MEASURING THE QUALITY OF BANKING REGULATION AND SUPERVISION AND ITS RELEVANCE FOR INFLATION IN TRANSITION COUNTRIES

A Master's Thesis

by
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Economics
Bilkent University
Ankara
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To My Parents

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I certify that I have read this thesis and have found that it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Economics.

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ABSTRACT

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AND ITS RELEVANCE FOR INFLATION IN TRANSITION COUNTRIES

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December 1999

Bank regulation and supervision is essential to maintain confidence and stability in the financial system. The contribution of this study is twofold: primarily, we develop a technique to measure the quality of bank regulation and supervision by identifying the techniques and tools that should exist in a banking law. Secondly, using this measurement criteria, we form an index of banking regulation and supervision (RS) in a manner that allows systematic comparisons. We then use this index to document and quantify the cross-sectional and over time variation in the quality of RS in transition economies. This empirical findings support our hypothesis that regulation and supervision is negatively associated with inflation; and good regulation and supervision along with a high level of legal central bank independence and liberalization has a significant effect on price stability. Results not only confirm the studies of Cukierman, Webb and Neyapti (1999) and Melo, Denizer and Gelb (1996), but also modifies them by incorporating an additional institutional dimension.

ÖZET

BANKA DENETİM VE GÖZETİMİNİN ÖLÇÜMÜ
VE GEÇİŞ EKONOMİLERİNDE ENFLASYONLA İLİŞKİSİ

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Finans sisteminde güveninirliliğin ve stabilitenin sağlanabilmesi için denetim ve gözetim mekanizmalarının iyi çalışıyor olması gerekir. Bu çalışmanın literatüre katkısı iki yönlüdür: birincil olarak, bankaların denetim ve gözetimini sağlamak amacıyla bir banka kanununda mevcut olması gereken araçları ve tekniklerin kalitesini ölçmek üzere bir kriter listesi oluşturulmuştur. İkinci olarak ise, bu kriter listesi kullanılarak, geçiş ekonomilerinin denetim ve gözetimlerinin sistematik karşılaştırılmalarını sağlayacak şekilde kesimler arası (cross-section) ve zaman içindeki değişimlerini açıklayacak banka denetim ve gözetim endeksi (RS) üretilmiştir. Bu endeks ile ölçülen denetim ve gözetim derecesinin enflasyonla ters ilişkili olduğu ve yüksek seviyede merkez bankası bağımsızlığı (hukuksal anlamda) ve piyasa liberalizasyonun iyi denetim ve gözetimle birlikte fiyat istikrarında etkin bir rol oynadığı hipotezi desteklenmiştir. Bu sonuçlar, Cukierman, Webb ve Neyapti (1999) ve Denizer, Melo ve Gelb (1996) makalelerinin bulgularım desteklemekte ve geliştirmektedir.

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CHAPTER 1

INTRODUCTION

In recent years, there have been many changes in the banking sector because of both globalisation and improvements in technology. These changes increased the role of the banking sector in the overall economy. A stable financial system is necessary both for a stable economy with low inflation and for a stable growth path. Obtaining a stable financial system is possible only with a healthy banking system, which can be attained by good regulation and supervision. Then, the question is how to achieve an effective banking regulation and supervision.

Regulation is defined as "the public administrative policing of a private activity with respect to a rule prescribed in the public interest" (Mitnick, 1980:7). The fundamental goal of bank regulation is stated as "to promote the efficient allocation of scarce economic resources by minimising disruptions in the payments mechanism by which funds are transferred between savers and borrowers" in Barth and Brumbaugh (1996). We can restate the idea, as the goal of bank regulation is to maintain confidence and stability in the financial system. However, the existence of a legal regulatory framework may not reflect the actual practice in a given country. The extent to which regulations are put into practice depends on the structure of the politics, among many other elements, of the country. Although the existing regulatory framework may not tell about the actual performance, it still provides a valuable tool to understand the forces behind a given degree of financial stability.

Supervision is an important tool for the health of the financial system. However, the power that a regulatory framework assigns to the supervisory authorities also affects the performance of the supervision. Thus, supervision may be effective with only effective regulation. The principle work of supervisory agencies includes the establishment of regulations in accordance with law, and the evaluation of 'safety and soundness' of the institutions supervised. The objectives of supervision are protecting depositors; protecting the insurance funds; protecting the payments mechanisms; protecting the money supply; and assuring that banks abide by laws that constrain the private use of their resources. The principal tool of the supervisory agencies is bank examinations.

This paper has three major purposes. The first is to identify the techniques and tools that should exist in a banking law for effective banking regulation and supervision. The second is to document and quantify the cross sectional and over time variation in the quality of banking regulation and supervision (RS) in a manner that allows systematic comparisons of regulation and supervision in transitional economies. The study by de Melo, Denizer and Gelb (1996) reports that inflation is lower in transition economies with a higher level of sustained liberalization. The recent study by Cukierman, Miller and Neyapti (1999) reports that there is a positive relationship between both liberalization and legal central bank independence (CBI) and the abatement of inflation. The third purpose of this paper is to examine whether higher RS is also associated with lower inflation and, hence, to examine the contribution of RS, of liberalization, and that of legal CBI to price stability.

In the related literature, there are many studies about the bank regulation. Who the regulator should be is an issue that has been discussed frequently. Dowd (1996), Dowd and Lewis (1992) and 'free-banking school' discuss that free banking would solve the problems, and that there is no need for regulation. On the other hand, Caprio and Summers (1996), Goodhart (1987) and Fair (1986) are against the idea of laissez-faire banking. There are discussions for deregulation as an alternative to free banking. The supporters of deregulation believe that the regulators should control risk without their traditional tools to control the banking system. Garten (1991) is against this idea and supports the necessity of the traditional rules. The further discussions are presented in Chapter 2 of the paper.

Another issue that is discussed in the literature about bank regulation is what banking regulation should involve and how the banks should be regulated. However, these studies do not involve international principles but they are case studies that mainly concern the rules designed for improving the regulation in a particular country. Among them are Garten (1991), who deals with the case of United States, Williams (1996), who concerns the Caribbean case, and Berka (1997), who studies the Slovakia case.

As for supervision, there are many case studies in the literature that define banking supervision and the areas that need improvements. Generally, these studies are in the form of working papers of various central banks or the supervisory agencies. Some of the other studies are Cooper (1984), who studies the case of Britain, and Papadimitriou (1996) who studies the case of the United States.

To this point, however, there has been hardly any systematic work on measuring the quality of banking regulation and supervision and its relation to inflation. The principles for effective banking supervision are defined by Basle Committee on Banking Supervision (BCBS). However, the BCBS guidelines do not involve principles for effective regulation, nor the methods as to how to evaluate the quality of regulation and supervision. The current paper suggests an elaborate method to evaluate the quality of banking regulation and supervision. To do this, we first develop a criteria list to evaluate the quality of banking regulation and supervision principles. Using this criteria list, we derive an index of regulation and supervision (RS) that we use to compare the effectiveness of banking regulation and supervision among transition countries. The index also allows for empirical research on the effects on macroeconomic performance of the quality of regulation and supervision.

Our cross-sectional data set consists of nineteen transition economies that yield twenty-six data points due to double enactment of banking laws in some of them since 1989. We regress inflation on the index RS and test the relationship between the quality of banking regulation and supervision and inflation. Moreover, we modify the analysis performed by Cukierman, Miller and Neyapti (1998) by including the index of RS in the estimation of inflation, along with the indices of legal central bank independence and liberalization, in transition economies.

The paper is organised as follows. Chapter 2 describes and rationalises the techniques and tools that a banking law should take into account for an effective bank regulation and supervision. Chapter 3 presents the procedure to quantify these

qualitative aspects of bank regulation and supervision for the transition countries, and to form an index based on this quantification. It also evaluates the banking laws of transition economies and points out the areas with respect to which these laws are weak. Chapter 4 presents a multiple regression analysis where we regress inflation on the indices of legal central bank independence, banking regulation and supervision and liberalization in transition economies. Finally, Chapter 5 concludes.

CHAPTER 2

MEASURING THE QUALITY OF BANK REGULATION AND SUPERVISION (RS)

Financial stability of a country, whether developing or developed, requires a strong banking system. To have a safe and sound banking system, in turn, effective banking regulation and supervision is necessary.

In view of this, we analyse the transition countries' banking laws to measure the quality of banking regulation and supervision. We, thus, develop a list of criteria to evaluate the extent of power given by law to bank regulators and supervisors and the various restrictions on banks' activities and management stated in banking laws.

In constructing our evaluation criteria, we pay close regard to the documents of 'Basle Committee on Banking Supervision (BCBS)'. Basle Committee has been reported to work in the field of strengthening financial stability throughout the world for many years, both directly and through its many contacts with banking supervisors in every part of the world. In the last few years, it has been examining how best to expand its efforts aimed at strengthening prudential supervision in all countries to enhance prudential supervision in its member countries. In particular, the Committee has prepared many documents for release. One of them that we use as a guideline, the Basle Core Principles (BCP, 1997), comprise twenty-five basic principles that need to be in place for a supervisory system to be effective. The principles relate to *the preconditions for effective banking supervision, licensing and structure,*

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prudential regulation and supervision, information requirements, formal powers of supervisors and *cross-border banking.* In the document it is stated that

> The Principles are minimum requirements and in many cases may need to be supplemented by other measures designed to address particular conditions and risks in the financial systems of individual countries. Basle Core Principles are intended to serve as a basic reference for supervisory and other public authorities in all countries and internationally.

Although for effective regulation and supervision it is necessary for banking laws to involve these principles, these conditions are not sufficiently elaborate, especially for banking regulation. For this reason, while constructing our criteria list we take as a guideline not only these principles but also many other necessary rules for effective regulation and supervision. By analysing both the transition and developed countries' laws and the related literature, we develop a criteria list that covers all the elements of regulation and supervision that a banking law should address to achieve financial stability.

Another important point about the Core Principles is that they do not involve the methods of implementing the banking laws. We, therefore, derive our criteria list from the original banking laws and the literature, rather than basing entirely on BCP. Nevertheless, we do not claim that this analysis results in a perfect measure of the actual quality of banking regulation and supervision, since our measure reflects only what is implied by banking laws.

We should, also, mention that the current version of our criteria list, thus our study, draws mainly on the banking laws adopted by transition economies, besides the guidelines provided by BCP. We may therefore expect modifications to the list of criteria we develop here to evaluate banking laws, as we extend our analysis to

include developed or developing countries. The scope of the current study, however, is limited to the transition economies and, hence, a comparative evaluation of their banking system is still possible within this scope.

In this chapter, we discuss the rationale behind each criteria of our evaluation system, which involves a stratified coding method for each criterion. The criteria list is also provided in Appendix A.

Our criteria for measuring the quality of bank regulation and supervision concern eight main issues: i. Capital requirements; ii. restrictions on lending; iii. ownership structure; iv. directors and managers; v. reporting and recording requirements; vi. corrective action; vii. regulatory agency; viii. supervisory agency.

A. Capital Requirements

Capital requirements carry major importance for effective regulation and supervision in a banking law. By means of minimum capital requirements and limits on using and holding the capital, banks are prevented from having excess risk, which could threaten the financial sector's stability and liquidity.

There are, however, ongoing debates in the financial sector about whether these limits may cause some disadvantages to both the financial and the real sector of the economy. Primarily, the question is whether firmly applied capital standards or minimum capital requirements induce, weakly capitalised banks to rebuild their

capital ratios in various ways more rapidly than otherwise. There is, to date, no empirical support about this debate, however.

The second question is whether the banks restrict their credits because of the capital requirements so that it has a narrowing effect for the real economy or not. However, empirical results show that it is not the case. Capital requirements for banks appear to limit excessive risk-taking, relative to capital, by reducing the likelihood of bank failures. If they are successful in this, the requirements could, overall, have a positive effect on output (for further discussions see 'Capital Requirements and Bank Behaviour: The impact of the Basle Accord', BCBS Working Papers, 1999).

Finally, whether minimum capital requirements lead the banks to loose their competitiveness or not can be questioned. Empirical studies, however, have found no evidence in that direction.

The evidence shows that banks change the composition of their assets when they face a binding regulatory capital constraint, substituting away from high risk-weighted assets. Thus, it is necessary to have minimum capital requirements for good regulation and supervision. What kind of capital requirements are necessary for good regulation and supervision, however, is the question arising. The criteria regarding minimum capital requirements are summarised in three parts: Minimum capital at licensing; capital adequacy; and major acquisitions and investment.

1. Minimum Capital at Licensing:

In the licensing stage of the bank, the minimum capital is necessary for the bank to support its strategic plan, especially in light of start-up costs and possible operational losses, as the Basle Core Principles state. In our view, a legal statement of the nominal minimum amount for licensing would reflect good regulation. Evaluation of banking laws reveal, however, that the minimum capital required is to be determined by the supervisor, and usually not stated in the law. We conjecture that, the lack of definite statement about minimum capital requirements reflects loose regulation as it allows the practice to change day by day and thus possibly would allow for an unequal treatment of the banks, especially when coupled with the influence of the political games and rent-seeking activity.

2. Capital Adequacy

In the absence of any legal limitations, banks may take excess risk to increase their profitability. To maintain the liquidity and the safety of the banks, there are usually legal provisions regarding banks' asset compositions. This leads banks to diversify their asset portfolio by reducing their concentration on risky assets. For this reason, authorities suggest that the total amount of risky substandard assets and non-performing assets of a bank should not exceed 5 percent of its liable capital.

Another important criterion of good banking regulation is the clear definition of liable capital. If the type of assets and capital that make up liable capital is not

clearly identified, the limits on the banks' asset composition would not be effectively adhered to, since those limits are often defined as the percentage of the liable capital. Hence, a prudent account of liable capital is necessary for good regulation.

Banks may also need to hold extra reserves for the cases of illiquidity that may either arise from internal problems or from macroeconomic problems. Since in such emergency situations it would be hard to obtain interbank liquidity or supervisory support in financial terms, holding extra reserves is necessary for maintaining the liquidity of a bank, and the soundness of the banking system by allowing the payment of liabilities on time.

3. Major Acquisitions and investments

Once a bank has been licensed, it may conduct any activity that is normally permissible for banks or any range of activities specified in the banking licence. Nevertheless, limitations on acquisitions and investments help to prevent both banks and the financial sector from taking excess-risks. Such limitations may take various forms.

Firstly, there can be limits on the aggregate amount of investment. When the investment of the bank exceeds that specified level, liquidity problems may arise. When an institution needs money in cases of emergency, its investment commitments may obstruct it, if enough cash can not be made available within the needed period. A second type of problem could be in regards to the lending capacity

of the bank, which is the main activity of a bank. When banks earn enough money from their investments, there will be no need to give credits, which would have a narrowing effect for the economy. However, investment without limit would damage the safety of the bank and the financial sector, as investment would be risky and may cause high losses.

A third type of limitation on investment may be on the amount invested on juridical people. When a bank invests in another financial institution and if its share is more than a specified level, this may lead to a monopoly, which can be dangerous for the entire financial sector. Another reason why we consider the limit for the aggregate amount of investment on juridical persons is to limit the risk factor. To reduce the likelihood of monopoly, we suggest that the composition of investment should be diversified. Otherwise, when a crisis hits the sector, in which a bank has concentrated its investments, the loss of the bank would be very large.

As the percentage of aggregate amount of investment increases, the bank would have more power to influence the activities of greater number of banks. This would, in turn, increase the likelihood of monopoly.

In case of default, a bank may hold the capital of another juridical person for three years or more. In fact, it can be argued that a time-limitation on holding capital is not necessary, as the case does not have the risk of monopoly.

B. Lending

1. Lending to the Private Sector:

Extending loans is the primary activity of most banks. Notwithstanding the many different reasons due to which financial sector may face difficulties, BCBS (*Principles for the Management of Credit Risk*, 1999:9) states that:

> The major cause of serious banking problems continues to be directly related to lax credit standards for borrowers and counterparts; poor portfolio risk management; or a lack of attention to changes in economic or other circumstances that can lead to deterioration in the credit standing of bank's counterparts. Thus to overcome lending-related problems bank laws should draw lessons from the past experiences. Effective regulation and supervision, thus, require the identification, measurement and monitoring the credit risk.

When a bank faces the decision to give emergency loan, it usually has no means to definitively determine the risk/profitability ratio. It is the supervisor who then has a chance to influence such loan decisions.

Granting credit involves accepting risk as well as producing profits. Banks assess the risk/return relationship of any credit decision. To assess the true risk-return relationship, bank needs to get to know the borrower, to decide whether the borrower is creditworthy or not. There are many methods that may be used in this process. BCBS (*Principles for the Management of Credit Risk*, 1999:15) include the following:

* The bank analyses the financial condition of the borrower;
* why he wants the credit;
* where the borrower will use it;
* the integrity and reputation of the borrower;
* the current risk profile of the borrower and its sensitivity to economic and market developments;
* the borrower's repayment history and current capacity to repay, based on

historical financial trends and cash flow projects;
* a forward-looking analysis of the capacity to repay based on various scenarios;
* the legal capacity of the borrower or counterpart to assume the liability;
* for commercial credits, the borrower's business expertise and the status of the borrower's economic sector and its position within that sector;
* the proposed terms and conditions of the credit, including covenants designed to limit changes in the future risk profile of the borrower; and
* where applicable, the adequacy and enforceability of collateral or guarantees, including under various scenarios.

These steps help to know customer better and understand the level of the risk, and it is better for banks to follow these before extending credit. In order to ensure that these information are true and valid, references from known parties may be asked, credit registries may be assessed, managers may be searched. It is hard when a bank individually tries to build an effective system for evaluating the creditworthiness of the borrower. Instead, a system that involves the supervisor as the coordinator and all the banks' credit portfolios and borrowers' (with a financial history) risk ratings would work well. Such a system would reduce the time to search the borrower and decrease the likelihood of stating false information of the borrower.

We hypothesise that when the amount of the loan given to a borrower is a significant portion of the bank's portfolio, then the bank should have a right to investigate the balance sheet of the borrower to evaluate the borrower's financial standing. Also, the bank should have a right to investigate the personal background of a big borrower.

Another type of risk the bank faces, other than the credit risk, is price risk. We hypothesise that banks should keep maximum total amount of certain position involving price risks at the close of business day in order to achieve sustained

liquidity and solvency. If, for example, a bank's foreign exchange position is very high and if the exchange rate depreciates much, the loss of the bank would be very high, both causing illiqudity and insolvency. To prevent banks from violating this limit we suggest a fine system. In order that these fines be effective, fines should increase with violation would help.

Like all the activities involving risk, we argue that the lending process should have limits. For these limits to have a meaning, however, they have to be binding. The kind of credits to be limited may include the following:

i. Maximum risk and aggregate credit for one borrower may be limited. This is necessary to diversify the risk in order to decrease possible losses. Any natural persons who are "connected"[1] to each other or requesting credit for the same project are concerned as one borrower.

ii. Maximum aggregate credit to ten big borrowers would be limited by the same reason of i. When there is a crises in one sector, and if more than one of the big borrowers are from the same sector then the loss of the bank will increase.

iii. Maximum aggregate credit that may be given to borrowers would also be limited. This has two reasons. Firstly, the risk would be diversified. The second reason is that limits also factor in any unsecured exposure in a liquidation scenario, that is limits help preventing liquidity problems arising from credit losses.

iv. An important problem, in the process of credit extension, is lending to related persons[2]. Most of the abuses in this process arise from the credits given to

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[1] Although the definition of connected persons differs from law to law, as a convenience, we refer to persons having business relationships as connected.

[2] Although the definition of related persons differs from law to law, as a convenience, we refer to employees, shareholders, managers and their relatives up to second degree as related.

shareholders, managers, employees, and such. To prevent managers from extending more favourable credits to the shareholders than to non-related borrowers under similar circumstances, it is the best principle not to give credits to shareholders. The second best way would be imposing strict limits on such lending if the first best, restriction of extending credit to shareholders, can not be satisfied. Although the most serious case abuses arises and leads the banks to insolvency when favourable credits are extended to shareholders, extending credits to manager, employees and other related persons have the same risk and thus we suggest limiting such credits as well. We further hypothesise that all credit decisions should be closely monitored, internally and externally, to identify and reduce problems arising from connected lending.

Another important issue in private lending activity is about guarantees. A tool for evaluating the credit risk for borrower is the calculation of the guarantees. We suggest the existence of well defined rules in the law to calculate the guarantees, as they are important both for the borrower and the bank's managers. The reason why these rules are necessary for the banks is that, first of all, if the rules are stated in the law, then the probability of abuses by the employees and managers in the cases of credit extension would decrease. To put it differently, limits on guarantees make risk evaluation easier and induce the banks not to take excess-risks in order to earn extra profit. As for the borrowers, they will know how much loan they would get by the collateral they own. As for banks, to decrease the risk factor there would be a restriction for a minimum amount of loans for which the borrower should offer guarantee. Without this limit, if only the creditworthiness of the borrower is concerned in the process of extending credit and if a misleading judgement has been

made, the loss of the bank would be high. With this limit, when the loan is not paid back because of a misjudgment of the borrower's creditworthiness, or market risk, or price risk, the guarantee that the borrower offered would cover most of the losses.

2. Lending to the Government

We hypothesise that banking laws should prevent banks carrying out operations with budgetary funds on the basis of concluded contracts; carrying out money transfers with the organs of executive power and municipal organs; providing credit for aimful use of budget funds allocated for the purpose of carrying out state and regional programs; and extending credit to government and local government to finance budget deficits. The role of the banking sector in the economy is to purchase the investments' of the depositors and to supply credit to the private sector, and thereby making profits. When a bank extends credit to the government, the credit extended to private sector would decrease, which is a negative effect for the development of the private sector. The profits of the bank would therefore decrease. Moreover, as the interest payments to the depositors decrease because of the falling profits of the banks, they will no more want to make investments in the banks, which would lead to the collapse of the banking sector.

C. Ownership Structure:

BCP (BCBS,1997: 15) state that:

> The licensing authority should establish that new banking organisations have suitable shareholders, adequate financial strength, a legal structure in line with its operational structure, and a management with sufficient expertise and integrity to operate the banking sector in a sound and prudent manner.

In this perspective, there should be some restrictions on the shareholders, which are necessary for their suitability in the licensing process and we suggest some limits on the transfer of shares, thereafter, for the continuity of the suitability of the shareholders.

1. Restrictions on shareholders

The most important and necessary feature of a shareholder is his or her financial strength. In the licensing period, financial status of a shareholder is necessary to meet both the start-up costs and to satisfy the minimum capital required for licensing. The need for financial support of a shareholder continues after licensing, especially in cases of emergency. This is the reason why we argue that the reporting of the financial standing of major shareholders should be required in the law. BCP (BCBS,1997: 18) state it as:

> If there is a coherent financial standing observed by the shareholder then that would mean that financial support of the shareholder would be supplied whenever it is necessary.

We hypothesise that the source of the capital of the bank, that is the capital of shareholders, should be proved. This is necessary for two reasons: The first one is

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that the capital should not come from money-laundering process, which is the internationally accepted rule. The second one is that the source of the capital is a sign to understand the stability of the financial strength of the shareholder. The source of capital should allow the financial support by the shareholders in a continuous manner. Thus, the capital of the bank is not necessarily to be supplied with a loan taken from another financial institution or elsewhere.

Our argument is that other important restrictions about the shareholders should concern their personal background. First of all, to be a shareholder of a bank, both the depositors and the regulators and supervisors need to believe in their trustworthiness and business ethic. For this reason, bank laws may prevent directors and managers who are associated with bank failures in the past from becoming shareholders. Secondly, when shareholders are from political parties, media or non-governmental organs, they may disturb the fair competition within the financial sector by influencing the public and economy. Thus, in our view, their selection as a shareholder should be restricted also.

We hypothesise that another major restriction should be with regards to the percentage of the share held by a single shareholder. The reason for this restriction is as follows. When there is a crisis in the sector of the shareholder, or if there is a problem in the financial standing of the shareholder, and if his share is high or not limited, then the costs of these on the bank could be very high.

Besides the restrictions on shareholders in the licensing process, we suggest limiting the transfer of shares thereafter so that the discipline with respect to the

ownership structure at the licensing process can be maintained. The following section is about these restrictions on transfer of shares.

2. Transfer of Shares:

As mentioned above, we suggest that being a shareholder would be subject to a quality check. In the licensing process, the supervisor agency analyses the shareholders to see whether they satisfy the criteria of ownership stated in the laws or not. After licensing, we argue that shareholders should continue to meet the same criteria. Hence, if there is a transfer of shares the new investors, or shareholders, should satisfy these criteria also. In the BCP (BCBS,1997:19), Principle 4, the idea is stated as:

> Banking supervisors must have the authority to review and reject any proposals to transfer significant ownership and controlling interests in existing banks to other parties.

This principle guarantees that, in addition to licensing new banks, banking supervisors should be notified of any future significant direct or indirect investment in the bank or any increases or other changes in the ownership over a particular threshold. Further, they would have the power to block such investments, or to prevent the exercise of voting rights in respect of such investments, if new shareholders do not meet the criteria comparable to those used for approving new banks. Notifications are often required for ownership or voting control involving established percentages of a bank's outstanding shares. The threshold for approval of significant ownership may be higher than that for notification. In this respect, we suggest that the supervisor would be notified when shares are to be transferred.

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While increasing or decreasing shares, when capital above a certain level reached it should be reported. Also when a shareholder dies, the supervisor may prohibit the business if the new shareholder does not satisfy the criteria.

D. Directors and Managers

An important step in the licensing process is the evaluation of the competence, integrity and qualifications of proposed management, including the board of directors. For this reason, we hypothesise that regulators should investigate the proposed directors and senior managers before licensing in order to consider individually and collectively their banking experience, other business experience, personal integrity and relevant skills. This investigation may involve background checks on whether previous activities, including regulatory or juridical judgements, raise doubts concerning their competence, sound judgement or history. It, furthermore, involves investigating the history and experience of both top managers and other managers.

Another important subject is the managers' trustworthiness. In order to make certain of their trustworthiness, the law may prohibit the selection of directors or managers who were, in the past, associated with bank failures as a director or manager.

We suggest dual control for the management of a bank, which means that at least two managers' approval is obtained in any important banking activity. This is a

caution against the possible abuses in case of one manager taking control. Two managers' control is considered to be safer.

E. Reporting Recording

As mentioned before, banking system is a profit-seeking sector that uses risk management. Therefore, it is important to prevent the banks from incurring excessive losses by monitoring them. In this respect, an effective reporting-recording system is very important. Recording-reporting system involves many aspects. The main aspect concerned here are: Operating plan, systems of control and internal organisation; financial projection; cross border banking; external auditing; and coverage of reporting and recording.

1. Operating plan, systems of control and internal organisation

A system of effective internal controls is a critical component of bank management and a foundation for the safe and sound operation of banking organisations. BCBS (*Framework for Internal Control Systems in Banking Organisations*, 1998:1) states:

> A system of effective internal controls may help to ensure that the goals and objectives of a banking organisation will be met and the bank achieve long term profitability targets and maintain reliable financial and managerial reporting.

Such a system would help to guarantee that the bank will comply with laws and regulations as well as policies, plans, internal rules and procedures and decrease the risk of unexpected losses and the probability of damages to the bank's reputation.

As the system of internal control is essential for the stability of the whole financial system, one needs to define the principles for assessing internal control systems. BCP define these major systems as well as the role and duties of the board of directors with respect to them.

The board of directors may approve and periodically review the overall business strategies and significant policies of the bank; understanding the major risks of the bank; setting the levels for risk; identifying, monitoring and measuring the risk; and promoting high ethical and integrity standards. Hence, the board of directors has an important role in the internal control system, which is an essential part of the banking system. This leads to the issue of the competence and integrity of the board of directors. In this respect, we argue that the law should give detailed information about not only the systems of control and internal organisations, but also the qualifications and duties of managers of the board.

Although the role of the board of directors is vital in the internal control system, the internal auditors have important duties as well. In Principle 11, of the BCP (BCBS,1997), this is stated as:

> There should be an effective and comprehensive internal audit of the internal control system carried out by operationally independent, appropriately trained and component staff. The internal audit function, as part of the monitoring of the system of internal controls, should report directly to the board of directors or its audit committee.

Principle 12 states that as:

Internal control deficiencies, whether identified by business line, internal audit or other control personnel, should be reported in a timely manner to the appropriate management level and addressed promptly. Material internal control deficiencies should be reported to senior management and the board of directors.

Thus the law should state the qualifications of the internal auditor to guarantee their competence, business ethic and appropriateness for this duty.

2. Financial Projections

With regards to the licensing process, we hypothesise that the licensing agency should consider whether the new bank's policy is liable to the economy, whether the bank could cover the start-up costs and early operational losses, and whether the aim of the bank is consistent with the general policies of the macro-economy of the country. The way that the licensing agency would find the answers to these indefinite issues would be by requiring the projected balance sheets and commercial plans covering long periods. By means of these projections, the agency could also analyse the plans of the new bank, explicitly, and obtain enough information about their feasibility, consistency and viability.

3. Cross Border Banking

When the proposed owner is a foreign bank, we argue that the approval of the home country is to be required. To give a licence to a bank, the licensing agency

should make sure that system's effectiveness are monitored regularly so that the banking activity continues in a healthy way. On the other hand, the banking activity of a bank, whether it is an international bank or not, is monitored and supervised by home supervisors. Thus, before giving a licence we argue that the licensing authority should contact the home country supervisor and take their approval to make sure that the bank is monitored and supervised in a prudent manner.

4. External Auditing

We hypothesise that the supervisory agency should not only get information about the banking activities regularly and in a prudent manner, but also validate them. On-site examination is a major way to get information and it may be done either by the staff of the supervisory agency or the external auditors, or by both of them. Using both external auditing and the supervisory staff for on-site examination is an effective choice for this activity to provide independent verification about whether adequate corporate governance exists in individual banks and the information provided by banks is reliable. Although the supervisory agency has the right to reject the auditing agency if they believe that they are not reliable, double control would be better and prevent any abuses that would arise in examinations.

The matters that the supervisor would verify by means of on-site examinations are stated in the BCP (BCBS,1997: 33),as:

> * The accuracy of reports received from the bank
> * The overall operations and condition of the bank
> * The adequacy of the bank's risks management systems and internal control procedures

* The quality of the loan portfolio and adequacy of loan loss provisions and reserves
* The competence of management
* The adequacy of accounting and management information systems
* Issues identified in off-site or previous on-site supervisory process
* Bank adherence to laws and regulations and the terms stipulated in the banking licence

We argue that the supervisory agency should set clear guidelines related to the frequency and scope of such examinations. Also. the procedures and policies of the examination should be set clearly to ensure that examinations are conducted in a thorough and consistent manner with clear objectives to obtain the information listed above explicitly.

In order to ensure these, we hypothesise that laws should contain these criteria. In laws, on-site examination by both the supervisory staff and the auditing agency should be stated as compulsory. The higher the frequency of on-site checks, the more effective is monitoring and prompt of realisation of deficiencies earlier. To obtain all the information necessary from on-site checks, we suggest a well-defined scope for the auditing reports to exist. The most important information that should be obtained from an auditing is the irregularities and deficiencies of the bank.

5. Coverage of Reporting and Recording

Thorough understanding of the financial institution's operations whether by on-site or off-site examination is vital for the supervision of the institution. We argue that the various factors considered during the licensing process should be periodically assessed as part of the ongoing supervision. Review of reports of

internal and external auditing can be an integral part of the monitoring process. Banks should submit information periodically in order that the supervisor agency reviews the business of the bank on a consolidated basis. For this purpose, the reports should include basic financial statements as well as supporting schedules that provide greater detail on exposure to different types of risk and various other financial aspects of the bank, including provisions and off-balance sheet activities. By the help of these reports the supervisor would be able to check adherence to prudential requirements, such as capital adequacy or single debtor limits. These reports can be used to identify trends not only for particular institutions, but also for the banking system as a whole. We argue that this information then would be verified periodically through on-site examinations and internal audits.

When a problem arises, the bank should consult it with the supervisor. We hypothesise that the bank should also inform the supervisor in case of deficiencies or when things go wrong.

In this respect, annual balance sheets, the main source of understanding the financial position of a bank, should be reported. We suggest that the banking law should contain a basis for the frequency of such reports. It is important for the supervisory agency to obtain information about the bank's business in order to record the deficiencies as soon as possible. The scope of these reports should be designed before hand, as the details that are needed for the supervisors would also be stated in the reports.

On the other hand, some information may not be detected from periodical reports. We argue that one such information that should also be reported is the change in the charter of the bank.

To sum up, we argue that supervisory agencies should make sure that each bank provides adequate accounting reports with consistent accounting policies and practices that enables the supervisor to obtain a true and fair view of the financial condition of the bank and the profitability of its business.

F. Corrective Action

Although the supervisory agency monitors the bank in a regular and prudent manner things can still go wrong. The bank may not follow the rules, or even if it does, losses of the bank may still increase. In order to protect both depositors and the banking system as a whole, we argue that supervisory agency would intervene in these situations. The intervention of the supervisor should differ, however, from case to case. If the solvency of the bank is doubtful and the managers are not capable of solving the problem, the supervisory agent may give a start to a comprehensive program under the management of a conservator. To clear up questions or problems that are likely to arise, however, the situations where the conservatorship's management may start should be defined explicitly.

In many cases, the profitability and the solvency of the bank are related to each other and may affect the whole financial system. When a bank has a liquidity

problem, supervisory agent should determine its reasons explicitly and should identify the conditions under which liquidation would prevent the bank from insolvency. Thus, we argue that the supervisory agency should be cautious about extending credit and observe the differences between the cases of illiquidation and insolvency.

When a bank faces a problem of losses, the supervisory agent should follow the case well to prevent the financial system and depositors from bankruptcy. Thus, after a bank loses at most one third of its liable capital, we hypothesise that supervisor should liquidate the bank and take its license back.

In cases of problems such as above, or in cases that the conservatorship would not solve the problem, or in cases when the supervisor makes the judgement that there is nothing more to do to solve the bank's problem and deficiencies, the supervisor would liquidate the bank. We argue that the cases that would result in liquidation should also be defined in the law.

G. Regulatory agent

Despite the ongoing debate regarding the necessity of regulation in the financial markets, financial institutions have been regulated, in some way. Given this, the issue at hand is the selection of the regulatory agent who could provide a relatively healthier financial system.

When the regulator is an independent authority, the only role of the authority should be to set rules for the health of the financial system. The authority should observe the deficiencies without the effects of powerful committees or government and concentrate on only the regulation of the bank.

The central bank can be that independent authority, as it has the power of lender of last resort. When a bank faces a financial problem, the final authority that could rescue would therefore be the central bank. To reduce or eliminate political influence on the process of bank regulation, an independent central bank is a good choice for a regulatory agent.

In case the government is the regulator, political preferences may prevent the fairness and effectiveness in regulation. Thus, an independent authorisation is preferred to government for the role of regulation.

Proponents of self-regulation, on the other hand, argue that the financial market would overcome its problems and work in the way like the Adam Smith's invisible hand. The counter argument, however, is that because there exist linkages between banks, industries and the government sectors and because the central bank has the power of lender of last resort, the argument for self-regulation has an important deficiency. Without a regulatory body banks can not overcome a systemic risk which is a result of a collapse of a part of or the whole banking system. Thus, the market is not independent and needs intervention, especially in the case of crises.

H. Supervisiory Agency

The questions about the regulatory agent are also valid for the supervisory agent. In many countries. like Australia, Netherlands and Switzerland, the supervision is currently done by independent authorities, whereas formerly the function was vested with the government. The reasoning provided for this is that the supervision of a country's financial system is important for the overall economy, and is an ongoing process, thus, it should not be affected from politics or new policies. An independent authority should do the supervision on a consolidated basis without the effects of politics.

On the other hand, because of its lender of last resort power the central bank has an effect on the supervision. Central bank, therefore, may share the supervisory role with an independent authority and the bank council. In this manner, it would be easier to discuss the problems and consult the bank. Although it is better if the bank council is involved in the supervision for consultancy and frequent discussions, supervision can be done without them also.

Central bank is related to the supervision activity because of its extending credit facility. Whether it is the supervisor or not, the central bank should monitor and analyse the bank before the extension of credit. Thus, in many countries the supervision is done by the central bank.

If the central bank is not independent, the role of the supervision may as well be shared by the government. Otherwise, as for reputation, it is better for supervision to be separated from politics, as well.

CHAPTER 3

METHODOLOGY: DERIVATION OF THE INDEX OF RS

Even though measuring the quality of banking regulation and supervision is difficult, it is crucial as it helps to compare countries with respect to their potential of financial stability. For this reason, based on the criteria list of Chapter 2, we provide a numerical index of the quality of banking regulation and supervision in order to evaluate the banking laws. Our data set is cross-sectional and it consists of nineteen transition economies. The evaluation criteria are applied to all banking laws enacted in these countries since 1989. We, therefore, obtain twenty-four observations since five of these countries have enacted banking laws twice since then.

3.1. Coding Legal Regulation and Supervision

To evaluate the quality of regulation and supervision in a banking system, we set up our coding system by utilising three sources of information. First, we consider the theoretical literature with regards to the issues we cover in our coding system. Second, we take the "Basle Core Principles for Effective Supervision" as a guideline and cover all the ideas outlined in the 25 principles in our criteria list. However, these principles do not include all the items that we consider relevant, especially for regulation. "The Basle Core Principles", only provide the ideas for improving

supervision in a country while they do not explicitly define the implementation techniques, which we also include in our coding system to evaluate the banking laws. Third, we study the banking laws of the sample countries to develop our criteria list. As our sample countries are confined to the transition economies, this coverage may limit our coding system in many ways. With the expansion of the sample to include developing countries, which we plan to undertake shortly, we expect to see both the list of criteria and the coding system to be expanded or modified due to a wider range of areas covered. Using all these sources facilitates the derivation of a coding system that can be used to rank the quality of legal regulation and supervision in transition economies.

We group the legal issues regarding banking regulation and supervision in the banking laws into eight clusters:

A. Capital requirements

B. Lending

C. Ownership structure

D. Directors and Managers

E. Reporting and recording

F. Corrective action

G. Regulatory agency

H. Supervisory Agency

These clusters were built up from 72 different criteria, which we report in Appendix A. The numbers in Appendix A are set such that the higher the number the more effective regulation and supervision. We then transform each of these numbers

on to a scale of 0 (lowest level of effective regulation and supervision) to 1 (highest level of effective regulation and supervision).

This study analyses the banking laws of the transition economies starting 1989 till now. Some of the countries have two banking laws in the period indicated. Different laws of a country in different periods carry different information for our analysis as they may involve important legislative changes. The coded variables appear in Appendix B.

3.2. Aggregating the Coded Variables

The 72 components of the quality of regulation and supervision are aggregated in three steps to yield a hierarchy of indexes. The basic data on the 72 disaggregated variables that are described in Appendix A were first aggregated into 16 legal variables using equal weights for each of the components.

The 16 variables were then aggregated into the 8 major variables that we list above by the following rule. The three variables labelled as the *Minimum Capital at Licensing, Capital Adequacy* and *Major Acquisitions and Investments* were aggregated into a single variable labelled as *Capital Requirements*, calculated as the average of its four components. The two variables for limiting the lending to the private sector and the government were averaged with equal weights into a single variable named as *Lending*. The variable *Ownership Structure* is formed also as the unweighted average of the two variables: *Restrictions on Shareholders* and *Transfer*

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Table 1. Variables That Measure the Quality of Regulation and Supervision

	A1	A2	A3	B1	B2	C1	C2	D1	E1	E2	E3	E4	E5	F1	G1	H1
ALBENIA 96	0.50	0.25	0.15	0.05	0.25	0.28	0.00	0.28	0.50	0.33	0.00	0.75	0.40	0.50	0.75	0.50
ARMENIA 93	0.50	0.25	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	1.00	0.07	0.48	0.13	0.75	0.50
ARMENIA 96	0.50	0.00	0.27	0.00	0.00	0.25	0.08	0.00	0.50	0.56	1.00	0.46	0.12	0.25	0.75	0.50
AZERBAIJAN 92	0.50	0.00	0.00	0.00	0.25	0.38	0.00	0.00	0.00	0.00	1.00	0.04	0.40	0.00	0.75	0.50
AZERBAIJAN 96	0.50	0.25	0.52	0.06	0.25	0.14	0.25	0.22	0.50	0.00	0.00	0.32	0.80	0.63	0.75	0.50
BELARUS 92	0.50	0.25	0.00	0.00	0.50	0.17	0.00	0.00	0.00	0.11	0.00	0.04	0.40	0.00	0.75	0.50
BULGARIA 92	0.50	0.25	0.42	0.33	0.00	0.17	0.00	0.33	0.00	0.00	1.00	0.46	0.56	0.38	0.75	0.50
CROATIA 93	1.00	0.50	0.19	0.08	0.25	0.00	0.58	0.28	0.50	0.22	1.00	0.32	0.40	0.00	0.75	0.50
CROATIA 96	1.00	0.50	0.19	0.13	0.25	0.17	0.58	0.17	0.50	0.22	1.00	0.32	0.52	0.00	0.75	0.50
CZECK 92	0.50	0.00	0.42	0.09	0.00	0.22	0.11	0.00	0.25	0.33	1.00	0.18	0.40	0.50	0.50	0.50
CZECH 94	1.00	0.00	0.42	0.09	0.00	0.22	0.11	0.11	0.25	0.67	1.00	0.18	0.40	0.50	0.50	0.50
GEORGIA 96	0.50	0.25	0.13	0.00	0.25	0.24	0.22	0.17	1.00	0.33	1.00	0.82	0.44	0.50	0.75	0.50
HUNGARY 94	1.00	0.50	0.46	0.27	0.00	0.53	0.25	0.50	0.25	0.00	1.00	0.89	0.92	0.25	0.75	1.00
KAZAKHISTAN 93	0.50	0.25	0.06	0.00	0.00	0.08	0.00	0.17	0.00	0.33	1.00	0.29	0.00	0.00	0.75	0.50
KAZAKHISTAN 95	0.50	0.25	0.00	0.05	0.00	0.35	0.00	0.33	0.25	0.00	1.00	0.46	0.40	0.00	0.75	0.50
KRGYZSTAN 91	0.50	0.25	0.21	0.05	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.32	0.44	0.25	0.75	0.50
LITHUANIA 92	0.50	0.25	0.00	0.08	0.00	0.17	0.25	0.00	0.50	0.00	1.00	0.18	0.40	0.25	0.75	0.50
MACEDONIA 94	1.00	0.25	0.25	0.18	0.00	0.29	0.00	0.00	0.50	0.00	0.00	0.32	0.40	0.50	0.75	0.50
MOLDOVA 91	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.00	0.75	0.50
MONGOLIA 91	1.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.40	0.00	0.50	0.50
POLAND 89	0.50	0.00	0.00	0.11	0.00	0.08	0.47	0.00	0.25	0.67	0.00	0.00	0.56	0.38	0.50	0.50
SLOVAK 92	1.00	0.00	0.42	0.09	0.00	0.22	0.11	0.11	0.25	0.67	1.00	0.18	0.40	0.50	0.50	0.50
TAJIKISTAN 94	0.50	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	1.00	0.00	0.04	0.00	0.75	0.50
UZBEKISTAN 91	0.50	0.25	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	1.00	0.29	0.40	0.00	0.75	0.50

Notes: 1. Accompanying the country names are the years in which the banking laws are enacted. As can be seen in the table, five of the nineteen countries in the sample have enacted two banking laws.

2. The variables A1 to H1 are enumarated based on the sixteen criteria which are reported in Appendix A.

3. All variables are normalised between 0 and 1, such that when a variable takes the value of 1, it indicates the largest degree of quality of bank regulation and supervision, with respect to the particular aspect of the banking law that variable intends to measure.

4. All data are obtained from the banking laws.

of Shares. The five variables *Operating Plan Systems of Control and Internal Organisation, Financial Projection, Cross-border Banking, On-site Supervision, and Coverage of Recording and Reporting* were aggregated into a single variable that is labelled as *Reporting and Recording.* The other variables, *Directors and Managers, Corrective Action, Regulatory Agency and Supervisory Agency* are taken as the major variables without being aggregated. The eight aggregated variables are presented in Table 2.

The eight variables obtained from the second round of aggregation were aggregated further into a single index for each country with equal weights. The aggregated index is indicated in Table 2 as the index of the quality of regulation and supervision, RS. We use this index as the measure of the quality of regulation and supervision (in legal terms) in a country. In the next section of this chapter, we analyse the properties of the individual variables and the RS index.

3.3. Some Characteristics of the Aggregated Variables

When we aggregate the variables that comprise RS, we naturally lose some of the information that the individual components carry. In Chapter 4, we nevertheless use only the final index, RS, due to the data limitations in performing a regression analysis. In this section, however, we analyse the legal variables in Table 1 and Table 2, individually. This analysis provides us a more detailed information about the common weaknesses of the banking laws of the transition countries and may thus suggest the necessary improvements in the legislation of these countries.

TABLE 2: Eight Aggregate Variables of Banking Regulation and Supervision, and the Aggregate Index (RS)

	A. Capital Requirements	B. Lending	C. Ownership Structure	D. Directors and Managers	E. Reporting/ Recording	F. Corrective Action	G. Regulatory Agency	H. Supervisory Agency	RS
ALBENIA 96	0.30	0.15	0.14	0.28	0.40	0.50	0.75	0.50	0.38
ARMENIA 93	0.25	0.00	0.08	0.00	0.31	0.13	0.75	0.50	0.25
ARMENIA 96	0.26	0.00	0.17	0.00	0.53	0.25	0.75	0.50	0.31
AZERBAIJAN 92	0.17	0.13	0.19	0.00	0.29	0.00	0.75	0.50	0.25
AZERBAIJAN 96	0.42	0.16	0.19	0.22	0.32	0.63	0.75	0.50	0.40
BELARUS 92	0.25	0.25	0.08	0.00	0.11	0.00	0.75	0.50	0.24
BULGARIA 92	0.39	0.16	0.08	0.33	0.40	0.38	0.75	0.50	0.37
CROATIA 93	0.56	0.17	0.29	0.28	0.49	0.00	0.75	0.50	0.38
CROATIA 96	0.56	0.19	0.38	0.17	0.51	0.00	0.75	0.50	0.38
CZECK 92	0.31	0.05	0.17	0.00	0.43	0.50	0.50	0.50	0.35
CZECH 94	0.47	0.05	0.17	0.11	0.50	0.50	0.50	0.50	0.31
GEORGIA 96	0.29	0.13	0.23	0.17	0.72	0.50	0.75	0.50	0.41
HUNGARY 94	0.65	0.14	0.39	0.50	0.61	0.25	0.75	1.00	0.54
KAZAKHISTAN 93	0.27	0.00	0.04	0.17	0.32	0.00	0.75	0.50	0.26
KAZAKHISTAN 95	0.25	0.03	0.17	0.33	0.42	0.00	0.75	0.50	0.31
KRGYZSTAN 91	0.32	0.03	0.00	0.00	0.35	0.25	0.75	0.50	0.27
LITHUANIA 92	0.25	0.04	0.21	0.00	0.42	0.25	0.75	0.50	0.30
MACEDONIA 94	0.50	0.09	0.15	0.00	0.24	0.50	0.75	0.50	0.34
MOLDOVA 91	0.17	0.00	0.00	0.00	0.10	0.00	0.75	0.50	0.19
MONGOLIA 91	0.42	0.00	0.00	0.00	0.14	0.00	0.50	0.50	0.19
POLAND 89	0.17	0.05	0.28	0.00	0.30	0.38	0.50	0.50	0.31
SLOVAK 92	0.31	0.05	0.17	0.00	0.43	0.50	0.50	0.50	0.35
TAJIKISTAN 94	0.17	0.00	0.04	0.00	0.21	0.00	0.75	0.50	0.21
UZBEKISTAN 91	0.25	0.00	0.04	0.00	0.34	0.00	0.75	0.50	0.23

Note: For the notes see Table 1, from which these aggregates are obtained in the form of unweighted averages of the catagories under the main headings of A to H.

When we analyse the data in Table 1, the first observation is that there are many countries whose legal variables take the value of zero. This means that although we use a wide range of coding criteria to observe the variations for regulation and supervision among the countries, the quality of the legislation in transition countries are even below those standards.

Another observation based on Table 1 is that the countries where there are two banking laws have improved legislation for regulation and supervision. Besides, the first banking laws the transition countries have adopted appear quite similar to each other. After the first law, a period that usually coincides with their political and economic reforms, some of these countries (Armenia (1996), Azerbaijan (1996), Czech (1994), Kazakhistan (1995)) appear to have adopted more improved banking laws (Table 1, Table 2).

We may analyse the 8 major variables one by one. The aggregated variable measuring the effectiveness of the rules for capital requirements largely varies among the countries. The maximum observed value of this variable is 0.653 for the 1994 law of Hungary. Hungarian banking law also gets the highest rank with regards to the overall index of regulation and supervision. The capital adequacy variable is the lowest component of this aggregated variable (see column A2 of Table 1). This observation would be translated, as transition countries in general do not have satisfactory restrictions for capital.

The second aggregated variable, *Lending*, shows the quality of the law with regards to lending restrictions. As we mentioned in Chapter 2, most of the serious

The areas that need improvements are mainly the *Operating Plan and Systems of Control* and *Financial Projections* (see Table 2). The low mean values of these two variables, which are the sub-variables of *Reporting and Recording*, show that the countries are weak mainly in these fields.

Perhaps because the countries newly established market systems, the corrective action parts are generally weak in the banking laws of transition economies. However, since the immediate and expansive restructuring in the banking system would frequently require corrective action, the regulations in this area should therefore be revised.

Although there are unsolved discussions in the literature about who should be the regulatory agency and supervisory agency, these roles are generally performed by the central banks in majority of the transition countries. We outline this debate, along with the preferences of the developed countries, in Chapter 2.

Finally, we can comment on the general structure of the regulation and supervision in transition countries by using the aggregate index, RS. We observe that the country with the highest quality of regulation and supervision is Hungary and the one with the lowest quality is Moldavia. Generally, we can not indicate that the transition countries' banks are regulated and supervised in a prudent manner or their quality for regulation and supervision vary greatly among the group. The mean of the RS in this sample is 0.3054, which is much lower than 1, and only one country exceeds the value of 0.5, which indicates that there is much room for improvements in the banking laws of transition economies to lead to a more stable financial system.

Finally, the credit extension policies of the banks in transition countries get the lowest values among all the variables. Hence, the starting point for any adjustment in banking laws could be this point, while many other points should be improved also.

CHAPTER 4

INFLATION AND BANK REGULATION AND SUPERVISION

Do countries with more effective bank regulation and supervision have lower rates of inflation? This paper contributes to the literature on the effects of macroeconomic institutions on inflation by providing a preliminary investigation of the linkage between inflation and bank regulation and supervision.

Banks' main aim is to increase their profits, and they often do not have to care about the health of the banking system as a whole. Central banks are, however, usually vested with powers to perform this duty "In Western economies, central banks emerged as a response to the needs of financial institutions and to serve other banks," writes Wooley. Central banks and financial institutions are closely linked, whether or not central banks perform the role of the supervising authority.

If bank regulation and supervision in a country is not effective, this may lead the financial system to instability. This may prove to be costly for the central banks, because of their role as the lender of last resort and the creditor of the banks. Although in some countries central banks do not perform the role of banking regulation and supervision, they are still responsible for maintaining financial stability. When financial system is unstable, banks are often unable to cover up their liabilities. This would generate an extra cost for the central banks, leading them to print money in order to finance the banks' liabilities. This situation affects the policy of the central banks in two ways. First, the central bank may need to deviate from its

main role of maintaining price stability in order to maintain the financial stability. Second, because of printing extra money inflation will increase.

A stable and developed financial market serves as an important source of non-inflationary government finance. When, on the other hand, the financial market is weak, government resorts to the central bank money in order to finance its expenditures. The resultant inflation, in turn, inhibits the development of strong financial institutions. Moreover, when financial markets are weak, industrialists are likely to rely on government credits or government transfers. In such cases, the government needs additional resources to cover the credit needs of the private sector. Creation of such additional resources is usually possible with only inflationary policies. Thus, inefficient financial markets usually lead to inflationary policies.

As unanticipated inflation leads to deterioration in the value of long-term loans, it is detrimental to the interests of financial institutions. Hence, if banks are organised as a powerful lobby they can force the government to follow anti-inflationary politics (so argue Posen (1994)). Such organised anti-inflationary incentives are especially possible in a well-developed financial system. Since bank regulation and supervision is likely to be closely linked with financial sector development, then inflation and degree of bank regulation and supervision is likely to be closely –inversely- related also.

There is also an indirect effect of bank regulation and supervision on inflation via budget deficits. When bank regulation and supervision is not prudent, financial fragility arises. Moreover, financial fragility results in fiscal fragility, in other words

high budget deficits. When both the financial markets and tax collection mechanisms do not work properly in order to provide the government with the resources it needs, the central bank monetises the deficit and that leads to inflation. Thus, financial prudence via bank regulation and supervision may also prevent inflation by inducing fiscal prudence.

Further, we should mention that the relationship between inflation and bank regulation and supervision is not a one way causality. Till now, we emphasised the possible negative effects of regulation and supervision on inflation. However, it may be the case that inflation itself affects the degree of bank regulation and supervision. Moreover, this effect may be both positive and negative. In what follows, we elaborate on these effects.

In a high inflation environment, the goal of the government would normally be to decrease inflation. If there exists a stable and developed financial market, then banks can allocate the funds for maximum profits and generate funds through their own operations rather than through central bank or government lending. Thus, a developed financial system usually offers non-or less inflationary means to finance the budget. When following disinflation policies, therefore, the first goal is to strengthen the financial system. For this reason, government tries to improve the quality of the regulation and supervision. This shows the positive effect of inflation on regulation and supervision.

The effect of inflation on bank supervision and regulation can be negative also. If we consider the case of low inflation the goal of the government would be to

increase the growth of the country without increasing the inflation. The tool that the government wants to use would be the financial sector. As Levine, et al (1999) show that financial market development has a large impact on economic growth. In order to strengthen the financial system, in turn, good regulation and supervision should be attained.

When inflation is high, and chronic, however, there may exist inflation lobbies that also benefit from a weak financial system. Directed credits and imprudent bank lending are some of the mechanisms of the linkage between high inflation and weak financial sector. In such a case, establishing prudent bank regulation and supervision may be difficult. This argument contradicts with the positive effect of bank regulation and supervision on inflation, rendering the investigation of two ways causality between inflation and regulation and supervision rather difficult.

In this paper, we examine the direct effects of regulation and supervision on inflation. However, we do not investigate the effects of inflation on bank regulation and supervision in this paper, as the sign of that relationship is indefinite. In a further study, we plan to extend this study by examining the relationship between bank regulation and supervision and budget deficits.

In the remainder of this chapter, we investigate the claim that, although effective banking regulation and supervision is neither a necessary nor a sufficient condition for low inflation, other things being equal, ineffective banking regulation and supervision contributes to higher inflation. This study draws mainly on the

studies of Cukierman, Webb, Neyapti (1992) and Cukierman, Miller, Neyapti (CMN, 1999), which both analyse the role of institutions on inflation determination. The study of de Melo, Denizer and Gelb (1996) suggests that inflation is negatively related to the degree of liberalization of the economy. CMN show that controlling for the level of market liberalization, the lack of central bank independence contributes to higher inflation. In this paper, controlling for both degree of liberalization and legal central bank independence we estimate the effects of the quality of banking regulation and supervision (RS) on inflation. Hence, we analyse whether the measure of RS improves the relationships derived in the afore mentioned studies or not.

4.1 Inflation, Banking Regulation and Supervision, Central Bank Independence and Cumulative Degree of Liberalization - a first look

To observe the relationships of banking regulation and supervision; degree of liberalization of the economy; and legal central bank independence with inflation we first provide indexes for each of these institutional variables for transition economies. The indexes are reported in Table 3. The first column of Table 3 provides the index of banking regulation and supervision, the derivation of which we explain explicitly in Chapter 3.

The second column represents the index of legal central bank independence, LVAW, constructed by Cukierman, Webb and Neyapti (CWN, 1992). This index is based on the coding of sixteen characteristics of central bank (CB) charters, including the allocation of authority over monetary policy, procedures for resolution

Table 3: Variables used in the Regression:
Post Enactment Period Averages

	rs	CLI	LWAV	D
ALBENIA 96, 92	0.376	4.560	0.470	0.205
ARMENIA 93, 93	0.252	1.930	0.290	0.593
ARMENIA 96, 96	0.306	3.370	0.740	0.090
AZERBAIJAN 92, 92	0.252	1.250	0.223	0.705
AZERBAIJAN 96, 96	0.399	2.640	0.252	0.035
BELARUS 92, 92	0.243	1.790	0.730	0.657
BULGARIA 92, 91	0.375	3.805	0.500	0.490
CROATIA 93, 92	0.380	4.830	0.440	0.180
CROATIA 96, 92	0.382	6.530	0.440	0.040
CZECK 92, 91	0.306	5.965	0.690	0.085
CZECH 94, 91	0.349	1.840	0.690	0.130
GEOGIA 96, 95	0.410	3.260	0.736	0.055
HUNGARY 94, 91	0.536	6.375	0.670	0.173
KAZAKHISTAN 93,	0.257	1.310	0.320	0.795
KAZAKHISTAN 95,	0.307	3.390	0.440	0.167
KRGYZSTAN 91, 92	0.275	3.060	0.520	0.413
LITHUANIA 92,91	0.301	2.720	0.275	0.522
LITHUANIA 92, 96	0.301	5.390	0.778	0.065
MACEDONIA 94, 95	0.341	6.340	0.410	0.017
MOLDOVA 91, 91	0.190	1.345	0.383	0.705
MOLDOVA 91, 95	0.190	3.800	0.730	0.123
MONGOLIA 91, 91	0.194	2.270	0.429	0.590
POLAND 89, 91	0.271	5.030	0.460	0.204
SLOVAK 92, 92	0.306	4.760	0.620	0.095
TAJIKISTAN 94, 93	0.208	1.985	0.360	0.610
UZBEKISTAN 91, 91	0.235	1.690	0.410	0.631
Mean of the series	0.306	3.509	0.500	0.322
Median of the series	0.304	3.315	0.450	0.631

Note: Years next to countries indicate the enactment years of banking laws and central bank laws, respectively.

of conflicts between the CB and government, the relative importance of price

stability among the CB objectives as stated in the law, the seriousness of limitations

on lending by the CB to the government, and the procedures for the appointment and

dismissal of the governor of the CB.

The third column represents the cumulative liberalization index, CLI,

developed by de Melo, Denizer and Gelb (1996). We use CLI in the same way and

by the same reasons with CMN. Therefore, we report the properties of CLI from

CMN.

> The cumulative degree of liberalization in a given year is defined as a simple
> sum of the degrees of liberalization (LI) up to and including the current year.
> The yearly liberalization index, in turn, is a weighted average (with weights
> 0.3, 0.3 and 0.4) of the degree of liberalization in the following areas: internal
> markets (I), external markets (E) and the private sector entry (P). The
> rationale for using a cumulative, rather than a yearly, index of liberalization is
> that, at any given time, economic performance is affected by the degree of
> liberalization at that time, as well as by the length of time that particular
> reforms have been in effect.

The fourth column is the inflation rate. However, instead of taking inflation

directly, we transform it into the rate of depreciation in the real value of money (D)

in order to reduce heteroskedasticity of the error term and thus improve the

efficiency of the estimate, following the method of CWN. D is defined as:

$$D = \pi / (1 + \pi)$$

where π is the average inflation rate. D is naturally bounded between zero and one.

We prefer this measure because of the following two advantages over the rate of

inflation. First, it diminishes the influence of outliers. This is an important

consideration due to the wide variations in the inflation rate in the sample countries.

Using the straight inflation rate would give undue weight to the outlier observations

like the three digit inflation rates, common to transition economies in the early

1990's. Second, D is a more meaningful measure of the impact of inflation on individuals than the rate of inflation. This consideration is not important at low rates of inflation since at low rates the divergence between two measures is negligible. But at high rates, of the kind that has been experienced by a good number of countries in our sample, the divergence become clear.

4.2. Selection of Time Coverage

For our study, we use the indexes for the post enactment periods of both the banking laws and central banks laws. The reason for this treatment is to give equal importance to both of these laws. Our sample consists of nineteen transition countries, for which we have data. Table 3 reports two years next to each country where the first year represents the enactment year of the banking law and the second year represents the enactment year of the central bank law. When a country holds two rows, it may be either due to the enactment of two banking laws, or two central bank laws, in that case, the first raw stands for the first enactment of the law that was later revised in that country and the second raw for the second enactment year of that law, which may either be the banking law or the central bank law. This leads to a total of twenty-six observations since seven of the nineteen countries have revised either their banking laws or central bank laws.

The following explains the definition of time periods over which the variables are considered. If a country has only one banking law and one central bank law, and if their enactment years are the same, then CLI and D take the average values in the

post enactment year, which ends in 1998. In case, the enactment years for banking law and central bank law are different, then CLI and D take the average values in the post enactment year of either central bank law or banking law depending on which has the latest enactment year. If there are two laws for either banking law or central bank law, we take the first law's post enactment period, as in the case there is one law, but ending with the enactment year of the second law, to evaluate the averages of CLI and D. For the second law, taking the other type of law being the same (either the banking or central bank laws), the post enactment period ends at 1998 and the average values of CLI and D are calculated for this period. These criteria explain why for some countries in Table 3 there are two rows with different years attached.

Before we examine the relation between the variables LVAW, RS, CLI and inflation more systematically, we analyse Table 3 to observe the general characteristics of the variables and the relations among them. In the bottom of the table, we provide the mean and the median of the series. By taking these parameters as a starting point, we examine the series as follows. In the first three series, RS, CLI and LVAW, we hypothesise that if the observations are below the median or the mean (or a number around the median), then inflation should also be below its median or mean, respectively. We see that this rule generally holds, and that is there is a negative relationship between inflation and RS, CLI and LVAW. There are, however, some outliers. In some of the countries, the institutional variables do not follow the same trend. When two of them are below their median, for example, the other one is above its median. However, these outliers do not disturb our general inference. In some of these countries, one of the first three variables is much higher or lower than the average, so that it compensates the opposite effect of the other

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variable. On the other hand, in Bulgaria, although all the first three variables are above their median, there is still higher inflation than average. We do not view this case as an unexpected one, however, because we do not hypothesise that these variables are the necessary and sufficient conditions for lower inflation, or that they explain inflation completely. There are many other structural characteristics that may cause high inflation in a country. Thus, Bulgaria may have other structural problems that cause high inflation. Also, we should remind once more that the indexes only account for the legal characteristics, and not the actual performances.

We thus obtain a pooled cross section - time series sample with, at most 2 periods for each country, as reported in Table 3. We are now in a position to make a regression analysis by using this data.

4.3 Regression Analysis

Previous studies, by Cukierman, Webb, Neyapti (1992), Denizer, Melo and Gelb (1996), and Cukierman, Miller, Neyapti (1998) analyse the relationships between inflation and LVAW and CLI in their regressions. The results support the negative relation of inflation with central bank independence and liberalization. In this study, we examine systematically the relation between banking regulation and supervision and inflation and we hypothesise that banking regulation and supervision further improves these relations.

To test our hypothesis, we first regress inflation over RS (Table 4, case I). The coefficient of RS appears to be significantly negative. Secondly, we regress inflation on LVAW. We observe that our results are similar to the previous studies that use different samples (Table 4, case II); the coefficient of LVAW is statistically significant at 1 % level of confidence. To examine if the quality of banking regulation and supervision (RS) has further explanatory power for inflation, we regress inflation on both LVAW and RS (Table 4, case III). The results show that including RS to our regressions is an improvement; the adjusted R-square is higher than in case II, as it increases from 0.22 to 0.46. In case IV of Table 4, we include CLI instead of RS to our regressions and we observe that it is also an improvement over the case II of Table 4. Adjusted R-square becomes 0.58. Finally, we regress inflation on all the three variables, RS, CLI, LVAW, together (Table 4, case V). We observe the highest adjusted R-square, 0.61, in this case. Although in all the regressions the coefficients of the variables are statistically significant, in case V we observe that the t-statistics for all of them decrease. The possible reason for this is the high correlation between CLI and RS (56%). Table 5 shows the correlations among RS, CLI and LVAW. In a larger sample, we expect to dissolve this issue of high correlation, since transition economies have adopted laws that show great similarities. However, these correlations do not weaken our results.

From Table 4, we conclude that the quality of banking regulation and supervision, central bank independence and liberalization are all negatively related to inflation. Given the level of central bank independence and liberalization, including the measure of the quality of bank regulation and supervision (RS) explains inflation better.

TABLE 4. Estimation of the Transformed Inflation Rate (D) Using RS, CLI and LVAW

Explanatory Variable	I	II	III	IV	V
c	0,91***	0,71***	1,14***	0,87***	1,04***
	(5.35)	(4.95)	(6.52)	(7.91)	(6.98)
lvaw		-0,77***	-0,61**	-0,39*	-0,39*
		(-2.85)	(-2.66)	(-1.80)	(-1.90)
rs	-1,92***		-1,66***		-0,81*
	(-3.57)		(-3.38)		(-1.65)
cli				-0,10***	-0,08***
				(-4.69)	(-3.21)
adjusted R²	0.32	0.22	0.46	0.58	0.61

Notes: 1. The t-statistics are reported in parenthesis under estimated coefficients.
  2. * indicates significance at the 10 percent level, ** at the 5 percent level, and *** at the 1 percent level

Table 5: Correlation Matrix

	RS	CLI	LVAW
RS	1.00	0.56	0.20
CLI		1.00	0.38
LVAW			1.00

Another point that we should mention about these regressions is that we do not use war dummy. In the previous studies, war dummy is used. Since in a war situation, expenditures increase, which is a case of causing inflation. However, in our sample, when we regress inflation on war dummy, it becomes statistically insignificant. So, we do not include war dummy in our regressions.

After we examine the relations between RS, LVAW, CLI and inflation and find empirical support for our hypothesis, we further investigate their relationship with inflation, by allowing for interactions among these indices. To do that we form dummies for both RS and CLI: dRS and dCLI. dRS picks up those values that are above its mean value (3.1), whereas dCLI picks up those values of CLI that are above $2^{(3,4)}$. The regressions are reported in Table 6. In case I, we regress inflation over LVAW, as in Table 4, case II. Then, we run the regression including an interaction term between the indices of regulation and supervision and central bank independence (Table 6, Case II). We observe that, with respect to case I, this specification leads to an improvement in terms of the adjusted R-square; adjusted R-square increases from 0.22 to 0.45. Next, we regress inflation on CBI, and CBI in interaction with dCLI (Table 6, case III). Again, we observe an improvement in the adjusted R-square with respect to case I of Table 6; it increases from 0.22 to 0.50. When we examine the relation of inflation with central bank independence; with high level of liberalization, in interaction with central bank independence (LVAW*dCLI); and with a high level of banking regulation and supervision in interaction with central bank independence (LVAW*dRS), the coefficients become statistically more significant than case IV in Table 4. Also, adjusted R-square of it, 0.62, is greater than case I, case II, and case III of Table 6.

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[3] The break point value of 2 for dCLI is chosen following CMN(1999). On the other hand, estimations with the break point value of 2.5 also performed; the results are similar.

[4] The variables are more specifically defined in the following way:

  dRS = 1 if RS > 3.1
  dRS = 0 otherwise
and
  dCLI = 1 if CLI > 2
  dCLI = 0 otherwise

We can interpret this result as follows. When there is a high degree of liberalization; effective regulation and supervision; as well as central bank independence, inflation is lower. The previous studies show the negative relation of inflation with central bank independence and liberalization. The results we derive here improves those findings, by showing that although there is a negative relation with these variables, effective regulation and supervision make these relationships even more significant. Hence, we conclude that for lower inflation, an independent central bank is not enough. Rather, besides central bank independence and liberalization, there also should be an effectively regulated and supervised banking system.

TABLE 6: The Transformed Inflation Rate (D) and the Interactions of RS, CLI and LVAW

Explanatory Variable	I	II	III	IV
c	0,71***	0,64***	0,62***	0,59***
	(4.95)	(5.28)	(5.28)	(5.69)
lvaw	-0,77***	-0.37	-0.12	0.05
	(-2.85)	(-1.42)	(-0.44)	(0.18)
lvaw*drs		-0,50***		-0,37***
		(-3.35)		(-2.83)
lvaw*dcli			-0,64***	-0,51***
			(-3.79)	(-3.28)
adj-r2	0.22	0.45	0.50	0.62

Notes: 1. t-statistics are reported in parenthesis under estimated coefficients.
2. * indicates significance at the 10 percent level, ** at the 5 percent level, and *** at the 1 percent level

CHAPTER 5

CONCLUSION

This paper develops a criteria list to evaluate banking laws in order to measure the quality of banking regulation and supervision. To create the criteria list, we utilise the Basle Core Principles, the existing theory about regulation and supervision and the banking laws. In the criteria list, we express the principles of banking regulation and supervision in 8 major headings: i. capital requirements; ii. lending; iii. ownership structure; iv. directors and managers; v. reporting and recording; vi. corrective action; vii. regulatory agency and viii. supervisory agency. The criteria list we design here concern specifically the transition economies. We expect that, when we include developing and developed countries in our study, the criteria list will be enhanced and modified.

Using this criteria list, we next derive an index for the quality of regulation and supervision (RS) for transition economies. The RS index measures the quality of banking regulation and supervision as can be read from the banking laws, and not from the actual implementations. When countries have two different laws with different enactment years, they are both included in the data, thus providing a limited time series dimension for the study. Observing the index numbers, we can state that the transition economies generally do not have effective banking regulation and supervision. Moreover, the weakest area in the banking laws is the credit granting process. In other words, the credit risk is not controlled effectively in transition economies although the credit risk is the major risk a bank undertakes.

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Our empirical analysis involves estimating the effects on inflation of the level of liberalization, legal central bank independence and the quality of bank regulation and supervision. The findings support our hypothesis that inflation is negatively related to the quality of bank regulation and supervision (RS), besides the degree of liberalization (CLI), and the legal central bank independence (LVAW). The case of Bulgaria, however, is an exception. The first result we derive by these observations is that effective regulation and supervision with high levels of liberalization and legal central bank independence implies low levels of inflation.

Our results improve the results of Cukierman, Miller and Neyapti (1998) who find that legal central bank independence and the degree of liberalization negatively affect inflation. The parameter RS improves the negative relationship between inflation and legal central bank independence and liberalization. We can, then, conclude that effective banking regulation and supervision, along with a high level of legal central bank independence and liberalization, has a significant role for price stability.

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LIST OF CRITERIA FOR MEASURING THE QUALITY OF BANK

REGULATION AND SUPERVISION

A. Capital Requirements

1. Minimum capital at licensing

a. Minimum capital
  (1) nominal amount
  (2) determined by supervisor
  (3) no comment

2. Capital adequacy

a. Maximum risky assets of a bank should be
  (1) 5 % of liable capital
  (2) 10% of liable capital
  (3) over 10 % of liable capital not mentioned

b. Is liable capital explicitly defined?
  (1) yes
  (2) no

c. Is there any extra capital required to cover losses?
  (1) yes
  (2) no

3.Major acquisitions and investments

a. Maximum aggregate amount of investment
  (1) 20 % of its own funds
  (2) 40 % of its own funds
  (3) 60 % of its own funds
  (4) 80 % of its own funds
  (5) no restriction

b. Instead of repayment of a loan, a juridical person's capital may be owned for
  (1) more than 3 years
  (2) 2 years
  (3) 1 year
  (4) no comment

c. Maximum amount of capital of any juridical person a bank may participate is
   (1) 5 % of its own funds
   (2) 10% of its own funds
   (3) 20% of its own funds
   (4) no comment

d. Maximum aggregate amount of investment on juridical persons
   (1) 20 % of liable capital
   (2) 40 % of liable capital
   (3) 60 % of liable capital
   (4) 80 % of liable capital
   (5) no comment or higher

B. Lending

1. Lending to Private Sector

a. May supervisors prohibit emergency loans?
   (1) yes
   (2) no

b. Maximum total amount of certain positions of a bank involving price risks at close of business any day
   (1) 25 % of liable capital
   (2) 50 % of liable capital
   (3) more than 50 % of liable capital or not mentioned

c. Is there a defined system to evaluate the creditworthiness of borrowers?
   (1) yes
   (2) no

d. May a bank investigate balance sheet of the borrower to evaluate the financial standing?
   (1) yes
   (2) no

e. Maximum risk for one borrower
   (1) 10 % of liable capital
   (2) 20 % of liable capital
   (3) 30 % of liable capital
   (4) over 30 % or not mentioned

f. Maximum aggregate credit for one borrower
   (1) 25 % of capital
   (2) 50 % of capital
   (3) 75 % of liable capital
   (4) over 75 % or not mentioned

g. Maximum risk for one related party
   (1) 10 % of liable capital
   (2) 20 % of liable capital
   (3) 30 % of liable capital
   (4) over 30 % or not mentioned

h. Maximum aggregate credit for one related party
   (1) 25 % of capital
   (2) 50 % of capital
   (3) 75 % of liable capital
   (4) over 75 % or not mentioned

i. Maximum aggregate credit that may be given to borrowers
   (1) 10 times capital
   (2) 20 times capital
   (3) 30 times capital
   (4) over 30 times of capital or not mentioned

j. Maximum aggregate credit that may be given to related parties
   (1) 1 times capital
   (2) 2 times capital
   (3) 3 times capital
   (4) over 3 times capital or not mentioned

k. Maximum aggregate credit that may be given to 10 big borrowers
   (1) 5 times capital
   (2) 10 times capital
   (3) 15 times capital
   (4) over 15 times of capital or not mentioned

l. Maximum aggregate credits to employers
   (1) 10 % of bank capital
   (2) 20 % of liable capital
   (3) 30 % of liable capital
   (4) over 3 % of liable capital or not mentioned

m. Maximum aggregate credit to managers
   (1) 10 % of bank capital
   (2) 20 % of liable capital
   (3) 30 % of liable capital
   (4) over 30 % of liable capital or not mentioned

n. Maximum risk that should be reported
   (1) 10 % of liable capital
   (2) 20 % of liable capital
   (3) 30 % of liable capital
   (4) over 30 % or not mentioned

o. Rules for calculating guarantees for loans
  (1) given
  (2) not given

p. Do credit to shareholders allowed?
  (1) no
  (2) yes

2. Lending to the Government

a. May banks carry out operations with budget funds on the basis of concluded contracts, carry out money transfers with the organs of executive power and municipal organs, provide for aimful use of budget funds allocated for the purpose of carrying out state and regional programs?
  (1) yes
  (2) no

b. Extending credit to government and local government to finance budget deficits allowed or not?
  (1) yes
  (2) no

C. Ownership structure

1.Restrictions on shareholders

a. Financial standing for shareholders wanted for
  (1) over 5 years
  (2) greater or equal to 3 years less than 5 years
  (3) greater or equal to 1 year less than 3 years
  (4) no comment

b. Financial standing of shareholders asked owning
  (1) over 1% of total shares
  (2) over 5% of total shares
  (3) over 10% of total shares
  (4) no comment

c. Maximum share one may own
  (1) 10 % of total shares
  (2) 25 % of total shares
  (3) 50 % of total shares
  (4) 75 % of total shares
  (5) more than 75 % of total shares or not mentioned

d. Source of the capital
  (1) should be proved
  (2) no comment

e. Who are restricted from being shareholders?
(1) political parties and social funds and media
(2) either 1 or 2 of (1)
(3) not restricted

f. Does the law prohibit selection of shareholders that are associated bank failures as a director or manager or a shareholder in the past?
(1) yes
(2) no

2. Transfer of shareholders

a. When how much shares transferred supervisor should be notified?
(1) less than 5 %
(2) greater or equal to 5 % less than 10 %
(3) greater or equal to 10 % less than 25 %
(4) greater or equal to 25 % less than 50 %
(5) over 50 % or No comment

b. When a shareholder die may supervisor prohibit business?
(1) yes
(2) no

c. While increasing or decreasing shares when how much capital reached it should be reported?
(1) less than 10 %
(2) greater or equal to 10 % less than 25 %
(3) greater or equal to 25 % less than 50 %
(4) greater or equal to 50 % less than 75 %
(5) no comment

D. Directors and Managers

a. Is there a rule of dual control[5]?
(1) Yes
(2) No

b. How much experience needed for top managers?
(1) More than 5 years
(2) greater or equal to 3 years less than 5 years
(3) greater or equal to 1 year less than 3 years
(4) no clause

c. History of top managers asked for
(1) more than 10 years
(2) greater or equal to 5 years less than 10 years
(3) greater or equal to 1 year less than 5 years
(4) no clause

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[5] Decisions should be taken by at least two managers.

d. How much experience needed for other managers?
(1) more than 5 years
(2) greater or equal to 3 years less than 5 years
(3) greater or equal to 1 year less than 3 years
(4) no clause

e. History of other managers asked for
(1) more than 10 years
(2) greater or equal to 5 years less than 10 years
(3) greater or equal to 1 year less than 5 years
(4) no clause

f. Does the law prohibit selection of directors or managers who are associated bank failures as a director or manager in the past?
(1) yes
(2) no

E. Reporting / Recording

1. Operating Plan Systems of Control and Internal Organisation

a. Are qualifications about independent auditors asked in law?
(1) yes
(2) no

b. Is information about systems of control and internal organisations spelled out in law?
(1) yes
(2) no

c. Does information about qualifications of managers of the board required in the law?
(1) yes
(2) no

d. Are the duties of the managers of the board defined explicitly?
(1) yes
(2) no

2. Financial Projection

a. Projected balance sheet for
(1) over 3 years
(2) 2 years
(3) 1 year
(4) no comment

3. Cross Border Banking

a. Is approval from home country required when the proposed owner a foreign bank?
   (1) yes
   (2) no

4. On-site supervision

a. Do on-site checks exist?
   (1) yes
   (2) no

b. Who does on-site checks?
   (1) supervisor's employees
   (2) auditors
   (3) other or not mentioned

c. Frequency of audits
   (1) monthly or more often
   (2) quarterly
   (3) yearly
   (4) not mentioned

d. Is there a detailed scope for auditing report?
   (1) yes
   (2) no

e. Do auditors inform supervisors about irregularities and deficiencies?
   (1) yes
   (2) no

f. Does background of auditors indicated?
   (1) yes
   (2) no

g. Do the auditing reports obey the accounting standards set by the reports?
   (1) yes
   (2) no

5. Coverage of Reporting and Recording

a. Is there a requirement for reporting annual balance sheets?
   (1) yes
   (2) no

b. Frequency of bank reports
   (1) monthly
   (2) quarterly
   (3) semiannually
   (4) annually
   (5) not mentioned

c. Is there any report on liquidity creditworthiness and profitability of the bank?
   (1) yes
   (2) no

d. Does the bank notify the supervisor when there is a change in the charter?
   (1) yes
   (2) no

e. Is there a detailed scope for supervision reports?
   (1) yes
   (2) no

F. Corrective Action

a. Are the cases causing conservatorship defined clearly?
   (1) yes
   (2) no

b. Are the cases causing liquidation trustee defined clearly?
   (1) yes
   (2) no

c. Central Bank provides credit
   (1) under very restrictive conditions
   (2) under looser conditions
   (3) no restrictions

d. Limit of loss causing licence back
   (1) less than 1/3 of liable capital
   (2) greater or equal to 1/3 of liable capital less than 2/3 of liable capital
   (3) greater or equal to 2/3 of liable capital

G. Regulation

a. Who does the regulation?
   (1) council of bank, central bank and an independent authority
   (2) independent authority
   (3) independent authority and central bank
   (4) central bank
   (5) government and central bank
   (6) government

H. Supervision

a. Who does the supervision?
   (1) council of bank, central bank and an independent authority
   (2) independent authority
   (3) independent authority and central bank
   (4) central bank
   (5) government and central bank
   (6) government

APPENDIX B. Disaggregated Variables of the Quality of Banking Regulation and Supervision
(See Appendix A for the description of the variables)

COUNTRIES	A1A	A2A	A2B	A2C	A3A	A3B	A3D	B1A	B1B	B1C	B1D	B1E
ALBENIA 96	0.5	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.0
ARMENIA 93	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ARMENIA 96	0.5	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0
AZERBAIJAN 92	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AZERBAIJAN 96	0.5	0.0	0.0	0.0	0.0	0.7	0.8	0.0	0.0	0.0	0.0	0.0
BELARUS 92	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BULGARIA 92	0.5	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0
CROATIA 93	1.0	0.0	0.0	1.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CROATIA 96	1.0	0.0	0.0	1.0	0.8	0.0	0.0	0.0	0.0	0.0	1.0	0.0
CZECH 92	0.5	0.0	0.0	0.0	0.8	0.7	0.3	0.0	0.0	0.0	0.0	0.0
CZECH 94	1.0	0.0	0.0	0.0	0.8	0.7	0.3	0.0	0.0	0.0	0.0	0.0
GEORGIA 96	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
HUNGARY 94	1.0	0.0	0.0	1.0	0.0	1.0	0.5	1.0	0.0	0.0	1.0	0.0
KAZAKHISTAN 9	0.5	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
KAZAKHISTAN 9	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
KRGYZSTAN 91	0.5	0.0	0.0	0.0	0.0	0.0	0.5	1.0	0.0	0.0	0.0	0.0
LITHUANIA 92	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MACEDONIA 94	1.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0
MOLDOVA 91	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MONGOLIA 91	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
POLAND 89	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SLOVAK 92	0.5	0.0	0.0	0.0	0.8	0.7	0.3	0.0	0.0	0.0	0.0	0.0
TAJIKISTAN94	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
UZBEKISTAN91	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(Table continues on the following page.)

COUNTRIES	B1F	B1G	B1H	B1I	B1J	B1K	B1L	B1M	B1N	B1O	B1P	B2A	B2B
ALBENIA 96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.5
ARMENIA 93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ARMENIA 96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AZERBAIJAN 92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
AZERBAIJAN 96	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.5
BELARUS 92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
BULGARIA 92	0.0	0.3	0.0	0.0	1.0	0.0	0.8	0.7	0.8	0.0	1.0	0.0	0.0
CROATIA 93	0.0	0.0	0.7	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.5
CROATIA 96	0.0	0.0	0.7	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.5
CZECH 92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0
CZECH 94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0
GEORGIA 96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
HUNGARY 94	0.0	0.0	1.0	0.0	0.0	0.0	0.3	0.7	0.5	0.0	0.0	0.0	0.0
KAZAKHISTAN 93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KAZAKHISTAN 95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KRGYZSTAN 91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LITHUANIA 92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
MACEDONIA 94	0.0	0.0	0.7	0.0	0.0	0.0	0.0	1.0	0.5	0.0	0.0	0.0	0.0
MOLDOVA 91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MONGOLIA 91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
POLAND 89	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.7	0.5	0.0	0.0	0.0	0.0
SLOVAK 92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0
TAJIKISTAN 94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
UZBEKISTAN 91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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Appendix B. (Cont'd),

COUNTRIES	C1A	C1B	C1C	C1D	C1E	C1F	C2A	C2B	C2C	D1A	D1B	D1C	D1D	D1E	D1F
ALBENIA 96	1.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	1.0
ARMENIA 93	0.0	0.0	0.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ARMENIA 96	0.0	0.0	0.0	0.0	0.5	1.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
AZERBAIJAN 92	0.0	1.0	0.8	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	1.0
AZERBAIJAN 96	0.3	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0
BELARUS 92	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
BULGARIA 92	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	1.0
CROATIA 93	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.8	1.0	0.7	0.0	0.0	0.0	0.0
CROATIA 96	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.8	1.0	0.0	0.0	0.0	0.0	0.0
CZECH 92	0.3	0.0	0.0	1.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CZECH 94	0.3	0.0	0.0	1.0	0.0	0.0	0.3	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0
GEORGIA 96	0.0	0.7	0.8	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
HUNGARY 94	1.0	0.7	0.5	0.0	0.0	1.0	0.0	0.0	0.8	1.0	1.0	0.0	0.0	0.0	1.0
KAZAKHISTAN 93	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
KAZAKHISTAN 95	0.3	1.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.3	0.0	1.0
KRGYZSTAN 91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LITHUANIA 92	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0
MACEDONIA 94	0.0	0.0	0.8	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MOLDOVA 91	0.0	1.0	0.5	-2.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MONGOLIA 91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
POLAND 89	0.0	0.0	0.5	0.0	0.0	0.0	0.7	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0
SLOVAK 92	0.3	0.0	0.0	1.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAJIKISTAN 94	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
UZBEKISTAN 91	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(Table continues on the following page.)

Appendix B. (Cont'd),

COUNTRIES	E1A	E1B	E1C	E1D	E2A	E3A	E4A	E4B	E4C	E4D	E4E	E4F	E4G
ALBENIA 96	0.0	1.0	0.0	1.0	1.0	0.0	0.3	1.0	1.0	0.0	1.0	1.0	1.0
ARMENIA 93	0.0	0.0	0.0	0.0	0.0	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
ARMENIA 96	0.0	1.0	1.0	0.0	0.7	1.0	0.3	1.0	0.0	0.0	1.0	1.0	0.0
AZERBAIJAN 92	0.0	0.0	0.0	0.0	0.0	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
AZERBAIJAN 96	0.0	1.0	0.0	1.0	0.0	0.0	0.3	1.0	0.0	0.0	0.0	0.0	1.0
BELARUS 92	0.0	0.0	0.0	0.0	0.3	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
BULGARIA 92	0.0	0.0	0.0	0.0	0.0	1.0	0.3	0.0	1.0	0.0	1.0	1.0	0.0
CROATIA 93	0.0	1.0	1.0	0.0	0.7	1.0	0.3	1.0	1.0	0.0	0.0	0.0	0.0
CROATIA 96	0.0	1.0	1.0	0.0	0.7	1.0	0.3	1.0	1.0	0.0	0.0	0.0	0.0
CZECH 92	0.0	1.0	0.0	0.0	0.0	1.0	0.3	0.0	1.0	0.0	0.0	0.0	0.0
CZECH 94	0.0	1.0	0.0	0.0	1.0	1.0	0.3	0.0	1.0	0.0	0.0	0.0	0.0
GEORGIA 96	1.0	1.0	1.0	1.0	0.0	1.0	0.8	1.0	1.0	0.0	1.0	1.0	1.0
HUNGARY 94	0.0	1.0	0.0	0.0	0.0	1.0	0.3	1.0	1.0	1.0	1.0	1.0	1.0
KAZAKHISTAN 93	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0
KAZAKHISTAN 95	0.0	1.0	0.0	0.0	0.0	1.0	0.3	0.0	0.0	1.0	1.0	1.0	0.0
KRGYZSTAN 91	0.0	0.0	0.0	0.0	0.0	1.0	0.3	0.0	0.0	0.0	1.0	1.0	0.0
LITHUANIA 92	0.0	1.0	0.0	1.0	0.0	1.0	0.3	0.0	0.0	1.0	0.0	0.0	0.0
MACEDONIA 94	0.0	1.0	0.0	1.0	0.0	0.0	0.3	1.0	1.0	0.0	0.0	0.0	0.0
MOLDOVA 91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MONGOLIA 91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0
POLAND 89	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SLOVAK 92	0.0	1.0	0.0	0.0	0.0	1.0	0.3	0.0	1.0	0.0	0.0	0.0	0.0
TAJIKISTAN 94	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
UZBEKISTAN 91	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0

(Table continues on the following page.)

COUNTRIES	E5A	E5B	E5C	E5D	E5E	F1A	F1B	F1C	F1D	G1A	H1A
ALBENIA 96	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	0.8	0.5
ARMENIA 93	1.0	0.4	1.0	0.0	0.0	0.0	0.0	0.5	0.0	0.8	0.5
ARMENIA 96	1.0	0.6	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.8	0.5
AZERBAIJAN 92	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.5
AZERBAIJAN 96	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.5	0.0	0.8	0.5
BELARUS 92	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.5
BULGARIA 92	1.0	0.8	1.0	0.0	0.0	0.0	1.0	0.5	0.0	0.8	0.5
CROATIA 93	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.5
CROATIA 96	1.0	0.6	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.5
CZECH 92	1.0	0.0	1.0	0.0	0.0	0.0	1.0	0.5	0.5	0.5	0.5
CZECH 94	1.0	0.0	1.0	0.0	0.0	0.0	1.0	0.5	0.5	0.5	0.5
GEORGIA 96	1.0	0.2	1.0	0.0	0.0	1.0	1.0	0.0	0.0	0.8	0.5
HUNGARY 94	1.0	0.6	1.0	1.0	1.0	0.0	1.0	0.0	0.0	0.8	1.0
KAZAKHISTAN 9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.5
KAZAKHISTAN 9	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.5
KRGYZSTAN 91	1.0	0.2	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.8	0.5
LITHUANIA 92	1.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.8	0.5
MACEDONIA 94	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	0.8	0.5
MOLDOVA 91	1.0	0.6	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.5
MONGOLIA 91	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5
POLAND 89	1.0	0.8	1.0	0.0	0.0	0.0	1.0	0.0	0.5	0.5	0.5
SLOVAK 92	1.0	0.0	1.0	0.0	0.0	0.0	1.0	0.5	0.5	0.5	0.5
TAJIKISTAN 94	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.5
UZBEKISTAN 91	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.5

Notes: **1.** Accompanying the country names are the years in which the banking laws are enacted. As can be seen in the table, five of the nineteen countries in the sample have enacted two banking laws.

2. The variables A1 to H1 are enumarated based on the seventy-two criteria which are reported in Appendix A.

3. All variables are normalised between 0 and 1, such that when a variable takes the value of 1, it indicates the largest degree of quality of bank regulation and supervision, with respect to the particular aspect of the banking law that variable intends to measure.

4. All data are obtained from the banking laws.