

RESEARCH NEWSLETTER

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This newsletter, No.32, presents the most recently concluded research papers, research papers in progress, articles, and the main research activities organised by the Bank of Albania's economists over the course of the first half of 2024.

I. RESEARCH PAPERS

1.1 RECENTLY CONDUCTED RESEARCH PAPER

Scientific research at the Bank of Albania throughout this period was oriented towards empirical studies and analyses focused on: climate changes and related risks, the monetary policy, financial stability, artificial intelligence, house prices, financial cycles, etc. A short summary is presented below:

"The Green Strategy Progress Report of the Bank of Albania (May 2023 - May 2024)", Bank of Albania (2024)

The Green Strategy Progress Report of the Bank of Albania outlines the achievements and challenges faced by the Bank of Albania in addressing climate-related financial risks. The strategy aims to integrate these risks into financial decision-making and banking policies. Key highlights include the creation of a Green Dashboard to monitor sustainability indicators, the development of the exposure analyses of

the Albanian banking sector to climate risks, and collaboration with international networks for knowledge exchange. The report underscores the Bank's commitment to promoting financial stability in the face of climate challenges and advancing towards a sustainable and resilient financial sector.

https://www.bankofalbania.org/About_the_Bank/Green_finance/

"Banking Sector Climate-Related Exposure Assessment Report", Bank of Albania (2024)

The Banking Sector Climate-Related Exposure Assessment Report (2024) analyses the exposure of the Albanian banking sector to climate-related risks, including both physical and transition risks. The report employs an advanced methodology to identify the sectors and economic activities most affected by climate change. Through the analysis of various indicators, the report identifies the challenges and opportunities

for the banking sector in addressing these risks. This report represents a significant step towards enhancing the resilience of the financial sector and aligning it with international sustainability standards.

https://www.bankofalbania.org/About_the_Bank/Green_finance/

“Monetary policy and bank profitability: Unveiling nonlinearities in an era of low interest rates and flattening yield curves”, by Adela Bode, Raiffeisen Bank International AG; Besa (Vorpsi) Kokallaj, Financial Stability Department, Meri Papavangjeli, Research Department.

The period of progressive reduction of the key interest rate for several years, characterizing the accommodative monetary policy implemented by the Bank of Albania, necessitates a thorough examination of its repercussions on both bank profitability and the stability of the financial sector in Albania. This research examines the influence of monetary policy and the structure of interest rates on the net interest income of banks, which serves as their primary revenue stream, by considering the existence of a non-linear relation between these two variables. The analysis, categorized into three distinct groups based on the respective proportions of these banks' assets within the banking sector, employs a panel corrected standard errors (PCSE) approach for robust estimation. The findings indicate a significant non-linear association solely between the level of the monetary policy rate and the net interest margin for small banks, whereas for larger banks, the observed effects tend to be statistically insignificant. The investigation also reveals a non-linear relationship when substituting the monetary policy rate with the short-term rate and the slope of the yield curve.

“Are Albanian households financially fragile”, by Elona Dushku, Research Department.

This material analyses the financial fragility of Albanian households based on the ability of households to withstand an unexpected expense, as well as to analyses, in addition to socio-economic indicators (such as: age, gender, debt), the role of households portfolio compositions. Financially fragile households are those households that are able to meet expected expenses but do not have sufficient liquidity to meet unexpected expenses (Bruneti et al., (2012)). Using data obtained from the first round of the Household Wealth Survey, we have identified that 59% of households in Albania are considered financially fragile, and are unable to withstand an unexpected expenditure shock, equal as the median income of total households. Estimates obtained from multinomial regressions show that the probability of households being financially fragile is negatively related to the education level of the reference person. On the other hand, the results show that financial access and family ties reduce the probability of Albanian household of being financially fragile.

1.2 RESEARCH PAPER IN PROGRESS

“Financial and business cycles in Central, Eastern, and South-Eastern Europe: The role of Monetary and Macroprudential Policies,” by Altin Tanku; Meri Papavangjeli, Research Department.

The study explores the coordination between monetary and macroprudential policies and their interaction with financial and business cycles in the Central, Eastern, and South-Eastern Europe (CESEE) region is important, particularly against the backdrop

of current global uncertainties exacerbated by the COVID-19 pandemic and the Ukrainian-Russian war. These events have led to significant economic disruptions, underscoring the importance of robust policy frameworks that can effectively manage financial stability and fostering economic resilience. The countries considered in this study are Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Montenegro, North Macedonia, Poland, Romania, Serbia, Slovak Republic, and Slovenia.

“Artificial Intelligence and Banking”, by Lindita Molishti, Research Department.

This working paper’s topic is the rapid development of Artificial Intelligence (AI) and its impact on the banking industry. It highlights how AI applications like ChatGPT have captured global attention, indicating the accelerating pace of AI progress. The banking sector, which has traditionally undergone gradual and strategically planned digitization, is now faced with the challenge of navigating the complexities of AI integration. Bank management teams must consider various scenarios and adapt their strategies accordingly. A suggestion brought in this working paper is that the integration of AI into banking services requires more than just learning new terminology. The potential for AI to reshape societies and the need for authorities to respond quickly with regulatory measures, such as the Artificial Intelligence Act in Europe, is also emphasized. Banks must balance the speed, agility, and flexibility offered by AI with the need to maintain performance, security standards, and regulatory requirements. The working paper presents an approach to integrating AI throughout the banking value chain and emphasizes the importance of giving AI a specific purpose based on transparency and

ethical accountability. The paper concludes by advising banks to view AI implementation as a journey rather than a one-time event, and to have a clear vision and plan to take advantage of the opportunities presented by this rapidly evolving technology.

“House prices and the stance of monetary policy in Albania”, by Ilir Vika, Research Department.

This study attempts to analyse the relationship between housing market wealth and macroeconomic indicators in Albania. The analysis uses quarterly data for the period 1998-2023 and relies on various methods such as Bayesian VAR and vector error correction with non-linear estimation to measure the long- and short-term response of domestic product to permanent changes in wealth of housing. The results are expected to shed light on whether (i) there is a significant multidirectional relationship between house prices, monetary and macroeconomic indicators; (ii) the relationship between house prices and economic indicators has changed over time; (iii) the effects of money and credit shocks are stronger when house prices are booming; (iv) housing price performance is a concern for the stance of monetary policy.

“Assessing the dichotomous sentiment of the Bank of Albania’s monetary policy reports”, by Orion Garo, Research Department.

This research project’s aim is to attain a quantitative assessment of the dichotomous sentiment present in the of Bank of Albania’s monetary policy quarterly reports. The assessment will be based on the ratio of hawkish (positive) and dovish (negative) terms used, which includes both key words and key phrases used inside reports’ text, and will synthesize a single index

indicating the time periods when hawkish or dovish terminology prevails in the Bank's communication. In accordance with the theoretical body of pertaining literature, the index is planned to be tested for correlation with the medium and long term interest rates, of both: government securities, and commercial banks' deposits and loans.

"Analysing de-globalization and de-coupling tendencies in western Balkan countries on climate change related patterns", by Gerti Shijaku and Elona Mulgeci, Research Department.

After a series of shocks, in particular the global financial crisis, the instability related to the Greek debt crisis, the Covid-19 pandemic and the Russian aggression in Ukraine, global trade has undergone a transformation characterized by a de-globalization and decoupling trend, which will stabilise minimally to a constant steady-state global value chain. For this reason, this paper uses descriptive statistics to analyse the level of international trade in the Western Balkan countries among themselves and with other countries focusing in particular on their ability to increase trade exchanges for products and technology with direct impact in climate change. The aim is to analyse the fact that (de)globalization and/or the trend of de-coupling from the point of view of trade related to climate change factors are a characteristic of the region.

"The impact of market consolidation on market power", by Ilir Pustina, Research Department.

The purpose of the study is to investigate whether the consolidation observed in the Albanian banking system in recent years has been accompanied by an increase in market power, or in other words, a decrease in competition between banks.

In the context of this study, market power means the bank's ability to control price, quantity, or even other competitive factors. It is worth noting that consolidation can lead to increased concentration in the banking system, but not necessarily to increased market power and reduced competition.

1.3 ARTICLES

"Evidence on household financial fragility in Western Balkan countries before COVID-19", by Elona Dushku, Research Department.

This paper seeks to investigate household financial fragility in Western Balkan countries, as the ability of households to cope with an unexpected expenditure shock using household-level data from the third wave of the Life in Transition Survey. We analysed how socio-demographics and economic characteristics are related to the probability of households being financially fragile. Results show that almost half the households in the Western Balkans could not cope with an unexpected expenditure event and are considered financially fragile. Estimated results based on probit regressions show that the probability of Western Balkan households being financial fragile is, in addition to socio-demographic factors, related to households' portfolio choices.

<https://www.suerf.org/publications/suerf-policy-notes-and-briefs/household-financial-fragility-in-western-balkan-countries-before-covid-19/>

"Banking on "ice"? Interest rates near freezing point" by Adela Bode, Raiffeisen Bank International AG; Besa (Vorpsi) Kokallaj, Financial Stability Department and Meri Papavangjeli, Research Department, Bank of Albania.

Amid a global trend towards rising interest

rates to cope with increased inflation, revisiting the era of low interest rates is important to draw valuable lessons for possible similar challenges in the future. The article explores the effects of prolonged near-zero interest rates on bank profitability and financial stability, using data from commercial banks between 2004 and 2020. It finds that smaller banks exhibit a significant non-linear relationship between interest rates and net interest margin, while for the largest banks the effects are negligible. The study finds that medium and large banks benefit most from monetary policy easing, especially those with fewer deposits and those involved in extensive maturity transformation activities. The findings show that prolonged periods of monetary policy easing can adversely affect the most vulnerable banks, highlighting the importance of considering these impacts in the design of monetary policies.

<https://www.suerf.org/publications/suerf-policy-notes-and-briefs/banking-on-ice-interest-rates-near-freezing-point/>

"SAFE to update inflation expectations? New survey evidence on euro area firms", Ursel Baumann, Annalisa Ferrando, Dimitris Georgarakos, Yuriy Gorodnichenko, Timo Reinelt, European Central Bank

This paper provides new survey evidence on firms' inflation expectations in the euro area. Building on the ECB's Survey on the Access to Finance of Enterprises (SAFE), we introduce consistent measurement of inflation expectations across countries and shed new light on the properties and causal effects of these expectations. We find considerable heterogeneity in firms' inflation expectations and show that firms disagree about future inflation more than professional forecasters but less than households. We document

that differences in firms' demographics, firms' choices and constraints, and cross-country macroeconomic environments account for most of the variation in inflation expectations by roughly equal shares. Using an RCT approach, we show that firms update their inflation expectations in a Bayesian manner. Moreover, they revise their plans regarding prices, wages, costs and employment in response to information treatments about current or future inflation.

<https://www.suerf.org/publications/suerf-policy-notes-and-briefs/household-financial-fragility-in-western-balkan-countries-before-covid-19/>

"Digital payments, informality and economic growth" by Ana Aguilar, Jon Frost, Rafael Guerra, Steven Kamin, Alexandre Tombini.

We examine the relationship between digital payment innovation, economic growth and informal activities in 101 economies over 2014–19. Following the economic growth literature, panel regressions relate growth rates of GDP per capita, total factor productivity (TFP) and the share of informal sector employment to lagged levels of these variables, the extent of digital payments use and various controls for endogeneity. We find that a one-percentage point increase in digital payments use is associated with increases in the growth of GDP per capita of 0.10 percentage points over a two-year period, and a decline in the share of informal sector employment of 0.06 percentage points over a two-year period. Insofar as the reported share of the population making digital payments ranges nearly from 0 to 100%, this is substantial. Digital payments do not appear to be significantly associated with rises in TFP, once controlling for general measures of digitalisation and government effectiveness, but they are linked to greater financial inclusion and credit access. Our

results reinforce the case for government policies to encourage digital payments and, as complementary factors, access to the financial sector and information technology. <https://www.bis.org/publ/work1196.htm>

“Central Banking Post Crises”, by Michael T. Kiley, Frederic S. Mishkin, Federal Reserve

The world economy has experienced the largest financial crisis in generations, a global pandemic, and a resurgence in inflation during the first quarter of the 21st century, yielding important insights for central banking. Price stability has important benefits and is the responsibility of a central bank. Achieving price stability in a complex and uncertain environment involves a credible commitment to a nominal anchor with a strong response to inflation and pre-emptive leaning against an overheating economy. Associated challenges imply that central bank communication and transparency are key elements of monetary policy strategies and tactics. Crises have emphasized the role of central banks in promoting financial stability, as financial stability is key to achieving price and economic stability, but this role increases risks to independence. Goals for central banks other than price and economic

stability, complemented by financial stability, can make it more difficult for them to stabilize both inflation and economic activity.

<https://www.federalreserve.gov/econres/feds/central-banking-post-crises.htm>

“Digital transformation and its impact on labour productivity - A multi-sector perspective” by Elisabeth Falck, Oke Röhe, Johannes Strobel, Deutsche BundesBank

In recent years, there has been a controversial debate on how the rapid diffusion of digital technologies affects labour productivity in advanced economies. Using a multi-sector dynamic general equilibrium model, we show that cumulative labour productivity growth in the United States, Germany and France over the period from 1996 to 2020 would have been about half as high without the efficiency gains from the sectors producing digital goods – despite their relatively small size in terms of gross value added. This is not only because TFP growth in the digital sectors is exceptionally high, but also because other sectors benefit from these efficiency improvements via production linkages.

<https://www.bundesbank.de/resource/b/935568/7def63580bc49447888573ca2d756205/mL/2024-07-15-dkp-28-data.pdf>

II. RESEARCH ACTIVITIES

2.1 FRIDAY SEMINARS

The following seminars took place in the period July- June 2024:

“ESGRiskRadar: Climate Risk Management tool”, by Prof. Dr. Tobias Peylo, Professor for Economics and Finance Kempten University of Applied Sciences, Bavaria, Germany, February 2024.

Management and supervision of climate-related financial risks in the financial sector

have received special attention over the past years. This seminar focused on the introduction of the ESG (Environmental, Social and Governance) risk radar that enables the assessment of the risks in the financial sector by taking into consideration issues related to the environment, society and governance. In addition, this risk radar is aimed at be incorporated and integrated into financial decision-making, to reorienting financial flows towards projects that have positive environmental and/or

social effects, as well as positive impact on long-term economic sustainability and financial stability.

“Weighted Median: A Measure of Albanian Core Inflation”, by Lorena Skufi, Monetary Policy Department, June 2024.

The traditional measure of core inflation is the inflation rate which excludes food and energy. This paper constructs an alternative measure of core inflation for the Albanian economy, called the weighted median inflation rate. This measurement is built on the CPI basket at a detailed 7-digit level for the period 2019-2024 and 4-digit for the period 2009-2018, with monthly frequency. The results of this measure are compared to the traditional measure of core inflation and show that the weighted median is less volatile than the traditional measure and performs better with the cyclical conditions of the economy.

2.2 WORKSHOP ON: “ALBANIA’S PATH TO SEPA INTEGRATION, FINANCIAL INCLUSION AND EDUCATION”

On 14 June 2024, the Bank of Albania organized in Tirana the workshop on “Albania’s path to SEPA integration, financial inclusion and education” Discussions in this activity focused on the integration status of Albania in the Single Euro Payments Area and the benefits for Albania, as well as on the importance of financial inclusion and education for the development of market and social welfare. The workshop, organized in the form of a discussion forum, among various stakeholders highlighted the tangible benefits that SEPA brings to Albania; the expected impact on Albania’s financial

infrastructure and economy, the importance of financial inclusion and education for market development and social well-being. Discussions, also addressed the role and contribution of various actors in the field of financial education, focusing first on identifying the needs for financial education, and then following on with best practices, target groups, the success of projects, but also the challenges they face and future recommendations.

2.3 WORKSHOP ON: “NAVIGATING INTERCONNECTED RISKS: IMPLICATIONS OF ENVIRONMENTAL DEGRADATION AND CLIMATE CHANGE”

On July 11, 2024, the Bank of Albania, in collaboration with the Centre for Economic Transition Expertise (CETEx) at the London School of Economics (LSE), organized a workshop in Tirana on “Navigating Interconnected Risks: Implications of Environmental Degradation and Climate Change.” The workshop brought together representatives from various international public and private institutions, with the main goal of engaging various actors in a dialogue about the challenges posed by climate change and its implications on the economy and finance. The Bank of Albania presented the so far progress achieved in the framework of the Bank of Albania’s Green Strategy, over the first year of its implementation. A full information on the activity of the Bank of Albania in the framework of its commitments against climate changes is provided at its official website:

https://www.bankofalbania.org/About_the_Bank/Green_finance/

2.4 GOVERNOR'S AWARD FOR THE BEST DIPLOMA THESIS 2024

The Bank of Albania launches the open contest "Governor's Award for the Best Diploma Thesis, 2024". The contest targets Albanian students graduated during the period October 2023 – October 2024, in Albania or abroad. Contestants are invited to submit their thesis on university, master or PhD degree, on issues related to monetary and international economics, financial stability, and role of macro-economic policies, the Albanian financial system, households and enterprises behaviour in Albania, as well as other aspects of the economy in general. Deadline for submissions: 31 October 2024. For more details on the rules and required documents, please see the announcement at Bank of Albania's website:

https://www.bankofalbania.org/Shtypi/Njoftimet_per_shtyp/Cmimi_i_Guvernatorit_per_Diplomen_me_te_Mire_per_vitin_2024.html

- *Income, wealth and inflation inequality, their implications for central bank policies.*
- *Demographics and labor market structural changes and their impact on monetary and fiscal policies.*
- *Transition towards sustainable practices, role of financial market and central bank. How to measure the impact and optimize CB policies?*
- *Housing market risks, macro financial stability and the role of monetary and macro prudential policies.*
- *Currency composition of international reserves, experiences from developed developing countries.*

For more details, please see the Bank of Albania's website:

<https://www.bankofalbania.org/Shtypi/>

[Njoftimet_per_shtyp/Thirrje_per_aplikime_Workshop-i_XVIII_i_Kerkimeve_Ekonomike_te_Evropes_Juglindore_Tirane_19-20_nentor_2024.html](#)

2.6 PARTICIPATION IN OTHER ACTIVITIES

- *Presentation of paper on: "Financial fragility and literacy in Albania" at the Academic follow-up conference, organised by the European Commission, the Belgian Financial Services and Markets Authority (FSMA), and KU Leuven research centre LEER, on 20-21 February in Belgium. The goal of this paper aims at analysing and assessing financial fragility of households in Albania, as well as the role of financial literacy in their financial situation, in addition to socio-economic indicators.*
- *Presentation of paper on "Financial weaknesses of households in Western Balkans before Covid-19 crises", by Elona Dushku at New York University of Tirana, and the presentation of paper on: "Green Strategy of the Bank of Albania", by Margerita Topalli at Western Balkans University, in the framework of Global Money Week, held by the Bank of Albania, on 18-22 March 2024.*
- *Presentation of the Strategy of the Bank of Albania and the steps in the future" by Altin Tanku, as well as the presentation of "Results from 4 round of cultural and financial inclusion of the population in Albania, 2023", by Elona Dushku at the Workshop organized by the Bank of Albania and the World Bank on June 14, 2024, on "Albania's path towards SEPA integration, financial inclusion and education".*

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

