A MODEL OF CREDIT BUREAU IN SERBIA – INSTRUMENT FOR PRESERVING STABILITY OF THE BANKING SECTOR IN CONDITIONS OF THE GLOBAL ECONOMIC CRISIS

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Abstract: *This paper presents the characteristics of the banking system in serbia before and during the global financial crisis. The model of the credit bureau in serbia which, according to its technical characteristics and the level of business performance, represents the original solution is analyzed. Its implementation, in conjunction with other control mechanisms, has provided the stability of the banking sector in terms of crisis. Consequently, the control of liquidity in the banking sector is achieved as well as the control of the expansion of credit activities, with the maintenance of population and economy indebtedness at optimal level, which is of great importance in terms of global crisis when economic policy makers in serbia, faced with a pronounced deficit in balance of payments of the country, as one of economic policy measures aimed at improving the balance of payment position, implement the measure of controlled reduction of private demand.*

Key words: *credit bureau; financial crisis; liquidity risk; loan placement; Serbia*

1. Introduction

World economic crisis has a direct impact on the countries that dominate the international capital flows and international trade. Unlike them, the developing countries and countries undergoing the transition process are indirectly influenced by the crisis which, in the context of the impact on the financial sector, is manifested as a crisis of liquidity and difficulties in development and reform of financial institutions (Vjetrov A. et al. 2009). Serbia belongs to this group of countries.

Manifestation of the crisis of liquidity brings into question the stability of the banking system in Serbia, as the holder of the entire financial system. Our intention is to point out on the credit bureau as one of the instruments for preserving liquidity in the banking sector in Serbia as well as the stability of the same, before and during the crisis.

Information that are analyzed in this paper were collected on the basis of research conducted in the Association of Serbian Banks (ASB) under whose authority functions the first credit bureau in modern Serbian history.

The paper is organized as follows. Section 1 is the Introduction to the theme. Section 2 represents an overview of the characteristics of the banking system in Serbia in the period before and during the global financial crisis, with special emphasis on measures that the National Bank of Serbia (NBS) has undertaken with the aim of preserving the stability of the banking sector in terms of global crisis and shaken confidence of the Serbian citizens in it. Section 3 represents an overview of the functional characteristics of Serbian credit bureau model as well as its specificity which have caused it to be ranked as one of the best in the World by the World bank. Section 4 points out the importance of credit bureau in Serbia as an instrument for the preservation of liquidity in the banking sector.

2. Characteristics of the banking sector in Serbia before and during the World economic crisis

Financial system in Serbia is a network of institutions which consists of 34 banks, 22 insurance companies, 17 leasing companies and 9 voluntary pension funds. Within the financial system of Serbia banks have a very dominant role and run with 90% of total financial assets.

National Bank of Serbia carried out a radical reform of the banking sector during 2001 and 2002 which resulted in the closure of 23 insolvent banks, thus erasing almost 70% of all assets of the banking sector (Ostojic S. 2002). Reform of the banking sector led to a reduction in the number of banks in which the state is the majority owner and increased the number of banks with foreign ownership whose arrival has increased competition in the market and the efficiency of the banking sector. In today's conditions in the balance sheet amount of the banking system in Serbia, the dominant share of 75% are foreign-owned bank.

Since 2004 private sector loans in Serbia recorded dynamic growth which is a consequence of the low starting base and the fact that before 2003 private sector loans nearly were not approved at all. The main source of credit activities was the growing deposit potential, but significant funds were also provided by means of recapitalization of banks and loans from abroad. The trend of increasing dependence on loans from abroad manifested in 2005, began to drop in the second half of 2006. Consequently, in today's conditions, 7.6% of sources of funds of banks in Serbia are those loans (National bank of Serbia, 2008).

The growth of the banking sector in Serbia in 2008 was slowed as a result of restrictive monetary and prudential policy, and in the fourth quarter as a result of the global economic crisis. The period of credit expansion that lasted from 2004 ended in the last quarter of 2008. Since then credit activity achieved the minimum real growth in some months, while retail loans achieved a nominal decrease. This situation is caused by the reduction of demand for loans due to negative macroeconomic trends as well as by the reduction in credit supply due to the bad situation in terms of sources of liquidity and minimized tendency towards risk by the banks. Retail loans recorded a growth of 20% in 2008, which is significantly below the 54% of real growth recorded in 2007. The decline in retail loans started during the 2007 thanks to the measures of the central bank issued in terms of expansion of retail loans. The fact that retail loans declined gradually is important for preserving financial stability in conditions of financial crisis. The decline of credit activity is mostly pronounced for the retail and cash loans to which the prudential measures of the NBS were targeted in 2007.

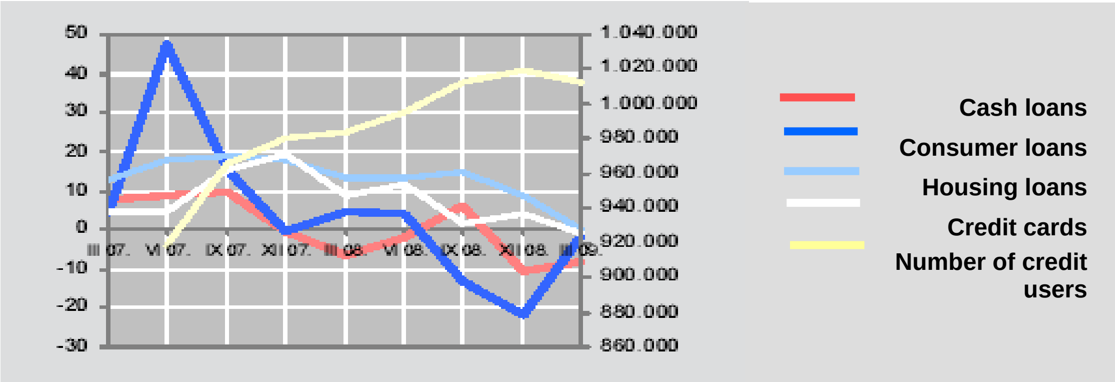

Figure 1. The growth of retail loans by purpose

National Bank of Serbia did not react only to the consequences of the crisis, but a responsible monetary policy and prudential measures in the time before the crisis acted preventively, alleviating the negative effects of the global financial crisis. In this sense, the NBS has implemented a restrictive monetary policy (high key policy rate and withdrawal of excess liquidity) prudential (comprehensive and conservative risk weights, reducing exposure to foreign currency risk, limiting the indebtedness of the population) and administrative measures (high required reserve on foreign currency savings and loans from abroad, limiting the relationship of gross retail placement and capital), and tightened control of commercial banks and also established the first private credit bureau.

In terms of the financial crisis in Serbia it turned out that the greatest vulnerability of the domestic financial system is high share of indexed loans (70%) which increased the foreign exchange and interest rate risk. The fact that the real sector (due to a low share of exports in GDP) and population (due to income in dinars) are exposed to foreign exchange risk is having the great impact on the fact that nominal depreciation leads to increase of defaults and impairs the quality of assets of the banking system.

One of the first effects of the global financial crisis in Serbia, manifested through the withdrawal of deposits from banks. Bad experience from the past, in terms of savings "trapped" in the pyramidal and some state banks, had a negative psychological impact on depositors in Serbia who widely started to withdraw deposits from banks, which have had a short-term negative effect on banks' foreign currency liquidity. In order to restore the shaken confidence of citizens in the banking sector, Serbian Government adopted a set of measures which could be systematized as follows:

- The state guarantee for savings was increased from € 3000 to € 50,000 per depositor if the bank went into bankruptcy. The decision to increase the amount of insured deposit was made on the proposal of the European Commission.

- In order to encourage savings, starting from January 1st 2009, Serbian Government temporary abolished income tax for foreign currency savings, which amounted to 20%. In 2010 this tax will be charged at a rate of 10%.
- Temporarily, until the end of the 2012, capital gains tax (20%) was abolished as well as the tax on the transfer of absolute rights (0.35%) realized through securities trading.

In addition to the Serbian Government, NBS has prepared a set of measures to mitigate the negative effects of the global crisis on the financial sector in Serbia:

- The supervision of the financial system through intensive control of daily liquidity, deposits and foreign currency reserve of banks was reinforced. A new regulatory framework that enables regular data collection on uncollectable receivables was adopted. In addition, the collection and exchange of information on the financial conditions of centrals of the banks that operate in the country was improved and control of financial accounts on a daily basis was reinforced.
- Required reserves for funds taken in overseas aren't being calculated retroactively from October 1st 2009 for bank loans from abroad (untill then the required reserve was 45%), subordinated capital from abroad (20%) and borrowing of th e financial leasing companies (20%)
- National Bank of Serbia has ordered banks to change the structure of the required reserves which are held on the account with the NBS, so that instead of the former 90% of reserves in foreign currency and 10% in dinars, now required reserves consist of 80% of reserves in foreign currency and 20% in dinars.
- Reduction of penalty interest rate for dinars from 31.75% to 23.63% and for foreign currency from 31,75% to three-month Euribor plus 10%

Thanks to the recapitalization of banks, as well as restrictive prudential and monetary policy of central bank, the banking sector in Serbia welcomed the spread of financial crisis with a high degree of resistance. Unlike banks in Europe and America, the Serbian banking sector is well prepared for external challenges. For example, depositors in Serbia are provided with a high level of protection through high required reserve in the amount of 40% for the new foreign currency savings. High capital adequacy of 28.1% (among the highest in Europe) and low dependence on bank loans from abroad, as well as a wide deposit base are mitigating the effects of the liquidity shock. Also, a third of the balance sheet sum of the banking sector are cash, deposits with NBS and securities of the central bank. The fact that local deposits are over 70% of total liabilities confirms the stable structure of sources of funds. Observed by sectors, the domestic deposit base as the primary source of financing for banks is made of population deposits (49% of total deposits). Favorable indicator from the point of the compliance of sources of financing and loans is the fact that the total retail loans are almost completely covered by term deposits of the population, and that ratio is much better than in many European countries. From the point of maturity of term deposits inconsistency between sources of financing and loans is evident - long-term loans exceed the long-term sources of financing multiple times. Thanks to the policy of required reserves on borrowing abroad and the domestic foreign currency deposits, the banki ng sector in Serbia is characterized by coverage of deposits in foreign exchange reserves amounting to 86.3% which is much more than this rate in most countries of the region in which it amounts on average 35%.

Considering the retail loans to GDP the population of Serbia is one of the least indebted in the region. In Serbia, Macedonia and Albania approved retail loans are 12-15% of GDP, while in Romania, Hungary and Bulgaria, that ratio is 20-25% of GDP. In Croatia, this percentage is up to 40%. From the point of indebtedness per capita which currently amounts to € 637, Serbia is in far more favorable position in comparison to some countries in the region in which the indebtedness per capita is up to € 3750 (Croatia). This is a direct consequent of the measures taken by NBS by which instalment of the loan can be up to 30% of monthly income and the introduction of the credit bureau. The expansion of credit activity which is not accompanied by adequate control mechanisms can jeopardize the entire banking system through the emergence of liquidity crisis. The introduction of credit bureau in Serbia aimed to enable optimal alocation of resources based on reliable information for the creditors and in conjunction with measures of NBS to ensure stability of the banking system, which is particularly important in terms of the global economic crisis.

3. Serbian credit bureau model

The model of Serbian credit bureau is the result of observed experiences of models that are more or less successfully applied in practice of a large number of countries. With certain modifications, solutions which were estimated to have been good, were accepted and relying on own resources a model, which for most of its functional characteristics represents the original solution, was developed. The ultimate result is a model of the credit bureau which was ranked by the World Bank as the as one of the best in the World. Credit Bureau in Serbia has started its operative work on 2004 as the result of the initiative of the Association of Serbian Banks with the consent of the National Bank of Serbia and the Ministry of Finance and Economics. It should be noted that the institution of the credit bureau has a long tradition in Serbia, since the Inforamtional Credit Department existed in the Kingdom of Serbs, Croats and Slovenes from 1929, but after the Second World War the whole system closed its opeations (Vaskovic V, 2007).

The basic assumption, and also the biggest advantage of the Serbian credit bureau model is the fact that the creditors (72 members of the credit bureau in Serbia) are solely responsible for the accuracy of the data shown in the credit bureau reports. This fact is ensured thanks to the unique technological process of the credit bureau in Serbia (Figure 2). The central database is located in the credit bureau, and the creditors (banks and other financial institutions) have their own part within the central database. Therefore, banks and other creditors practically rent private space within the information system of the credit bureau and are responsible for its maintenance and the accuracy of data in it.

In the banks and with the other creditors, once a day, usually before the end of business hours, procedures that draw data from their production database (on the credit activities of their clients) are initiated. As a result the documents for the exchange of data with the information system of the credit bureau are generated. Those documents are in XML format, digitally signed and encrypted. It is necessary that the data, which are to be imported by creditors in the rented private database, meet the criteria of validation. Those criteria use the logic, syntax and semantic rules for data filtering and only if all rules are satisfied the data can be stored in the database. This ensures a high degree of accuracy of data that would later appear in the credit bureau reports. Each creditor namely, the authorized person in this institution, can only access its private database, and the credit bureau can access the private databases of the creditors based only on written consent of the client by which the report is withdrawn from the credit bureau.

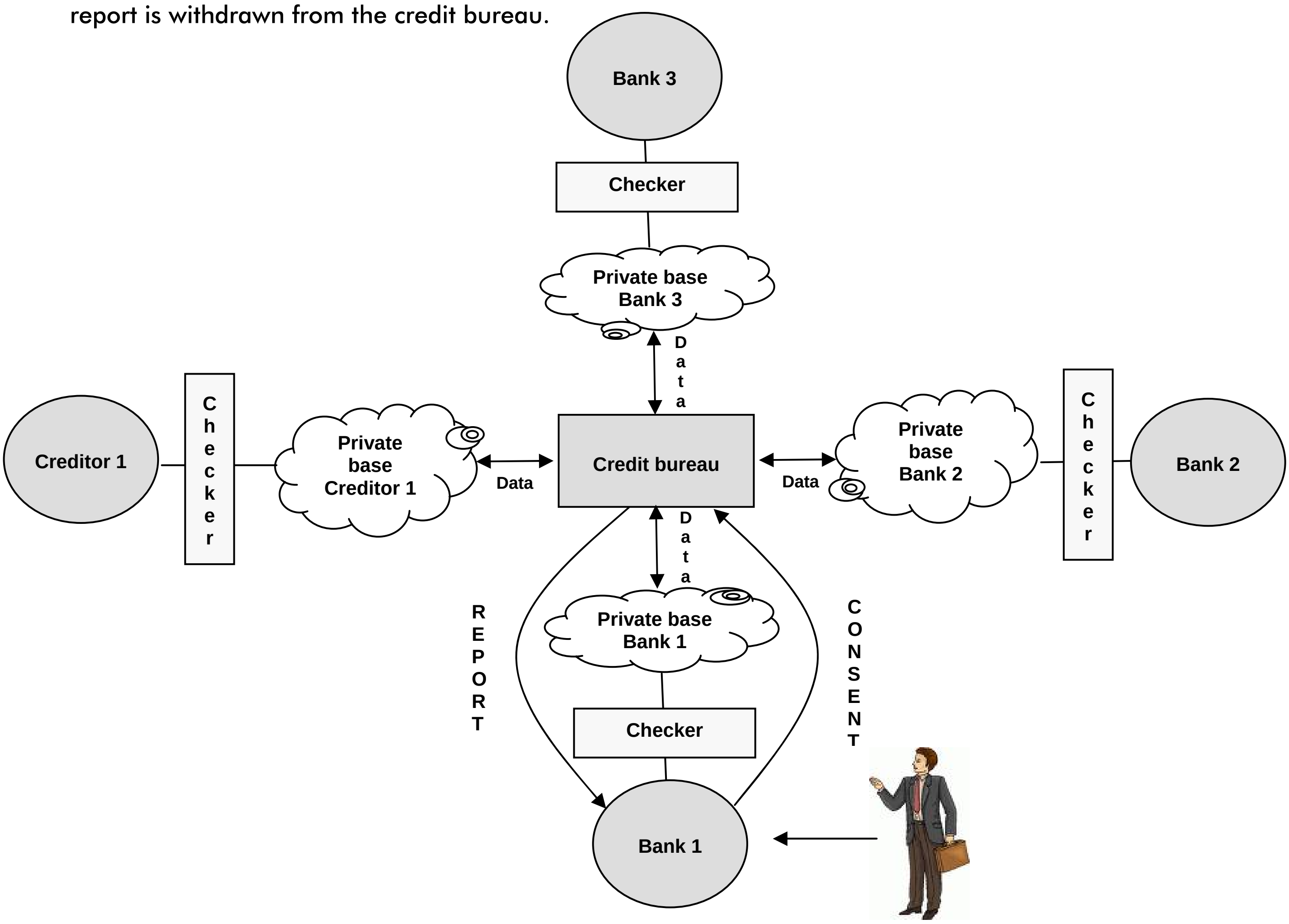

Figure 2. Technological process of credit bureau in Serbia

By the decision of the National Bank of Serbia, which is in accordance with Directive of European Parliament and The Council for Harmonization of Regulations of the Member States, it is regulated that before the loan contract is concluded, the creditor evaluates with all means available, whether the credit applicant regularly pays its obligations under previously approved loans. This means that the creditor is obliged to withdraw the report from the credit bureau. On withdrawing the credit report from credit bureau, the creditor needs to forward to the credit bureau the written consent of a natural person or legal entity for which he asks for report. Then, the data from private databases of all creditors are matched and loaded into the reporting database. The data become accessible and the information is visible in the credit report.

The good side of this model is the fact that the credit bureau can not change in any way the data stored in creditors private databases. Precisely for this reason, all the responsibility for the accuracy of data shown in credit bureau reports is fully transferred to the creditors, which from the credit bureau's point of view significantly facilitates the resolution of eventual complaints. In the case of the complaints on the accuracy of the data shown in credit bureau reports by the end users of credit lines, the request is forwarded directly to the creditor which imported the original data in the rented private space within the information system of the credit bureau. The creditor is obliged to check the reasonableness of the complaint request and if necessary to make the changes of the data and to forward the complaint request to the credit bureau that monitors its resolution.

In current credit bureau business practice in Serbia on total number of issued reports (8,501,055) there has been 22.147 reported complaints, which is 0,26 % of the gross number of issued reports. This data clearly confirms the fact that creditors in Serbia make their credit decisions based on reliable and high quality information.

Table 1. The number of complaints in relation to the number of issued reports

YEAR	ISSUED REPORTS	NUMBER OF COMPLAINTS	PERCENTAGE
2004	65.206	0	0
2005	1.106.725	1.037	0.09
2006	1.710.999	3.389	0.20
2007	2.641.295	7.220	0.27
2008	2.976.830	10.501	0.35
SUM	8.501.055	22.147	0.26

Growth of the number of complaints is in correlation with the number of issued reports, but still is very low as a result of organizational and technological sophistication of the model of credit bureau in Serbia which by applying data validation rules and eliminating the possibility of errors during the process of data manipulation by the credit bureau provides a high degree of accuracy of data shown in credit reports.

Based on credit bureau report the creditor (bank) decides whether the applicant would be provided with the requested service. The adequate interpretation of the data shown in credit bureau reports is necessary for making the optimal decision by the creditor that minimizes the risk and simultaneously increase the number of users of its services. A model of credit scoring was developed for this purposes and currently it is used only for natural persons. This model is calculating credit score by taking the following factors into account:

1. Orderliness, and/or disorderliness in the discharge of obligations is the first and dominant factor that influences summary score (35% of total score)

- Debit rate is a second factor according to the influence on the summary score and it is 30% of total score
- Third factor is the time necessary for settling of irregularities in the discharge of obligations. The influence of this factor on the overall score is 15%.
- The number of drawn reports from the banks in the past 30 days is the fourth factor, and it influences the score in 10%.
- The length of time for the use of bank services which influences to a certain extent on the overall score in the amount of 5 % is the fifth factor.
- Sixth factor is the number of used bank services and it influences the overall score with 5 %.

One of the essential characteristics of the credit bureau model in Serbia is the fact that the counters of banks and other creditors are used as branches of credit bureau. This organization is possible thanks to the fact that for each charged fee for issuing report from the credit bureau, bank receives 40% of the total sum and the fact that banks and other creditors are responsible for the accuracy of the data shown in credit reports, so that in terms of resolving complaints, the most optimal solution is solving it in a direct contact of client and creditor. Thus, the significant operational expenses for establishing own branches on the territory of Republic of Serbia have been eliminated.

4. Credit Bureau - instrument of securing liquidity in the banking sector

The stability of the banking sector is one of the basic prerequisites of stability of the entire financial system, particularly in transitional economies in which banks have a dominant role in the financial system. The stability of the banking sector, among other things is significantly influenced by different categories of financial risks - credit risk, liquidity risk and market risks. For the purposes of this paper, special attention will be devoted to the issue of preserving the liquidity of the banking system due to the direct impact of the credit bureau on liquidity at bank level, through the control of loan placement. Maintaining liquidity of the banking system is a complex problem that involves coordinated action of central bank and individual banks.

One of the major problems in the operation of commercial banks and other creditors is maintenance of liquidity through monitoring financial discipline of bank clients. Liquidity represents the ability of the bank to have, at any time, adequate amount of funds necessary to finance the growth of assets and timely cover all the obligations that are due. Liquidity risk is the risk of emergence of negative effects on the financial result and capital of banks due to the inability of banks to meet their outstanding obligations. Liquidity risk is one of the leading financial risks in the banking sector, whose sources are often other financial risks like credit and market risks.

Problems with the liquidity of a single bank may have a significant impact on the banking sector and financial system as a whole. Current crisis points out to the great importance that liquidity of bank and the banking system has on the overall financial system and economy both on national and international level.

Liquidity in the banking system in Serbia in 2009 can be described as satisfactory. The average monthly indicator of the overall liquidity of the banking sector in March 2009 is 1.88, which can be considered a satisfactory level due to the regulatory minimum of 1.

Credit bureau has an indirect impact on the liquidity of the banking sector by reducing the credit risk which, as already mentioned, can lead to the appearance of liquidity risk. The introduction of credit bureau institution in Serbia is aimed to reduce the risk of loan placement, which in combination with other factors resulted in maintaining liquidity in the banking sector at the optimal level.

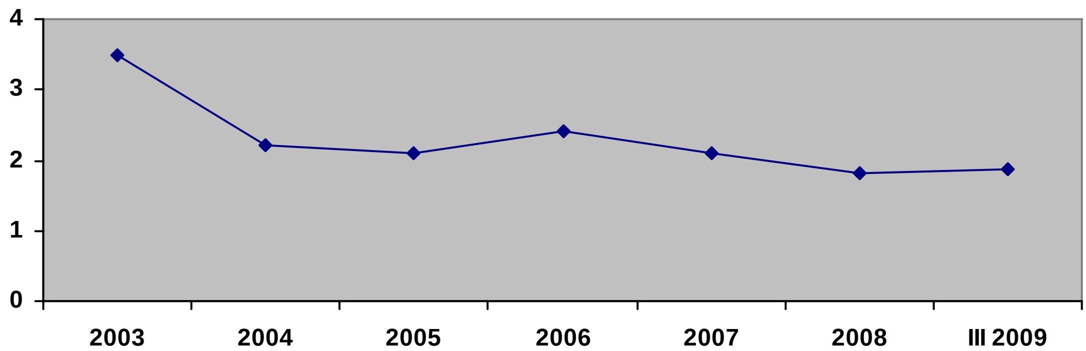

Figure 3. The average monthly indicator of the overall liquidity of the banking sector in Serbia
Data source: National bank of Serbia (Narodna banka Srbije)

The impact of the credit bureau on liquidity movement is difficult to quantify due to the fact that the liquidity is conditioned by many factors. Credit Bureau aims to provide reliable information that would enable banks to make the adequate credit decision that allows the optimal allocation of resources and minimize the credit risk. Banks use the information on the behavior of their clients in the past, so they can predict their future behavior. The research conducted in banking sector of 34 national economies (Miller M.J, 2003) where the credit bureau operates showed that more than half of the respondents thought that the posibility of using credit information obtained from the credit bureau for making the credit decision, makes the time of loan approval shorter, lowers the costs and the default rate for more than 25%. Impact of the credit bureau on reducing the credit risk, and indirectly the risk of liquidity will depend on the quality of information which are available to the users of its services. Depending on the chosen business concept, the credit bureaus can record positive and/or negative information, about the credit activity of users of the credit lines. The research conducted by the International Finance Corporatioin (International Finance Corporation, 2006) suggests that if the credit bureau records both positive and negative information about the credit users activity, the default rate would decrease by 43% compared to the situation when making credit decisions is based solely on the negative information about credit users past behavior. Credit Bureau in Serbia keeps records in its database containing both positive and negative information on credit history of loan applicant. Due to this fact and the high quality of available information (which is confirmed by the low percentage share of complaints in the total number of issued reports) creditors in Serbia are able to realistically assess the credit risk.

For the purpose of this analysis we would point out the importance of non performing loans and the impact that the introduction of the credit bureau institution had on reduction of percentage share of non performing loans in the total amount of approved loans. According to the methodology of the IMF a loan is nonperforming when payments of interest and principal are past due by 90 days or more (Svartzman I, 2003). Non performing loans are significant due to the fact that their greater percentage share in total loans approved, leads to the reduction of the liquidity of banks, risking to jeopardize the entire banking system. The banks are pushing their efforts to make an optimal credit decisions, based on reliable information obtained from credit bureau, in order to reduce the credit risk and consequently the share of non performing loans in the total amount of approved loans. Institution of credit bureau, besides a direct impact on reducing the credit risk, indirectly affects the reduction of the percentage share of non performing loans in the total amount of approved loans, by increasing the financial discipline of the credit lines users. Figure 4 is a preview of percentage share of non performing loans in Serbia in the period 2003-2009.

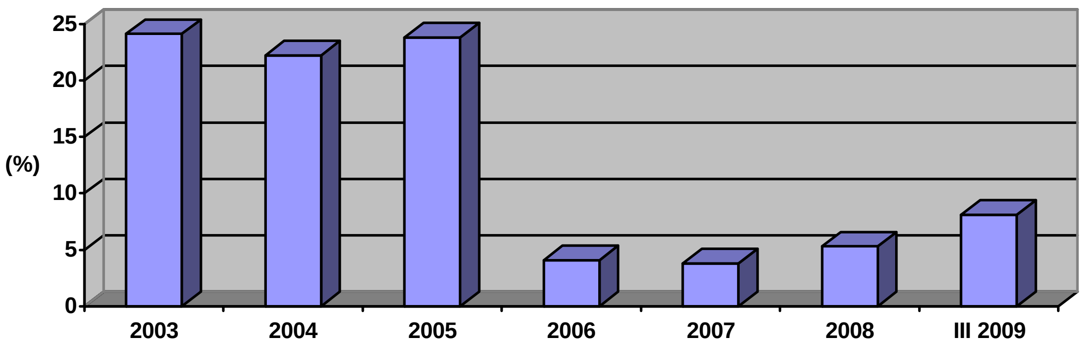

Figure 4. Non performing loans in Serbia in the period 2003-2009
Data source: National bank of Serbia (Narodna banka Srbije)

What is evident from Figure 4 is the fact that the introduction of credit bureau in Serbia had a direct impact on reduction of share of non performing loans in the total amount of approved loans from 23.8% (2005) to 4.1% (2006). Namely, the credit bureau in Serbia has started its operative work on collecting and processing data for natural persons in 2004, and the collection of data for legal enteties started in April 2006. For this reason, the reduction of share of non performing loans in the total amount of approved loans is evident only in 2006 and after, as a direct consequence of the introduction of credit bureau. In this way, the credit bureau confirmed its role as an instrument for the preservation of liquidity in the banking sector in Serbia and in the end the stability of the same, which is particularly important in terms of the World economic crisis. The results, shown in Figure 4, confirm the general expectations that the repayment ability of credit customers would decrease during recession, since the movement of non-performing loans is affected not only by the control mechanisms but also the general market trends.

5. Conclusions

This paper points out the problems of the banking sector in Serbia in conditions of the global economic crisis with special emphasis on measures undertaken by regulatory authorities in order to mitigate the adverse effects of the same. The special characteristics of the Serbian credit bureau model are emphasized as well as its unique technical and technological and organizational structure that makes it an original solution in global terms. Due to the fact that banks and other creditors are solely responsible for the accuracy of data shown in credit bureau reports, high quality of data on which creditors base their credit decisions with a minimized credit risk is ensured. The unique organizational structure of the credit bureau in Serbia, which implies that the credit bureau uses the counters of banks and other creditors as own branches in order to reduce operating costs is also described in the paper.

The hypothesis that the credit bureau is one of the instruments for preserving liquidity in the banking system, and consequently for ensuring the stability of the same, which is of especially great importance in conditions of the global economic crisis, is empirically confirmed in the paper. Analyzing the impact of the credit bureau on the participation of non performing loans in the total amount of approved loans in the period from 2003 to 2009, its positive impact on reducing the liquidity risk as the basic assumption of stability of the banking sector is confirmed.

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