

RESEARCH NEWSLETTER

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This newsletter presents a short summary of the Bank of Albania's research projects during 2018 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 2018 H2, scientific research at the Bank of Albania consisted of empirical studies and analyses on: banks prudential behaviour; spillover effects of ECB policies in the case of a small and open economy like Albania; virtual currencies and the challenges they pose to central banks, and the use of micro data to analyse consumer behaviour and the labour market.

Spillover Effects of ECB Policies in a SOE framework, Bledar Hoda, Research Department.

The scope of this paper is to assess the impact of unconventional monetary policy (UMP) of the European Central Bank (ECB) on the dynamics of the Albanian economy. The approach is consistent with the trend in literature and allows for a comparison. Results support the view that UMP shocks have strong positive effects on financial

conditions of Albania, but small negative effects on the real sector. Second, the author investigates the transmission channels of unconventional MP shocks on the Albanian economy. Findings suggest that UMP negative effects through the portfolio-rebalancing channel counterbalance the potential of positive effects through the financial channel. In addition to UMP shocks, 'risk' shocks emerge as a potentially significant factor for the dynamics of the real sector of the Albanian economy, in particular for investments and output. The latter operate via portfolio re-balancing, remittances and bank lending channels.

Does bank prudential behaviour affect their solvency condition?, Gerti Shijaku, Research Department.

This paper analyses whether increasing banks' attitude toward prudential behaviour improves their solvency condition, which might provide some insights about the effectiveness of the regulatory framework.

For this reason, the degree of bank solvency condition is captured by the ratio of their risk-weighted assets to total assets, also known as the capital adequacy ratio. The proxy on bank prudential behaviour is a composite index, based on a wide set of information that consists of six categories, namely capital, liquidity, provisioning, concentration ratio, as well as mismatch maturities and banks' net open position. Then the main hypothesis is tested by employing a General Method of Movements approach based on a sample with 16 banks operating in the Albanian banking sector using quarterly data for the period 2004 – 2017.

Virtual Currencies, Technological Innovation and Central Banking, Bledar Hoda, Research Department.

The electronic infrastructure that allows transactions denominated in Bitcoin has drawn the interest of many actors in the financial industry. In this paper, the reader is introduced with the Bitcoin and its technological infrastructure as well as the potential challenges and opportunities that Bitcoin innovation might bring to policy makers. On one extreme, the massive hypothetical adoption of Bitcoin would make it very difficult to implement macroeconomic policies, in particular the monetary policy. But, a partial adoption of Bitcoin, would lead to tighter monetary conditions and would squeeze the capacity of the banking system to generate loans to finance the economy. Nevertheless, the high risk associated with investing monetary funds in Bitcoin and the absence of a central authority as a guarantor of its value limit its potential as a main payment instrument. Instead, the underlying technological innovation upon which payment infrastructure is built provides new opportunities for improving

the traditional payment system in terms of efficiency and costs. The focus of monetary authorities and private actors in developed economies is based on this perspective.

Bank prudential behaviour. A statistical assessment based on an alternative new index estimated by the principal component analysis Approach, Gerti Shijaku, Research Department.

This paper presents a new alternative approach to measure the prudential behaviour of banks, in addition to the traditional indicators used so far. First, it identifies a set of observable correlated variables. Second, it uses the means of the principal components analysis approach to transform them orthogonally into a set of values of linearly uncorrelated variables, called principal components. Then this set of components is used to assess similarities and differences with the set of information used to estimate them so as to be able to determine whether such behaviour is more a matter of constraints imposed by regulation or a consequence of bank decision-making itself. This is not a trivial problem, but rather a fundamental obstacle in the empirical science. Finally, this set of components is transformed into a single index, which we refer to as an alternative index to measure the degree of bank prudential behaviour, so as to be able to analyse such pattern across different sample times.

Household's Demand in Albania: Measuring the Effects of Income and Price Shocks to Consumer Demand using Micro Data", Ola Çami, Research Department.

This paper implements a Quadratic Almost Ideal Demand System (QUAIDS) model on cross-sectional data of Albanian households

over the period 2005-2012. The system is comprehensive, consisting of eight budget shares matching the classification of goods and services of INSTAT, through which income and price elasticities (compensated, uncompensated, cross-price) are estimated for each share. Based on the QUAIDS results, the paper performs a simulation of an increase in income and administered prices to see how household demand reacts and, consequently, how the basket composition is affected. The results suggest that a 10% increase in household income reduces the share of spending on food and other necessities and increases the share of spending on entertainment, transportation and other luxury goods. Meanwhile, the rise in administered prices does not significantly affect the composition of the household basket.

Wage differentials as an outturn of sector of employment, formal education level and occupational classification in Albania, Orion Garo, Research Department.

This paper analyses empirically the differences in earning from wages for labour market participants in Albania. The analysis uses the data of the Living Standard Measurement Survey, collected by the Institute of Statistics (INSTAT) for the period 2002-2012. The results suggest that public sector employees are paid more on average than those employed in the private sector. This is also true for highly educated employees. On the other hand, the occupations that are paid below average appear to be: skilled workers in agriculture, forestry and fisheries; sales and service employees, as well as elementary occupations.

1.2. RESEARCH PAPERS IN PROGRESS

Credit Risk, Business Cycles and Foreign Currency Risk, Bledar Hoda, Research Department.

GDP and non-performing loans (NPL) are two key indicators of an economy. Based on data for the past several years, in Albania, these two indicators are negatively correlated. After the global crisis of 2008-2009, the NPL ratio to outstanding credit in the economy went up above 10 %, while the economy has been growing by around 3% on average compared to an average above 6 % before the crisis. This paper focuses on the investigation of the impact of economic indicators like GDP, exchange rate, interest rate and financial frictions in the fluctuations of the NPL ratio.

What drives the lek-euro exchange rate?, Altin Tanku and Ilir Vika, Research Department.

This paper aims to assess the sensitivity of exchange rate to real and monetary shocks in Albania. The distinction between these shocks helps us to better understand the role of exchange rate in the economy, whether it is a shocks absorber that stabilizes the deviations from equilibrium, or a source of instability. The analysis relies on the structural VAR method, which is widely used in literature to identify economic shocks. Firstly, we estimate a small model following Clarida and Gali (1994) with three variables – economic growth, real exchange rate and inflation – to identify the supply, demand and nominal shocks, respectively. Then we augment the analysis with other indicators commonly used in the exchange rate literature, such as consumption, interest rate

and trade balance. The preliminary results suggest that monetary shocks generally account for one-fourth of the exchange rate fluctuations in Albania. Meanwhile, their effects are found to be negligible in the last quarters, and real exchange rate appreciation could mostly stem from real economic factors.

The impact of housing markets and real estate exposure on the risk-taking behaviour of banks: Evidence from CESEE countries, Elona Dushku (Bank of Albania), Antje Hildebrandt (Oesterreichische Nationalbank) and Erjona Rebi (Bank of Albania).

This paper evaluates empirically the impact of housing market dynamics and real estate exposure on the stability of the banking sector in 16 CESEE countries. Preliminary results based on a panel approach show that the exposure of banks to the housing market has a positive and significant impact on banks' stability, measured through the Z-score index. Furthermore, we find that house price dynamics are important for the banks' stability, but its impact is related to the exposure of banks to the real estate market and the institutional development of the respective country.

Financial literacy in Albania: Survey results for measuring financial literacy of the population, 2015, Egnis Isaku, Kliti Ceca and Arlinda Koleniço, Research Department.

The paper will analyse the survey results for measuring the level of financial literacy of the population. The survey was developed by the Bank of Albania according to OECD / INFE guidelines and methodology, and conducted by INSTAT in July-August 2015.

After the 2011 survey, this is the second round to collect and publish data on this indicator, comparable in time and space, at home and abroad. This analysis is an important tool for identifying issues that need attention and intervention through educational projects. The paper will study in detail the 2015 data at country level, and will compare the results of the two periods: summer 2011 and summer 2015. According to the issues that are addressed in the survey, data will be analysed separately, according to socio-demographic characteristics and will be grouped into four chapters: financial inclusion; financial literacy; financial behaviours; and financial attitudes.

An empirical investigation of the effects of fiscal policy on the Albanian economy, Meri Papavangjeli, Research Department.

This paper investigates the effects of fiscal policy on the Albanian economy during the period 1998Q1-2018Q2 employing, on one hand, a structural VAR approach as proposed by Blanchard and Perotti (2002) for the identification of fiscal policy shocks and, on the other hand, a Local Projection Method for the computation of impulse response functions. The estimated results show that a tax revenue shock has a higher effect on the economic activity compared to a government spending shock in the short run, while its effects fade out over longer horizons. Output and private consumption reacts positively to a government spending shock and negatively to a tax revenue shock. Capital spending and government purchases have a similar effect on GDP, but the capital spending effects remains significant for longer. Considering this, medium-term policies could minimize the adverse consequences

of fiscal consolidation on economic growth by offsetting some current spending cuts with increased capital spending.

1.3. ARTICLES

Practical issues in forecasting with vector autoregressions, Ilir Vika, Research Department.

The use of vector autoregressions for forecasting purposes raises certain questions on the model specification and estimation. These issues are related to a) selecting an adequate number of time lags; b) the need to transform variables in levels so as to become stationary; c) model forecast strategy, whether recursive estimation provides better forecasts than rolling estimation; d) performance of in-sample versus out-of-sample forecasting; and e) controlling for over-parameterization problems. This article addresses some of the practical issues that are faced in building VAR forecast models at the central bank. It uses a small open economy model and compares the forecast performance of various specifications, which might serve potential users as a starting point in creating their models.

Constructing exogenous output elasticity of tax revenue for the Albanian fiscal sector, Meri Papavangjeli, Research Department.

Estimates of tax revenue elasticities with respect to economic output or tax bases are needed not only at the Ministry of Finance and Economy, but also at the Bank of Albania, for the fiscal parameters of macroeconomic models, which aid monetary-policy making. In addition to the existing publications on this issue, this article

contributes to literature by estimating for the first time the output elasticity of tax revenues through the disaggregated approach as suggested by OECD. For the estimation the latest available data for the Albanian economy (1998Q1-2018Q2) are used, estimating also the output elasticities for the main tax components such as: Value Added Tax, direct taxes on individuals and corporations, Excise Taxes, Customs duties and Social security taxes. The calculated elasticity of total tax revenue results to be in line with previous studies for Albania and other countries, as well.

Introducing a benchmark VAR model for the Albanian economy, Ilir Vika, Meri Papavangjeli, Research Department.

Macroeconomic analysis and forecasting are crucial issues for the policy-making process in central banks. In this context, this article aims to introduce a relatively simple macroeconomic tool, such as Vector Autoregressive (VAR) models for the Albanian economy that will serve as a benchmark to other time series techniques or more sophisticated econometric models used currently at the Bank. The model consists in three sectors: the real private sector, the financial sector and the external sector. For each of them, we have selected the most representative economic indicators. The model is estimated in log-differences, in order to convert all the variables into stationary series. Among the different possible identification schemes, we use the Cholesky ordering of the variables, without imposing any restrictions on the contemporaneous or the dynamic interrelationships between the variables. In order to judge on the suitability of the model for analysis purposes, the impulse response functions and the variance decomposition

of the forecast errors are computed. The preliminary results provide a reasonable analysis of the dynamic interactions between the variables. Lastly, we test the usefulness of the model for short-term forecasts of the main economic indicators.

Labour market characteristics in Albania, identifying the key indicators and their dynamics in time”, Orion Garo, Research Department.

Reviewing the features, problems and dynamics of labour market indicators is important not only to understand the current trends of this market but also to

understand the differences between groups of employees and the unemployed. This analysis provides an overview of the labour market situation in Albania and the dynamics of its main components, based on quarterly and annual data of the Labour Force Survey reported by the Institute of Statistics. The results show that, starting from 2014, the main indicators of the Albanian labour market - employment and unemployment - show favourable trends and encouraging dynamics for the economy. However, figures point to higher unemployment among the younger age groups, and an inadequate use of women's labour potential in our labour market.

II. ARTICLES FROM OTHER CENTRAL BANKS

The Role of Expectations in Changed Inflation Dynamics, Damjan Pfajfar, John M. Roberts, Federal Reserve.

The Phillips curve has been much flatter in the past twenty years than in the preceding decades. We consider two hypotheses. One is that prices at the microeconomic level are stickier than they used to be—in the context of the canonical Calvo model, firms are adjusting prices less often. The other is that the expectations of firms and households about future inflation are now less well informed by macroeconomic conditions; because expectations are important in the setting of current-period prices, inflation is therefore less sensitive to macroeconomic conditions.

To distinguish between our two hypotheses, we bring to bear information on inflation expectations from surveys, which allow us to distinguish changes

in the sensitivity of inflation to economic conditions conditioning on expectations from changes in the sensitivity of expectations themselves to economic conditions. We find that, with some measures, expectations are less tied to economic conditions than in the past, and thus that this reduced attentiveness can account for a significant portion of the reduction in the sensitivity of inflation to economic conditions in recent decades.

The macroeconomic effects of macroprudential policy, Björn Richter, Moritz Schularick, Ilhyock Shim, BIS.

Central banks increasingly rely on macroprudential measures to manage the financial cycle, but the effects of such policies on the core objectives of monetary policy to stabilise output and inflation are largely unknown. In this

paper, we quantify the effects of changes in maximum loan-to-value (LTV) ratios on output and inflation. We rely on a narrative identification approach based on detailed reading of policymakers' objectives when implementing the measures. We find that over a four-year horizon, a 10 percentage point decrease in the maximum LTV ratio leads to a 1.1% reduction in output. As a rule of thumb, the impact of a 10 percentage point LTV tightening can be viewed as roughly comparable to that of a 25 basis point increase in the policy rate. However, the effects are imprecisely estimated and the effect is only present in emerging market economies. We also find that tightening LTV limits has larger economic effects than loosening them. At the same time, we show that changes in maximum LTV ratios have substantial effects on credit and house price growth. Using inverse propensity weights to rerandomise LTV actions, we show that these effects are likely causal.

How does monetary policy affect income and wealth inequality? Evidence from quantitative easing in the euro area, Michele Lenza, Jiri Slacalek, ECB.

This paper studies the effects of quantitative easing on income and wealth of individual euro area households. The aggregate effects of quantitative easing are estimated in a multi-country VAR model of the four largest euro area countries, in which key variables affecting household income and wealth are included, such as the unemployment rate, wages, interest rates, house prices and stock prices. The aggregate effects are distributed across the individual households by means of a reduced-form simulation on micro data from the Household Finance and Consumption Survey, capturing the income composition, the portfolio composition and the earnings heterogeneity channels of transmission. We find that the earnings heterogeneity channel plays a key role: quantitative easing compresses the income distribution since many households with lower incomes become employed. In contrast, monetary policy has only negligible effects on wealth inequality.

III. RESEARCH ACTIVITIES

3.1. TECHNICAL SEMINARS

Implications of QE policies of the ECB on the Albanian Economy, Bledar Hoda, Research Department.

The aim of this study is to assess the implications of Quantitative Easing (QE) policies of the European Central Bank (ECB) and of the potential risks following the eventual exit from these policies. Both the implementation of QE and their eventual phase out can have a potential impact on financial conditions and macroeconomic variables of non-EU

economies with high trade or financial linkages with the EU. These policies may potentially put pressure on trade and financial flows as well as on the real activity of non-EU economies. In the particular case of economies with a high euroization level, like Albania, the ECB policies may add pressure on the exchange rate, on the country risk spread as well as on inflation. This study will potentially shed light on the transmission channels of QE policies of the ECB for a small economy with trade openness, up to 75% of GDP like Albania.

Wage differentials as an outturn of sector of employment, formal education level and occupational classification in Albania, Orion Garo, Research Department, Bank of Albania.

The aim of this paper is to conduct an empirical analysis of the differences in the 2002-2012 period. Its objective is to identify the typical earnings' differences among Albanian workforce participants, based on their formal education level and their occupation classification.

Bank Prudential Behaviour – A statistical analysis based on the principal component approach, Gerti Shijaku, Research Department.

This paper analyses the factor that influence mostly bank prudential behaviour. The aim is to understand whether bank prudential behaviour is a matter of constraints imposed by regulation or a consequence of bank decision-making itself. For this reason, first, we identify a set of correlated indicators pertaining both to the discretionary and non-discretionary patterns of bank prudential behaviour, in addition to LLP or reserve funds. Then we use the principal component analysis to identify a new variable - the principal component - a linear combination of the original variables, which we refer to as an optimal proxy of measuring bank prudential behaviour. In conclusion, we use this component to assess similarities and differences with the set of data used to estimate it.

3.2 TWELFTH SOUTH-EASTERN EUROPEAN ECONOMIC RESEARCH WORKSHOP

On 6 and 7 December 2018, the Research Department of the Bank of Albania

organized the 12th 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 to increase 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 presented their working papers according to general economic and financial themes, as follows:

- *Euroization, exchange rate developments and their implications for financial stability and price stability;*
- *Theoretical and empirical aspects of monetary policy and macroprudential policy;*
- *Financial innovation, dynamics and implications of uncertainty related to monetary policy and banking supervision;*
- *Macroeconomic models for policy analysis and forecasting;*
- *Global Capital Flows, Financing and Sustainable Stability;*
- *Labour markets, productivity and real wages after the financial crisis;*
- *Risk analysis and tools for risk management in the financial sector.*

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

- *"The time-spatial dimension of Eurozone Banking Systemic Risk", Matteo Foglia (PhD candidate, University of Chieti –*

- Pescara, Italy);
- "Keeping up with the Novaks: determinants of households' current and planned debt in CESEE", Mariya Hake, (Oesterreichische Nationalbank) and Philipp Poyntner, (Vienna University of Economics and Business);
 - "The impact of housing markets on the risk-taking behaviour of banks: Evidence from CESEE countries", Elona Dushku, Erjona Suljoti (Bank of Albania) Antje Hildebrandt, (Oesterreichische Nationalbank);
 - "Evaluating the forecasting accuracy of the closed- and open economy medium-sized DSGE models", Phuong Van Nguyen, (The University of Kiel (CAUx), Germany);
 - "Forecasting Housing Output with Artificial-Intelligence-Based Big Data Analytics: An Application of Natural Language Processing and Google Trends Analytics", Xuxin Mao, (London School of Economics and Political Science);
 - "An empirical analysis of the effects of fiscal policy on the Albanian economy", Meri Papavangjeli, (Bank of Albania);
 - "Monetary Policy Interaction with Government Bond Yields and Liquidity", Linas Jurksas, Hector Carcel, (Bank of Lithuania);
 - "Do ECB's monetary policies benefit EMEs? A GVAR analysis on the crisis and post-crisis period", Andrea Colabella, (Bank of Italy);
 - "Factors behind low inflation in Albania", Evelina Çeliku, Ermelinda Kristo, Iris Metani, Enian Çela, Gent Hashorva, (Bank of Albania);
 - "Spillover Effects of ECB Policies in a SoE framework", Bledar Hoda, (Bank of Albania);
 - "Analyzing the external debt-economic development relationship in Albania", Ermira Kalaj, Elvisa Drishti, Visar Dizdari, (University "Luigj Gurakuqi", Shkodër);
 - "Fiscal performance and elections in the context of transition economy", Drini Imami (Faculty of Economics and Agribusiness, Agricultural University of Tirana), Endrit Lami (Ministry of Finance and Economy of Albania), Iraj Hashi (Faculty of Business, Education and Law, Staffordshire University);
 - "Household's Demand in Albania: Measuring the Effects of Income and Price Shocks to Consumer Demand using Micro Data", Ola Çami, (Bank of Albania);
 - "The political economy of macroprudential policy", Elias Bengtsson, (Halmstad University & Banco de España);
 - "Does bank's prudential behavior affect their solvency conditions?", Gerti Shijaku, (Bank of Albania);
 - "Financial Cycle in the Bulgarian Economy and its Interaction with the Business Cycle", Tania Karamisheva, Gergana Markova, Boyan Zahariev, Svilen Pachedzhiev, (Bulgarian National Bank);
 - "Crypto Assets: Implications for Financial Stability", Faidon Kalfaoglou, (Bank of Greece);
 - "MPC Heterogeneity in Europe: Sources and Policy Implications", Miguel Ampudia (European Central Bank); Russell Cooper (The Pennsylvania State University & NBER);
 - "A Unique Monetary Policy Framework: Secondary Floor with a Floor System", Fatih Tuluk, (Washington University in St. Louis, United States & Middle East Technical University Northern Cyprus Campus, Turkey);
 - "Stochastic consistent expectations equilibria in a Regime Switching Model of Inflation Determination", Marco

- Airaud, Phd. Candidate Ina Hajdini, (Drexel University, School of Economics, Germany);
- "Structural Analysis of the Albanian Economy: Social Accounting Matrices based approach", Enian Çela, Iris Metani, Evelina Çeliku, (Bank of Albania);
 - "What Drives the Exchange Rate Developments in Albania", Altin Tanku, Ilir Vika, (Bank of Albania);
 - "Financial literacy in Albania: Survey results for 2015", Egnis Isaku, Kliti Ceca, Arlinda Koleniço, (Bank of Albania);
 - "Bank prudential behavior-a statistical analysis based on the principal component approach", Gerti Shijaku, (Bank of Albania);
 - "A forecasting BVAR model for the Albanian economy", Ilir Vika, Meri Papavangjeli, (Bank of Albania);
 - "Virtual Currencies, Its Technological Innovations and Central Banking", Bledar Hoda, (Bank of Albania);
 - "Measuring the Marginal Propensity to Consume out of Income and Real Wealth for Albanian Households using Micro Data", Elona Dushku, Ola Çami, (Bank of Albania);
 - "A dual index of income inequality for Albanian households", Ola Çami, (Bank of Albania);
 - "The Effect of Fed's Future Policy Expectations on Country Shares in Emerging Market Portfolio Flows", Yasemin Erduman, Zelar Aktaş, Neslihan Kaya Ekşi, (Central Bank of the Republic of Turkey);
 - "Capital Flows to South and Eastern European countries in an Era of Global Imbalances", Konrad Sobanski, (Poznan University of Economics, Faculty of International Business and Economics, Poland);
 - "Exchange Rate Changes and Money Demand in Albania: A Nonlinear ARDL Analysis", Mohsen Bahmani-Oskooee (University of Wisconsin – Milwaukee), Ilir Miteza, (University of Michigan-Dearborn), Altin Tanku, (Bank of Albania);
 - "Wage differentials as an outturn of sector of employment, formal education level and occupational classification in Albania", Orion Garo, (Bank of Albania);
 - "The interaction between private sector and public sector labor markets", Valeriu Nalban, Andra Smadu, (National Bank of Romania);
 - "What factors determine wages on a local level?", Tamás Lajos Szabó, (Central Bank of Hungary).

3.3 GOVERNOR'S AWARD FOR THE BEST DIPLOMA THESIS, 2018

The Bank of Albania, in the framework of encouraging graduates both from Albanian and foreign universities to engage in quality scientific research in various fields of economics and finance, organized during 2018 the open contest "Governor's Award for Best Diploma Thesis". The presented thesis focused on topics related to monetary and international economics, price and financial stability, economic integration, etc.

This year, the first prize was awarded to Migena Musli, from the Mediterranean University of Albania for her thesis on: "Foreign investments in Albania. The case of natural resources as an investment opportunity". The thesis presents the importance of foreign direct investments for Albania's economic development. The material also makes an overview of foreign investments in Albania and their impact on the domestic economy. On the other

hand, focusing on the natural resources of Albania, the study manages to identify the potentials of our country in this regard.

The second prize was awarded to Donald Vullnetari, from the University of Tirana for his thesis on: "The Inflation Dynamics in the Neo-Keynesian Phillips Curve Perspective: The Case of Albania". The study analyses the relationship between the inflation rate and the output gap in the case of Albania. Estimates, using the generalized method of moments, show a positive relationship between inflation and output gap. The author also estimates that inflation expectations in Albania are backward-looking, where the past is important for informing expectations in the future.

The third prize was awarded to Klisman Ndoje, from University Libre de Bruxelles for his thesis on "Albania: The Transition from Equality to Inequality". The thesis explores poverty and inequality in Albania using micro data on Albanian households. Initially, the author, through the creation of a statistical index, manages to approximate the wealth of households and then analyses whether the wealth differences affect spending on education or health care. Through the use of principal component methods and probabilistic assessment models, the author shows that economic inequality is reflected and also causes inequalities in education and health. The study identifies the need to address these important current issues as well as the impact on future generations.

IV. LINKS OF OTHER INSTITUTIONS:**Banca d'Italia**

[\(http://www.bancaditalia.it/studiricerche/\)](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

