During the second half of 2015, some of the presented papers focused on a variety of issues, such as: the efficiency of credit allocation; monetary policy transmission in Albania; and the relationship between financial development and economic growth.

Following is a summary of the topics presented in this seminar.

**The Efficiency of Banks’ Credit Portfolio Allocation: an Application of Kernel Density Estimation on a Panel of Albanian Banking System Data, by Altin Tanku, Kliti Ceca and Elona Dushku, Research Department**

This seminar investigated the efficiency of credit allocation in Albania, with a particular focus on the use of kernel density estimation as an alternative estimation methodology for pooled and panel datasets. Authors focus on the allocation of the banks’ credit portfolio (to businesses) to investigate whether sectorial distribution of credit after 2008 reflects the trends of sector developments (in terms of expansion), performance of credit portfolio and banks own characteristics. The empiric analysis is based on the adoption of the kernel density estimation, for the panel datasets. Conclusions are based on the estimation and interpretation of multidimensional joint densities.

**The macroeconomic pass-through effects of monetary policy through sign restrictions approach: The case of Albania, By Gerti Shijaku, Research Department**

The seminar examined the transmission mechanism of the monetary policy in Albania during 2002 M01 - 2014 M12. It addressed the macroeconomic pass-through effects of a monetary policy shock, with regards to interest rate and possible balance sheet policy changes. The analysis is based on a structural vector autoregressive model for the Albanian economy that includes means of the Cholesky identification scheme and the sign restrictions approach.

**Investigating financial development - economic growth nexus. A SEE perspective, by Arlind Rama, Research Department**

The seminar investigated the relationship...
between financial development and economic growth in a representative group of ten SEE economies, applying panel data techniques on annual data, for the period 2002-2014. The author estimates whether the implementation of the regulatory framework and of the continuous reforms during the last decade have contributed to increasing the importance of the financial development on economic growth.

**Financial sector development and economic growth, by Endrit Yzeiraj, Research Department**

The seminar presented some preliminary work that was carried out for the same-stated discussion paper and was intended to draw comments and suggestions. A brief summary of the paper is presented in the working papers’ section.

**The EU-Albania Stabilization and Association Agreement, by Alban Pllaha, Research Department**

This seminar analyses the bilateral relationship of free trade between Albania and the European Union. The material focuses on the Stabilisation and Association Agreement (SAA), in particular the Free Trade Agreement with the regional countries, the results of trade exchanges among parties and the application of the “Gravity Model”. The model produces forecasting data that compare current trading volumes to the potential ones. Results in the model suggest that the trading volumes between Albania and EU countries, such as Greece and Italy, are close to the potential equilibrium, while there is more room to intensify trade exchanges with Germany. Results of the model for trade exchanges with regional countries suggest that trading volumes with these countries are far below the potential equilibrium. The analysis suggests the possibility to intensify Albania’s trade exchange with regional countries through the improvement of the infrastructure network and further integration. Hence, through the full implementation of the SAA, trading volumes will be considerably intensified not only with the traditional trading partners but also with other EU countries.

### II. RECENTLY CONCLUDED RESEARCH PAPERS

**The ‘Magic Act’ of Central Bank Governors; Does It Alter Monetary Policy? An Application of Kernel Density Estimation, by Altin Tanku and Kliti Ceca, Research Department**

This paper provides a natural generalization of the conditionality concept on the density estimates for multi-dimensional densities. A new generalized definition of the conditional density standard is given, as an authentic result. This new concept is applied on a set of quarterly economic variables of the US economy, which cover the period 1959–2014 for five main macroeconomic variables. The results are simulated for four sub-periods of the above-mentioned interval, which corresponds to four different governors.

**The Efficiency of Banks’ Credit Portfolio Allocation, an Application of the Kernel Density Estimation on a Panel of Albanian Banking System Data, by Altin Tanku, Kliti Ceca and Elona Dushku, Research Department**

This paper focuses on the sectorial allocation of banks’ credit portfolio of business loans
in response to sector-specific economic and risk developments and bank-specific characteristics observed after 2008. The authors do so by analysing a panel of banks using the kernel estimation methodology and the cross-section method proposed by Tanku and Ceca (2013; 2014). The advantage of this method is that, among others, the analysis does not suffer from the endogeneity and autocorrelation problems that impair traditional panel data analysis. The adoption and application of the method itself in panel datasets is a second important objective of this research. Albanian banking system data shows that the current distribution of outstanding stock of credit among sectors is disproportional to the sectors’ contribution in economy. This composition reflects first and foremost the characteristics of the fast financial intermediation process and those of the absorption-led growth model that dominated economic activity before 2008.

**Investigating financial development - economic growth nexus. A SEE perspective, by Arlind Rama, Research Department**

In an on-going challenge to a faster economic growth, South East European (SEE) economies should better explore all the channels that contribute to this process. Previous research in this context does not find a substantial relationship between the financial developments to economic growth in SEE countries. There is no updated analysis in this regard. This paper aims to investigate the causal effect of financial development on economic growth in a group of ten developing and emerging SEE economies in a time horizon spanning from 2002 until 2014. It applies a panel data technique, on an annual frequency, as an effort to understand whether the implementation of the regulatory framework and of the continuous reforms during the last decade have contributed to increasing the importance of the financial development on economic growth. The findings show that credit to the private sector is the only statistically significant indicator of the financial development, to a positive ratio to growth.

**Micro and macroeconomic determinants of net interest margin in the Albanian banking system (2002-2014), by Meri Papavangjeli, Research Department, and Eralda Leka, Monetary Policy Department**

This paper contributes to the existing literature on the Albanian banking sector, by introducing, for the first time, the macroeconomic factors in the econometric analysis as banking margin’s determinants. Using an OLS-based PCSE (Panel Corrected Standard Errors) model, the paper suggests that individual bank characteristics explain a substantial part of the variation in bank interest margins: Higher net interest margins tend to be associated with banks that have large overhead costs and high non-interest income. On the other side, banks with high capital adequacy ratio, liquidity ratio and non-performing loans ratio have lower net interest margin. Macroeconomic variables play also an important role in explaining the banking margins. The results indicate that a stable macroeconomic environment supports lower net interest margins. On the other hand, increasing government debt and associated macroeconomic risks are linked with higher margins.

**The macroeconomic pass-through effects of monetary policy through sign restrictions approach: The case of Albania, by Gerti Shijaku, Research Department**

Many central banks have been cutting interest rates to historically low in order to counter the risks to global financial crisis turmoil. This policy has been accomplished
by embarking also balance sheet policy response actions. These policies aimed at restoring confidence in the financial system, lowering bank and sovereign credit risk, and boosting economic growth recovery and anchoring inflation expectation. The paper also examines the transmission mechanism of monetary policy in Albania during 2002 M01 - 2014 M12. The main question addresses the macroeconomic pass-through effects of a monetary policy shock, with regards to an interest rate and possible different balance sheet policy changes. The analysis is based on a structural vector autoregressive model for the Albanian economy that includes means of the Cholesky identification scheme and the sign restrictions approach.

Motives and Effectiveness of Forex interventions in Albania, by Ilir Vika, Research Department

Using Probit and non-linear testing models, this study tries to evaluate the Bank of Albania’s reaction function to intervene during the 2000-2014 period. Results indicate that upward movements from a certain trend raise the probability that the central bank will intervene to stop further divergences of the lek exchange rate. The non-linear estimations largely confirm the empirical findings from the Probit method, adding that sizable (but not persistent) exchange rate deviations might draw the attention of the Bank of Albania.

The final aim of the study is to assess whether interventions have been effective in stabilizing the exchange rate by returning it towards an underlying direction and reducing undesired market volatility. The GARCH model results and the event study analysis give the impression that Bank of Albania’s actions have weighted on the exchange rate to return to certain ‘fundamental’ levels.

Financial sector development and economic growth in Albania, by Endrit Yzeiraj, Research Department

This paper is aimed at analyzing the effect of the growth and development of the financial sector’s size in Albania, a process that accelerated in the last half decade, on economic growth. This is not the first time such a study is undertaken at the Bank of Albania, but this relationship was being reassessed for the first time after the global financial crisis that has affected Albania, as well.

The paper focuses on aggregate data and uses standard time series econometric techniques such as VECM. Unlike many developed countries, where the growth of the financial sector is now seen as beyond the needs of the economy, this is still not the case for Albania. The relationship between these two variables continues to remain significant. However, compared to previous periods, this relationship has begun to weaken. Further studies are recommended, which would focus on specific characteristics of the financial system that can be improved upon and have, therefore, a more positive influence on growth.
III. RESEARCH PAPERS IN PROGRESS

Parameterization in the models based on estimated densities. An application on macroeconomic variables, by Altin Tanku and Kliti Ceca, Research Department

The paper provides various ways of parameterization in models built using the concept of estimated densities and a new generalized definition of the concept of parameterization. The literature on the parameterization of stochastic models is studied and also potential scenarios are determined, to which the new defined parameterization methodology will be applied. More specifically, the authors propose concrete optimization techniques in functional spaces. Five-dimensional estimated densities are calculated based on two macroeconomic databases – one for the Albanian economy and the other for the US economy. The applications on the selected scenarios for generation of the parameters matrix and the description of the economic patterns derived from them are yet to be realised.

The determinants of bank soundness index – Evidence from Albanian banking system, by Gerti Shijaku, Research Department

This paper assesses the factors that determine the health of banks in the Albanian banking system. The paper investigates the relationship between bank soundness index, based on individual banks, and other indicators such as credit risk, operational efficiency, banking concentration, output gap, and sovereign risk. For this reason, the paper uses the General Method of Moments, with individual bank data and macroeconomic indicators.

IV. ARTICLES

This section briefly summarizes some articles and papers to be published in the half-yearly publication of the Bank of Albania: “Economic Review” July-December 2015. This section provides a better view on research and scientific topics published during this period by central banks.

On the existence of bank lending channel in the transmission mechanism in Albania, by Ilir Vika, Research Department, and Erjona Suljoti, Monetary Policy Department

The analysis of bank credit was undertaken in the framework of the research on the monetary policy transmission mechanism in Albania. Unlike neoclassic channels, the credit channel examines the possibility of imperfections in the financial markets. The analysis at the beginning provides an inventory of empirical findings of the Bank of Albania or other research regarding the lending channel in Albania, and concludes on the relevance of these findings in today’s analysis on the monetary policy. The investigation of literature showed some research on lending in Albania. Only some of them try to address more directly the lending channel – Luçi & Vika (2005) and Vika (2009) – as a chain in the monetary transmission mechanism. The revaluation of model by Vika (2009) on the role of banks in the transmission of the monetary policy during 2004-2009, overall, maintains the
same position. Apparently, the monetary policy may impact lending supply of banks: the existence of lending channel in Albania may be evidenced only in case of banks with high liquidity. The size of banks in its own seems not to exercise any impact, except when these banks are well-positioned in liquid assets ratio.

**Do banking system confidence indices have signalling power for developments in credit and real macroeconomic variables in Albania? by Lindita Vrioni and Esida Abazaj, Research Department**

In conducting its monetary policy, the Bank of Albania (BoA) considers not only quantitative, but also qualitative information about current economic conditions. Since 2006, BoA conducts a quarterly survey in order to assess the banks’ perceptions and expectations regarding the future banking activity. This study attempts to estimate whether the qualitative information collected by the banking sector survey is useful in BoA’s decision-making process. Using a series of causation regressions, the banking confidence survey carried out by BoA is found to provide early signals of the future banking activity and of main macroeconomic developments.

**Housing prices in Albania: Deviation from Equilibrium by Endrit Yzeiraj, Research Department**

The article is a summary of a working paper written during 2013-14, but reflects the latest statistical developments and time series’ revisions. The article creates an index for the fundamental housing prices depending on various important macroeconomic variables such as growth rates, and interest rates. This index, which theoretically represents the “fundamental” price, is then compared with the actual housing prices. Depending on the variables used, the deviations from the fundamental price vary. Although the time period is relatively short for these kinds of studies, we may spot a tendency for actual prices to return to the fundamental price level.

**Investigating financial development - economic growth nexus. A SEE perspective, by Arlind Rama, Research Department**

A detailed summary of the paper is provided in the section “Recently concluded research papers”.

**Micro and macroeconomic determinants of net interest margin in the Albanian banking system (2002-2014), by Meri Papavangjeli, Research Department, and Eralda Leka, Monetary Policy Department**

A detailed summary of the paper is provided in the section “Recently concluded research papers”.

**Euro area business cycles in turbulent times: convergence or decoupling by Benjamin Klaus and Filippo Ferroni, European Central Bank**

The study estimates the business cycle properties of the four largest euro area economies in the wake of the recent recession episodes. The analysis is based on the factors estimated from a multi-country and multi-sector data-rich environment. Authors measure alikeness of business cycles by studying the synchronization of up and down phases, the convergence properties of country fluctuations towards the euro area cycles and the contribution of the euro area factor to national GDP volatilities. While the economic fluctuations of the four euro area member states were similar before the global financial turmoil, authors gather compelling evidence of an asymmetric
behaviour of Spanish fluctuations relative to the euro area one.


*Are monetary unions more synchronous than non-monetary unions*, by Patrick Crowley and Christopher Trombley, Bank of Finland

Within currency unions, the conventional wisdom is that there should be a high degree of macroeconomic synchronicity between the constituent parts of the union. But this conjecture has never been formally tested by comparing sample of monetary unions with a control sample of countries that do not belong to a monetary union. Using macro data (GDP, GDP deflator, unemployment rate) for United States, provinces of Canada and Australia, the material employs techniques relating to recurrence plots to measure the degree of synchronicity in dynamics over time using a dissimilarity measure. The results show that for the most part monetary unions are more synchronous than non-monetary unions, but that this is not always the case and particularly in the case of real GDP growth. Furthermore, Australia is by far the most synchronous monetary union in our sample.


**Determinants of global spillovers from US monetary policy**, by Georgios Georgiadis, European Central Bank

This paper assesses the global spillovers from identified US monetary policy shocks in a global VAR model. US monetary policy generates sizable output spillovers to the rest of the world, which are larger than the domestic effects in the US for many economies. The magnitude of spillovers depends on the receiving country’s trade and financial integration, de jure financial openness, exchange rate regime, financial market development, labour market rigidities, industry structure, and participation in global value chains. The role of these country characteristics for the spillovers often differs across advanced and non-advanced economies and also involves non-linearities. The results of this paper suggest that policymakers could mitigate their economies’ vulnerability to US monetary policy by fostering trade integration as well as domestic financial market development, increasing the flexibility of exchange rates, and reducing frictions in labour markets.

TECHNICAL SEMINARS

In the framework of the Medium-Term Development of Strategy of Research at the Bank of Albania, the Research Department organizes internal technical seminars and/or informative workshops on issues and various phenomena of interest. Below is a summary of workshops conducted during July-December 2015.

Behavioural economics and organizational behaviour, by Endrit Yzeiraj, Margerita Topalli, and Alban Pllaha, Research Department

This technical seminar was the continuation of a series of presentations focused on the field of behavioural economics. After the initial seminar, which provided a general presentation of the topic, the second one focused on the behaviour and decision-making process within organizations. The authors showed examples of some of the most important decisions that different organizations take during their activity and how they reach a decision.

Of special importance for researchers is the modelling of these behavioural characteristics in tractable equations. The ultimate goal of this process is the subsequent inclusion of these behavioural equations, which reflect in a most realistic way, the decision making process of economic agents, in aggregate macroeconomic models.

Trade according to broad economic categories, by Enian Çela, Research Department

This technical seminar presented trade data based on broad economic categories for exports and imports of goods. Also, intermediate and major categories were calculated and reported separately for exports and imports, analysing the dynamics in both cases. Finally, exports and imports were compared, based on the respective structures.

THE BILATERAL ASSISTANCE AND CAPACITY BUILDING FOR CENTRAL BANKS

In the framework of the cooperation agreement with the Assistance Program for Capacity Building for Central Banks (BCC), Prof. Massimiliano Marcellino, delivered a lecture in the workshop on “Doing Publishable Research” on 2 – 6 November. Prof. Massimiliano Marcellino is an econometrics professor at the Economics Department, Bocconi University. His academic experience spans the fields of Time Series Analysis, Applied econometrics, econometrics and macroeconomics.

The seminar aimed at providing suggestions and comments on some of the Research Department staff’s work and other staff of the Bank. The goal was to see how they could become more publishable in specialized economics-science journals. In addition to the presentations included in the agenda, the professor also conducted individual discussions with some staff members who were keen on the professor’s suggestion related to their own work.

A training course on “Prediction and Policy Analysis at the Bank of Albania” was held on 14-18 September 2015, with Luca Gambetti, a professor at the Autonoma de
Barcelona University, Spain. The training was comprehensive, giving due importance to the theoretical and practical aspects of the state-space models. During the first days, the training focused on explaining the theory behind these models, their advantages compared to other models and their usage to generate valid predictions for the political decision-making. The last two days were devoted more to the practical side, taking examples of the application of these models in E-Views. The latter was the most interesting part of the training, because it was in line with the medium-term project of the Department of Research for building and using these models at the Bank of Albania to build scenarios and to generate forecasts for economic key indicators.

**PARTICIPATION OF BANK OF ALBANIA STAFF IN CONFERENCES AND SEMINARS ORGANISED ABROAD**

The Bilateral Assistance and Capacity Building for Central Banks (BCC) program held its third annual conference in Geneva on October 29-30, 2015, themed: *Exchange rate policy: limits to flexibility, capital controls, and reserve Management*. The purpose of the conference was to share recent research work and policy experience among the central banks involved in the programme, of academics and policy makers from other institutions.

Staff of the Bank of Albania participated in this seminar with two main studies:

- “Motives and Effectiveness of Forex interventions in Albania”, by Ilir Vika, Research Department
- “Loan loss provision: Evidence from banks in Albania”, by Elona Dushku and Argita Frashëri, Bank of Albania

On 1 - 2 October, the European Central Banking Network organised the 1st Research Policy Conference, in Ljubljana. The main objective was to bring the problems of Emerging European countries closer to the centre of the debate. The network will make it possible to examine national experiences in a comparative setting, using a common framework of analysis. Staff of the Bank of Albania participated in this conference with the following study:

- “The Efficiency of Banks’ credit portfolio allocation, An Application of Kernel Density Estimation on a Panel of Albanian Banking System Data”, by Altin Tanku, Research Department

**9TH SOUTH-EASTERN EUROPEAN ECONOMIC RESEARCH WORKSHOP**

Institute of Economic and Banking Studies (Bank of Albania) organized for the ninth consecutive year the Regional Research Workshop for South Eastern on 3-4 December 2015. The purpose of this event is to serve as a bridge of cooperation between researchers and policy makers in our region, to contribute to the deepening of economic research in the region, and to expand the knowledge of the specific features of our countries’ economies. The main theme of the 9th South-Eastern European Research Workshop was “Rethinking economic policies and central banks’ methodologies”. The topics discussed by researchers this year were related to the stability of the European banking system, non-performing loans, determinants of credit growth, efficiency of the credit portfolio,
effects of monetary policy and interventions in the foreign exchange market, transmission of import prices, foreign direct investments, consumer confidence etc. Alternative methods of empirical investigation, such as of the evaluation of densities, were also presented in the workshop. Apart from the works submitted by colleagues of the Bank of Albania, this event was attended by the Bank of Italy, Bank of Greece, Bank of Montenegro, Bank of Turkey, Paris School of Business, Hungarian Academy of Sciences, etc. Below is a list of topics presented in this workshop:

1) Leroy*, Yannick Lucotte**, Laboratoire d’Economie d’Orléans (LEO), France*, Paris School of Business**)
2) “NPLs Resolution Regimes. Challenges for the Regulatory Authorities”, by Faidon Kalfaoglou, Bank of Greece
3) “Financial system development and economic growth”, by Endrit Yzeiraj, Bank of Albania
4) “Determinants of Credit Growth – The Case of Montenegro”, by Maja Ivanović, Central Bank of Montenegro
5) “Determinants of Credit Growth in Turkey: Does Size Matter?”, by Osman Furkan Abbasoglu, Şerife Öner Ileri, Yasin Mimar, Central Bank of the Republic of Turkey
8) “Similarity on Albanian Bank Credit Portfolio - Application on Credit Stock and Quality”, by Adela Bode, Elsida Orhan, Bank of Albania
11) “Do Banking System Confidence Indices Have Predictive Power for Developments in Credit and Real Macroeconomic Variables in Albania?”, by Lindita Vrioni, Esida Abazaj (Bank of Albania)
13) “The Transmission of Import Prices to Producer Prices in the Case of Albania”, by Enian Çela, Bank of Albania
16) “Sensitivity of Inflation to Demand Conditions in Turkey: Determining CPI Items Responding to Output Gap and Credits”, by Mustafa Utku Özmen, Çağrı Sarıkaya, Central Bank of the Republic of Turkey
17) “The “Magic Act” Of Central Bank
Governors; Does It Alter Monetary Policy? An Application Of Kernel Density Estimation”, by Altin Tanku, Kliti Ceca (Bank of Albania)

18) “In Search Of The Drivers Of The Turkish Consumer Confidence”, by Tugrul Gürgür, Zübeyir Kilinc, Central Bank of the Republic of Turkey


20) “Motives and Effectiveness of Forex Interventions in Albania”, by Ilir Vika, Bank of Albania

GOVERNOR’S AWARD FOR THE BEST DIPLOMA IN 2014- 2015

Already a tradition, in December 2015, the Bank of Albania organized the annual “Governor’s Award for the best Diploma”. This competition aims to encourage Albanian students graduated this year, domestically and internationally, for research on issues related to monetary and international economics, price and financial stability, economic integration of the Balkan countries in Europe, Bank of Albania operations in the Albanian financial system, role and behaviour of banks in the Albanian economy, and also issues relating to other macro and micro aspects in the economy in general.

The winners for the best diploma award 2014- 2015 are:

The first prize was awarded to Ms Ajla Ngjeliu, a student at the University of Greenwich, for her thesis, “Determinants of capital structure of listed companies in the Balkans”. This study investigates whether the capital structure and the behaviour of listed companies in the Balkans is in accordance with the theories of capital in advanced economies. Results of the study show that the determinants of capital structure for companies in our region are: profitability, size of the company and collateral. These findings indicate that the determinants of capital structure of the companies operating in the Balkans are different from those in advanced economies.

The second prize was awarded to Mr Klajd Panariti, a student at the Università Commerciale Luigi Bocconi, for his thesis, “Empirical evidence on mergers and acquisitions in the banking industry during the financial crisis”. The thesis analyses cases of mergers and acquisitions in the banking sector of the United States and the United Kingdom during the crisis, to see whether they are accompanied by a creation or a destruction of the value. Results indicate that these activities are mainly associated with value destruction and are made due to urgent liquidity needs, government intervention aimed at saving respective banks or as a result of minimum estimates.

The third prize was awarded to Mr Gentjan Çera, a student at the Agricultural University of Tirana, for his thesis, “Assessing the role of financial sector in Albania’s economic performance.

This study seeks to evaluate the impact of the financial system on the performance of the economy. Results of the study show that credit allocation and GDP by economic activity show a positive co-movement, besides the construction and industry sector. Services sector account for the greatest weight in absorbing credit issued to commercial banks, in alignment with its gross value added.
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