

AN INCENTIVE-COMPATIBLE SYSTEM OF DEPOSIT GUARANTEES: SERBIA AND SOUTH-EASTERN EUROPE

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Abstract. *The basic purpose of the paper is to study banking as a regulated industry. Inequality of information among various participants is assumed, as well as different incentives. We review literature to back up our stance of view that regulation, in general, and safety net, particularly, is necessary to make the financial service industry operate in a safe and proper way. A special attention is to transition banking as well as the Serbia banking peculiarities. Here we try to propose some guidelines for re-designing existing safety net in Serbia banking. We compare to current practice in other South-eastern Europe (SEE) countries, analyze impediments and solutions.*

INTRODUCTION

Financial safety net covers various institutions, rules and procedures enacted to protect safety and soundness of the system of financial intermediation. The specific safety net is designed to respond to actual threats, and has to be changed as the threats change. In other words, in a dynamic financial world, for a once chosen safety-net system, to be continuously adequate, it has to be continuously redesigned.

The new approach to risk-based technology (e.g. the new Basel Accord) is featured by the movement away from governmental control over the financial sector. It calls for a more effort to assess risks more finely, rely on non-governmental judgments about risks, and to activate market discipline (so-called Third Pillar). All those proposals are based on an assumption that sufficiently developed and deep financial markets exist and produce security prices that can provide a good indication of a bank's (regulatee) condition. This is because prices reflect assessments derived *via* the best available informational arrangements. But, this current vogue favoring exclusive regulatory reliance on institutional risk-management capacity is based on the current stance of institutional development of the most developed part of the world and, therefore, is not fully acceptable for developing and countries in transition.

On the other side, the transition and less developed countries particularly have to bear in mind that extensive, aggressive and widely prescriptive regulation could miss the target, too (c.f. Honohan and Stiglitz (2001)). Or it can even have an opposite effect, namely, it can produce a rigid, inflexible, and mostly inefficient banking system. Thus, the rules have to be kept simple so as to be easy to monitor compliance. In respect of dilemma rules vs. discretion in regulation we must state that regulation oriented strongly to rules leads to possible over-regulation. Adapting the design of regulation to meet every possible evasive action that will inevitably be adopted by regulatory entities is a never-ending story. Expanding scope of regulation can be understood by defining the concept of the regulatory dialectic. This well known concept embodies cyclical interaction between political and economic pressures in regulated markets, treating political processes of regulation and economic processes of regulatee avoidance as opposing forces that adapt continuously to each other, thereby spawning an increasing array of regulation. At the same time, fewer rules leave too much discretion to regulators that could be used in a wrong way. Thus, a regulatory discretion should be held inside the thresholds to restrict rent-seeking behavior. All those constraints make bank regulation extremely complex. But, beside those 'how' disputes, there are also some obscurities regarding instruments available for achieving the goal.

In spite of a huge academic and industry interest in the area of regulation and safety net, there is no consensus on what precisely the safety net components are. Often, the main components of a safety net are considered to be: precise design of deposit insurance, rules and procedures for intervening in banks, and for bank closure, line-of-business restrictions, capital adequacy requirements, entry restrains, interest rate ceilings, restrictions on composition of liabilities and composition of assets. Here, the focus will be on deposit insurance design and its relations to some other safety net and regulatory components. But, before we go on to survey this policy issue, it will be useful to address some open questions that request more less the same answer - what makes banks important, vulnerable and necessary to regulate.

1. REGULATING BANKING INDUSTRY

1.1 Rationale for Bank Regulation

For decades banking has been a more or less regulated industry. According to Goodhart et al (2001, p. 10), the traditional rationale for bank regulation and supervision is based on four main considerations: i) the pivotal position of banks in the financial system, especially in clearing and payment systems; ii) the potential systemic dangers resulting from bank runs; iii) the nature of bank contracts; and, iv) adverse selection and moral hazard associated with the lender-of-last-resort role and other safety net arrangements that apply to banks. Although the scope of public regulation could be much broader, in banking area, especially in emerging markets and transition banking, the most urgent and sensitive task is to provide systemic stability.

Obviously, a failure of a bank (particularly a big one) and a failure of a non-bank company could not be considered equal. Negative externalities of a bank failure are much bigger; thus, it more instantly hurts the rest of the economy. But, can the banking system sustain its stability with no external regulation and supervision? Or, can a bank be stable

and sound with the corporate governance as it really is? Dewatripoint and Tirole (1993) developed a model of the optimal control of (bank) firms. In the model, neither capital requirements nor a deposit insurance system are necessary to sustain a bank firm stable and sound. The only thing needed is good corporate governance. However, though a bank *is* a firm it certainly is a very peculiar firm. It is well known that banks have mostly small and uninformed claim holders. This fact seriously limits the intensity of monitoring and of outside involvement in the management. Therefore, the possibility of banks to be efficiently monitored by their claim holders seems to be quite low. But, at the same time, to delegate monitoring to a government body assumes a web of agency relations which is also likely to fail, especially in a system lacking good institutional, informational and contractual background. To conclude, the capacity building of monitor, whoever it is, could be a primary objective in process of designing sound and safe financial system.

Above all, we accept that a bank failure is likely to be a systemic event. Fragility of a bank merely comes from the fact that a huge part of its liabilities is on 'first come, first served' basis, so that the terminal value of someone's claim depends on his/her position in a queue in front of the counter. This 'sequential service constrain' feature of bank contract is essential for bank's stability. It produces, even for rational investors, positive likelihood to behave in a run-prone manner, or, otherwise stated, makes banks amenable to liquidity crises.

Banks, clearly, are not regular firms and need to be regulated, but, how to do that? Recent developments in the industry of regulation point out a changing attitude and structure of regulation. The process of evolution of the regulation approach in financial service industry underlines the crucial importance corporate governance has to play in financial stability. Many crises and disturbances in banking and financial sector worldwide (see Goodhart et al, 2001, p. 17-37) demonstrate that external regulation was not able to protect soundness of financial intermediation where serious deficiencies in corporate governance were in. Namely, even in extensively regulated systems crises emerge, sending a message to regulators that moral hazard and adverse selection problems are far from being solved.

Further on, we shall attempt to address some issues relevant for successful regulation as well as to point to some pitfalls need to be avoided when changing regulatory framework from less to more explicit. In the next section, we review the theory in order to see how different regulatory behavior influences fairness of insurance service, provided by regulator, and respectively, its influence on risk-shifting, moral hazard and incentives, generally.

1.2 Modeling Deposit Insurance's Pricing Issues: What Makes It Worthless?

A bank liability (disposable on demand) is imperfectly money because it still implies positive default (counterparty) risk. Because this default risk is bank-specific, exactly the same number of banks and bank-moneys circulate in a system. The institution of deposit insurance comes up to eliminate this risk. But it is not without negative externalities. A negative implication of deposit insurance comes from making bank monitoring unproductive since all the banks become equally risky, i.e. risk-free. So, a deposit insurance scheme would be well designed if it manages to trade-off expected gain from removing residual default risk (to make demand deposits perfectly money) and expected

loss coming from adverse selection and moral hazard distortion in incentives. The pricing issues stand crucial to reach the incentive-compatible solution.

The Costs of Not- controlling

Merton (1977) was the first to draw an insightful analogy between deposit insurance and writing a put option on bank assets. In this conception, bank shareholders receive the right to sell the market value of the bank's assets (denoted A) to the deposit insurer for the face value of insured deposits (exercise price, denoted D). This standard option approach is limited because it assumes that the insurer has complete regulatory control over banks. By valuing the insurer's liability as a put option the liability is modeled as 'time limited', that is, as extending only from one bank audit to another, the time from issuing date of put option (guarantee) and the date it expires. However, a real deposit insurance contract can be modeled as a 'limited term', i.e. one-period insurance contract, only if insurance premium is being adjusted at each audit to a new fair rate (a case of risk-based premium), or in other case assuming a fixed premium, if the insurer has full regulatory control over banks and forces them to adjust capital to again make the fixed premium fair. If none of these holds, this is the case of an unlimited or perpetual option, when the option price will be much higher. Pennacchi (1987) tested it empirically and gave a proof that the value of deposit guarantee varied significantly depending on whether the strong control or the weak control case was applied. The value of the perpetual American deposit insurance put, denoted as $P(A, \infty; D)$ or when normalized with $a=A/D$, than $p(a, \infty; 1)$, would be (see Allen and Saunders, 1993, p. 634, for the proof) priced as:

$$p(a, \infty; 1) = \frac{1}{1+\gamma} \left[\frac{(1+\gamma)a}{\gamma} \right]^{-\gamma} \quad (1)$$

Where $\gamma = 2r/\sigma^2 > 0$ is stochastic variable, and σ is the standard deviation of the market value of the bank's assets (asset return volatility). Note that, in Pennacchi (1987), γ stands for binary variable which codes 1 if deposit insurance is variable rate or limited-term, that is, capital ratio is not adjusted, otherwise assigns 0. Thus, γ can than be interpreted as the proportion of the pre-audit insuring agency's claim, eliminated by a capital readjustment, following a positive net worth audit. The assumption on σ is also important for our discussion. Namely, bank's asset return volatility, σ , is a decision variable for the bank, that is fixed prior to the pricing of the deposit insurance. The assumption that the variable is exogenous simply means that there is no moral hazard; this is the main argument of Kane (1995) against option-pricing intuition.

The Costs of Regulatory Forbearance

An important and basic improvement of the existing option-style valuation of deposit guarantees has been made by Allen and Saunders (1993). They managed to explicitly price regulatory forbearance effect on fairness of deposit insurance pricing. Forbearance is simply a delay in enforcing a specific regulation, which in the context of possible bank closure means the policy of granting the institution time to return to solvency (so called 'gambling for resurrection') before final enforcement of the rule. The question of closure and forbearance is important in the context of insurance valuation, i.e. fairness of the op-

tion price, especially in valuing the size of insurance subsidies due to fixed price insurance.

The true value of deposit insurance will be below the value implied by (1) because the deposit insurer, in reality, retains the right to call for exercising the put option, before the bank's optimal exercise point, at the asset/deposit ratio denoted, \bar{a} . This call provision component of the deposit insurance cannot be negative. Its value is (Allen and Saunders, 1993, p. 636):

$$c(a, \infty; 1) = a^{-\gamma} \left[a^{-\gamma+1} - a^{-\gamma} + \frac{\gamma^\gamma}{(\gamma+1)^{\gamma+1}} \right] \quad (2)$$

From value additivity, the net value of federal deposit insurance to bank stockholders, denoted $i(a, \infty; 1)$ evaluated as a callable perpetual American put option is obtained by subtracting the value of the call provision (2) from the value of the non-callable put (1):

$$i(a, \infty; 1) = (1 - \bar{a}) \left(\frac{\bar{a}}{a} \right)^\gamma \quad (3)$$

This latest contribution in the option-pricing analogy gives us the final approximation of the option-style deposit guarantee formulae (3). Since forbearance can be viewed as the failure of the insurer to exercise, immediately, its call option, the cost of forbearance can be valued as the foregone value of the call provision.

It seems now clear that value of deposit insurance, other things being equal, depends on i) quality of control (audit) or ability and willingness to adjust price of insurance to the risk (in both risk sensitive and flat systems), and ii) readiness to call for an option exercise (to liquidate the bank). The first explains regulatory failure in the case of *positive* net worth audit; while the second explains the failure in case of *negative* one. Besides the mentioned insurance design sources of moral hazard, the endogenous character of the bank risk delivers a type of moral hazard that is independent of insurance design. Kane (1995) shows that treating risk as exogenous and de-emphasizing a difficulty of enforcing capitalization requirements (i.e. influence on 'a') in the multilateral nexus of contracts that lacks transparency is likely to produce a divergence from actuarial neutrality principle, therefore, to transfer subsidy from ultimate cost bearers (taxpayers) to banks. The author goes on to conclude (Ibid, p. 455): 'The poorer the information system, the more burdensome the level at which capitalization requirements must be set, ... the more useful... market feedback... and the more urgent balanced use of the full range of loss-control instruments'. Thus, moral hazard costs and complex agency relationship make deposit insurance the most sensitive regulatory instrument.

2. EVALUATION OF ACTUAL SAFETY-NET IN SERBIA BANKING SYSTEM

Safety net in Serbia banking system pools together four different pillars: i) entry restrictions, ii) prudential regulation, iii) lender of last resort facilities, and iv) deposit insurance. There is no unusual limitation on bank entry (capital census is set at USD 10 ml.), only reciprocity provision is implemented in case of foreign bank entry. Among the restrictions on the composition of liabilities and of assets the capital adequacy require-

ments play the most prominent role (according to Basel Accord). There are also specific restrictions such as that on foreign currency asset-liability mismatch (max. 5 per cent mismatch is allowed). At the same time, all the ceilings on a deposit or loan rate have been lifted, so that the rates are now wholly competitively determined price variables. Other pillars will be discussed further in details, together with some quasy-safety net components.

2.1 Using Reserve Requirements As a Supplement to Deposit Insurance

What is peculiar in the banking regulatory framework is an unusual treatment of mandatory reserve requirements (minimum liquidity reserves of a bank). Namely, to some extent, the mandatory reserve, which, as a rule, is implemented worldwide as an instrument of monetary regulation, in Serbia, quite contrary, it is used in a way to compensate for deposit insurance inefficiency. There are some reasons that bring us to conclusion like this.

First and foremost, the rate and the base have been settled on the way not to recognize different moneyness of the various bank liabilities. Namely, the rate is uniform for all the liabilities regardless its maturity, currency of denomination and type of claimholder. Thus, the base includes inter-bank deposits and other credit liabilities, as well as outstanding securities issues. For an amount of commission loans drafted that is not matched with the amount granted to bank's loan customers, the base is cut back. Foreign exchange liabilities (demand and time deposits, saving accounts), except foreign loans, are subject of charging a regular mandatory reserve provision. Further, the rate is especially high (30 per cent till Jun 2003, when changed to 18 per cent) and leads potentially to burdensome implicit taxation. The picture becomes straightforward when taking into account the existing difference between the interest rate being paid to banks on reserve holdings (35 percents of official discount rate on domestic currency balance and 20 percents of LIBOR rates on selected foreign currency balance) and the rate charged on the gap in prescribed and actual amount of reserves (400 per cent of the discount rate). The rate banks earn from the reserve balances is a slightly but persistently lower than competitive demand deposit interest rate. The difference is even bigger for foreign deposits and especially for longer maturity liabilities. Finally, the rate and base approved quite resistant to any change in monetary targeting, which makes them rather rigid instruments, not tailored to serve in fine monetary tuning.

To reduce the implicit taxation effect on banks we propose allowing for holding competitive interest-bearing assets in reserve, which is regular practice in many developed monetary systems. The last change in the level of rate made the system less restrictive-oriented, which means that the authorities have become aware of the problem, so the system starts departing from 'financial repression' attribute.

2.2 Lender-of-last Resort Facility

Lender-of-last resort facility (hereafter LOLR) in Serbia passed through three phases. The first phase is a period of extensive reliance on the facility both in supporting liquidity of the liquidity distressed banks, and also in the purpose of monetary regulation.

The impression is clear if we take a look at Figure 1 that presents a flow of funds of the National Bank of Yugoslavia from March 1994 to October 2000. Figure 1 contains a

stylized summary of seven years long monetary operations of the NBY, in terms of the used apparatus and, thus presents the essential part of money-creation activity of the National Bank of Yugoslavia.

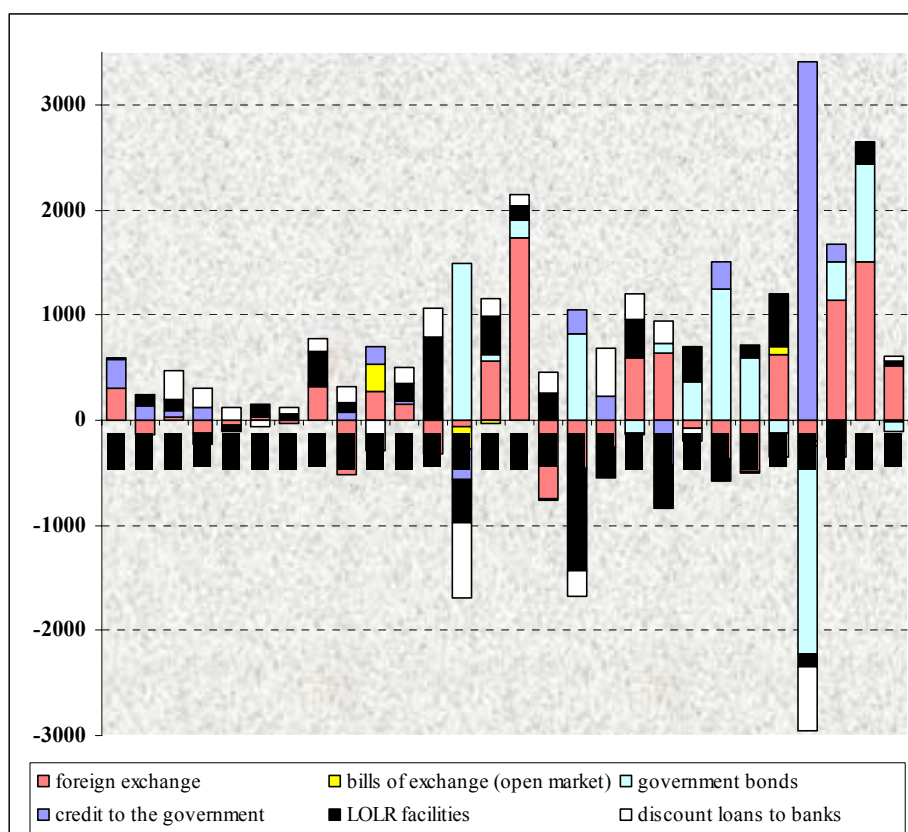


Fig. 1. NBY Balance Sheet Assets Structure
Source: Marinkovic (2002, p. 70)

LOLR facilities (different sorts of collateralized loans to banks) in the NBY balance sheet constantly take a prominent place, which means that the LOLR was misused, i.e. used as an instrument of monetary regulation. This impression is supported by the fact that the LOLR loans have a positive sign (indicating an increase of amount) during the whole period from 1994 to 1997. Afterwards the figure is either positive or negative, but still too big to be interpreted as a consequence of normal response (tuning) of the NBY to the banking system liquidity needs.

The reason why we had so extensive banks' reliance on the LOLR facility lies on the argument of persistent positive difference between 'federal funds rate' (interest rate charged on short-term inter-bank loans) and the NBY Lombard rate (the rate the NBY charged on short-term liquidity supporting loans). Thereafter, a bank, due to its special

connection to the NBY Lombard window, has been in a position to gain a significant margin, simply by intermediating between the NBY and ultimate borrowers, that is, liquidity deficient banks. Quite radical pattern¹ of misusing the LOLR was seen in the FRY (Figure 2) during the entire period from January 1995 to the last quarter of 1998. Later, the NBY started to support liquidity of the problem banks more finely and oriented to market conditions. Since the NBY has changed its attitude and operating targets (convergence) since early 1997, the Lombard rate and inter-bank rate ('federal-funds rate') are not positioned on conservative hierarchy till the third quarter of 1998.

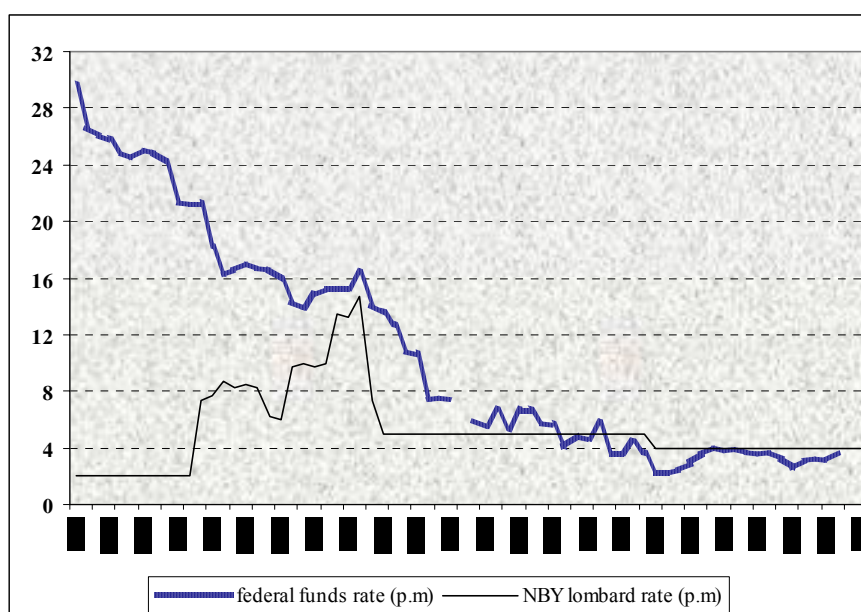


Fig. 2. LOLR Interest Rate Policy

Source: Marinković (2002, p. 76)

From October 2000 to April 2002, the NBY implemented moratorium on lender-of-last-resort facility. This could be one of reasons for increased risk averseness of domestic banks, and consequently, a cause of strong credit rationing. Namely, before the reform started, credit rationing had been a completely unknown phenomenon.

Since April 2002, the National Bank of Serbia has activated the facility again, ending two years long period of the moratoria. Liquidity assistance is offered to banks according to classic principles, on short-term and penal rate. Currently, the overnight loans on overdraft basis are offered ten times per month. The loans must be collateralized with treasury or NBS bills (safety margin is 20 per cents, i.e., an outstanding loan amount can not be

¹ Recent evidence for the United States, suggests that the Federal Reserve did not provide LOLR support only at penalty rates or only to illiquid but solvent institutions (Benston and Kaufman, 1995, p. 233).

over 80 per cents of collateral value). The overnight rate is 160 per cent of regular discount rate, while in case of a delay it would increase up to 200 per cent (NBS, 2004a, p.38).

As a conclusion, we underline that the problem following use of the LOLR mostly rests on abuse of its classic prudential criteria. But, this is possible because of direct political interference in economy and more likely because asymmetry of information makes hard to enforce and monitor compliance to the rules. The theory recognizes (Goodhart, 1999, p. 7) that accurate assessment of bank solvency is not possible when the assessor is faced with shortage of time and, especially when the current situation is more-less crisis prone. Some proposals (Benston and Kaufman, 1995, p. 233) intended to offer a solution able to avoid painful regulatory discretion point to an open-market operation as an alternative to the LOLR. To provide liquidity to the banking system as a whole through open-market operations (macro-liquidity), rather than directly to individual banks through Lombard window (micro-liquidity), rests on assumption that the inter-bank market is not driven by asymmetric information. In that case, it is logical that we need no LOLR. However, the practically crucial point is whether the information asymmetry and, hence, agency problem stay bigger into Lombard window or inter-bank market. Experience with the Yugoslav episode shows that the banks most supported by Lombard window were confirmed as distressed ones. Those were the banks that went under bankruptcy afterwards. The risk of abusing LOLR might be the reason why authorities in Serbia have refused to establish the facility until reform accelerated.

2.3 Current Deposit Insurance Arrangement

The banking system in Serbia stands in the middle of establishing a new regulatory and supervisory framework, so this is time to channel reforms toward safe and sound system of financial intermediation. Apart of the above shortcomings and inversions undermining effectiveness of different supportive pillars of safety net, the deposit insurance itself is far from being efficient and productive. The awareness of necessity of system redesign called for some proposals (e.g. Đukić, 2002). But, the reality has made it soon hardly adaptable.

The deposit insurance scheme in Serbia, although established since 1989, does not operate well, yet. The Agency for Deposit Insurance, Bank Rehabilitation, Bankruptcy and Liquidation is the institution responsible for deposit insurance in Serbia. It operates as a governmental agency under direct supervision of the related bodies of Government. Apparently, considerable political independency is granted to the Agency, but it is still responsible to the Government for the actions it undertakes just as it provides annual reports to the National Bank of Serbia, Parliament and the Ministry of Finance. The governing body is delegated from the Government.

The institution framework is deficient and in some manner contradictory. There is no current Act that should be straightforward regulation of the area. Rather, there is a nexus of different legal acts. But, the most important shortcoming of the system is funding arrangement. According to the law, the scheme should operate with funds equal to 20 per cent of the insured deposits base. However, it currently disposes of only 0.84 per cent of the deposits. The system of premiums is one of the reasons why it is so undercapitalized. The level of deposit insurance premium is set at 0.1 per cent of insurable deposits. This level is not able to produce adequate funds to the scheme. The second is a lack of respectable *ex-ante* or *ex-post* funding arrangements.

Table 1. Regional Cross-country Variation in Deposit Insurance Design Features

Deposit insurance Systems	Albania	Bosnia and Herzegovina	Croatia	Macedonia Republic of ¹	Serbia and Montenegro
Date Enacted/revised	2002	1998/2002	1994/2000	1996/2003	1989
Type	Explicit	Explicit	Explicit	Explicit	Explicit
Membership	Compulsory	Compulsory	Compulsory	Voluntary	Compulsory
Degree of Privatization	Administration	Joint	Public	Public	Joint
Funding	Funded	Funded	Funded	Funded	Funded
Source of funding	Banks & Government	Banks & Government	Banks & Government	Banks & Government	Banks & Government
Assessment Base	Insured Deposits	Insured Deposits	Insured Deposits	Insured Deposits	Insured Deposits
Breadth of Coverage	Coverage Limit	92% to \$6,000	\$3,125	\$15,300	Coinsurance 75% to \$183
Foreign and Interbank	Yes; No	Yes; No	Yes; No	Yes; No	Yes; No
Annual Premium	0.5% flat	0.3% flat	0.8% flat	1% - 5% risk based	0.1% flat
Susceptibility to Hidden Risk Shifting	Supervisory responsibility	No	No	n.a.	No
Risk of forbearance	n.a.	Yes	Yes	Yes	Yes

Source: Demirguc-Kunt, A. and T. Sobaci (2001); www.dia.org; www.faod.com.ba; www.dab.hr; www.fodsk.org.mk; www.bra.gov.yu;

¹FRY Macedonia recently shifts the system to compulsory, flat and more covered one.

The coverage amount is currently only CSD 5,000 (£50), which makes the system relatively (see Table 1) and absolutely incapable of reaching the goal. The Agency insures citizens' deposits up to the above limit, per depositor per bank, regardless of the type or number of deposits held in the bank. The coverage is provided for both principal and interests due. In the case of bankruptcy or liquidation, the deposits in foreign currency are repaid in CSD. One of biggest mistakes of the Serbian Agency for deposit insurance was avoidance of uniform payout procedure. The Agency followed bank by bank approach. In most cases, the Agency used the bank in liquidation itself as the agent of deposit repayment.

Let us conclude, the system of deposit insurance is undercapitalized and operates without significant breadth of coverage, so it is unable to provide any additional stability to bank intermediation. The system's still waiting to be restructured in order to be able to produce sustainable confidence and soundness of the banking system.

3. TRANSITION TO A RELIABLE SYSTEM

3.1 Institutional Determinants of Deposit Insurance

This section builds on cross-country data analyzed by other authors. The analyses show that observable characteristics of a country's deposit insurance system correlate sig-

nificantly with some of the proxy measures for transparency, deterrence, and accountability identified.

Table 2. Matrix of Insurance Design Determinants

		Explicit Scheme	Degree of Privatization	Breadth of Coverage	Susceptibility to Hidden Risk Shifting
Fiscal Capacity	GDP per capita	***	***		
Quality of Economic Information	Accounting Standards			*	(**)
	Ethical integrity	***	***	*	(**)
	Press freedom	***	***		
Banking system (i) Quality	Central bank independence	***	**		(**)
	Banking concentration	(***)	**		**
	Rating proxy	**	**	*	(**)
	Government presence		**	(*)	(*)
Corporate Governance	Preemptive rights	**	(***)		
	Restrictions for going into reorganization	***			
	No automatic stay on secured assets	***			
	Secured creditor first	**			
	Management does not stay	(***)			
	Creditor rights	(***)			
Counterparty protections	Risk of expropriation	***	***		
	Rule of Law	***	***		
	Contract Enforceability	*	**		
	Efficiency of Judicial System	*	**		
	Bureaucratic Quality	*	**	*	(**)

Source: Kane (2000, p.19-22) for the red, and Barth, Caprio and Levine (2004, p. 230) for black stars; Notes: Number of stars indicates correlation intensity. Negative correlation numbers are in parentheses

In Table 2 five most important groups of indicators, representing mostly the level of institutional development, are matched with four broad features of a deposit insurance design. The matrix is based on the available empirical cross-country examinations. But, since the sources were not complete, the statistical correlations are somewhere substituted by appraisals. Five areas of institutional development are considered most relevant for designing institutional deposit insurance, namely: i) fiscal capacity; ii) quality of economic information; iii) banking system quality; iv) corporate governance, and v) counterparty protection. All the areas are represented with at least one indicator.

Generally speaking, the low fiscal capacity certainly could undermine the very start-up of an explicit scheme, while it strongly jeopardizes achieving even elementary goals in the case of an implicit scheme. Also, it supports a higher level of privatization feature of a scheme. As obvious from Table 2, a higher quality of economic information goes together with a higher level of the scheme privatization. Further, the better counterparty

(private) protection, the higher private sector involvement should be. Clearly, to have private sector more involved into deposit insurance, reliable information and means of protecting the rights must be available. Finally, the findings on regularity between banking concentration, government presence and privatization may be rationalized by the fact that two of those must compensate for each other.

To conclude, the weaker a country's informational, ethical, and corporate-governance environment is, the more a wholly governmental system of explicit deposit guarantees is apt to undermine bank safety and stability. Put positively, the design features and operating protocols of a country's safety net ought to evolve over time with changes in private and government regulators' capacity for valuing banking institutions, for disciplining risk-taking and resolving insolvencies promptly, and for being held accountable for how well they perform these tasks. The policy implication of this finding is that any changes in the structure of a country's existing safety net should not be undertaken before carefully analyzing the impact each proposed change promises to have on fiscal sustainability, transparency, deterrence, and accountability.

In studying the case of Serbia, we have not been able to find specific rating for most of the variables listed in the table above because the relevant international authorities did not report on it. Instead, we feel free to address on some qualitative assessments that could be more-less accurate, but useful anyway.

Fiscal Capacity

The level of Serbia GDP per capita differs in different sources of information but, anyway, it is ranked up to the region (SEE) average (see, EBRD, 2004, Table 1.1). Beside the low absolute level of GDP, the fiscal capacity of Serbia is additionally undermined by foreign and domestic debt burden². The ratio of external debt to GDP is currently 68.5 percent, comparison to the region (SEE) average of 53.5 percents. Recently signed Serbia's agreement with London Club throws a new light on the foreign debt issue. Nevertheless, sustainability of the foreign debt and of fiscal position is no less dependent on FDI, growth of investments and domestic saving, current account equilibrium and spending control, even with favorable interest and exchange rate scenario (see NBS, 2004b).

Quality of Economic Information

With reference to the quality of economic information, some indicators might be indicative: i) accounting and auditing standards, ii) corruption index and iii) index of restrictions on press. First, the underlying accounting principles for the preparation of financial statements are similar to the Generally Accepted Accounting Principles (GAAP). However, there are certain departures from the International Accounting Standards (IAS) on specific accounting procedures (inflation, financial instruments, etc). Auditing is obligatory only for large, medium size companies and financial services. It has to be carried out by a local authorized auditing firm. Anyway, the audit methodology and stan-

² Madzar, Lj. says: 'A debt crisis is unavoidable... as debt servicing will be impossible without a considerable reduction of spending, which would be politically and socially untenable' (Roundtable table on the SCG foreign debt held at the Institute for International Politics and Economy (19.05.2004)).

dards are not in compliance with the International Standards on Auditing. In summary, regardless of the mentioned deficiencies, and taking into account a strong decision to accept GAAP and IAS, the accounting and auditing framework could eventually be a reliable source of economic information.

Ethical integrity of a society is regularly measured by corruption index. Transparency International reports (www.transparency.org) on a high level of in-transparency and corruption in the Serbian society (2000). In the sample of 90 countries, Serbia takes 89th place with score 1.3 (scores are ranged from the best 10 to the worst 0). More recent scores are not available, though the legal reform indicates some improvement in this area. Additionally, while media freedom is getting better, it is hard to estimate whether the press freedom is high enough to compensate for the deficiencies in official reporting.

Banking System Quality

Relative to the quality of the banking system, Serbia is the fastest improving country in the region. However, its banking system is still inefficient: the bank interest margin is persistently on decrease and currently amounts 11 percents (p.a.). Non-performing assets is a huge inherited problem of the banking industry (EBRD, 2004, p.23).

According to the Law of Central Bank, the NBS is granted a high level of political independence. The government deficit is financed through financial market (treasury bills) with no direct NBS lending to Government, and inflation was as targeted in the last four years.

Furthermore, there are 47 banks operating in Serbia, while the top five hold 48 percent of total assets (2003). The leading bank in Serbia (*Delta banka*, a.d.) holds only 12 percents of total assets (www.nbs.org.yu), what means that, comparing to the region, the system is not high-concentrated. Measured by Herfindahl-Hirschman Index, the Serbia's banking system is amongst less concentrated worldwide. In the case of Serbia, the figure is 607 (author's calculations) which is significantly less than even in most advanced transition countries, i.e. Czech Republic (1757), Hungary (1241) and Poland (899) (see Gelos and Roldos, 2004, Table 1, pp. 44). At the same time, the government share in banking system equity is above the regional average but still not so significant to indicate pervasive government presence in the industry. Finally, the international rating for most domestic banks is not available.

Corporate Governance

Existing corporate governance framework (Company or Commercial law, Bankruptcy and reorganization law) has to be upgraded. Currently, relevant laws stipulate preemptive rights, priority of secured creditors, etc., but, the legal framework and particularly governance itself are still deficient, especially with reference to the protection of minority shareholders' rights.

An indicator of creditor rights in insolvency is provided by the World Bank (www.worldbank.org/DoingBusiness). Serbia has a medium score of two, equal to the regional average (SEE) of 2 and weaker than OECD average of 1. Apart from the legal protection of creditor rights, an additional indicator of creditor superiority is degree of information sharing. A public registry index covers credit information coverage, distribution, access and quality for public registries. A higher value indicates that the rules are

better designed to support credit transactions. Accordingly, Serbia gets a score of 33, compared with the regional average of 49 and OECD average of 58. The reasons for that are non-existence of private credit bureau, and low coverage of recently established public registry.

Counterparty Protection

According to U.S. State Department source (www.CountryWatch.com), the risk of expropriation in Serbia is low because no significant expropriations have occurred recently nor are any anticipated.

Regarding the 'rule of law' and judicial efficiency the marks are negative. According to the Economist Intelligence Unit (www.eiu.com), the judicial system is overburdened and inefficient. Some quantitative estimates of courts ability to resolve insolvencies (www.worldbank.org/DoingBusiness) largely confirm the statement. Taking into account average costs and the time associated with resolving an insolvency, the observance of absolute priority of claims, and the outcome the Serbia is scored 42, comparing to regional average of 51 and OECD average of 77 (higher scores imply a more efficient system). Additionally, the courts in Serbia seize more power and, respectively, excess discretion, than usual in the region on average and OECD.

The same source (www.worldbank.org/DoingBusiness) evaluates the ease of enforcing commercial contracts in Serbia. The number of procedures counted from the moment the plaintiff files a lawsuit until actual payment, the associated time, and the cost (in court and attorney fees) indicate more complexity in enforcing a contract in Serbia (61) than in the region (56) and OECD (49).

Beside overall bureaucratic quality, of relevance to the counterparty protection are bureaucratic impediments that make everyday economic life more difficult. Fries at al, (2003) survey³ supports the view that business in the region suffers from bureaucratic obstacles while Serbia stands better than region in average. It is placed as the median value for 14 countries in transition.

To sum up, though the findings are mixed and, in general, below the regional average and significantly below the OECD average, in the worst, the existing informational, corporate governance, legal and judiciary framework is not a serious threat to an explicit, middle privatized and selective deposit insurance system we are ready to propose.

4. WHAT SYSTEM BEST SUITS SERBIA INSTITUTIONAL FEATURES?

In this section we will provide some suggestions on optimal structure of Serbia deposit insurance system. It should match the existing and, more fully, anticipated institutional landscape of Serbia. To be consistent with the previous discussions, all the propositions are going to be assembled into three main groups, depends on how they influence the following criteria: i) degree of privatization, ii) breadth of coverage, and iii) susceptibility to hidden risk-shifting.

³ The survey covers data on bureaucratic business obstacles in area of taxation, regulation, judiciary and crime, infrastructure failure and finance, all those measured by 'excess time spent', kickbacks, overdue costs and losses.

4.1 Degree of Privatization

A deposit insurance system may operate with more or less private sector involvement. In fact, the decision to build an explicit insurance system is the implicit choice of higher private sector involvement. Additionally, an explicit deposit insurance system will be more privatized if the system is funded and funds are raised both from public and private sector, if the membership is voluntary and selective according to actuarial neutrality principle and if administration highly involves private participants engagement. Under the next subsections we will discuss the positions in more details.

Type Issue: Implicit vs. Explicit Insurance

An explicit insurance scheme is a superior solution because it implies a cost effective way of generating sustainable confidence in banking system while addressing the moral hazard issue. It makes less likely for government to bail-out the problems banks and to spread subsidization over the banks shareholders and big creditors. However, the suggestions to avoid implicit deposit guaranties by shifting the losses to depositors may be taken seriously in designing a safety net, but not until initial reconstruction of current banking system takes place. Namely, an acute distress as well as undermined confidence in banking system limits effectiveness of any rigorous policy that can lead to significant depositors' participation in the cost of bank failure. This would produce systemic long-lasting negative external effects without producing any positive effect on amplifying market discipline. This is particularly reasonable when the bank liabilities mostly consist of demand deposits, the resource whose integrity must not be put in question. Moreover, the solvency of Yugoslav banking system is surprising even for regulators and supervisors, so the expectation that the systematically uninformed depositors could distinguish good from bad banks seems quite unintelligent.

Private vs. Public Deposit Insurance Scheme

The dilemma concerning private versus public insurance is more theoretical rather than an issue important for implementation purposes. The lack of timely and accurate accountability for losses has plagued government deposit-insurance schemes. In turn, weaknesses in enforcement powers and in reserve availability have undermined private schemes. However, some elements of privatization of deposit-insurance system could be beneficial, especially because it is a way of combining efficiently the greater accountability and timeliness that are characteristics of private responses with the deep pockets and strong legal empowerments possessed by a government agency (see FSF (2001) guidelines). One of the possible improvements of the public scheme is to link insurer's cost to its particular loss exposure. This could be done by privatizing some of the consequences of the loss-control decision an insurer makes. The theory (Kane, 1995) recognizes two ways of doing it: i) issuing private securities and other contracts by insured, if any, and ii) issuing stock, subordinated debt, or uninsured deposits by deposit insurer. Calomiris (1999) goes further in developing the former proposal to obligate insured on subordinated debt issuance. All those proposals lie on the ground of Third Pillar recommendation of Basel Committee to enhance market driven discipline. The approach is inevitably useful, however, in respect to the current stance in development of domestic financial markets; it could be taken only as a strategic goal.

In spite of being a public institution, the insurer must be hard budget constrained and adequately capitalized. Moreover, a public insurer should be funded by stock issues, so as to be able to offer as much as possible information to ultimate risk-bearers (taxpayers). It should be a corporation controlled by government, i.e. government should be major shareholder, and with wide authorization in auditing and monitoring banking sector. Also, this institution must be given enough legal power to intervene if necessary.

Membership

Relative to voluntary versus compulsory membership dilemma, we strongly opt for former one. Though a majority of actual schemes implement compulsory membership (Switzerland is a prominent global exception, as well as, FRY Macedonia in regional scale), and in general, membership should be compulsory to avoid adverse selection, Serbia is the case where voluntary access to the insurance could not be the reason for many banks to stay out of the scheme. Namely, we are of opinion that there is a strong commitment of banks to participate in a deposit protection scheme and it is to be achieved regardless of legal pressure. This is simply because the past bad experience of depositors makes them aware of and sensitive to the existence of institutional protection, and thus creates strong incentives for banks to be a part of a system.

In Serbia depositors treat a bank debt assuredly as risky. Thus, opt out of the scheme is not a reasonable alternative, even for the best domestic banks, so the threat that they might be out and therefore adverse customer mix would undermine the system solvency is not real. But, whether a financial institution will join to public scheme or not, must not depend solely on its discretion. The insurer must be given freedom to allow an institution joining the scheme. Taking in account the distressed banking system, as currently is the case, obligatory access to scheme may just sub-optimally reduce the insurer's discretion and it is likely to increase risk insured firms transfer to the insurer. Additionally, who may join the system has to be decided on straightforward eligibility criteria. All the banks should be required to apply for entry. This option provides a degree of flexibility for the deposit insurer to control the risks it assumes by establishing entry criteria. Rating scores by respective international houses as well as the National Bank of Serbia prudential assessments are possible sources of information for this activity.

A part of this issue is also whether the membership should be opened for foreign and state-owned banks, as well as non-bank depository institutions. Any bank, foreign or state-owned could be taken into consideration for membership according to established prudential criteria. We see no reason to restrict it, while there are a couple of reasons in favor of not restricting, like, to ensure competitive equality, to bring such banks under the same prudential, regulatory and supervisory rules, to diversify the insurer's risk, etc. Currently, the government owns no significant stake in the industry⁴ and it is decreasing, as well.

⁴ State-owned banks own 32.4 per cents of the bank sector capital, foreign banks 19.4 per cents, private banks 39.7 per cents, while socially-owned enterprises (not restructured, yet) have majority shareholding in banks that hold 8.5 per cents of the industry capital (2003). A part of the government stake in the financial service industry is going to be privatised soon (*Continental bank, a.d.* Novi Sad, (95.74 per cents is government stake), *Jubanka, a.d.* Belgrade (84.58 per cents) and *Novosadska banka, a.d.* Novi Sad (67.63 per cents).

However, referring to non-bank depository institutions membership our position is different. Those are not so significant players in financial service industry and also, their dominant governance concept (most of them are mutually organized saving cooperatives) make them informationally opaque. So, for them we propose staying out of the scheme.

4.2 Breadth of Coverage

Certain design features that concerns breadth of coverage may also mitigate moral hazard issue. Those are limiting amount of coverage and limiting eligibility of bank liabilities, as well as, funding arrangements.

Coverage and Eligibility Limits

Given the importance of effectively limiting coverage and contributing to financial system stability, as well keeping the requirement for information reasonable, it is preferable to apply deposit insurance on a per depositor per bank basis. According to a sample of sixty countries establishing explicit deposit insurance system till 2000, compiled by Demircuc-Kung and Sobaci (2000), the median for coverage limit was approximately twice a GDP per capita (author's calculation). This gives a preferable coverage limit for Serbia and Montenegro amounting approx. USD 4,800.

To sustain fairness and cost of the scheme certain bank liabilities must be excluded, e.g. liabilities held by government, banks, insiders, and other big or information intensive claimholders.

Funding on an Ex-ante or Ex-post Basis

In order to avoid dangerous delays in resolving failed banks, which leads to an increase of cost of resolution and loss of credibility, Serbia's deposit insurance system must achieve a sound funding arrangement. Though there are many alternatives, the ex-ante fund rising seems the best one. Since, we opt for *ex-ante* funding, which actually means if the insurer can not reach extra sources in case of shrinkage of the available fund, the deposit insurer should ensure that funds are well managed and readily available to cover losses as they arise. This can be accomplished by implementing appropriate investment policies and procedures, and by instituting sound internal controls, disclosure and reporting system.

4.3 Susceptibility to Hidden Risk-shifting

This feature of deposit insurance depends mostly on its ability to cope and correct two major problems immanent to deposit insurance, discussed in the 'pricing issues', that is: (i) moral hazard problem that occurs for banks primarily in the form of insufficient capital and (ii) agency problem (cost) that occurs for bank regulators primarily in the form of regulatory forbearance with respect to both timely sanctions and closure. Generally, moral hazard is reduced by increasing the cost of poor performance though mimicking the cost the market imposes on troubled non-insured firms. Agency is improved by requiring prompt progressively harsher and more mandatory sanctions on troubled banks in order to turn them around and, if unsuccessful, resolution before, at least in theory, the market value of capital becomes negative so that there are no losses to

depositors. Thus, we need effective pre-specified closure rules. But, even in USA, prudential sanctions of FDICIA were weakened (Kaufman, 1995). Other researchers (e.g. Garcia, 1995) in reviewing of implementing FDICIA's mandatory closure rule revealed that exceptions on the rules were overused, and the history, almost without exceptions, showed that it was done without any good reason. So, the regulatory forbearance remains reality even in well-organized and more advanced regulatory systems. A limit to the regulatory efficiency is the intrinsic tension between the two tasks allocated to the regulatory agency: monitoring and intervention (c.f. Dewatripoint and Tirole, 1993, p. 30). This conflict between monitoring and intervention suggests that it might be desirable to divide tasks. The monitoring role could be given to a private or governmental agency. Here we are faced with a problem of how to get necessary knowledge, or how 'leverage' the available expertise is; the possibilities are two: (i) central bank employment, and (ii) franchising expertise via credit rating agency or auditors. The intervention role might remain with the insurance agency, let's say. Then the civil servants (bureaucrats) would not be concerned with the bad inference drawn from their intervention. Namely, when they are asked to intervene when a bank is in trouble, they are *de facto* asked to confess that they may have made failure in monitoring activity. Because of that, so many times the regulators worldwide express regulatory forbearance in closure of troubled banks. We agree upon the usefulness of capital requirements enforced by a system of the structured early intervention and resolution (SEIR) by the regulators in order to make it more effective in discouraging poor and opportunistic management. This structure should be designed to mimic the private market sanctions.

Flat-rate vs. Risk-adjusted Differential Premium System

Information intensity of the banking business is a well accepted fact in theory and practice. The importance of this issue calls for an advanced solution. A right assessment of whole set of premiums or structure comes as a big task even for much better equipped and suited regulators. As instructive is a living debate on fairness of risk-based premium structure enacted in improved US deposit insurance system⁵. Falkenheim and Pennacchi (2003), Fan et al. (2003), as well as, Duffie et al. (2003) observed that current level of premiums is far from being risk neutral regardless of what methodology is chosen to appreciate it. But, the authorities face an option to implement some of the conservative measures, for instance CAMELS rating score or Basel solvency guidelines.

A possible way out of information-related inhibitions of risk-sensitive deposit insurance system is also a menu of regulatory instruments (Santos, 2001), e.g. lower capital requirements matched with higher insurance premium. Thus, the decision of the regulated signals its true solvency or risk profile. This, so-called, revelation mechanism proves that with capital requirements linked to risk-sensitive deposit insurance premiums, there is an equilibrium having riskier banks choosing relatively low capital requirements and high premiums, and safer banks opting for higher capital requirements and lower insurance premiums. A risk-sensitive deposit insurance pricing scheme, like this, could be incentive-compatible and avoid two undesirable features of the flat pricing scheme: (i)

⁵ Currently, the biggest banks that hold 96.7 per cents of whole insured deposits pay no premium (ranked as 1A what requires no premium).

cross-subsidization of riskier banks by safer counterparts, and (ii) intrusive regulatory auditing to discover banks' portfolio characteristics.

Supervisory Responsibility and Cooperation with Other Safety-net Participants

Banks that are included in a deposit insurance system must be subject to strong prudential regulation and supervision. In order to economize over the rare resources this control function should leave to existing institution, i.e. the National Bank of Serbia (for the arguments in favor of holding supervisory responsibilities centralized in a transition country c.f. Goodhart, 2000, p. 48-58). Moreover, special care should be given to solving the conflict between monitoring and intervention as we stressed before. Related to concentrating all safety net activities into a single institution, we see no role for this kind of monopolistic interventionism, although cooperation and the prompt sharing of relevant data would be surely beneficial.

CONCLUSION

The policy solutions for preventing bank disasters seem straightforward. Regulators should encourage shifting incentives of the bank's decision-makers in a risk-reducing direction just as they should establish a competent and accountable system of public protection.

Any system of insurance pleading to be a good enough substitute for corporate governance must follow a general rule. That is, the insurance activity should move away from public institution as much as possible so that the main object in regulating private sector has to provide stimuli for flowing of information. It is well known that the insurance activity assumes expertise; otherwise it will cause adverse selection and moral hazard. Especially in those systems lacking in credibility, independence, and competence, insurance should be ultimately combined with an 'easy to monitor' regulatory instrument, e.g. capital requirements.

According to above arguments, the most effective solution for Serbia safety net should be a mixture of capital requirements and deposit insurance. However, policy-makers should insist on following: i) avoiding implicit elements of insurance; ii) insisting on well capitalized and transparent funding arrangements; iii) stimulating co-insurance imposing coverage limits and grant coverage only to informational un-intensive claimholders; iv) making insurance premium risk-adjusted, as much as possible; and v) combining deposit insurance with capital requirements in order to avoid to restrictive capital requirements that might decrease bank franchise. The capital requirements should be a central risk-adjusting element, because it is less sensitive to informational impediments.

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SISTEM OSIGURANJA DEPOZITA KOJI OBEZBEĐUJE SKLAD POBUDA: SRBIJA I JUGOISTOČNA EVROPA

Srdan Marinković

Ovaj rad je usmeren na istraživanje funkcionisanja bankarskog sektora i mehanizam njegove regulacije. U radu pretpostavljamo nejednaku informisanost kao i različite pobude raznih aktera u sistemu. Istražujemo stručnu literaturu kako bi pružili argumente za iznet stav da su regulacija, uopšte, i system zaštite depozita, posebno, neophodni za normalno funkcionisanje sistema finansijskih usluga. Poseban osvrt dajemo na bankarstvo u tranziciji i specifičnosti domaćeg bankarstva. U radu dajemo izvesne smernice za unapređenje sistema zaštite depozita koji je trenutno u primeni u Srbiji, činimo poređenja sa rešenjima primenjenim u ostalim državama Jugoistočne Evrope, analiziramo rešenja i potencijalne prepreke u njihovoj primeni.