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ALTERNATIVE REGULATORY APPROACHES TO MANAGING BANKING CRISES

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The functioning of banks in a deregulated and competitive market environment involves taking growing and complex business risks. Inadequate risk management on the part of bank managers leads to the emergence of problem banks and banking crises. Practically speaking, banking crises stand for an integral part of the development of banking systems in the modern business environment that can be characterized as complex, dynamic, heterogeneous and unpredictable. The negative effects of the bankruptcy of individual banks on the economic system require the timely establishment of adequate regulatory frameworks and undertaking interventionist measures for the rehabilitation of banking problems. The issue of managing banking crises, which has been discussed in the professional domestic and foreign literature for years, has been brought back into focus with the emergence of the global Subprime crisis. Therefore, the paper makes an attempt at a comprehensive analysis of the causes and ways of resolving banking crises. In addition to identifying the causes and substantial differences among the analyzed banking crises, the paper will review the relevance of the applied interventionist measures and the existing regulatory policies.

Keywords: banking crises, interventionist measures, bank regulations, regulatory reforms

JEL Classification: G21

INTRODUCTION

Banking operations are very dynamic and change under the influence of changes in the environment and in regulations. In modern banking theory, the brokerage function of banks stands for a response to the need to alleviate the negative effects of imperfect, inefficient and unreliable financial markets. In this regard, the safe and stable banking sector is of crucial importance for the financial and economic system of each country. In order to address and alleviate the negative effects of banking crises on the stability of the economic system, the regulatory and government authorities are required to take prompt and adequate measures. Managing banking crises is a difficult and complex task, which is additionally complicated by an unrealistic picture of the actual financial condition of banks and inadequately established legal and institutional frameworks. A decision on a particular intervention is conditioned by a cost-benefit analysis. This means that decisions of regulatory and government bodies need to balance the economic and fiscal costs of the use of public funds and the benefits of preventing future bank bankruptcies.

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Therefore, the subject of the study will focus on the analysis of the relationship between interventionist measures and the resolution of systemic banking crises. More specifically, research will center on the analysis of specific regulatory measures to be taken in order to resolve banking problems and rehabilitate problem situations in banks.

Respecting the previously defined research subject, the main objective of the study is to examine the role and importance of applied interventionist measures and regulatory policies and their effectiveness in resolving banking crises and preserving the stability of banking systems.

Starting from the defined subject and the research objectives, the paper will test the following hypothesis: by circumventing regulatory restraint and by the timely taking of adequate and cost-effective measures corresponding to the specific characteristics and structural aspects of the banking system of a given country, the restructuring of individual banks will be more successful and the stability of the banking system will be preserved.

In order to test the initial hypothesis, the paper will apply qualitative methodology based on the study and descriptive analysis of the defined problems. Consulting the relevant literature dealing with theoretical generalizations and practical experiences of the authors who have studied the subject issues will allow a comparison and synthesize different views, on the basis of which general conclusions about the impact of certain interventionist measures on the speed and effectiveness of resolving banking problems will be derived.

Bearing in mind the defined subject and the objective of the research, as well as the defined hypothesis, this paper will first analyze the key characteristics of banking crises. After identifying and evaluating different interventionist measures for the rehabilitation of problem banks and the resolution of systemic banking crises, attention will be focused on the analysis of the benefits and costs of regulatory institutions' intervention in banking crises. The comparison of representative banking crises will point to the general conclusions on the most effective intervention models that have managed to resolve a crisis in the fastest way, without any negative effects on the economic system. The full analysis will be completed by identifying outstanding issues and, consequently, the necessary regulatory reforms initiated by the current crisis.

CONCEPTUAL CHARACTERISTICS OF BANKING CRISES

The current trends of the deregulation, financial liberalization and internationalization of banks, the waves of disorder in Asian countries in the late nineteen-nineties as well as the current financial crisis stand for obvious signals of high economic and social costs resulting from the banking system distress. Analyzing the determinants of banking crises, A. Demirguc-Kunt and E. Detragiache (1998, 104) define financial liberalization as the cause of the rise in real interest rates and an increased risk of a crisis in a given period of time, especially in developing countries. Therefore, the liberalization of credit markets and the real interest rate have been identified as the key factor in the development of the financial crisis in Latin America in the early nineteen-eighties, which was accompanied by severe banking distress (Demirguc-Kunt & Detragiache, 2005, 3). The likelihood of banking crises increases in the presence of poorly designed deposit insurance scheme, especially in countries with deregulated interest rates and a weak institutional environment lacking transparency (Todorović, 2013, 392). For example, the 1980's American savings and loan crisis has been explained by the existence of a generous deposit insurance system, financial liberalization and the inability of the regulatory bodies to promptly intervene in failing institutions (Beck, 2003, 7). A banking crisis may be deepened by the sluggishness of the government and regulatory institutions in identifying the problems, a delay in intervening in deteriorating conditions in banking operations and by neglecting the problem of the sensitivity of the banking sector structure to distress. Sluggishness in addressing and closing insolvent banks usually results in high fiscal costs and an even greater crisis which is then spilled over into the real sector (Beck & Laeven, 2006, 3).

Numerous analyses have shown that banking bankruptcies are more harmful to the economy than the bankruptcies of the other types of financial institutions, since the liquidation of one or more banks quickly spills over into the real sector of a country, sparks a balance-of-payments crisis and increases the gross domestic product costs (Leckow, 2006, 184). Analyzing bank insolvency, Caprio and Klingebiel (1996, 1) estimate that the costs of takeover and the rehabilitation of banks amount to 10% of the gross domestic product on average. At the same time, an uncertain future and credit disintermediation lead to a significant decline in investment and consumption, as well as in a reduced efficiency of the real sector.

Generally speaking, banks are more sensitive to problems that can lead to distress in operations and bankruptcies than other financial institutions. G. G. Kaufman (1996, 20) identifies several factors confirming this fact. First, banks have low capital-to-assets ratio (high leverage), which leaves them little room to cover unanticipated losses. Second, they have a low cash/asset ratio, which usually requires the sale of interest-bearing assets with the purpose of meeting deposit liabilities. Third, a high short-term debt/long-term debt ratio of banks (a potential for bank run) may require an urgent sale of interest-bearing assets at unrealistically low prices and cause potentially high losses.

Banking crises are very difficult to identify by using specific statistical data, as it is difficult to predict the exact date of bank run. The determination of indicators of banking crises is made even more difficult by the problems of asymmetric information and the availability of actual data on non-performing loans and losses on advances. As a result, literature still lacks a single criterion for defining systemic banking crises.

For example, A. Demirguc-Kunt and E. Detragiache (1998, 90-91) suggest the following criteria for identifying a banking system crisis: the ratio of non-performing assets to total assets exceeding 10%, the costs of the rehabilitation of banks higher than 2% of the GDP; the banking system distress resulting in the nationalization of banks, bank runs taking place, deposit freeze, prolonged bank holidays or days off. On the other hand, in the study of the indicators of banking crises in different countries, G. Caprio and D. Klingebiel (1996, 1-2) suggest a simple criterion of identifying a crisis, combining qualitative data on the state of the banking assets and the quantitative indicators of losses on non-performing loans and the indicators of bank solvency. After establishing the criteria, financial experts from specific countries are asked for the professional assessment of whether it really is a crisis or not. Analyzing the „twin crises", G. Kaminsky and C. M. Reinhart (1999) focus on an extensive analysis of systemic crises and conclude that the beginning of each systemic crisis coincides with bank runs, a distressed portfolio, the bankruptcy of banks and other financial institutions, the closure, merger and nationalization of problem banks and the general state intervention in the banking system .

When a systemic banking crisis is taken into consideration, it does not just come down to the fear of a domino effect, where the failure of a large and important bank would result in the bankruptcy of smaller banks. An even greater fear results from the fact that the closure of banks for several months in order to assess their illiquid assets would cause deposits and savings freeze, with a significant negative effect on national spending (Kaufman & Seelig, 2006, 164). In addition, more financially dependent sectors show poorer performance during the banking crises, i.e. they „lose about one percentage point of growth in each crisis year compared to less financially dependent sectors" (Demirguc-Kunt & Detragiache, 2005, 25).

The negative effects of banking crises are stronger in developing countries, countries where the private sector has limited access to foreign capital and where crises are more severe. As a result, banking bankruptcies have been and continue to be the main focus of the public policy and stand for the reason for a more rigorous regulation of banks in comparison to other institutions. On the other hand, the proponents of the so-called „free banking" attribute most banking crises to strong regulations and believe that the banking system would function more efficiently without regulatory institutions. This means that, in the absence of strong regulatory frameworks, banks would have greater motivation to prevent their own bankruptcy. However, if one takes into account strong regulations and the considerable protection of non-banking institutions from the competition, it becomes difficult to assess the quality of banking operations in a more liberal environment. Preoccupation with systemic risk forces regulators to be tolerant of the non-competitive behavior of banks. Bearing in mind that the main drivers of the economic system are the users of banking services, regulators aim at increasing transparency of banking operations. Therefore, one cannot talk about leaving the neoliberal paradigm, but rather about the need for implementing a countercyclical monetary policy in order to prevent the domino effect in a financial system and minimize panic among the population and the economy (Praščević, 2009, 136).

INTERVENTIONIST MEASURES FOR REHABILITATING PROBLEM BANKS AND RESOLVING SYSTEMIC BANKING CRISES

Addressing systemic banking crises is different from the ways of resolving individual banking bankruptcies in stable periods. Measures considered adequate in stable periods may increase uncertainty during a systemic crisis, influence the reduction of confidence of the private sector in the functioning of the banking system and slow down the rehabilitation of the banking system. For example, in stable periods, deposits have limited protection, emergency financial assistance is given under very strict conditions, while insolvent banks are quickly closed. However, if banking crises become systemic, then all measures and instruments have a role in protecting the payment system, reducing the loss of depositors' confidence, increasing the solvency of the banking system and preventing further macroeconomic deterioration (Hoelscher & Ingves, 2006, 5).

The early identification of a crisis and its resolution have no alternative. Regulatory restraint and delay in taking radical measures would result in the tightening of the crisis and an increase in the costs of its resolution in a later period. It should be noted that the universal pattern for resolving banking crises, which can be used in all conditions and at any time, does not exist. In the absence of a unique pattern, the following common elements for the efficient management of banking crises can be identified: the speed of the identification of banking problems, the state support for the supervisory authorities in the process of liquidating a particular bank, the willingness of the state authorities to cast substantial funds into the banking system, the implementation of transparent measures and actions for solving the problem of non-performing loans in the initial phase of the crisis and the necessity of regulatory reforms for creating adequate regulatory and supervisory frameworks (Casu *et al,* 2006, 448-449).

The successful resolution of banking crises requires an adequate set of state interventionist measures in order to ensure the viability of the financial system, i.e. to maintain the integrity of the payment system, increase financial savings and provide essential credit flows to the economy. At the same time, measures should be taken to ensure the effectiveness and efficiency of the restructuring process, by an adequate distribution of the burden of resolving problems and minimizing the government costs (Frydl & Quintyn, 2006, 30). Measures used for managing banking crises can be classified into two categories. The first category includes financial restructuring measures aimed at preventing a deposit outflow, maintaining bank liquidity and restoring confidence in the banking system immediately after the crisis. The second category includes medium-term operational restructuring measures aimed at improving the balance sheets of banks that continue to work and liquidating insolvent banks.

Financial restructuring measures, such as emergency financial assistance and state blanket guarantees, aim at preventing banking crises from spreading in early stages. Although these measures can buy time during the crisis, they themselves cannot restore confidence in the banking system if the worsening of the macroeconomic situation continues. To achieve a long-lasting result, measures to stop the crisis must be combined with strong macroeconomic adjustment policies and an adequate bank restructuring strategy.

When the initial stabilization of the banking system is achieved through the combination of emergency financial assistance and state blanket guarantees, it is necessary that a plan for bank restructuring be drawn up. Bank restructuring is a multiyear process that, among other things, includes the revision of laws and institutions, the development of strategies for liquidation, merger, sale, bank recapitalization, the restructuring and recovery of bank capital.

Bank restructuring starts with a diagnosis of the financial condition of individual banks, in order to identify the extent of their losses. However, an adequate diagnosis is often difficult because of the limited data available and false accounting. For the purpose of a prompt assessment of bank solvency and taking adequate restructuring measures, it is necessary that a consistent application of accounting standards, the continuous disclosure of truthful information on banking operations for the needs of the supervisory authorities and the public and an external audit to verify the actual situation should be ensured. Upon making a diagnosis for each bank, supervisors perform their classification and develop adequate strategies for resolving specific problems.

Intervention in problem banks implies the transfer of control of banking operations from the management and the shareholders to the state. In this case, the bank may close or may remain open under the control of the regulatory and governmental bodies until its financial situation is better-defined and decisions about the adequate restructuring strategy are made. These strategies include the closure and liquidation of banks unable to survive and recapitalization through an infusion of capital or the rehabilitation of assets. Both recapitalization approaches can be used separately, depending on the specific situation in the bank. Nevertheless, these approaches are often combined when insolvent banks need to be rehabilitated. Additionally, banks can be classified as stable and adequately capitalized, unreliable and reliable, but insufficiently capitalized.

Banks classified as unreliable and insolvent must be liquidated and removed from the system. Scientists and national regulators are divided with respect to opinions on the liquidation of banks. For example, the regulatory authorities in Japan have until recently believed that every problem bank should be rehabilitated and merged with a healthy bank. Great Britain has been dominated by the view that major banks must not be liquidated. The USA used to limit rehabilitation to the largest commercial banks only. However, since 1991, the legislation has required that the government adopt the least-cost approach, from the standpoint of the taxpayer, to rehabilitate problem banks. This means that each insolvent bank must be liquidated, except in the case when a strong bank is ready to take it over, including the taking of non-performing loans.

The unwillingness of supervisors to liquidate banks can stem from the fear that their actions will be evaluated as unsuccessful by the public. However, the true failure of the supervisory bodies is not the liquidation of banks, but a delay in resolving identified problems. Therefore, the objective of a regulatory control is not reflected in preventing liquidation, but in the timely identification of risks of specific banks and rapid intervention, with minimal losses in the real economy.

The recapitalization of banks through an infusion of the state capital involves different modes of restructuring, such as: the nationalization of banks, the purchase and takeover by other banks and the creation of a „bridge bank". The inclusion of the state in the process of the recapitalization of banks is a temporary measure in market economies and lasts until the bank is rehabilitated enough to be able to independently obtain additional capital on the financial market. Efficiency in the implementation of the aforementioned bank restructuring measures will determine the total costs of the restructuring process and the speed at which the banking system will exit from the crisis. However, experience indicates the existence of numerous problems in the implementation of measures for addressing banking crises.

First, the difficulties in the selection of adequate measures for secure bank restructuring may lead to a delay in resolving the identified problems in banks. Any delay, however, increases costs and makes the final restructuring more difficult. Second, to help problem, but viable banks, the regulatory and government authorities often refrain from applying appropriate interventionist measures. Third, a rapid resolution of banking crises requires full political support, because the resolution of banking problems implies the redistribution of resources within the economy. Disagreements within the government bodies on how these losses should be allocated can result in high fiscal costs and inefficient banking systems. Fourth, the lack of an adequate communication strategy may limit the effectiveness of interventionist measures. Understanding the established national objectives on the part of the private sector and its support are important factors in the implementation of bank restructuring measures. At the same time, an inadequate legal system can lead to suboptimal results in the process of bank restructuring. Even in circumstances when a banking strategy is comprehensive and fully compliant, the weaknesses of the legal system can prevent the restructuring of problem banks.

Bearing in mind the fact that each problem institution stands for a unique situation, it is very difficult to test and with absolute certainty predict the outcomes of alternative measures for resolving crises. Measures and procedures for resolving crises must be adapted to the circumstances in which the crisis originated, as well as to the causes that led to it. The application of measures that used to bring good results in the past does not guarantee a success in the current crisis. In addition, the regulatory and government authorities in a specific country must not copy the solutions applied in other countries, due to different macroeconomic environment.

COSTS AND BENEFITS OF INTERVENTIONIST MEASURES FOR RESOLVING BANKING CRISES

The cost-benefit analysis is a technique providing the relatively simple quantification of the optimal decision rules on intervention or non-intervention in banking crises. A choice between allowing a banking crisis to take its course and using public funds for undertaking various interventions essentially represents an economic investment decision, made in accordance with a cost-benefit analysis. The logic of this analysis is clear: each country aims at maximizing net benefits of its actions:

Net benefits = Benefits (interventionist measures) - Costs (interventionist measures),

where the amount of both benefits and costs depends on the type and degree of the interventionist measures taken (Frydl & Quintyn, 2006, 25-26).

A decision on the state intervention depends on the size of the banking system relative to the real sector. If bank loans are not the main source of funding of the sector of the economy, the collapse of the banking system will not significantly impair investments and employment. In this case, the state will be most likely to avoid the intervention. If, on the other hand, the state chooses to intervene, it will try to alleviate banking distress and the costs resulting from it. Actions for resolving banking distress include the liquidation or restructuring of failed and weakened banks. In principle, the state's decisions are supposed to balance the economic and fiscal costs of using public funds and the benefits of preventing a future economic collapse.

If the benefits exceed the costs of bank restructuring, the state will decide to intervene and resolve banking problems. However, the exact measurement of costs and benefits is almost impossible, which is why it is very difficult to assess and conclude whether benefits outweigh the costs and to what extent they do so. With the purpose of achieving this, the state authorities can rely on the past experience or they can try to make an adequate and reasonable ex-ante assessment of the costs and benefits of various interventionist measures (Frydl & Quintyn, 2006, 35).

The different nature of the process of identifying the costs and benefits impedes their reasonable ex-ante assessment. At the beginning of a crisis, the gross costs are the given factor (deposits are withdrawn, whereas assets lose their value). However, their amount is unknown and they continue to grow. During the crisis, the state authorities try to minimize net costs, by using adequate intervention techniques. As for cost quantification itself, some costs can be quantified (by entering fiscal accounts), whereas the quantification of other costs is rather difficult (for example, the disruption of the payment system and credit flows, a loss of confidence in the banking system, the deterioration of the macroeconomic situation). On the other hand, benefits stemming from the intervention of the state authorities in banking crises can be immediate, mid-term and long-term. Immediate or direct benefits are related to the maintenance of credit flows and the functioning of the payment system, as well as to restoring the confidence of depositors in the banking system. Mid-term and long-term benefits are reflected in the creation of a more efficient banking system.

In accordance with the aforementioned facts, the state can control the speed of taking initial measures, the speed of the restructuring strategy, the choice of measures for resolving banking crises and the choice of measures for resolving crises in the corporate sector. On the other hand, the factors over which the state has no or has partial control relate to the state of the macroeconomic environment, the size of the corporate sector crisis, the reaction of market participants to the state's interventionist measures and the willingness of the market to take part in the restructuring process.

The combination of the aforementioned factors significantly impedes the process of making a reliable ex-ante assessment of the costs and benefits of interventions in a banking crisis. In other words, the equality between the initial estimates and actual costs does not often exist. In addition, it is very difficult to base a decision on intervention or non-intervention on the previous experience. It is generally held that the state intervention in the systemic crisis brings more benefits than costs. However, this result of the state intervention is determined by the specifics of the banking system and the macroeconomic environment and varies from country to country.

The process of resolving banking crises (especially systemic), which involves the use of the state funds, must include a strategy with clear decision rules regarding which banks are eligible for being rehabilitated with public funds and which ones need to be closed. Solving the problem with public funds is only possible in those banks that realistically assess their assets, identify the total amount of losses and compile an operational restructuring plan that will provide an adequate amount of capital and ensure profitability in a real-time framework (Andrews & Joseffson, 2006, 155).

REPRESENTATIVE BANKING CRISES

Until recently, research on banking crises was inspired by the events occurring in the nineteenth and the early twentieth centuries, when experiences resulting from the Great Depression were dominant and a number of catastrophic banking bankruptcies occurred. Because of the financial repression, only three banking crises were identified during the 1970's (Davis & Karim, 2008, 89). The introduction of financial market liberalization in developing countries and the development of securitized markets with unregulated products in developed countries gave rise to the banking crises during the 1990's. Therefore, the following part of the paper will focus on the analysis of the causes, consequences and ways of resolving the Japanese and Scandinavian crises, which assumed a systemic character, as well as the current „Subprime" crisis, which spread at the global level. After that, the focus will shift to the analysis of the banking crisis in the former Yugoslavia, as well as the impact of the current crisis on the banking system in Serbia.

The introduction of financial liberalization in Japan created a competitive environment, which was not accompanied by an increased supervision of the regulatory authorities and the disclosure of financial information on banking operations. Therefore, banks were able to engage in excessive risk. Excessive lending, the negative impact of asset deflation and the policy failure to localize the problem stand for the most significant factors that led to the emergence of the major banking crisis in Japan in the 1990's.

Many analysts who analyzed the problems of Japanese banks have come to a conclusion that the Central bank (Bank of Japan) and the Ministry of Finance – MoF, were too slow in their reactions to the increase in non-performing loans in the banking system. In fact, during the 1990's, banks continued to give loans to the real estate sector, despite the problems in their account books and deflationary pressures in the economy. In the environment characterized by low interest rates, the Japanese government relied on the increase in public spending and demand in the economy. At the same time, no actions to resolve the problems in the banking system were taken. With the emergence of the systemic banking crisis, the government's initial approach was related to the stimulation of demand in the economy by using the fiscal policy. However, the fiscal stimulus had a marginal impact on the economy. At the same time, no international pressure on the Japanese government to solve its banking problem existed, since it was generally seen as a domestic issue.

The systemic banking crisis in Japan initiated a wide range of reforms, which aimed at stabilizing the banking system and facilitating the process of bank restructuring. Various actions typical of the majority of the countries passing through a banking or a financial crisis were initiated with the purpose of stabilizing the banking system, such as: the introduction of one-hundred-percent deposit-insurance schemes, extending emergency liquidity assistance for problem banks, providing financial assistance to encourage mergers among problem financial institutions, inserting additional capital into weak but viable banks and accelerating the temporary nationalization of non-viable banks.

In the late 1980's and the early 1990's, the Scandinavian countries (Finland, Norway and Sweden) were faced with the banking crises which had a systemic character. The history of the problems in these three countries is very similar to the banking problems of the Japanese banks. First, financial liberalization abolished all quantitative barriers in banks. Second, the increase in bank lending caused an increase in real estate prices. Finally, there was an increase in the scope of risky loans, which soon became non-performing.

An important study on the causes of the banking crises in the Scandinavian countries was published by Jarmo Pesola in 2001. His research covered the period from 1983 to 1998. He used two dependent variables: loan losses as a percentage of the total loans and banking bankruptcy, as well as several independent variables, such as: the share of the domestic loans in the nominal GDP, income surprise (the difference between the percentage change in the actual GDP volume and its forecast) and interest rate surprise, the terms of trade (the export price index/import price index of a specific country), prudential banking regulation indicators and the effective exchange rate in the country (Pesola, 2001, 28-29).

After the detailed analysis of the above-mentioned variables, Pesola concluded that the banking crises in the Scandinavian countries were directly affected by the high levels of indebtedness and the negative income surprise variables and the interest rate surprise variables. Since the deregulation increased the volume of loan losses by about 1%, it can be concluded that the financial liberalization also contributed significantly to the emergence and development of the banking crises. At the same time, Pesola did not think that the exchange rate and the terms of trade caused an increase in loan losses and bankruptcy of banks.

It has already been mentioned that the history of banking problems in the Scandinavian countries is very similar to the problems of the Japanese banks. However, compared with the Japanese banks, these crises were quickly resolved, because the state intervention ensued as soon as the first bank faced a problem. All the three analyzed countries solved their respective banking crises by introducing the one-hundred-percent deposit-insurance schemes, the provision of guarantees for bank loans, providing emergency liquidity assistance, the nationalization of the problem banks and selling non-performing assets from the banks' balance sheets (Stutts & Watts, 2009, 590). In this way, the costs of the restructuring of the problem banks in these particular countries were significantly lower when compared to Asian countries and Japan. In the Scandinavian crisis, the credibility of the government's blanket guarantees prevented bank run on time. On the other hand, the one- hundred-percent deposit guarantee was introduced later in Japan, practically at the peak of the crisis, which led to frequent bank runs.

Once the problems in the banking sector emerged, the currency crises in Finland and Sweden occurred as well, which caused a shift from fixed to floating exchange rates. In addition to the currency crises, Finland and Sweden faced a significant macroeconomic decline, despite rapid intervention and the rapid resolution of problems in the banking sector. Compared with the Scandinavian countries, a growing proportion of non-performing loans and slowness in resolving the problems with the problem banks are the most important reasons for the prolonged recessive trend in the Japanese economy.

The first major financial crisis in the XXI century (the Subprime crisis), which involves „esoteric instruments, unaware regulators and skittish investors" (Reinhart & Rogoff, 2009, 291), quickly spread to the real economy and affected the whole world. The existence of global connectivity caused the current financial crisis to have far-reaching consequences for the world economy and finance. It is an indisputable fact that the globalization of markets caused the globalization of the financial crisis and the economic recession, meaning that it caused „the damage to be paid globally, although the culprits were local" (Šoškić, 2009, 115).

By tracking the causes of the current financial crisis and its comparison with the past crises, it is possible to draw conclusions about the qualitative and quantitative match between certain standard indicators of financial crises, such as the growth of stock market indices and real estate prices. If we ignore the standard indicators of banking crises, the current crisis is different from the previous crises with respect to causes (financial innovation, securitization), and the speed of the spillover of the negative effects of the real and monetary developments on the world economy.

The current crisis was initiated by the credit boom combined with the housing bubble. Declining quality loans were generally available on corporate, consumer and mortgage markets. Although the financial institutions made the credit risk transfer through mortgage debt securitization, problems were becoming larger and larger. The „originate-to-distribute" securitization model became the norm. Practically speaking,

> „in the hierarchy of mortgage securitization in the USA, every intermediary in the chain of command had a commission; in the end, the credit risk was transferred to the structure that was so opaque that even the most sophisticated investor had no real idea of his holding. The reduced loan quality and the lack of the transparency of the securitized structure contributed to the system instability" (Goldberg & Giedeman, 2009, 18-19).

It was generally expected that the loan securitization would transfer the credit risk across the economy, with a limited effect on the systemic risk. However, banks and other financial institutions retained a large exposure in mortgage loans, without a capital increase in accordance with the risks taken. The credit crunch caused by the subprime mortgage loans in the United States launched a storm of criticism of the big credit rating agencies which did not spot risks on time and downgraded mortgage bonds. The overly optimistic ratings encouraged investors to buy mortgage-backed securities, which resulted in huge losses. At the same time, there was no motivation on the part of the formal regulatory institutions to intervene and limit the growth of mortgage lending. In addition, it was widely believed that the markets would correct themselves and that the regulatory control would just hinder useful financial innovation.

During the nineties, the banking sector of Serbia was practically ruined, primarily due to the conditions in the environment in which banks operated (political instability, high inflation, economic isolation, loss of savings and a complete loss of confidence in the banking sector). The dependence of the Serbian banking sector on the political structures was best reflected in the 1991-2000 period, when the monetary system was completely destroyed. Due to the hyperinflation that reached a devastating economic dimension in 1993, the dinar savings were lost and the loans were impaired. Money lost its basic functions, which led to the establishment of a parallel monetary system, based on the German Mark.

Compared to other countries in transition, the banking crisis in the former Yugoslavia was unique in terms of its length, depth and cost of the rehabilitation of the banks. Starting from the absolute unsustainability of such a banking sector, the mechanisms for its restructuring were established. Fast and efficient restructuring entailed an adequate cost-benefit analysis of the relevant interventionist measures. Compared with stabilization or complete rehabilitation, the costs of liquidation of the problem banks were the lowest, which significantly reduced the number of possible alternatives to the restructuring. Therefore, the liquidation of the large problem banks was imposed as the only efficient solution.

An analysis of the financial condition of the „Big four" (Beobanka, Beogradska banka, Invest banka and Jugobanka) showed that their losses were much higher than originally estimated. The lack of the real prospects of achieving a positive cash flow in the analyzed banks in the years to come, inability to secure huge budgetary resources for their rehabilitation and the high costs of rehabilitation to the commercial and economic development were the key elements that justified the closure of all the four banks in just one day. Although the controversy regarding the justification of the liquidation of „the big four" is still present, it cannot be denied that this was followed by an effective reform of the entire banking sector (judging by the relative performance indicators, the structure of the banking sector was improved, the losses of the entire banking system were reduced, confidence in the banking operations increased, the share of capital in the total resources increased and banks harmonized their operations with the operations of other banks). The bank restructuring, which was conducted with an active participation of the state, created a fairly stable banking sector characterized by enviable profitability, adequate capitalization and corporate performance even in times of global crisis.

Judging by the current situation, it can be concluded that the banking sector in Serbia bore the brunt of the global financial crisis relatively well. This situation is primarily the result of the conservative regulations of the National Bank of Serbia, which discouraged excessive borrowing by businesses and individuals. Additionally, the restrictive measures imposed by the National Bank of Serbia, which caused high liquidity, adequate capitalization and the overvaluation of provisions for non-performing loans, proved to be an advantage of the domestic banking system in relation to all other countries in the region. At the same time, such measures of the NBS relatively quickly alleviated the negative psychologically induced factors that led to massive bank runs at the beginning of the crisis. Banks successfully responded to citizens' demands for withdrawal, so that in December 2008, they stopped the outflow, which was followed by an inflow of new deposits. In addition to the short-term effect of the withdrawal of savings from banks, significant effects were prevented by the state guarantees for deposits, leading to the stabilization and return of bank deposits (Praščević, 2013, 18). This created strong shock absorbers for covering unexpected losses and resulted in the adequate capitalization and high liquidity of the banking sector at the start of the crisis.

Finally, it can be concluded that the public's confidence in the functioning of banks and the financial system in general can be restored with a better future transparency of the markets in financial instruments, the elimination of gaps in the regulatory frameworks across countries and an increase in their coordination, the development of countercyclical instruments to alleviate the procyclicality of the regulatory policy, the improvement of risk measurement and the management practice based on ethical standards, the control of rating agencies' operations, ensuring the liquidity of the banking sector and the gradual increase in the level of capital in banks (Jakšić & Todorović, 2009, 89).

OPEN QUESTIONS AND REGULATORY REFORMS

The credit crunch, caused by the Subprime crisis, led the financial and the banking systems to an unfamiliar ground. The financial system, established in the past, has become totally uncertain today, while its future form will be a matter of speculation.

This raises the question of why similar crises recur, despite the development of a large set of prudential regulations over the years, designed in order to prevent a systemic collapse. In many cases, regulations did not prevent problems; moreover, they significantly deteriorated the existing problems. For example, a key regulation in the United States, which emerged from the Great Depression, was the Glass-Steagall Act, which aimed at protecting commercial banks from price fluctuations on the stock market by separating commercial and investment banking. Furthermore, the savings and loan crisis initiated the regulatory requirement for securitization as a way of transferring the credit risk to financial markets. Today, it is obvious that investment banks and securitization were the key initiators of the Subprime crisis. In addition, the grey area existing between hedging and speculative transactions made derivative transactions so opaque that at one point they had to explode (Bloom, R. 2013, 10).

The current crisis has shown that the existing regulatory framework has many flaws (Torre & Izze, 2009, 21-22). First, there is a clear line between ex-ante prudential norms and ex-post safety net. Ex-ante regulatory framework focused on the stability of assets whereas ex-post safety net focused on maintaining the liquidity of liabilities. In addition, the growing systemic liquidity risks were not covered by the regulations, which was its main flaw. Second, prudential regulations focused on the safety and solidity of individual institutions, based on the assumption that the sum of strong institutions was equivalent to a strong system. However, the Subprime crisis has shown that this approach was set up completely wrong, since the system itself is the most important for the strength of each institution. Third, traditional regulations focused on statistically measurable risks, based on sophisticated and complex techniques for risk measurement and management. Based on the development of the Basel II Capital Accord, the current regulatory framework tried to reduce the gap between the constantly growing risks and the regulatory principles of business. However, the Subprime crisis has shown that risk management techniques are too complex and that the control over banking operations is incomplete and accompanied by an increase in uncertainty in the environment.

On the basis of the above considerations, it can be stated that the current situation requires a complete revision and reform of the current regulatory environment. The regulatory reform should aim at improving the harmonization of various incentives in order to minimize the systemic liquidity risk and the countercyclical effects of bank capital. Accordingly, it is necessary to make the system as a whole more stable, not so much to enhance risk awareness amongst individual banks, and switch the basis for calculating economic capital from the level of risk-weighted assets to their growth rates (Goodhart, 2008, 14). The strengthening of the prudential norms that encourage keeping the assets safe can help in limiting the banks' sensitivity to systemic liquidity shocks. As for the countercyclical effects, the direction to which the incentives must be harmonized rapidly changes, depending on the phase of the cycle. The ascending phase requires implementing less risky activities and the accumulation of capital, while the descending phase requires initiating risky activities and capital spending.

The current financial crisis has brought to light a significant failure of the Basel framework, reflected in the inadequate establishment of dynamic links between monetary and prudential policies. The job of the central bank was related to ensuring macro stability and being a lender of last resort, while the supervisors were responsible for prudential regulations and financial stability. The regulations did not commit them to firm cooperation, which stands for one of the main causes of the crisis. In other words, a lack of attention on the monetary authorities' part in relation to the implications of their actions on financial developments, and on the supervisors' part in relation to macro dynamics, deeply contributed to the emergence of the crisis.

Therefore, the Basel Committee responded by adopting certain recommendations (the so-called Basel III) regarding the reform of the banking regulations and the supervision of banks, which are primarily related to the increase of the capital adequacy ratio in accordance with the growing risk of the complex and globalized financial operations and an increase in the quality primary capital. It also adopted the recommendation on the introduction of the minimum global liquidity standards, which had previously not been included in the legislation, which could prevent the loss of liquid assets.

In addition to the above-mentioned recommendations for strengthening the prudential supervision of banks at the micro level, the Basel Committee issued recommendations at the macro level as well. First, the capital adequacy ratio must be supplemented by the corresponding internationally harmonized capital availability ratio, in order to prevent banks from circumventing the requirements of the new regulations. Second, it is necessary to create countercyclical reserves in the stages of economic prosperity, which would be activated during the recessive trends in the economy. Third, it is necessary to impose derivative rules, in order to reduce the use of derivatives as complex high-risk instruments.

Due to the fact that even the best regulation and supervision are not likely to completely eliminate the risk of systemic crises in the world of uncertainty, improving the systemic features of the security network has and will have a special significance in the new regulatory framework. Therefore, immediately after the outbreak of the crisis, the government of the United States initiated changes in the deposit insurance system, which related to a temporary increase in the amount of insured deposits. By adopting the Emergency Economic Stabilization Act on October 3, 2008, the United States increased deposit coverage from 100,000 to 250,000 dollars (Hansen *et al,* 2009, 50-51).

The current crisis also contributed to the temporary increase in deposit insurance in the European Union in the amount of 50,000 Euros in June 2009, whereas during 2010 the limit was increased to 100,000 Euros. At the same time, some countries, such as France and Germany, introduced temporary full deposit coverage, so that depositors would not lose their money and in order to maintain confidence in the banks during the crisis. The state and political structures of specific countries stand behind unlimited deposit guarantees (The Thematic Review on Deposit Insurance Systems, 2012, 11). It is typical of the European Union market to have national supervisors disinterested in preserving the integral value of national banks operating outside the country's borders. In times of crisis, national supervisors are focused on preserving the stability of the national parts of cross-border banks. This attitude is supported by the well-known financial trilemma, which indicates that the three major objectives (maintaining global financial stability, strengthening cross-border financial integration and preserving national integrity) cannot easily fit (Schoenmaker, 2012, 5). Each of these three objectives can relatively easily fit with each other, but it is difficult, if not impossible, to achieve the fit of all the three of them.

However, in order to maintain both the internal and the cross-border value of European banks, it is necessary to consolidate supervision, deposit insurance, the lender of last resort and the process of resolving problem banks at the supranational level, i.e. at the level of the European Union (Schoenmaker & Gross, 2012, 8). In this context, the establishment of the European deposit insurance fund is proposed, which would have a significant role in monitoring and rehabilitating problem banks.

The analysis of the regulatory framework of the banking operations in Serbia points to a conclusion that, by adopting a set of prudential measures in 2009, the National Bank of Serbia eased the monetary policy and created a framework for securing the additional sources of funding. Compared to neighboring countries, only the National Bank of Serbia has taken all the relevant prudential measures aimed at maintaining the macroeconomic and financial stability and security of the banking sector during the crisis.

In the environment characterized by expected challenges from the country and abroad, the priorities of the banking sector in Serbia must be based on efficient risk management and the quality of invested funds, in order to continue the upward trend of capital adequacy from the previous years. However, it must be emphasized that there are still no reasons for excessive optimism, because the problems of the banking sector may increase with the prolongation of the recession and the growth of the credit risk, which is expected to increase the number of non-performing loans in the future. Whether that increase will be higher or lower will depend on a future direction of the monetary policy of the National Bank of Serbia.

On the basis of the above considerations, it can be concluded that the success of regulatory reforms depends on the possibility of combining specific rules (which maintain the system within reasonable limits) with institutional reforms proportional to the higher power and responsibilities of supervisors and strong enough to overcome numerous difficulties associated with the use of discretion. The system of banking regulations must move from the attitude of too complex and unclear rules to the approach based on transparency and simplicity (Page & Hooper, 2013, 52). Finding the right modality of implementation and a regulatory mix between rules and discretion will be one of the toughest and the most important challenges of regulatory reforms in the future.

CONCLUSION

The established research framework, which investigates the role and importance of various interventionist measures in resolving banking crises and preserving the stability of banking systems, has opened a lot of theoretical and practical issues and dilemmas. Casting light on the key aspects of the complex issue of managing banking crises in accordance with the requirements and challenges of contemporary economic trends confirms the complexity, importance and topicality of this issue.

The paper points out that the chaotic nature of banking crises often leads to missteps and problems in the implementation of measures for addressing them. Given that systemic banking crises limit economic growth and development, it is necessary to identify them on time and implement rules and regulations to prevent the emergence of crises. If a crisis does occur, the timely formulation of a strategy to overcome it is necessary. Additionally, because of differences in the macro environment, the strategies that led to the recovery of the banking system and showed good results in other countries in the past must not be copied. To be efficient, strategies must be adjusted to the institutional, legal and cultural characteristics of a particular country.

The presented attitudes were developed with the purpose of drawing attention to the selection of the most efficient approach to managing banking crises. This presentation pointed out that the timely taking of relevant and cost-effective measures corresponding to the structural aspects and concrete specifics of the banking system of a particular country allows for the successful restructuring of individual banks and the preservation of the stability of banking systems, which confirms the starting hypothesis of this paper.

The current financial crisis has opened the essential questions regarding the adequacy of the existing regulatory architecture, which can be characterized as rather unbalanced. Therefore, certain reforms were initiated with the purpose of bringing banking regulations into line with the unstable environment in which the banks operate. Any reform must integrate problems related to moral hazard, external influences and uncertainty and maintain an adequate balance between financial stability and financial development. This is a difficult task to do, because each individual problem may lead to different and often inconsistent regulatory implications.

In trying to alleviate the negative effects of the current crisis, the regulatory institutions must develop their own development strategies, allowing for the adequate evaluation and efficient use of available capital. In this regard, the National Bank of Serbia must focus on the macro approach to the supervision of financial institutions, since the current crisis has shown that micro approach is not sufficient to ensure financial stability in general. Thus defined, the approach to supervision should enable the minimization of the negative trends and distress in the financial system, reduce the costs of financial instability and enable the long-term financial stability of the country.

In order to maintain the vitality and stability of the financial and the banking systems, it is necessary to establish a strong connection between fiscal, monetary and prudential measures and intensify the ongoing institutional reforms and the reforms of the private sector. Therefore, the National Bank of Serbia must focus its future efforts on: improving the risk management function in all financial institutions, strengthening the prudential supervision and regulation of financial institutions in order to prevent future instability on the financial markets, a more adequate control of the entry and operations of rating agencies, strengthening corporate management and the transparency of the work of financial institutions and reducing the sources of procyclicality through adequate regulatory and accounting frameworks.

The exceptional importance of establishing an adequate prudential regulatory control of the banking system operations in Serbia and the preparation of the banking system for inclusion in the European financial flows give the prudential regulations a high scientific and practical relevance. In addition, the multi-oriented research created a connection between the theoretical basis and practice, and clearly illustrated their relationship, thus ensuring a consistent framework for understanding the role of prudential regulation and control in managing banking crises.

An analysis of experiences and the impact of the measures implemented in the design of regulatory frameworks in developing countries can have important practical significance for the design of measures for increasing the efficiency of the regulatory framework in Serbia and harmonizing it with the international banking principles.

The key limitation of this paper is related to the small sample of the analyzed crises, which partly simplified the process of drawing conclusions about the most effective interventionist measures in certain cases. In addition, the regulatory reforms and the changes in the regulatory frameworks, undertaken with the aim of minimizing the banking problems and preventing banking crises (such as Basel III), are still in the implementation phase, so their effectiveness cannot reliably be determined. Therefore, future research should focus on analyzing the effectiveness of the existing regulatory reforms. Moreover, it would also be useful to base such an analysis on a larger number of countries and include the consequences of new regulations on banking operations. The analysis could also include an empirical research that would in a methodologically correct way test the ability of banks to accept new standards in order to ensure safe and profitable operations, without high risks to the stability of banking systems.

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REFERENCES

Andrews, M., & Josefsson, M. (2006). What Happens After Supervisory Intervention? Considering Bank Closure Options. In Hoelscher, S. D. (Ed.), *Bank Restructuring and Resolution* (pp. 142-162). IMF, New York: Palgrave Macmillan.

Beck, T. (2003). The Incentive Compatible Design of Deposit Insurance and Bank Failure Resolution – Concepts and Country Studies. *World Bank Policy Research Working Paper 3043*. May, 1-29.

Beck, T., & Laeven, L. (2006). Resolution of Failed Banks by Deposit Insurers: Cross-Country Evidence. *World Bank Policy Research Working Paper 3920*. May, 1-33.

Bloom, R. (2013). Global Financial Crisis in Retrospect. *The CPA Journal, 83*(3), 6-10.

Caprio, G. Jr., & Klingebiel, D. (1996). Bank Insolvencies: Cross-country Experience. Policy Research Department 1620, July. *The World Bank*, 1-60.

Casu, B., Girardone, C., & Molyneux, P. (2006). *Introduction to Banking*. Harlow, UK: Prentice Hall.

Davis, P. E., & Karim, D. (2008). Comparing Early Warning Systems for Banking Crises. *Journal of Financial Stability, 4*(2), 89-120. doi:10.1016/j.jfs.2007.12.004

Demirguc-Kunt, A., & Detragiache, E. (1998). The Determinants of Banking Crises in Developing and Developed Countris. *IMF Staff Papers, 45*(1), 81-109.

Demirguc-Kunt, A., & Detragiache, E. (2005). Cross-Country Empirical Studies of Systemic Bank Distress: A Survey. *World Bank Policy Research Working Paper 3719*. September, 1-40.

Frydl, J. E., & Quintyn, M. (2006). The Benefits and Costs of Intervening in Banking Crises. In S. D. Hoelscher (Ed.), *Bank Restructuring and Resolution* (pp. 24-93). IMF, New York: Palgrave Macmillan.

Goldberg, S. R., & Giedeman, D. C. (2009). Healing the Global Financial Crisis. *The Journal of Corporate Accounting & Finance*, September/October. 13-24. doi: 10.1002/jcaf.20524

Goodhart, C. A. E. (2008). The Regulatory Response to the Financial Crisis. *CESifo Working Paper 2257/3*. Category 6: Monetary Policy and International Finance, 1-15.

Hansen, K. A., Carlson, S. J., & Dosch, R. J. (2009). How safe are bank deposits? *The CPA Journal, 79*(2), 50-53.

Hoelscher, S. D., & Ingves, S. (2006). The Resolution of Systemic Banking System Crises. In S. D. Hoelscher (Ed.), *Bank Restructuring and Resolution* (pp. 3-23). IMF, New York: Palgrave Macmillan.

Jakšić, M., i Todorović, V. (2009). Aktuelna kretanja u globalnim finansijskim tokovima. *Računovodstvo*, 3/4, 79-89.

Kaminsky, G., & Reinhart, C. M. (1999). The twin crises: the causes of banking and balance of payments problems. *The American Economic Review, 89*(3), 473-500. doi: 10.1257/aer.89.3.473

Kaufman, G. G. (1996). Bank failures, systemic risk and bank regulation. *Cato Journal, 16*(1). 17-45.

Kaufman, G. G., & Seelig, A. S. (2006). Post-Resolution Treatment of Depositors at Failed Banks: Implications for the Severity of Banking Crises, Systemic Risk, and Too-Big-To-Fail. In S. D. Hoelscher (Ed.), *Bank Restructuring and Resolution* (pp. 163-183). IMF, New York: Palgrave Macmillan.

Leckow, B. R. (2006). The IMF/World Bank Global Insolvency Initiative-Its Purpose and Principial Features. In S. D. Hoelscher (Ed.), *Bank Restructuring and Resolution* (pp. 184-195). IMF, New York: Palgrave Macmillan.

Page, J., & Hooper, P. (2013). The fundamentals of bank accounting. *The CPA Journal, 83*(3), 46-52.

Pesola, J. (2001). The Role of macroeconomic shocks in banking crises. *Bank of Finland Discussion Papers*, 6, 1-62.

Praščević, A. (2009). Velika ekonomska depresija (1929.) i globalna ekonomska recesija (2008.): uticaj na promenu makroekonomske paradigme. U *Kriza i globalizacija* (str. 122-136). Beograd, Srbija: Centar za ekonomska istraživanja Instituta društvenih nauka.

Praščević, A. (2013). Dometi ekonomske politike u prevazilaženju efekata globalne ekonomske krize na ekonomiju Srbije. *Ekonomski horizonti, 15*(2), 17-30. doi: 10.5937/ekonhor1301017P.

Reinhart, C. M., & Rogoff, K. S. (2009). Da li je američka Subprime finansijska kriza iz 2007. godine toliko različita? Međunarodna istorijska komparacija, *Panoeconomicus,* 3, 291-299. doi: 10.2298/PAN0903291R

Schoenmaker, D. (2012). Banking supervision and resolution: The European dimension. *DSF Policy Paper, 19*(1), 1-14.

Schoenmaker, D., & Gros, D. (2012). A European Deposit Insurance and Resolution Fund. CEPS Working Document, No. 364 (5), 1-12.

Stutts, W. F., & Watts, W. C. (2009). Of Herring and Sausage: Nordic Responses to Banking Crises as Examples for the United States. *Texas International Law Journal,* 44, 577-627.

Šoškić, D. (2009). Globalna finansijska kriza i Srbija – pouke i mere. U *Svetska ekonomska kriza i ekonomska politika Srbije u 2009. godini.* (str. 115-131). Knjiga 1, Beograd, Srbija: Naučno društvo ekonomista sa Akademijom ekonomskih nauka i Ekonomski fakultet Univerziteta u Beogradu.

Thematic Review on Deposit Insurance Systems - Peer Review Report. (2012). *Financial Stability Board Publications.* February 08, 1-69.

Todorović, V. (2013). Uloga osiguranja depozita u sistemima bankarskih regulativa. U V. Leković (Ur.), *Institucionalne promene kao determinanta privrednog razvoja Srbije* (str. 384-401). Kragujevac, Srbija: Ekonomski fakultet Univerziteta u Kragujevcu.

Torre, A., & Ize, A. (2009). Regulatory Reform: Integrating Paradigms. *Policy Research Working Paper* 4842/2. The World Bank, 1-36.

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