators in the model.

“The credit crunch and the new regulation on capital adequacy”, by Lindita Vrioni, Research Department

Understanding whether the minimum capital requirements put in place by Basel II contributed to credit slowdowns is important for the monetary policy. The study investigates the possible impact of the new regulatory framework on capital adequacy on banks behavior. Regressive model OLS is specified to capture the supply side factors as well as demand side factor of credit. Estimations are made on the total data of banking system and the parameters are as expected. This study is based on Berger and Udell theory, according to which credit supply is assumed to respond to the risk factors with time lags. For more complete results and estimations it is also being performed the evaluation of all banks' panel data, which will show more exactly whether there is a link between credit slowdown and the need for capital injection by the banks as an effect of regulatory pressures.

IV. ARTICLES

This section briefly summarizes some articles and papers to be published in the half yearly publication of the Bank of Albania: “Economic Review” July-December 2016. You will also find some article published by other central banks as well.

“An evaluation of the forecasting performance of GAP model” by Meri

Papavangjeli and Arlind Rama, Research Department

This article aims to evaluate the forecasting performance of the GAP model, a semi-structural economic model, which is used by the Bank of Albania for forecasting purposes since 2011. The analytic approach consists in using statistical indicators like RMSE, scaled RMSE, BIAS and scaled BIAS, which are important to

understand the forecasting performance of the model in horizons of one, two and three years continuously. A VAR model is constructed to describe the economic relationships of the GAP model, as a model based only on the information provided by the data series. The comparison of the forecasting performance of the two models on a common statistical diagnostic metrics contributes to a broader understanding of the forecasting abilities of the GAP Model and draw discussion issues for potential improvements of the model that would potentially lead to an improved representation of the Albanian economy and increased accuracy in its' forecasting performance.

“A new indicator of competition in the bank loans market in Albania” by Gerti Shijaku, Research Department.

This article calculates an alternative indicator on competition in the lending market in Albania, as Boone indicator, which estimates the effect of costs in the efficiency of the bank to gain a greater share of the market. First, the results represent convincing proofs that the lending market in the case of Albania reflects features related more closely with full competition. Second, the increase of competition is accompanied by the decrease of concentration in the lending market as well. Third, the least efficient banks (those with a higher ratio price vs. cost) have lost many shares of the lending market, especially after the global financial crisis. Lastly, small banks appear more competitive than large ones.

“Demand for foreign exchange reserves: an extensive study through risk motives”, by Gerti Shijaku, Elona Dushku, Research Department.

This article analyses the demand for foreign exchange reserves in the case of Albania as a function of developments in the current

account, economic performance, fiscal domination, opportunity cost and monetary imbalance. The model was estimated through the vector error correction model. The results suggest that demand for reserves is more sensitive to precautionary motives than mercantilist ones. The other results confirm that developments in the current account and the fiscal ones are the key factors that dictate the level of foreign exchange reserves. Furthermore, the foreign exchange reserve stock still remains less sensitive to opportunity costs and monetary imbalance.

“The Museum of the Bank of Albania, didactic environment that encourages cross-curricular knowledge” by Besa Dhami (Sinani), Research Department

The article analyses the potential informative, educative, stimulating and at the same time aesthetic strength that the Museum of the Bank of Albania in particular, and museums in general, convey in the education process of school students of any age group. Through the exhibition of coins, photos, and historical facts the students may explore the history of money and exchange means circulation in our lands from the earliest ages to the present day. Furthermore, the Museum and the knowledge received during its visit serve as an additional information opportunity on the Albanian culture, history and heritage through the years.

RESEARCH PAPERS FROM OTHER CENTRAL BANKS

“Credit Spreads, Financial Crises, and Macroprudential Policy” by Ozge Akinci, Albert Queralto, (Federal Reserve Bank of New York).

Credit spreads has displayed occasionally strong fluctuations that are often

two international organizations have used micro-banking data in conjunction with a new data set composed of prudential instruments to study cross-border spill-overs of the individual macro-prudential policies and their effects on bank lending growth. The collective analysis reached three main findings: first, sometimes the effect of the spill-over of prudential instruments happens through bank lending. Second, spill-over

depends by the type of instruments used which are heterogeneous across banks. Bank-specific factors like financial situations and business models drive the amplitude and direction of spill-overs of lending growth. Third, the effects of international spill-overs of prudential policy on loan growth rates have not been large on average.

<https://www.newyorkfed.org/research/staff-reports/sr801.html>

V. OTHER ACTIVITIES

TECHNICAL SEMINAR

“An evaluation of the forecasting performance of GAP model” by Meri Papavangjeli and Arlind Rama, Research Department.

As part of the improvement process of the GAP model, the Economic Modelling Sector organized a seminar on the process of evaluation of the forecasting performance of this model, by using the IRIS in the MATLAB. This technical seminar had the purpose of presenting the used methodology, which consists in the calculation of statistical indicators such as RMSE (Root Mean Square Error), scaled RMSE, BIAS, scaled BIAS for 3 different time horizons, for the variables: real growth, inflation and exchange rate. The results obtained from the GAP model, were compared with the results of a VAR model on the Albanian economy based on the same macro indicators, testing which of the models has a better forecasting performance.

10-TH REGIONAL RESEARCH MEETING IN SOUTH-EAST EUROPE

The Bank of Albania, on 1 and 2 December 2016, organized the 10-th Regional Research Meeting in South-East Europe with the topic “Monetary policy and financial shocks: Their analysis and empirical modelling”. The purpose of this event was the presentation, the discussion of scientific research materials, and the exchange of experience between experts of the regional central banks, universities and research institutes in related areas of research.

Below you will find a detailed list of the research materials presented during this event.

“Spillovers of the ECB’s non-standard monetary policy on CESEE economies”, Alessio Ciarlone & Andrea Colabella, (Bank of Italy).

“Identification of household credit supply and its macroeconomic effects”, Nikolett Vago, (Bank of Hungary).

- "Currency substitution in CESEE—what drives households' preference for euro payments?"*, Thomas Scheiber, (Bank of Austria).
- "The role of Bulgaria in the added global value"*, Evgeni Ivanov, (Bank of Bulgaria).
- "Capital Flows and Growth Dynamics in Central and Eastern Europe"*, Karsten Staehr, (Bank of Estonia).
- "The role of competition and macro prudential regulation on bank liquidity creation: the case of Indonesia"*, Elis Deriantino Naiborhu, (Bank of Indonesia).
- "Banks' risk and competition in the Albanian banking system"*, Elona Dushku, (Bank of Albania).
- "Systemic Risk and Individual Risk: A trade-off"*, Tatiana Yongoua, (Paris Ovest Nanterre - La Défense University, France).
- "Does Concentration matter for Bank Stability? Evidence from Albanian Banking Sector"*, Gerti Shijaku, (Bank of Albania).
- "Accounting versus real production responses among firms to tax incentives: bunching evidence from Hungary"*, Palma Mosberger, (Bank of Hungary).
- "Non linearity of the debt growth relationship"*, Alba Kruja (INSTAT).
- "Attitudes towards income inequality in Turkey"*, Ömer Limanlı, (Artvin Coruh University, Turkey).
- "Loan supply shocks in Macedonia: a Bayesian SVAR approach with sign restrictions"*, Rilind Kabash, (Bank of Macedonia).
- "Bank recapitalization: Necessary but not sufficient condition for resuming lending"*, Faidon Kalfaoglou (Bank of Greece).
- "Relevance of the housing market for the Albanian banking sector"*, Erjona Suljoti (Bank of Albania).
- "Insights on the Greek economy from the 3D macro model"*, Hiona Balfoussia & Dimitris Papageorgiou, (Bank of Greece).
- "Employment and Output Effects of Financial Shocks"*, Hoang Khieu, (Johannes Gutenberg University, Mainz, Germany).
- "External liabilities, domestic institutions and banking crises in developing economies"*, Nabila Boukef, (Paris School of Business University, France).
- "Building a DSGE model for the Albanian economy"*, Altin Tanku, Elona Dushku & Ilir Vika, (Bank of Albania).
- "Parametrization on the kernel density estimation – An application on economic variables"*, Altin Tanku & Kliti Ceca, (Bank of Albania).
- "The role of secondary markets for economic growth in Albania (2005-2015)"*, Elvis Ponari, (Bank of Albania).
- "Evaluating the forecasting performance of the GAP Model for the Albanian economy"*, Meri Papavangjeli & Arlind Rama, (Bank of Albania).
- "An empirically derived framework of the impact of privatization on Central*

and Eastern European enterprises using the Co-Word Analysis” by Margerita Topalli, (Bank of Albania) and Silvester Ivanaj, (ICN Business School, Nancy, France).

“Higher education as a direct contributor to lifetime periodic earnings: The case of Albanian workforce participants”, Orion Garo, (Bank of Albania).

“What happened to the debt? Stimulus effects in the Albanian economy”, Neraida Hoxha (Bank of Albania) & Erinda Malaj (Hera Project shpk).

GOVERNOR’S AWARD FOR BEST DIPLOMA THESIS, 2016

The Bank of Albania, in the context of encouraging economy students both domestically and abroad, to engage in high quality scientific research in various fields of economy and finance, organized during 2016 as well the “Governor’s Award” open competition. In this competition participated students from

domestic and foreign universities as well, with diverse topics about challenging and original issues for academics and policy-makers in the field of central banking, banking, corporate, etc. The winners of the competition for this year are as follows:

The first prize was awarded to Ms Danjela Guxha, a student at the University of Freiburg, in Germany, for her thesis on: “Portfolio optimization through the evaluation of the expected losses in the context of the multi-dimensional hyperbolic general method”.

The second prize was awarded to Ms Pamela Qendrai, a student at the University of Bonn, in Germany for her thesis on: “The transition from school to work and youth unemployment in Europe”.

The third prize was awarded to Ms Anisa Plepi, student of the University of Tirana for her thesis on: “The role of monetary policy in influencing the decisions of economic agents: An assessment for Albania based on the theory of the term structure of interest rates”.

VI. LINKS OF OTHER INSTITUTIONS**Banca d'Italia**

<http://www.bancaditalia.it/studiricerche>

Bank of Canada

<http://www.bankofcanada.ca/research/>

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>

BIS Central Bank Research Hub

<http://www.bis.org/cbhub/index.htm>

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>

Federal Reserve

<http://www.federalreserve.gov/econresdata/default.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>

Oesterreichische Nationalbank

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