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Kosovo Banking Paradox

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Abstract

Kosovo does not have a bond market, which would enable companies, people and other economic agents to have access to it, that would have been a substitute for the companies to get other sources of funds beside banking sector. The Kosovo economy has only one source of institutional money injected into the economy and that is the banking industry. Bringing back the money of Kosovo Pension and Saving Trust (KPST) to Kosovo would have been a huge injection for the economy to raise GDP and lower unemployment. Since the companies in Kosovo contain a lot of asymmetric information within their financial statements, clearing the way for KPST how to allocate their investments in Kosovo would be through alleviating asymmetric information. The paper stands on the general concepts of the asymmetric information and how to alleviate it within the financial market and particularly within the bond market. The other part of the paper concentrates on theoretical framework how to eliminate asymmetric information for the companies who want to get funding from KPST. Therefore, it is necessary to have healthy banks and a better environment to have a sound bond market. On the other hand, the bond market may increase the health of banks by enhancing market competition.

Key words

Asymmetric information, market competition, Kosovo Pension Fund, interest rate, bond market

JEL Codes: G32, G33

1. Introduction

Competition is proven throughout theoretical paradigms and also tested with empirical results that it is the key driver of productivity, innovation and growth acceleration. Since the banking industry in Kosovo is the key institutional money injection into Kosovo economy, there is a huge concern if the interest rates in the Kosovo economy are set up for the competition among the banks or it is driven up by the banks throughout their

market power (banks set up interest rates on their own). According to Aliu (2015), the banking industry in Kosovo has higher interest rates on lending activities than regional countries, while all risks are lower, such as public debt, non-performing loans (NPL), exchange rate risk, economic growth and etc. In this paper we built our research questions based on paradox that the risks are lower in Kosovo than regional countries while interest rates spread is higher. *In our paper*, we will try to find out the answers to these questions: Do the interest rates in the Kosovo banking industry reflect the risks that the industry is opposed to? Does the establishment of the bond market create pressure for the banking industry in Kosovo to lower the interest rates on lending activities while raising the interest rates on deposits? These questions have been intensively debated throughout the paper.

The view that the interest rates spread lies on general microeconomic principles of price signals and market competition has been attracted for many years by scholars in emerging countries to attain research on the bond market. The main reasons for starting a bond market in emerging countries were to fund fiscal deficit and sterilize large capital inflows (Turner, 2002). According to Yoshitomi and Shirai (2001) and Shirai (2001), banking markets should be developed before the bond market established and they suggested several reasons for this. First, households have a greater preference for liquid short-term bank deposits; second, institutional investors are immature; third, very few large companies enable to issue bonds; and the last main problem is that the legal and judicial infrastructure is not in place. But, some economists believe the health of banks in emerging countries can be increased after developing bond market. For instance, Greenspan (2000) provided that bond markets can act like 'spare tire', they can substitute as a source of finance when banks' balance sheets are frail and banks are rationing credit. Greenspan (2000) stated that in the moment when there is a "loss of confidence" in the economy than the bond market will be a substitute for the banks. But in contrast to Greenspan (2000), Hawkins (2002) considers that in times when the banks lose the confidence within the economy, the bond market will not be an efficient substitute. Further, he comments that asymmetric information is even deeper, because bondholders have even less information for the bond issuers than banks have for their clients. Moreover, previous work of Hanson and Roca (1986) is the inventive study of the determinant factors affecting the interest rate spread. Their study contained a sample of 29 countries for a period of eight years where factors such as financial costs, recession, competition and inflation were statistically significant. Since Kosovo doesn't have stock market, which would have been substituted for the banking industry in funding projects and daily operations of the economic agents. Faced with these limitations, for Kosovo economy is vital that interest rates on lending activities to be derived from the competition within players in the market, and not from collusion within banks.

Financial system and in particular banking industry is a crucial element in allocating deposits into profitable projects, since it allows both borrowers and savers to be attracted from the system. Reaching the equilibrium interest rate in the banking industry, requires not only market forces driven from the competition among entrepreneurs (banks), but reaching the equilibrium involves additional aspects such as: bank specific factors, macroeconomic factors, political factors, corruption etc. In the capitalist system, financial system and explicitly banking industry plays a crucial role in shifting the funds from one industry to the other, based on the price signals (profits) which enables the economy to be competitive not only locally but also on international scope. Financial crisis of 2008, spread a great lesson not only for developing countries but also for developed countries that the crisis does not stand only on financial borders but gets down in the real economy as well. There is tendency that bank specific factors play a fundamental role in determining IRS (Gelos, 2006; Demirguc and Huizinga, 1998). While the study conducted for Rumania on the period 1997 till 1999 by Kroszner (1999) reveals that high interest rates were obstacle for the country developments and suggest that government should destroy the monopolies, control inflation and exchange rate. It is considered that banks during their lending activities change their interest rate based on risk perception that they face within the bank (unsystematic risk) and in the economy (systematic risk). When banks feel that the risk is raising, they compensate risk exposure by raising interest rates and vice versa.

The study conducted from Khawaja and Din (2007) with 29 Pakistan banks, concluded that high interest rate spread was a result of monopolistic market and inelastic deposits. The study conducted for Ghana by Aboagye *et al.* (2008), found out that increase in the market power, bank size, staff costs, administrative costs increase the net interest margins. While incline in bank reserves, management efficiency decrease net interest margins. Beck and Hesse (2006), conducted study for Uganda to explore the reasons for high interest rate spread for a long period of time. The results of the study show that macro factors had less explanatory power than bank specific indicators such as: bank size, operating costs, loans composition. Different studies concentrate on different factors impacting interest rate spread, some of them on macro factors and the others on bank specific factors while some on both of them. The study conducted for Albania by Neli (2015) for the period 2005-2014, shows that factors impacting interest rate spread in banking sector are: bank development level and discount rate negatively affect IRS while inflation, deficit rate and money supply positively affect IRS. Albania together with almost all Balkan countries went through same painful waves of the transformation process not just of the real economy (with privatization as a crucial element of restructuring) but also of the financial system. Banks as a leading industry in Balkan countries had robust impact on financial transformation with major role in injecting liquidity for economic agents. Stock market was inexistent in some Balkan countries and even if formally existed, it didn't become a substitute for the banking

industry. The other study led for Macedonia by Georgievska *et al.* (2010), shows that bank size, market share and differential between domestic and foreign rates are the most influential factors impacting IRS. To our best knowledge, none of the papers include bond market as an indicator that would create pressure for bank interest rate movements.

Our research differentiates itself from the prior studies concerning the banking industry in Kosovo in the following aspects: 1) It gives a clear picture how to bring back to Kosovo allocated investments of the Kosovo Pension and Saving Trust (KPST) as a key ingredient for establishing bond market. 2) It shows clear outlook how to eliminate asymmetric information during the listing process, which would enable all companies in Kosovo to have access in the bond market. 3) It gives practical overview how to ensure competition within the overall financial system.

The paper is constructed under two objectives. First tries to find out the impact of introducing the bond market on the interest rates in the banking industry of Kosovo. The second objective is trying to give theoretical construction how to eliminate asymmetric information during the process of listing companies in the bond market. To this end, we use theoretical justification standing on the microeconomic concepts of market competition, asymmetric information and price elasticity through graphical illustration. The main contribution of our paper lies in practical forms, how to ensure a competitive environment within the financial system (reaches financial market equilibrium) through the bond market where the banking industry is not the only institutional money injected into the economy.

2. Background of Kosovo banking industry

Kosovo experienced the transformation of the economy from a centralized economy to the market economy, where the elements of free market didn't exist. After 1999, Kosovo went through the same path of economic and financial transformation like most countries of ex-Soviet Union, with privatization as a backbone in whole developments. Enterprises under a socialist system in Kosovo were operating not with profit targets but with output objectives, set up by the parties in power. Structural economic transformations that occurred during the transition period in Kosovo had required solid institutional framework to support market oriented values. Economic restructuring was accompanied by the painful process of unemployment that happened during the privatization process.

Central Bank of Kosovo (CBK) is the only authorized institution mandated from the parliament of Kosovo to ensure stability within the financial system, its independence is ensured from the Kosovo constitution. Kosovo doesn't have monetary policy which would enable CBK to help the economy when it is needed. Kosovo is using euro but is not part of the Eurozone, CBK mandate is constrained only on the supervision activities. With a lack of national currency, CBK (Central Bank of Kosovo) lost the

institutional authority to control inflation, influence exchange rate and reduce unemployment. Opposed to these limitations, CBK is mandated to ensure financial stability within the banking industry (through capital requirements imposed on commercial banks) and guarantee competition within the system (through licensing new banks).

Since the early stages of financial restructuring, the Kosovo banking industry was characterized by a high level of concentration captured through the Harfindahl-Hirschman index. The industry was dominated from three banks, owning more than 70% of deposits and almost 74% of lending activities (CBK, 2004-2015). The general intention of CBK was to ensure stability within the banking industry through licensing very strong and well capitalized banks. In 2007, 70% of ownership structure in the Kosovo banking industry were held by foreign banks while the rest from domestic banks. Banks in Kosovo play essential role in total economic developments with participation of 47% in relation to GDP (CBK, 2006). Whereas in 2014 entire assets of the banking industry touched the level of 3.2 billion, while overall assets of the financial system are 4.5 billion (CBK, 2014). Number of banks in the banking industry remained almost the same with slight increase year by year. In 2008, there were only 8 banks operating in the system while in 2014 only 10 banks (CBK, 2008, 2014).

3. Theoretical background

Financial system and in particular banking industry is a crucial element in allocating deposits into profitable projects, since it allows both borrowers and savers to be attracted from the interest rate movements. Reaching the equilibrium interest rate in the banking industry, requires not only market forces driven from the competition among entrepreneurs (banks) but it involves supplementary features such as: bank specific factors, macroeconomic factors, political factors, corruption etc. In the capitalist system, financial system and explicitly banking industry plays a crucial role in shifting the funds from one industry to the other based on the price signals (profits), which enables the economy to be competitive not only locally but also on international scope. The financial crisis of 2008, spread a great lesson not only for developing countries, but also for developed countries that the crisis does not stand only on domestic and financial borders but gets down in the real economy and it spreads internationally. According to the general microeconomic principles competition is a key driver of innovation and productivity, also competition among the entrepreneurs and economic agents drives prices down in the industry where the companies are operating ($P=MC$), so it means in a perfect market competition companies are operating with profits close to zero. Basically, economic agents will end up in a price war, which will drive prices down. In a perfect competitive environment players do not have a market power to determine the prices compared to monopoly and monopolistic competition where players have some market power. The market consists of many buyers and any single

buyer has a small fraction within the market. Since the buyer is a price taker in his purchase, they do not have any impact on determining the prices within the market. The market contains many sellers and any single seller has an insignificant impact on the market to affect the prices, so in this case the seller operates as a price taker. Since he operates as a price taker, he only chooses the level of production that maximizes his profit. Firms that sell in the market are free to enter and exit. The goods sold by the sellers in the market are homogenous. Buyers and sellers in the market are assumed to have perfect information. Both buyers and sellers know the prices driven by the market. The demand side of the market contains all potential buyers, and each of the buyers which compound the demand side have their own preferences, consumption and level of income (Jehle and Reny, 2011).

$$q^d(p) = \sum_{i \in I} q^i(p, P, y^i) \quad (1)$$

In our case the demand (q^d) Would contain all people, economic agents, government, etc., that are looking for recourses to finance their daily activities or their daily needs (Jehle and Reny, 2011). The supply side contains all providers of the products or services (q) in a particular market, which no-one of them has a market power to determine the prices. In a short run, number of players within the market are limited, profit incentives push other players to join the market and drive prices and profits of existing players in the market. On the supply side the equation contains these elements:

$$q^s(p) = \sum_{j \in S} q^j(p, W) \quad (2)$$

Market demand together with the market supply (supply is represented through bond market and banking industry) determine the price and the quantity traded on the market (demand for money is represented by people and all other economic agents). Market

equilibrium is achieved at a price (p) when $q^d(p) = q^s(p)$. So basically under these circumstances, no economic agent in the market is interested to change his behavior (Jehle and Reny, 2011). In order to ensure competition within particular market there are assumptions that should be accomplished which are depicted below:

Assumption 1. Homogenous product: money is homogenous in each bank, moreover the products that banks are offering are almost the same.

Assumption 2. Low transaction costs: For economic agents, is quite easy to have access to the prices delivered from the banking sector through internet accesses or through getting the information directly from the bank. Establishing the bond market would be also under low transaction cost to get the information on the bond prices, interest rates and their denomination, since all the necessary information will be

accessible online. Asymmetric information is linked with the concept when one party has less information than the other party involved in the transaction (buyers or sellers). Pioneering work of Akerlof, Spence and Stiglitz (2001) on the market with a lack of information shed light on the concept of market disequilibrium, where one part of the market has more information than the other part of the market. Borrowers know more than the lenders concerning their ability to repay their debts, managers are more aware of the company than shareholders. All these problems involved within the markets lead to disequilibrium and also to speculation concerning particular prices. Moreover, Liu and Wang (2016) concluded that due to market power, information asymmetry may decrease welfare loss.

Assumption 3. Free entry and exist in the short run: stands for the general concept of mature industries, if there is a profit realized on particular industry new entries will occur and drive profits down to the level of price equals marginal costs ($P=MC$). This condition in the banking industry of Kosovo is hardly achieved since establishing new bank requires certain rules and regulation that new potential bank should fulfill.

4. Methodology of research

There are multiple forms how you can make pressure on the banks to lower interest rates. One is through laws and regulation in force on purpose, of reaching market competition in the industry if they are speculating on the risks. The other is naturally making pressure on them through capital market where money will move toward those segments that return signals offer better prospect.

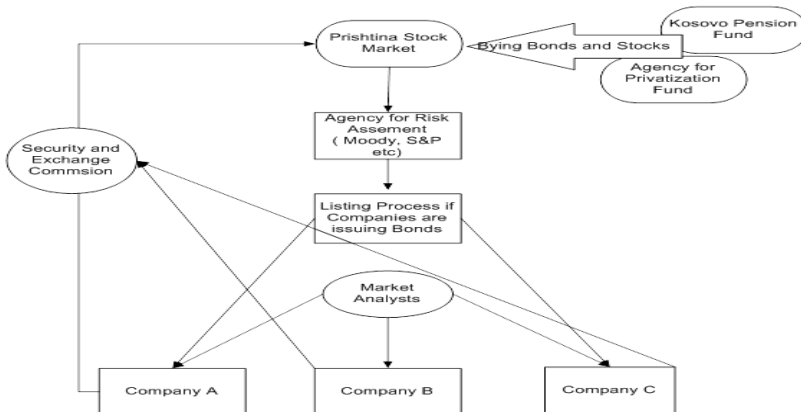


Figure 1. Investing in Prishtina Bond and Stock Market

Figure 1 explains one of the forms to bring back allocated investments of the Kosovo Pension Fund, as far as the law constraints investments only on financial assets because of liquidity concerns (KPST, 2004). Kosovo should create Prishtina Stock and Bond Market in order to enable for domestic companies to get listed in it. The efficiency of the stock market is depended on multivariable factors such as volume of trading, information asymmetry, regulatory framework, judicial system, political will and etc. Companies which issue bonds will go through the agency which we have named as 'Debt Assessment Agency or Rating Agency'. Bond has its price and annual payments reflected by the interest rates. Those companies that are audited from big five well-known audited companies will not contain asymmetric information on their financial statements, they will be only appraised on the ability to pay back the debts on the time, and consequently they will be appraised on ratios such as performance, liquidity, debt and so forth. Those companies who are not audited from the big five, for them the "Debt Assessment Agency" will decline their interest rate and also will reduce their bond price, which is common law how debt markets operate. For instance, if interest rates on the Prishtina Bond Market are in the range of 8% we will see huge movements from banking deposits toward Prishtina Bond Market. Here, 8% means interest payments for the company that is issuing that bond, and on the other side that is income for a person, company or government who is buying the bond. Equally the issuer and buyer of the bond will be happy to generate that transaction (as far as for the issuer is more profitable to issue that bond than to get credit from the banks, the buyer will earn higher returns than depositing money in the banks) and we will see huge capital movements from the banking industry toward stock market as a result this will make pressure on the banking industry to lower interest rates to the level of 8% or even lower in order to attract their depositors to keep their money in the banking industry.

Figure 2 shows that investments will be allocated on three types of companies based on risk preferences, some people are risk averse and allocate their money in company A, some are risk neutral and they are not concerned at the risk level they just want a certain amount of expected return for a given level of risk and the others are risk lovers which invest in Company C. Money will flow en route on those sectors and industries where prices and profits are increasing. This scheme will push companies toward formalization in order to keep their financial statements not fraud, as far as for them is less costly to obtain credits from bond market if their financial statements are audited. As an outcome banks will feel the pressure of capital flight from their balance sheets on the way to the bond market, they will lower interest rates on lending activities and raise interest rates on deposits. It will be more profitable for citizens to invest in bonds than keeping their money on bank deposit which does not cover even the inflation level (CBK, 2013). Kosovo Inhabitants, Foreign Companies and Domestic Companies can buy bonds on the bond market based on their risk preferences. The model is built

under the assumption that three companies have strong ability to pay their debts (all the ratios are the same) on time, but they are audited from different companies. We are using these assumptions to simplify explanation.

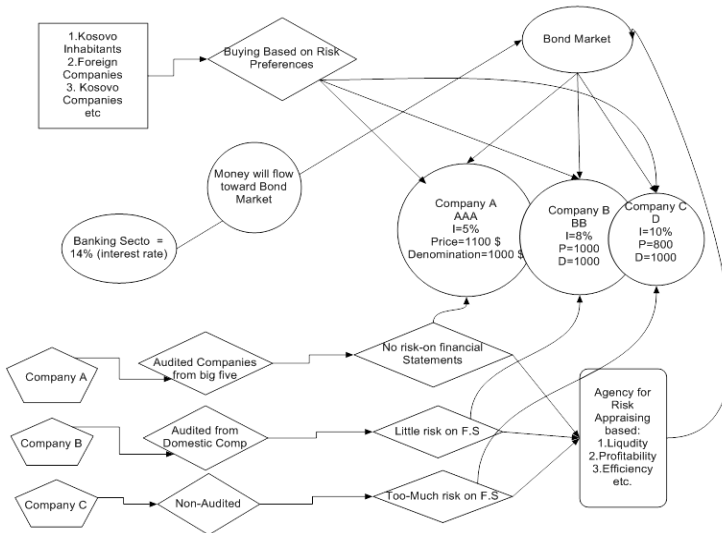


Figure 2. Process of Risk Appraising

Company A: Is audited from big 5 worldknown audited companies which eliminates the risk on financial statements (so if financial statements are fraud the responsibility drops on audited companies), and according to the "Agency for Risk Assessment" the company's ability to pay their debts on time is high and therefore it is rated AAA. So, the price of the bond has gone up and its coupon down.

Company B: Contains more risk for the reason that its financial statements are audited from domestic companies, because of that its coupon rate has gone up while its price has dropped down and is rated BB. Denomination value is all the same for three companies.

Company C: which is not audited by any domestic or international audit company, it contains a lot of risk that its financial statements might be fraud. Therefore, its coupon rate is higher compared to Company A and Company B, as well bond price has dropped down in a much superior range than the other two companies.

5. Results

Explanation driven from the (Figure 1) shows how Kosovo Pension and Saving Trust and Privatization Agency of Kosovo could bring back to Kosovo investments that they have allocated outside Kosovo. This will be realized through the establishment of the Agency for Risk Assessment and also the establishment of the Prishtina Stock Market. Market analyst are integrated part of the overall stock market. The level of efficiency within stock market will be ensured through incorporation of all these elements presented in schematic form. Stock market will be independent financial institution that will be managed from the ministry of finance or private ownership. Consulting companies and other specialized entities will prepare the IPO process (Valuation of the companies). Moreover (Figure 2), incorporates broader components within the bond market, such as: audit companies, enterprises with different risk level, agency for risk assessment, Kosovo inhabitants, Kosovo government, Kosovo Pension and Saving Trust, banking industry. Companies are split within: Company A (audited from big five audit companies), Company B (audited from domestic companies), Company C (not audited). Agency for risk assessment is highly dependent from the results delivered from the audit companies, and from the current state of the companies. All these elements enable creation of the competitive environment within the financial system and in particular pressuring banks to lower interest rates on lending activities and raise interest rates on deposits, shows how the asymmetric information will be alleviated via audited companies and through agency for risk assessment. The other part of the diagram demonstrates how companies, the government of Kosovo, Kosovo Pension and Saving Trust, Kosovo Privatization Agency via participating in the bond market will be a significant player to reach equilibrium in the overall financial system (general theory of market competition).

6. Conclusions

Financial system and in particular banking industry is a key in allocating funds from people and economic agents who have excess of funds to people and economic agents who have idea but do not have resources to finance their ideas. It is widespread perception that interest rates on lending activities in Kosovo are too high in comparison to the regional countries. Liberalization of financial system and banking industry in particular, created high expectations that better products will be delivered, higher efficiency within system will be ensured and lower interest rates from liberalization will be obtained. The banking industry is a crucial element of the inclusive economic growth of Kosovo due to the fact that is the fundamental component of funding business ideas and their daily operations. Therefore, ensuring competition within the banking industry is decisive for delivering better products, lower prices and higher efficiency. Ensuring competition within the banking industry is in line with the laws established from the

parliament of Kosovo on competition issues (KCA, 2016). Kosovo has not been able to establish the stock and bond market during the transformation of the real economy in comparison to some countries of ex-Soviet Union such as the Czech Republic, Poland, Slovakia, Hungary, Romania etc. Kosovo financial system in order to add one additional source of funding within itself, it is suggested to bring back in Kosovo allocated investments of KPST and Privatization Agency which would create supplementary competition toward the banking industry. Kosovo Pension and Saving Trust (KPST) have allocated investments abroad around more than 1 billion euro (KPST, 2013), bringing back those monies in Kosovo would contribute in raising whole liquidity of the economy, GDP acceleration, lower unemployment. Allocated investments of KPST would generate extra competition within all financial systems (in particular on the banking industry) through lowering interest rates on lending activities and raising interest rates on deposits. Theoretical concepts expressed on (Fig.1 and Figure. 2) Show overview map on how companies can emit bonds and have access to funding, while standing on these statements, economic agents will buy bonds based on their risk preferences. KPST would have been a one of the key engines on ensuring competition within the financial system.

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References

- Aboagye, A.Q., Akoena, S.K., Antwi-Asare, T.O., and Gockel, A.F. (2008). Explaining interest rate spreads in Ghana. *African Development Review*, 20(3), 378-399
- Akerlof, G., Spence, M., and Stiglitz, J. (2001). Markets with Asymmetric information. *Committee, Nobel Prize*.
- Aliu, F. (2015). Understanding the current state of the financial system in Kosovo and its implications for human security. *Center for research documentation and publication*, Policy Brief. [Online]. Available at: <http://cn4hs.org/wp-content/uploads/2015/12/FINAL-POLICY-BRIEF-ENGLISH-DEC.18-2015.pdf>
- Beck, T., and Hesse, H. (2006). Bank efficiency, ownership, and market structure: why are interest spreads so high in Uganda?. *World Bank Policy Research Working Paper*, (4027).
- CBK (2004-2014). Central Bank of Kosovo, Annual reports.[online]. Available at: <http://bqk-kos.org/index.php?m=tandid=57>

- Demirgüç-Kunt, A., and Huizinga, H. (1999). Determinants of commercial bank interest margins and profitability: some international evidence. *The World Bank Economic Review*, 13(2), 379-408.
- Gelos, M.G. (2006). *Banking Spreads in Latin America* (No. 6-44). International Monetary Fund.
- Greenspan, A. (2000, July). Global challenges. In remarks at the Financial Crisis Conference, Council on Foreign Relations, New York (Vol. 12).
- Hanson, J.A., and de Rezende Rocha, R. (1986). *High interest rates, spreads, and the costs of intermediation: Two studies* (Vol. 18). World Bank.
- Jehle, G.A., and Reny, P.J. (2011). *Advanced Microeconomic Theory*, Harlow: Financial Times.
- Hawkins, J. (2002). Bond markets and banks in emerging economies. *BIS papers*, (11), 42-48.
- Khawaja, M.I., and Din, M.U. (2007). Determinants of interest spread in Pakistan. *The Pakistan Development Review*, 129-143
- Kroszner, R. (1999). Is the financial system politically independent. *Perspectives on the Political Economy of Banking and Financial Regulation*, George J. Stigler Center for the Study of the Economy and the State Working Papers Series, University of Chicago.
- KCA (2010). Kosovo Competition Authority. Law on Protection of Competition.[online]. Available at: <https://ak.rks-gov.net/?cid=2%2C1>
- KPST (2004). Kosovo Pension and Saving Trust Law on Kosovo Pension Fund.[online].Available at: <http://www.kuvendikosoves.org/common/docs/ligjet/Law%20on%20Pension%20Funds%20of%20Kosovo.pdf>
- Liu, H., and Wang, Y. (2016). Market making with asymmetric information and inventory risk. *Journal of Economic Theory*.
- Shirai, S. (2001). Searching for new regulatory frameworks for the intermediate financial market structure in post-crisis Asia.
- Turner, P. (2002). Bond markets in emerging economies: an overview of policy issues. *BIS papers*, 11, 1-12.
- Yoshitomi, M., and Shirai, S. (2001). Designing a financial market structure in post-crisis Asia: how to develop corporate bond markets (No. 15). ADBI Research Paper Series.