

## RESEARCH NEWSLETTER AT THE BANK OF ALBANIA

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This newsletter presents a short summary of the Bank of Albania's research projects during 2017 H2. More concretely, it reflects the most recently concluded research

papers, research work in progress, articles, and the main research activities organised mainly by Bank of Albania's economists in the course of this period.

### I. RECENTLY CONCLUDED RESEARCH PAPERS

Scientific research at the Bank of Albania throughout this period was oriented towards empirical studies and analyses focused on: monetary policy and its impact on the real and banking sectors, real wage developments in Albania, foreign price impacts on domestic prices, the assessment of the marginal propensity to consume out of income and real wealth shocks, financial stability and financial inclusion. Following is a summary:

***Bank Prudential Behaviour and Stability after Global Financial Crises: How far do They Go?***, by Gerti Shijaku, Research Department, Bank of Albania.

This paper analyses how bank prudential behaviour affects bank stability, focusing only on the period after the global financial crisis. For this reason, we construct a new composite proxy to measure the banks' prudential behaviour. The study is based on the General Method of Moments with panel data for 16 banks operating in the Albanian financial sector during 2008-2015. The

empirical estimation includes also two sub-samples of small and large banks. Lastly, results are complemented with robustness checks that include methodological changes and alternative proxy variables.

***Assessing real wage flexibility in Albania***, by Meri Papavangjeli, Research Department, Bank of Albania.

This paper aims at assessing the degree of real wage flexibility in Albania in the framework of a vector error-correction model. The main explanatory variables are the productivity and the unemployment rate which are considered as wage fundamentals in the economic literature. The estimation results suggest the existence of a long-run relationship between real wages, productivity and unemployment in Albania. Meanwhile, the variance decomposition analysis shows that real wage changes are attributable mainly to their past values and to a very small extent to changes in the explanatory variables.

***Pricing to market effects in Albania: how competitive is the external sector?*** By Ilir Vika, Arlind Rama, Research Department, Bank of Albania.

This paper tries to test this hypothesis by analysing the price-setting behaviour in Albania as well as to contribute to improving the external sector specification in macroeconomic models for the Albanian economy. The analysis focuses on Albania's trade relationship with the euro area for the period 2005 Q1 - 2017 Q2, where import and export prices of goods are directly explained by two factors: the international environment (approximated with competitors' prices and exchange rate performance) and domestic costs (approximated with the GDP deflator by cost of factors). Econometric results suggest that pricing-to-market effects are considerable in the price-setting behaviour in the case of Albania. These findings, in fact, reject the hypothesis or perception that small economies accept market-determined pricing without negotiating. According to authors' estimations, international prices and exchange rate changes influence only half of developments in the prices of Albanian exported goods. Their pass-through to import prices is somewhat higher, where a 1 per cent increase in foreign prices and/or exchange rate depreciation might lead to 0.7 per cent increase in the deflator of goods' import. The impact is similar in both the long run and the short run.

***An assessment of the marginal propensity to consume out of income and real wealth for Albanian households,*** Elona Dushku, Ola Çami, Research Department, BoA

Using micro data covering 17000 Albanian households from the Living Standards

Measure Study (LSMS) over the period 2002-2012, this paper examines the extent to which households' consumption responds to changes in income and real wealth. Empirical results suggest for a positive relationship between the changes in income and real wealth and the changes in consumption that varies depending on the age of the head of the household and on the household's fragility.

***The influence of monetary policy on net interest margins: The case of Albania,*** by Meri Papavangjeli, Research Department, and Adela Bode, Besa Vorpsi, Financial Stability Department, Bank of Albania.

The continuous decrease of the key interest rate over recent years, reflecting the easing of the monetary policy by the Bank of Albania, leads to the need to further investigate the monetary policy effects on banks' profitability and the soundness of the financial sector in Albania. This paper analyses the impact of monetary policy on the net interest margin as the main source of income for banks, allowing for a non-linear relationship between these variables. This paper uses data for all commercial banks of the Albanian banking sector for the period 2004-2017, splitting the analysis into three bank groups by their share in the total assets of the banking sector.

***The role of corruption and crime on the performance of the enterprises in CEE,*** by Margerita Topalli, Research Department, Bank of Albania.

This paper provides new evidence on the relationship between enterprise performance and other structural indicators (such as enterprise size, ownership, competition, the way of enterprise establishment), as well as

non-institutional factors (such as corruption and crime). Estimates are based on panel data records for 27 Central and Eastern European countries.

The results indicate a negative impact of crime on the performance of enterprises. Moreover, the results show that foreign ownership of enterprises is more likely to have a positive impact on their performance, but that is not the case for privatized former state-owned enterprises.

***Financial Inclusion: Indicators for Albania and the need for inclusion in the traditional central bank agenda***, Lindita Vrioni, Research Department, Bank of Albania.

Financial inclusion is a crucial aspect of the financial-sector development. This analysis presents a view of the status of financial inclusion in Albania using the data from the World Bank's Global Findex 2014, comparing the data for Albania with 10 other countries and going through a diagnosis about possible reasons of the scale of financial inclusion. Data suggests that 38 per cent of adults in Albania use financial products to manage their finances. Yet, 62 per cent of adults remain almost totally excluded from the financial system. In a more detailed analysis of the Albanian data, a low level of use of financial services is confirmed, while among those who have a bank account, 30 per cent declare they have neither deposited nor withdrawn money in the last year. Based on the findings, the author comes forth with some recommendations, presented as a Road-Map for improving these numbers.

***Financial Development and Economic Growth - New Evidence for Albania***, by Gent Sejko, Elona Dushku, Bank of Albania.

The paper re-evaluates the long-term relationship between financial development and economic growth in Albania over the period 2002-2016, based on a vector error correction model (VECM) and Granger tests. Estimates confirm a positive and statistically significant relationship between financial development and economic growth over the long run. Moreover this connection is confirmed in the short run as well. Empirical results show that both macroeconomic and financial developments have positive effects on banking sector developments, proving the dual causality between these two indicators.

***The impact of sectorial growth and credit risk on the efficiency of credit allocation: An empiric investigation based on a Panel of Albanian Banking System Data***, by Gent Sejko, Altin Tanku, Elona Dushku, Kliti Ceca, Bank of Albania.

This paper investigates the behaviour of the banking system with regard to the efficiency of credit allocation in the Albanian economy, based on a dataset of individual bank credit records. We are focused mainly on the sectorial allocation of banks' credit portfolio to investigate whether the distribution of new credit among four different economic sectors reflects the trends of economic development (in terms of expansion), the performance of bank's own credit portfolio for each sector and other bank's own characteristics. The empirical analysis is based on the adoption of panel EGLS estimation methods. In conclusion, we find that credit allocation by sector is inefficient and does not reflect the economic developments of the sector.

***Agricultural enterprises in Albania and their financing***, by Elona Dushku, Kliti Ceca, Research Department, Bank of Albania.

In order to evaluate the main sources of financing of agricultural enterprises, Bank of Albania conducted a survey in June 2017 on the financial and borrowing situation of these enterprises. Survey results on 1000 agricultural enterprises show that agricultural enterprises fund their activity mainly from their sales and stocks and less from loans. Agricultural enterprises report that loans are generally expensive, yet the relationship with banks and financial institutions is very beneficial to their activity.

***Use of external financing by micro enterprises (1-4 employees) in Albania***, by Kliti Ceca, Elona Dushku, Research Department, Bank of Albania.

In June 2017, the Bank of Albania conducted a survey on the financial situation and borrowing of micro enterprises. The survey results on over 3000 micro enterprises (1-4 employees) show that during 2017 H1 the main obstacles to their activity were: competition, finding markets, outstanding debts and access to finance. The main sources of financing for micro enterprises are mainly sales and their own funds, while loans account for a small share. Micro enterprises, like agricultural enterprises, claim that the loan is generally expensive; however, the cooperation with banks is important to their activity.

## II. RESEARCH PAPERS IN PROGRESS

***A cross-sectional analysis of household expenditures in Albania: Evidence from the living standards measurement study (LSMS)***, Ola Çami, Research Department, BoA

This paper analyses the expenditure patterns of Albanian households using cross-section data from the Living Standards Measurement Study (LSMS). More specifically, the empirical analysis investigates the extent to which total expenditures as a measure of permanent income and key household characteristics impact the budget shares of four broad expenditure components: food, utilities, non-food and durables.

### III. ARTICLES

***Does bank competition affect stability in the banking sector after the Global Financial Crisis?***, by Gerti Shijaku, Research Department, Bank of Albania.

This article analyses the relationship between competition and banking stability after the global financial crises based on a Generalized Method of Moments with quarterly data for the period 2008 - 2015. Empirical results strongly support the competition - stability view after the global financial crises, which implies that a higher degree of competition boosts further bank stability conditions in the Albanian banking sector. Results further indicate that greater concentration has also a negative impact on bank stability. Lastly, the relationship between competition and stability is linear.

***Perceptions of Inequality***, by Markus Knell, Helmut Stix, Oesterreichische Nationalbank (OeNB)

The authors present a new framework that is based on the assumption that people typically do not observe the entire income (wealth) distribution and that their guesses about the extent of inequality are based on reference groups. The findings suggest that: First, low (high) income individuals overestimate (underestimate) their own position. Second, subjective estimates of average earnings increase with the own income position. Third, high or low income people have different perceptions about the distributional shape of society. Fourth, the subjective perception of inequality is lower for high-income individuals.

<https://www.oenb.at/en/Publications/Economics/Working-Papers.html>

***Real effects of bank capital regulations: Global evidence***, by Yota D. Deli and Iftekhar Hasan, Norges Bank

The authors examine the effect of the full set of bank capital regulations on loan growth, using bank-level data for a maximum of 125 countries over the period 1998-2011. Contrary to standard theoretical considerations, authors find that overall capital stringency only has a weak negative effect on loan growth. In fact, this effect is completely offset if banks hold moderately high levels of capital. Interestingly, the components of capital stringency that have the strongest negative effect on loan growth are those related to the prevention of banks to use as capital borrowed funds and assets other than cash or government securities. In contrast, compliance with Basel guidelines in using Basel- and credit-risk weights has a much less potent effect on loan growth.

[https://helda.helsinki.fi/bof/bitstream/handle/123456789/14852/BoF\\_DP\\_1723.pdf?sequence=1](https://helda.helsinki.fi/bof/bitstream/handle/123456789/14852/BoF_DP_1723.pdf?sequence=1)

***Spillovers from the ECB's non-standard monetary policy measures on south-eastern Europe***, by Isabella Moder, European Central Bank.

By employing bilateral BVAR models, the author is able to estimate the response of output and prices in the South-East Europe to non-standard monetary policy in the Euro Area, as well as to shed more light on potential shock transmission channels. The results suggest that the ECB's non-standard monetary policy measures have had pronounced price effects on all south-eastern European countries, and output effects on

approximately half of them. Furthermore, the results suggest that the exchange rate regime does not play a role in determining the sign and magnitude of price level and output responses, suggesting that Exchange rates did not act as buffers for spillovers of euro area non-standard monetary policy measures on south-eastern Europe.

<http://www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2095>.

**Macroeconomic Nowcasting and Forecasting with Big Data**, by Brandyn Bok, Daniele Caratelli, Domenico Giannone, Argia M. Sbordone, Andrea Tambalotti, Federal Reserve Bank of New York

Handling large and complex data sets was a challenge that macroeconomists engaged in realtime analysis faced long before big data became pervasive in other disciplines. Authors review how methods for tracking economic conditions using big data have evolved over time and explain how econometric techniques have advanced to mimic and automate the best practices of forecasters on securities market, at central banks, and in other market-monitoring roles. Authors present in detail the methodology underlying the “New York Fed Staff Nowcast”, which employs these innovative techniques to produce early estimates of GDP growth, synthesizing a wide range of macroeconomic data.

[https://www.newyorkfed.org/research/staff\\_reports/sr830.html](https://www.newyorkfed.org/research/staff_reports/sr830.html)

## IV. RESEARCH ACTIVITIES

### FRIDAY SEMINAR

**Understanding policy rates at the zero lower bound: insights from a Bayesian model**, by Marco Taboga, Bank of Italy.

The paper proposes an exact Bayesian method of estimation and apply it to developments in the euro and dollar yield curves since the end of the 1990s. Empirical estimates confirm and provide a significant divergence of monetary policies between the Euro area and the US. More concretely, the estimates suggest that between 2009 and 2013, the monetary policy rate was much lower in the US than in the euro area, and since then the opposite has been the case.

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

The key ambition 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 bank stability in Albania during 2008 – 2015 using the Generalized Method of Moments (Arrelano-Bond) estimator approach with quarterly macroeconomic and bank level data. Results strongly support the competition – stability view after the global financial crises - that higher degree of competition boosts further bank stability conditions. Results further indicate that greater concentration has also a negative impact on bank stability. Small banks are found to be more sensitive to competition

patterns than large banks. Finally, we do not find a non-linear relationship between competition and stability.

## TECHNICAL SEMINARS

***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. For this reason, this study constructs different indicators of bank competition in the case of the Albanian banking system. Then it uses them to analyse the stability – competition nexus after the global financial crises using the General Method of Moments (Arrelano-Bond) estimator approach with quarterly macroeconomic and bank level data.

***A Bayesian VAR Model for the Albanian Economy***, by Ilir Vika, Meri Papavangjeli, Arlind Rama, Research Department.

This research project aims to build a relatively simple forecasting model for the main macroeconomic indicators aligned with conditioned scenarios for foreign variables (exogenous). The model comprises four sectors: the real private sector, the public sector, the financial sector and the external sector, for each of which we have selected the most representative economic indicators. The new Bayesian VAR model is in line with the BoA's main forecasting models: MEAM and GAP models; moreover, its estimation

methodology allows easiness in use and makes its' maintenance less costly. In this context, this model would serve as a benchmark for the projections and analyses generated from other more sophisticated models used at the Bank.

## 11<sup>TH</sup> REGIONAL RESEARCH WORKSHOP IN SOUTH-EAST EUROPE

On 4 and 5 December 2017, the Research Department of the Bank of Albania organized the 11<sup>th</sup> South Eastern European Economic Research Workshop. This annual event provides a platform for presenting and discussing the scientific work of researchers from the Bank of Albania, central banks of the region and beyond, as well as the domestic and foreign academic institutions. This activity aims to promote discussion, economic research and regional co-operation in South Eastern Europe. It also aims at increasing the potential contribution of the central bank to the financial markets, the economy and the society.

During the two intensive days of the workshop, researchers this year presented their working papers according to general economic and financial themes, as follows:

- *Theoretical and empirical aspects of monetary phenomena and monetary policy;*
- *Competition, banking supervision and financial stability;*
- *Financial market infrastructure, dynamics and uncertainty;*
- *Coordination of macro-prudential and monetary policies;*
- *Theoretical and empirical aspects of international trade and finance;*

- Exchange rate dynamics and their implications for prices and financial stability;
- Economic modelling as an important aspect in the decision-making process of the central banks

The research works presented during this activity will be given in more details as follows:

- Optimal bank capital requirements: An asymmetric information perspective, Alessandra Marcelletti (University of LUISS Guido Carli, Italy).
- The competition-stability controversy in banking. Further evidence from the EU-28, Nicoleta Pintilie (University of Orléans, France).
- Does bank prudential behavior affect bank stability after Global Financial Crisis?, Gerti Shijaku (Bank of Albania).
- The March 2013 banking sector collapse of Cyprus: The actions/inactions & challenges of the Central Bank, George Stavri (Athens Institute of Finance, Greece).
- Investigating credit transmission mechanism in the Republic of Macedonia: Evidence from Vector Error Correction Model, Milan Eliskovski (National Bank of the Republic of Macedonia).
- The influence of monetary policy on net interest margins: Case of Albania, Meri Papavangjeli, Adela Bode, Besa Vorpsi (Bank of Albania).
- The impact of post-crisis sectoral growth and credit risk in the efficiency of credit allocation. An empiric investigation based on a panel of Albanian banking system data, Gent Sejko, Altin Tanku, Elona Dushku, Kliti Ceca (Bank of Albania).
- Political business cycles and construction licensing: Evidence from post-socialist Tirana, Albania (1994-2015), Drini Imami (Agricultural University of Tirana, Albania), Luca J. Uberti (University of Otago, New Zealand), Endrit Lami (Ministry of Finance, Albania) Edvin Zhllima (Agricultural University of Tirana, Albania).
- Financial development and economic growth in Albania- New evidence, Gent Sejko, Elona Dushku (Bank of Albania).
- NPLs resolution - The aftermath and the role of corporate governance, Faidon Kalfaoglou (Bank of Greece).
- Financial Stability Map – Kosovo, Zana Gjocaj, Krenare Maloku (Central Bank of the Republic of Kosovo).
- Macroeconomic Fluctuations and Monetary Policy: The role of financial soundness”, Bledar Hoda (Bank of Albania).
- Monetary policy shocks, inflation persistence, and long memory, Alejandro Perez-Laborda (Rovira-i-Virgili University, Spain).
- Has the crisis changed the monetary transmission mechanism in Albania? An application of Kernel density estimation technique, Altin Tanku, Kliti Ceca (Bank of Albania)
- Asset price volatility in EU-6 economies. The role played by the ECB?, Alessio Ciarlone (Bank of Italy).
- An assessment of the Marginal Propensity to Consume out of Income and Real Wealth for Albanian households, Elona Dushku, Ola Çami (Bank of Albania).
- Albanian Exports Prices and their pricing to market effect, Ilir Vika, Arlind Rama (Bank of Albania).
- Measuring the financial literacy of the adult population: the experience of Banca d'Italia, Andrea Neri (Bank of Italy).
- The effect of credit information sharing on loan performance, Fatmira Kola, Franco

*Fiordelisi (University of Rome Tor Vergata, University of Rome Roma Tre, Italy).*

- *A Financial Cycle for Albania, Vasilika Kota, Arisa Saqe (Bank of Albania).*
- *Early warning indicators of systemic banking stress in case of Albania, Odeta Koçillari (Bank of Albania).*
- *Building inclusive financial systems complements the traditional pillars of monetary and financial stability, Lindita Vrioni (Bank of Albania).*

#### **THE BANK OF ALBANIA GOVERNOR'S AWARD FOR THE BEST DIPLOMA THESIS, 2017**

The competition for the Governor's Award for the best diploma, organized annually by the Bank of Albania, is dedicated to Albanian graduates from Albanian and foreign universities, for research on issues related to monetary and international

economics, price and financial stability, economic integration, etc.

The first prize was awarded to Ms Vasilika Lushka, a student at University of Tirana for her Master of Science thesis on: "Analysis of the insurance market structure in Albania. Regulation and measurement of competition in this market"

The second prize was awarded to Ms Joana Gjinopulli, a student at University of Tirana for her Master of Science thesis on: "Assessment of macroeconomic effects from climate change based on Error Correction Mechanism and 2 Stage Least Square models: the case of Albania".

The third prize was awarded to Ms Denisa Dervishi, a student at Epoka University for her thesis on "Theory of money demand and the application for Albania under an inflation targeting regime".

**V. 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](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](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](http://www.oenb.at/en/presse_pub/research/research.jsp))