

RESEARCH NEWSLETTER

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This newsletter presents a short summary of the Bank of Albania's research projects during 2020 H2. More concretely, it reflects the most recently concluded research papers, research work in progress, articles, and the main research activities organized mainly by Bank of Albania's economists in the course of this period.

I. RESEARCH PAPERS

1.1. RECENTLY CONCLUDED RESEARCH PAPERS

In 2020 H2, scientific research at the Bank of Albania consisted of empirical studies and analyses on topics related to the economic impact of the pandemic and the measures taken, economic models, short-term and long-term forecasts and specific topics related to the banking and external sectors. A short summary is presented below.

“Building empirical models to forecast the short-term and long-term need for operational market liquidity in the Albanian financial sector”, Gerti Shijaku, Research Department.

The Bank of Albania regulates the need for liquidity in the financial sector in a chosen time horizon to reflect its monetary policy stance. It is from this standpoint that the central bank analyzes and forecasts the demand for short-term and long-term liquidity in the market, which changes as a

result of changes in autonomous and non-autonomous factors. For this reason, this paper develops a series of empirical models with daily data for the period 2008 - 2019 in order to predict the need for liquidity in the interbank market based on binary indicators and the approach of liquidity distribution according to autonomous and discretionary factors.

“The economic effects of Covid-19”, Bledar Hoda, Research Department.

The study looks at the direct immediate effect of lockdowns on economic activity and labour markets. Even though these immediate effects may miss a critical part of the effects that take a longer-term horizon to materialize, the estimates about these immediate effects provide a comparative benchmark in weighing the cost of the lockdowns relative to the benefits in terms of curbing the spread of the infection. The findings suggest that based on the scales of the lockdown measures established during

the first wave, raising the bar of the lockdowns by any 10 percentage point may cause a decline of industrial production by 5% in any month. The magnitude of the impact of lockdowns on unemployment rate seems very low, although statistically significant. Estimates show closing the economy may affect more the employment in construction and services industries while employment in agricultural and manufacturing may suffer relatively less. Furthermore, unemployment among youngsters can go up faster than unemployment among older population due to lockdown measures.

“The impact of foreign direct investments on poverty reduction in the Western Balkans”, Margerita Topalli, Meri Papavangjeli, Research Department.

This paper empirically examines the impact of foreign direct investment (FDI) inflows on poverty in six Western Balkan countries, and also considers other country characteristics, such as the human development index (HDI), corruption, investment freedom, economic freedom, trade openness, and fertility. The work presents estimations based on a Generalized Method of Moments estimator for panel-data models with fixed effects during the period from 2002 to 2018. Our results show that FDI has significantly contributed to poverty reduction in Western Balkan countries. However, attention should be paid to where and how FDI takes place, as these investments should be directed at the productive sectors of the economy, leading to a higher impact on poverty and inequality. The study also finds that policies and institutions that support a country's economic freedom and openness are imperative for poverty reduction. In addition, poverty reduction in the Western Balkan region can be achieved through measures that contribute to the improvement

of HDI and strengthen institutions to combat corruption.

“Forecasting with a time-varying VAR model: evidence from the Albanian economy”, Meri Papavangjeli, Research Department.

This study aims to assess whether the use of time-varying parameters brings about any significant improvement in the forecast accuracy of the main Albanian economic indicators. Using data for the period 2000-2019, a time-varying Bayesian VAR model is constructed with the following variables: real GDP growth, inflation and interest rate, estimated with a Markov chain Monte Carlo (MCMC) method (Gibbs sampler), and its forecasting performance is examined relative to other simpler econometric models such as ARIMA and unrestricted VAR. The results show that the TVP-BVAR approach outperforms the benchmark univariate and the unrestricted VAR models in the different time horizons of the forecast sample.

1.2. RESEARCH PAPERS IN PROGRESS

“Albanian Household Wealth Survey: Results of the first wave”, Elona Dushku, Ola Çami, Research Department.

This report summarizes the main stylized facts from the first wave of the Albanian Household Wealth Survey, conducted by the Bank of Albania in early 2019. The purpose of this survey is to collect individual data on the real and financial wealth of 2500 Albanian households. The report presents the results on household wealth (real and financial), liabilities, income and consumption based on different groups of households. The results of the first wave suggest that household wealth is composed

mainly of real estate, where the main residence of the household is the most important component of household wealth. While financial assets make up a small portion of total household assets. Moreover, the data suggest a highly heterogeneous behaviour of Albanian households based on different indicators of the balance sheet of households.

“Financial Literacy in Albania: Survey Results for Measuring the Level of Financial Literacy of the Population, 2019”, Arlinda Koleniço, Kliti Ceca, Egnis Isaku, Research Department.

The Bank of Albania has assessed for the third time the level of financial literacy of the Albanian population. The survey “Financial Literacy in Albania” is designed according to the OECD/INFE guidelines and methodology and was conducted in collaboration with INSTAT during September-October 2019. The data obtained from this survey provide crucial information on identifying the issues that need attention and intervention through financial education projects.

“Deposit euroization determinants: Some evidence for Albania”, Denada Rada, Research Department.

The material aims to analyse the nature of deposits in euro in Albania and to decompose the factors that have contributed to the upward trend of recent years. Empirical assessment takes into account the VECM methodology based on the following variables: euro deposits in the banking system, remittance inflows; nominal exchange rate, the degree of development of the financial system, and the interest rate differential of deposits in domestic and foreign currency for the period 2008-2020. Preliminary results show that

financial development increases in the presence of euro deposits. Furthermore, the performance of the interest rate differential and the nominal exchange rate tend to push depositors towards local currency savings.

“The relationship between unemployment and economic growth in Albania, the impact of Covid-19”, Orion Garo, Research Department.

This material analyses the relationship between unemployment and economic growth using Okun’s law. Furthermore, it focuses on the impact that the decline in economic activity as a result of Covid-19 has on unemployment. Methodologically, the study uses a VAR model and labour market “flow” indicators. The findings suggest that the decline in the growth of production causes an increase in the unemployment rate in the country.

1.3. ARTICLES

ARTICLES FROM OTHER CENTRAL BANKS

“The great lockdown: pandemic response policies and bank lending conditions”, Carlo Altavilla, Francesca Barbiero, Miguel Boucinha, Lorenzo Burlon, ECB.

This study analyses the policy measures taken in the euro area in response to the outbreak and the escalating diffusion of new coronavirus (COVID-19) pandemic. We focus on monetary, microprudential and macroprudential policies designed specifically to support bank lending conditions. For identification, we use proprietary data on participation in central bank liquidity operations, high-frequency reactions to monetary policy announcements, and confidential supervisory information on

bank capital requirements. The results show that in the absence of the funding cost relief and capital relief associated with the pandemic response measures, banks' ability to supply credit would have been severely affected. The results also indicate that the coordinated intervention by monetary and prudential authorities amplified the effects of the individual measures in supporting liquidity conditions and helping to sustain the flow of credit to the private sector. Finally, we investigate the potential real effects of the joint pandemic response measures by estimating the adjustment in labour input variables for firms that in the past have been more exposed to similar policies. We find that, in absence of monetary and prudential policies, the pandemic would lead to a significantly larger decline in firms' employment.

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

"What comes next?", Daniel Rees, BIS.

The Covid crisis prompted an unprecedented global economic contraction. Although the worst is likely behind us, the recovery is likely to be uneven, with economic activity in many customer facing service industries set to remain constrained for some time. I use a quantitative multi industry model to estimate the economic forces that explain the decline in economic activity in the United States, the Euro Area, Japan and China in the first half of 2020. I then use the model to project the trajectory of the economic recovery. I find that the US, EA and Japan will each face a '98% economy' if half of the constraints faced by customer-facing service industries in the first half of 2020 persist. The economic recovery in China is projected to occur more quickly.

<https://www.bis.org/publ/work898.htm>

"Will the Covid-19 Pandemic lead to job reallocation and persistent unemployment?", Joel David, Federal Reserve.

The Covid-19 pandemic has had an enormous impact on the U.S. economy. Nowhere are the effects more dramatic than in the labour market: In a span of just two months, the unemployment rate increased from 3.5% in February 2020—a low not seen since the late 1960s—to 14.7% in April—a high not seen since the Great Depression—before falling modestly in May and June. How persistent are these effects likely to be? Will the labour market recover quickly once pandemic-related restrictions are fully lifted, or will unemployment remain at elevated levels further into the future?

<https://www.chicagofed.org/publications/chicago-fed-letter/2020/444>

"Helicopter money in Europe: New evidence on the marginal propensity to consume across European households", Katharina Drescher, Pirmin Fessler, Peter Lindner, Oesterreichische Nationalbank.

The recent spread of COVID-19 has led to the worst economic crisis since the 1930s. To boost demand after the crisis, direct monetary transfers to households are being discussed. Using novel microdata from the Eurosystem Household Finance and Consumption Survey (HFCS), we study how much of such a transfer households would actually spend. We do so by exploiting the unique opportunity that the new wave of the survey included an experimental question to calculate the marginal propensity to consume from hypothetical windfall gains. Our results show that households on average spend between about 33% (the Netherlands) and 57% (Lithuania) of such a transfer. In all countries, answers are clustered at

spending nothing, spending 50% and spending everything. Marginal propensities to consume decrease with income but are not as clearly related to wealth.

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

“Data vs collateral”, Leonardo Gambacorta, Yiping Huang, Zhenhua Li, Han Qiu, Shu Chen, BIS.

The use of massive amounts of data by large technology firms (big techs) to assess firms' creditworthiness could reduce the need for collateral in solving asymmetric information problems in credit markets. Using a unique dataset of more than 2 million Chinese firms that received credit from both an important big tech firm (Ant Group) and traditional commercial banks, this paper investigates how different forms of credit correlate

with local economic activity, house prices and firm characteristics. We find that big tech credit does not correlate with local business conditions and house prices when controlling for demand factors, but reacts strongly to changes in firm characteristics, such as transaction volumes and network scores used to calculate firm credit ratings. By contrast, both secured and unsecured bank credit react significantly to local house prices, which incorporate useful information on the environment in which clients operate and on their creditworthiness. This evidence implies that a greater use of big tech credit - granted on the basis of machine learning and big data - could reduce the importance of collateral in credit markets and potentially weaken the financial accelerator mechanism.

<https://www.bis.org/publ/work881.htm>

II. RESEARCH ACTIVITIES

2.1. TECHNICAL SEMINARS

“Building empirical models to forecast the short-term and long-term need for operational market liquidity in the Albanian financial sector”, Gerti Shijaku, Research Department.

This paper, which was presented through the online platforms provided by the Bank of Albania, aims to develop a series of empirical models with daily data for the period 2008 - 2019, in order to predict the need for liquidity in the interbank market based on binary indicators and on the approach of liquidity distribution according to autonomous and discretionary factors.

2.2. OTHER ACTIVITIES

“Training activities of the Research Department staff in the framework of the Bilateral Assistance and Capacity Building for Central Banks Program (BCC)”, online, Bank of Albania.

In the context of the Bilateral Assistance and Capacity Building for Central Banks Program (BCC), an online training activity on “Introduction to R and its use for economic modelling purpose” took place on 21-25 September, with Dr. Seton Leonard as a lecturer. This activity aimed to acquaint employees with the software “R Studio”, which unlike the softwares

currently used at the Bank, is provided free of charge and offers a set of additional functions and features quite useful for the purposes of econometric analysis and forecasting. In addition to this activity, another online training course “Advanced forecasting models”, taught by professor Dr. Massimiliano Marcellino, took place on 10-13 November. The latter aimed to further deepen the knowledge of employees on advanced econometric methods used for forecasting purpose, in line with the techniques used nowadays by central banks.

2.3. FOURTEENTH SOUTH-EASTERN EUROPEAN ECONOMIC RESEARCH WORKSHOP

On 10 and 11 December 2020, the Research Department of the Bank of Albania organized the 14th South Eastern European Economic Research Workshop, for the purpose of promoting discussion, economic research and regional cooperation in South Eastern Europe. Due to the social distancing measures as a result of the COVID-19 pandemic, this year the activity was organized online. However, it achieved the goal of serving as a platform to increase regional cooperation in Southeast Europe and beyond, in increasing the potential contribution of the central banks in financial markets, the economy and in society.

During the two days of the workshop, researchers presented their working papers aiming at discussing the following economic and financial topics:

- *The Covid-19 pandemic and its impact on the domestic and international economic climate;*
 - *Unconventional economic policies in the context of recent economic developments;*
 - *Theoretical and empirical aspects of monetary policy and macroprudential policy;*
 - *Macroeconomic models for policy analysis and forecasting;*
 - *Profitability of the banking system, financing structure and lending;*
 - *Euroization and other CESEE region specific topics;*
 - *Microdata and their use in empirical analysis by central banks.*
- The working papers presented during this activity are given in more details as follows:
- *“Mobility And Government Restrictions In The Wake Of Covid-19”, Ines Buono, Francesco Paolo Conteduca, Bank of Italy;*
 - *“The Economic Effects of Covid-19”, Bledar Hoda, Bank of Albania;*
 - *“Indonesia Intersectoral Financial Linkage during Early COVID-19 Pandemic”, Agni Alam Awirya Fazal Rahman, Bank of Indonesia;*
 - *“Unconventional Monetary Policies and Expectations on Economic Variables”, Alessio Anzuini*
 - *Luca Rossi, Bank of Italy;*
 - *“Evaluating Monetary Policy Effectiveness in North Macedonia: Evidence from a Bayesian FAVAR framework”, Artan Sulejmani, National Bank of the Republic of North Macedonia;*
 - *“Money demand and interest sensitivity in India: an ARDL approach”, Masudul Hasan Adil Refig Hussain and Adelajda Matuka, University of Mumbai & University of Macerata;*
 - *“Trilemma under the yoke of the Dominant Currency paradigm?”, Vanesa Olakemi, Université d’Orléans, Faculté de Droit;*

- *"Collateral Misrepresentation, External Auditing, and Optimal Monetary and Supervisory Policies"*, Fatih Tuluk, Middle East Technical, University Northern Cyprus Campus;
- *"When could macroprudential and monetary policies be in conflict?"*, Jose D. Garcia, Grégory Leveuge, The University of Orléans;
- *"The prevalence and determinants of non-bank borrowing in CESEE: Evidence from the OeNB Euro Survey"*, Katharina Allinger, Elisabeth Beckmann, Oesterreichische Nationalbank;
- *"Albanian Household Wealth Survey (AHWS): Results of the First Wave"*, Elona Dushku, Ola Çami, Bank of Albania;
- *"The determinants of commercial banks' profitability in the South-Eastern Europe region: a system GMM approach"*, Francesco Guidi, Enowbi Batwo Michael, University of Greenwich;
- *"Foreign vs local banks in the CESEE countries: An analysis of the impact of the funding structure on the credit channel"*, Olta Manjani, Bank of Albania;
- *"Spillovers from Prudential Policies Implemented at Consolidated Level: Evidence from the EBA's 2011 Capital Exercise and its Effect in Slovenia"*, Selcuk Ozsahin, Bank of Slovenia;
- *"Credit-to-GDP gap: Local versus foreign currency credit"*, Gjergj Legisi, Banka e Shqipërisë;
- *"Evaluating Interest Rate Forecasts at the Bank of Albania During the Asset Allocation Process"*, Dorian Dine, Rezart Erindi, Bank of Albania;
- *"Forecasting Albanian time series with linear and nonlinear univariate models?"*, Blerina Vika, Ilir Vika, Bank of Albania;
- *"Building Empirical Models To Forecast The Short-Term And Long-Term Need For Operational Market Liquidity In The Albanian Financial Sector"*, Gerti Shijaku, Bank of Albania;
- *"Forecasting with a time-varying Bayesian VAR model: evidence from the Albanian economy"*, Meri Papavangjeli, Bank of Albania;
- *"Emerging Markets Interest Rates, International Reserves and Net Foreign Assets"*, Joseph Bitar, University of Lille;
- *"Sustainable development goals: Multinational enterprises, economic growth, and poverty reduction in the Western Balkans"*, Meri Papavangjeli, Margerita Topalli, Bank of Albania;
- *"Inquiring Into The Relationship Between The Unemployment Rate And Output Growth"*, Orion Garo, Bank of Albania;
- *"Deposit Euroization Determinants: Some evidence for Albania"*, Denada Rada, Bank of Albania;

2.4. GOVERNOR'S AWARD FOR THE BEST DIPLOMA THESIS 2020

The Bank of Albania, in the framework of encouraging graduates both from Albanian and foreign universities to engage in quality empirical research in various fields of economics and finance, organized during 2020 the open contest "Governor's Award for the Best Diploma Thesis". Students from universities inside and outside the country participated in this competition with topics related to monetary and international economics, price stability, financial stability, etc. This year the award ceremony took place online.

The first prize was awarded to Ms Megi Jaupi, a student at the ETH Zurich University,

Switzerland, for the topic on “Generative Adversarial Networks for Multivariate Return Simulation and Robust Portfolio Optimization”. The thesis applies the methodology of neural networks, as one of the most innovative and sophisticated methods for the approximation of multidimensional variables allocation in economy and finance, used by many central banks nowadays. The thesis was laudable, not only in terms of methodology, but also in terms of academic writing.

The second prize was awarded to Mr Argi Hanku, a student at the University of Vienna, Austria, on the topic “Evaluating Low Frequency Liquidity Proxies”. This study focuses and discusses liquidity as an important characteristic of securities investment, which was not addressed so far in the previous applications for the “Governor’s Award for the Best Diploma Thesis”. Investment liquidity is a very

important aspect and takes a particular attention in the field of monetary operations in the context of the well-management of foreign currency reserve. Liquidity of investment portfolio is a crucial element of investing behaviour, particularly during and after financial and economic crisis.

The third prize was awarded to Ms Eda Meta, student at the “Berlin School of Economics and Law” in Germany, on the topic “Assessment of the impact of CoCo bonds on banks”. This paper assesses the impact and effectiveness of CoCo bonds (Contingent Convertible Bonds) on bank solvency, as an instrument for absorbing losses. Even though in the case of Albania, CoCo bonds are not yet a reality, it is always worthy to generate a discussion regarding new financial instruments and other novelties, even if only at the academic level.

III. 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

