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ABSTRACT

This paper provides a foundation for evaluating recent changes in regulatory design in light of the increasingly competitive and dynamic environment of banking. Intrusive, control-oriented direct and indirect approaches to regulation have become very costly. Regulation that focuses on setting minimum requirements will become dominant. Supervision would then primarily aim at verifying compliance. We argue that the viability of this approach requires a well-developed financial system and adequate internal control systems, primarily to align incentives within institutions.

Keywords: systemic risk; contagion; interbank markets

JEL Codes: E58, G21

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1 INTRODUCTION

The future of regulation of the financial services industry is certainly an important topic in the current policy debate. To date, the concern about the safety and soundness of the financial system has led to intrusive regulatory interference. However, developments in information technology, the proliferation of financial markets, the blurring distinction between banking and non-banking financial institutions and the continuous barrage of new product innovations have put banking in a state of perpetual flux. This more competitive and dynamic environment may not be compatible with traditional regulatory structures, including deposit insurance, limits on permissible activities and controls such as intrusive capital and liquidity reserve requirements. The key question is how to adapt the regulatory framework to the increasingly competitive environment of banking.

Traditionally, bankers and regulators worked in concert to safeguard the financial services sector, thereby maintaining the stability of the financial system. To this end, *direct* and *indirect* approaches to regulation can be distinguished. Direct regulation seeks to reduce discretion on the part of banks (and regulators) by explicitly prescribing and dictating the activities banks can engage in. The Glass-Steagall Act in the U.S. (separating commercial from investment banking[1]) and the enforced separation between banking and insurance, as observed in many countries, are examples of this approach. The indirect approach relies primarily on price and non-price incentives that are designed to induce the desired behavior of financial institutions. Risk-based capital requirements would be an example of this approach.[2]

Both direct and indirect forms of regulation are costly, particularly in a more competitive environment where issues of a level playing field and regulatory-arbitrage become of primary concern. In particular, direct regulation seems very costly in a competitive, rapidly changing environment. This regulatory structure runs the risk of being outdated constantly by new developments. The recent wave of expansion of scale and scope in banking underscores the lesser emphasis put on this type of regulation. Indirect regulation has thus gained importance, witness for example the increased emphasis put on further refin-

[1] Recently, new U.S. banking law relaxes these constraints.

[2] It is imporant to note that not all forms of regulation can be classified as either direct or indirect. That is, lump sum capital requirements and different types of certification requirements (as discussed later) may not be part of either direct or indirect regulation.

ing the risk-based capital requirements and other control instruments. But in a competitive environment, these *control* instruments must be delicately and constantly fine-tuned such that they do not cause competitive distortions. Hence, the applicability of the indirect, control-oriented approach to regulation is also strained. As a consequence, the effectiveness of both direct and indirect forms of regulation has suffered.

In this paper, we identify two structural dimensions that are of primary importance for the optimal regulatory design. These dimensions are the competitive environment of banking and the state of development of the financial system. In the context of a well-developed system, we argue that the distortions associated with direct and indirect approaches to regulation induce a shift in regulatory design. In our view, the increasingly competitive and dynamic environment redirects the focus of regulation to setting basic minimum standards, essentially certification requirements. These standards dictate basic requirements that viable financial institutions should meet. As we will argue, these observations are not inconsistent with some of the observed regulatory changes and current proposals for change.

We do *not* take the position that the role of regulators and supervisors would be limited to only setting and verifying compliance with the certification requirements, albeit timely intervention in the case of non-compliance should be *the* primary objective of supervision. While the objective and non-discretionary nature of this type of regulation is a nice feature, there remains scope for some subjective intervention. Additionally, discretionary supervision is needed to monitor the integrity and viability of financial institutions. We will argue that this puts great emphasis on the banking industry itself, where aligning the internal incentives of financial institutions should become a primary concern. Internal supervision and appropriate control systems therefore will gain in importance. This helps explain the emphasis that the Bank of England and BIS have put on internal control systems. Lastly, we believe that the reputation of financial institutions will become increasingly important, which could also mitigate regulatory concerns. However, in our view, this alone will not adequately substitute for the loss in effectiveness of regulation.[3] This puts even greater weight on the importance of aligning internal incentives in the regulatory design.

[3] In this regard, we are not as optimistic as R.W. Ferguson, member of the Board of Governors of the US Federal Reserve System. He supports the idea of having minimum regulation and supervision such that they are consistent with maintaining safety and soundness of the banking system and financial stability. He goes on to argue that the marketplace is the best regulator and it should be looked to for guidance (BIS Review 24/1998).

The suggestions for regulatory design echo observations made by some in the financial services industry. Kupiec and O'Brien (1997) propose a pre-commitment approach to setting capital requirements. Similarly, the Group of Thirty in its report, "Global Institutions, National Supervision and Systemic Risks", proposes voluntary standards. These proposals could be interpreted as self-regulation.[4] Self-regulatory elements are very limited in our approach. Banks need to impose adequate internal control systems to facilitate the transition to certification requirements. The dependence on internal control systems has a self-regulatory flavor to it. However, external regulators should set the certification requirements, monitor compliance as well as engage in timely intervention. This is consistent with recent regulatory developments. For example, the U.S. Federal Deposit Insurance Corporation Improvement Act (FDICIA, 1991) stipulates prompt corrective action provisions for capital deficient banks. This is a move in the direction of the certification requirements that we advocate. Like FDICIA, the European Community's Capital Adequacy Directive also primarily focuses on capital-contingent corrective actions. Certification-based regulation should, however, encompass more than just verifying the level of capital. For example, the bank's internal control systems should be "certified" by stress-testing against pre-specified standards.[5]

The dependence on certification requirements and internal control systems presupposes a well developed financial sector, including clearly specified property rights, well-defined and enforceable legal and regulatory structures, strong disclosure requirements, government integrity and highly skilled human capital. These define the second structural dimension of optimal regulatory design (recall that the first dimension is the competitive environment). As we will argue, underdeveloped financial systems, such as those in the emerging economies in Eastern and Central Europe, are facing very different issues. In many of these countries, the regulatory framework and supervisory mechanisms are in their infancy; trained personnel is lacking, both in the banks and in the regulatory agencies; and the legal framework within which contracts need to be enforced is often unclear and unfinished. Moreover, the uncertain environment, lack

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[4] See also *Euromoney*, September 1997, "Can bankers be their own cops?", pp 125-128. However, observe that in the pre-commitment approach banks face detailed rules and guidelines that limit the degree of effective self-regulation.

[5] In this paper, we ignore complementary suggestions for regulatory reform that seek to limit the scope of regulation by separating (or isolating) particular contagious activities of financial institutions. For example, Flannery (1999) has advocated secure collateral-based payment and settlement systems. Similarly, narrow-bank type resolutions may contain the scope of the safety net provided by deposit insurance and promote market discipline on the non-narrow bank activities (see Boot and Greenbaum (1993)).

of a civil service tradition and severe decline in income that characterizes some regions trigger serious problems of corruption and fraud, problems to which the financial sector by the nature of its business is particularly vulnerable. In these situations, intrusive regulation (both direct and indirect) may be necessary. Once reputable financial institutions are in place, regulation could be transformed along the lines discussed in the context of a well-developed financial sector. These arguments underscore that regulatory design not only depends on the competitive environment, but also on the degree of development of the financial system.[6]

The remainder of our paper is organized as follows. We first focus on regulatory design in developed countries. Section 2 surveys some of the recent changes in the competitive environment of Western banking. Section 3 contains a discussion of issues at stake in the regulation of financial systems, the various approaches to regulation and the effect of competition on the optimal regulatory design. Section 4 describes our recommendations for optimal regulatory design. The issue of regulatory design in transition economies is contained in Section 5. Section 6 concludes.

2 COMPETITIVE ENVIRONMENT OF WESTERN BANKING

Across Western countries there are striking variations in the configurations of financial systems. In some countries, such as the U.S. and U.K., financial markets have been very important for the allocation of resources. In others, such as most Continental European countries, banks have played a more prominent role and financial markets are less developed. In many countries, banks do not hold major equity stakes in industrial companies, while in others, notably Germany, banks are among the largest shareholders. These differences have a long history and could be purely coincidental, but more likely depend on each country's evolution of industrial structure. The varying extent of government involvement could also explain some of these differences. This is particularly true in the U.S. where rigid regulatory structures have fragmented its banking system.

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[6] In a related paper, Llewellyn (1999) makes a similar point. He argues that financial regulation should be based in the context of what he calls the *regulatory regime*. This includes the legal and governance characteristics of the economy in which the banks operate.

The U.S. regulatory structure was (and still largely is) characterized by a government sponsored deposit insurance system, a separation of investment banking and commercial banking, and pervasive entry barriers including limitations on inter- and intra-state branching. This structure dates bank to the 1930's and is contained in the Banking Act of 1933, also known as the Glass-Steagall Act. Complementary legislation sought to reduce competition even further. In particular, regulatory caps on deposit rates, known as Regulation Q were in effect into the 1980's.

The three pillars of the Banking Act of 1933 – federal deposit insurance, restrictions on bank empowerments and entry barriers – guaranteed stability for over forty years. However, recent environmental and competitive changes have disturbed the balance provided by the Glass-Steagall Act. The volatile environment made regulatory caps on deposit interest rates too costly for bank depositors, prompting the diversion of savings to the largely unregulated money-market mutual funds that offered more competitive interest rates. This forced banks to borrow at costlier market interest rates, thereby posing a real threat to the banks' protected franchises. Further, their traditionally best customers increasingly sought access to equity and bond markets, elevating the risk of the banks' remaining clientele. Higher and more volatile funding costs also coaxed the banks into the business of writing off-balance sheet guarantees and trading in a host of financial derivatives. Collectively, these changes elevated the banks' risks in virtually all aspects of their business.

Advances in information technology facilitated the circumvention of regulation and tilted the competitive advantage away from the "opaque" financial institutions, such as deposit takers and insurance companies, towards both more "transparent" intermediaries, such as mutual funds, and direct financing in the capital markets. As a consequence, there has been a proliferation of specialized non-bank financial institutions.

The banks' loss of market share is a manifestation of increased competition on both the asset and liability sides of the balance sheet. Finance companies, like GE Capital in the U.S., have for decades been increasing their share of business and consumer lending. In addition, the commercial paper and bond markets have captured larger pieces of the business credit market. On the liability side, investment companies and their mutual funds have taken an ever-increasing share of the banks' traditional funding. The frequency of bank failures in countries like the U.S., Israel and the Scandinavian countries, provides yet another reflection of rising competitive pressures. Declining credit ratings – in an environment where

ratings have gained importance – similarly illustrate the challenges that traditional banks face.

While oligopolistic practices (including those preserved by the recent consolidation wave) may temporarily hide the competitive deterioration of traditional banking institutions, they will soon face the new realities. The same is true for the regulatory framework. Under the earlier bank-government nexus, public regulation inhibited both the establishment of new banks and the termination of impaired institutions. The latter is still much in evidence in the form of governmental deposit insurance that continues to deter bank failures under the banner of protecting depositors. With the rapidly decreasing costs of computing and communicating, all types of non-bank financial institutions successfully encroach on the banks' traditional markets. Artificial life-support measures and the preservation of inefficient operations are becoming increasingly costly.

With some notable exceptions, such as the Scandinavian countries, other Western European countries were spared the banking turmoil. European banks are better diversified, both geographically and functionally, than their U.S. counterparts. They typically operate nationwide, often have substantial cross-border operations, and engage in both commercial and investment banking activities. In addition, the greater concentration among European banks in their home markets may help protect their rents. Thus, Europe may have not yet faced the unbridled competitive pressures that increasingly characterize U.S. banking. Moreover, the most recent consolidation and despecialization (increasing scope) among European banks – especially in Spain, Scandinavia and The Netherlands – can be seen as a pre-emptive response to the threat of increased foreign competition. As a result, the market share of European banks in their home markets has reached unprecedented levels with the larger institutions absorbing smaller and often more specialized ones.

For example, commercial banks previously focused almost exclusively on corporate clients, while eschewing the retail sector. This allowed smaller savings banks to control considerable market share in mortgages, consumer loans and deposits. But the larger banks have now entered these markets, often by acquiring established retail-oriented institutions. The acquisition strategy deters foreign entry and protects local franchises. Anti-trust concerns are dismissed alluding to the presumed importance of the national identity of banks.[7] Thus, "opaqueness" is growing; something that may not sit well with the

[7] See Boot (1999) for a discussion of the political dimension behind the conglomeration wave.

competitive realities that Europe may soon encounter. This implies that West European banks have not yet faced the entire effects of a more competitive environment and the imminent dissipation of monopoly rents. However, the European Monetary Union, and in particular the introduction of the Euro, have become a catalyst to increased (cross-border) competitive pressures.

The key public policy question is therefore how to design a regulatory structure for the increasingly competitive environment.

3 REGULATORY CONSIDERATIONS

3.1 **The Role of the Financial System: Stability and Competitiveness as Joint Objectives**

The primary function of the financial system is to facilitate the transfer of resources from savers to those who need funds. The objective is to have an efficient allocation and deployment of resources. Efficiency in this context is interpreted broadly and presumes both stability and competitiveness of the financial system. Stability is needed to guarantee the orderly flow, allocation and deployment of resources. It is generally recognized that fragility of the financial system would come with great cost, since disruptions have potentially severe consequences for the economy at large. An efficient financial system should also minimize transaction costs; interpreted broadly as resources that dissipate or evaporate in the process of allocating resources. This generally necessitates a certain degree of competitiveness.

But stability and competitiveness are very likely to be *conflicting* rather than complementary objectives, thus presenting regulators with a difficult trade-off. In the popular view, restrictions on competition would improve banks' profitability, reduce failure rates and hence safeguard stability (Keeley (1990) and more recently Demsetz, Saidenberg and Strahan (1996) make this point). The experience of Western Banks is noteworthy here. Until recently, they operated in a cozy, symbiotic relationship with governmental regulators who restrained competition, supporting the profitability of established institutions. Commercial banks were accorded a centrality among financial intermediaries; they safeguarded public

savings, provided working capital and longer term credit to businesses, managed the payments system, and served as a conduit for monetary policy initiatives of the central bank. In return for a protected status, banks accepted regulatory scrutiny and restrictions that constrained their activities.

The special status of banks has been called into question: record-shattering inflation and interest rates in the 1980's undermined the banks' protected franchises. In particular, these developments spurred the growth of non-banking financial institutions that could largely circumvent existing regulatory constraints (e.g., money market mutual funds bypassing interest-rate controls on deposits). Together with the arguments presented in Section 2, these considerations pose an important challenge: how does one design a sustainable regulatory environment in banking?

3.2 **Deposit Insurance: Rationale and Implications**

The regulatory interference that characterizes banking suggests that banks are considered "special" or different from other firms. Obviously, regulation has made them special. But what is different about their operations that justifies this "special" regulatory treatment?

This question needs to be addressed before we can derive the structure of the optimal regulatory response, if any. A starting point is the observation that banks typically have a very fragmented deposit base; bank debt ("deposits") is typically held by many different agents, none of whom holds a very large fraction of the total debt of the bank. This creates a gap in governance; while equity holders may have sufficient incentive to monitor the managers in good states of nature, they do not have such incentives in the bad states since the benefits of monitoring and imposing governance would mostly accrue to debt holders. With a normal debt structure, the latter fact will be enough of an incentive for debt holders to start monitoring management. However, with a very fragmented deposit base, obvious free-rider problems would prevent the emergence of an active monitoring role played by debt holders. Thus, one should expect bank managers to engage in excessively risky behavior in bad states of nature, as the fragmented nature of the deposit base destroys governance mechanisms in those situations (Dewatripont and Tirole

(1993)).[8]

The special – fragmented – nature of bank debt only highlights a lack of governance. It is widely believed that the potential fragility of banks stems from another feature of bank debt, that is, their vulnerability to runs rooted in the withdrawal-upon-demand and sequential-service-constraint features of the deposit contract. The fear is that excessive withdrawals would force a bank to liquidate assets and thereby incur substantial liquidation costs that undermine the bank's ability to honor its remaining deposits. The excessive withdrawals could be triggered by concern about the bank's well-being. However, the bank's demise could then become a self-fulfilling prophecy: once a depositor thinks that others will withdraw, he will withdraw too. This is optimal given the presence of the sequential service constraint. These arguments explain potential runs on *individual* banks, but of real concern are systemic crises. Chari and Jagannathan (1988) show that a little uncertainty about the nature of a run may trigger a system-wide collapse or a panic. The social cost of bank failures may then be considerable.[9] Bhattacharya, Boot and Thakor (1998) provide a comprehensive overview of the rationales for regulation in the context of the fragility of financial intermediaries.

The potential vulnerability of deposit-funded banks to runs and the banking system's vulnerability to panics are often used as motivation for regulation, and in particular for deposit insurance (Diamond and Dybvig (1983)). It is generally thought that private arrangements are beset with free-rider problems and therefore could not cope with these problems. Most countries have therefore enacted "lender of last resort" and deposit insurance (DI) arrangements which guarantee that banks and certain other credit institutions can meet their commitments to depositors. As long as the insurance system is credible and fully guarantees each depositor's funds, bank runs will not materialize.

But deposit insurance, while safeguarding depositors, widens the gap in governance; depositors no longer have any incentive to monitor the bank. Therefore, it exacerbates the problem of excessive risk taking by bank managers since only the tax payer – the ultimate financier of the DI system – bears the consequences of any increase in downside risk. The existence of DI then necessitates *further* regulation, in particular

[8] Observe that deposits are not traded. This implies that valuable price-information is not available which could amplify the governance problem.

[9] An important consideration is the stability of the payment system. Bank failures may disrupt the payment system which may have great social cost (see Freixas and Rochet (1997)).

on the lending side to contain the risk-taking incentives. These arguments could explain why extensive deposit guarantees – as observed throughout the world – have induced governments to severely regulate the banks' operations.

The moral hazards created by a fixed-rate, risk-insensitive deposit insurance system are widely acknowledged. There also seems to be considerable support for the notion that these incentives have contributed to the financial crises experienced in Western banking. However, this consensus seems at odds with the apparent stability of DI arrangements for most of the 1935-1980 period. Various authors, such as Keeley (1990), argue that the inclination toward risk was restrained for almost half a century by the economic rents earned in banking. In recent decades, however, rents have eroded significantly. This has exposed the latent design flaws of deposit insurance.

On a more fundamental level, we may conclude that a system of deposit insurance distorts the relation between a bank and its providers of funds. In particular, it reduces or undermines market discipline. Depositors knowing that their funds are insured will feel little inclination to monitor their investment by evaluating the banks' activities. While, as we have emphasized, depositors are generally small and may not have a sufficient economic incentive to monitor even in the absence of deposit insurance, it is likely that in a world without deposit insurance, market-rooted solutions would develop to facilitate monitoring. There would also be a real sense of urgency because without these solutions, funding might not be forthcoming. However, the potential for these solutions should not be overstated. Specifically, these "solutions" may severely hamper the transformation and liquidity-provision roles of financial intermediaries. The fact of the matter is that even ignoring the issue of deposit insurance arrangements, banks are often still considered "special" and bank failures socially costly.[10] A bank safety-net may thus be *implicitly* present even in the absence of deposit insurance.

A potential solution is rooted in the banks' incentives to develop a reputation. A sufficient reputation could convince the market that a bank would not exploit problems of unobservability and moral hazard. The bank would then benefit and obtain a lower cost of funds. Once a reputation is established, a bank has a powerful incentive to behave prudently to preserve its reputation. An important observation is that

[10] As we have pointed out (see also Hoenig (1997)), the integrity of the payment system is a key public policy concern. Banks plan an important role in the functioning of the payment system. This could help rationalize regulatory interference.

the banks' reliance on deposit insurance fixes their costs of (insured) funds at the risk-free rate, and also guarantees the availability of those funds. Reputation then no longer benefits the banks' costs or availability of funds, and the banks' incentives to develop reputations would accordingly be diminished (see Boot and Greenbaum (1993)). Their prudential operation would then be compromised (unless Keeley's (1990) monopoly rents are sizable).

The conclusion is that historically, monopolistic benefits provided banks with compelling incentives to follow low-risk strategies, despite the presence of deposit insurance. Market discipline was not necessary, and regulation and supervision were only of secondary importance; rents were the primary defense against moral hazard. With the dissipation of rents, rigid regulatory structures like the Glass Steagall Act in the U.S. were subjected to unique challenges. The viability of the financial system now hinged upon regulation and supervision.

In our view, this analysis is incomplete at best. We believe that reputation-building incentives have simultaneously improved owing to changes in the banking business, partially alleviating the increased pressures on regulatory design. What we have in mind is that the ever-increasing importance of credit ratings in banking suggests that reputation is gaining in importance.[11] The important insight is that more recently, banking has been transformed from a solely "on-the-balance-sheet" business to one that is extensively "off-the-balance-sheet". Guarantees, letters of credit, absorption of counter-party risk, and various other contingent liabilities are becoming increasingly important. A bank's credibility in these activities depends to a large extent on its solidity, and thus reputation. Reputation-building incentives in banking therefore have improved.[12] This is good news for regulators and for the regulatory design of banking in general. Prudent behavior might in fact be less at risk than suggested by the overly simplistic moral hazard story of deposit insurance.

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[11] This could be linked to Keeley's (1990) analysis that showed that monopoly rents as a source of franchise value have become less important. Our arguments suggest that reputation may have replaced monopoly rents as a source of franchise value.

[12] This appears to depart from the views expressed in Boot and Greenbaum (1993). However, there the sole focus is on a bank's reputation-building incentives in the context of bank lending activity. For smaller banks, the funding role may still dominate and reputation-building incentives might be small. This may also help explain the higher levels of capital observed in smaller banks.

3.3 **Direct and Indirect Approaches to Regulation**

A key issue in the design of regulation is whether it *stipulates* behavior or seeks to *induce* the desired behavior. A direct approach consists of explicitly restricting the activities banks can undertake. While this has the benefit of clearly restricting possible outcomes, such a regulatory structure runs the risk of being outdated by new developments. The questionable sustainability of the separation between commercial and investment banking in the U.S. is one example. The alternative approach, indirect regulation, does not prescribe behavior (i.e., permissible activities), but rather establishes incremental price and non-price incentives that are designed to elicit socially desired choices by financial institutions. Ultimately, indirect regulation aims at making undesirable activities more expensive. Risk-based capital adequacy rules are one example; rather than prohibiting risky activities, they seek to mitigate risk-taking incentives by making risky lending more expensive to fund than safe lending. The problem here is, of course, fine-tuning the price incentives. As a further illustration, the indirect approach would sensitize deposit insurance premia to risk in order to encourage low-risk strategies, whereas the direct approach would prohibit high-risk strategies funded with insured deposits. In both cases, compliance would need to be monitored.

Existing bank regulatory practices incorporate both direct and indirect elements. The separation of investment and commercial banking in the U.S. and Japan, restrictions on branching and insurance, and bank holding company limitations all illustrate direct restrictions. On the other hand, risk-based capital requirements and liquidity reserve requirements illustrate indirect controls. The former approach elicits the desired behavior by “brute-force”. The latter would reach the desired outcome by inducement, provided the regulator is sufficiently informed to price correctly. However, it could be costly if informational deficiencies loom large enough. This is particularly true in an environment where competitive distortions could be substantial. Moreover, banks might seek to exploit the discretion that indirect regulation grants them. Regulators will also be granted discretion and need to be supervised themselves, if only to contain corruption. Indirect regulation thus requires a well-defined regulatory and legal structure.

3.4 **Implications**

The traditional regulatory approach to Western banking implicitly guaranteed stability by reducing competitiveness. The competitive reality of today makes this approach no longer viable. Banking is in flux. It is thus important that one (re)examines the issues of competitiveness and stability. Given the distortions associated with intrusive direct and indirect forms of regulation, it is important to design a banking structure and regulatory framework that make the operations of financial institutions minimally dependent on regulation and supervision.

4 OPTIMAL REGULATORY DESIGN

4.1 **Recommendations for Regulatory Design**

The preceding paragraphs highlight the distortionary costs of direct and indirect regulation, particularly in a more competitive environment.[13] As stated above, structural changes in banking have rendered these approaches untenable, and may explain a shift towards more hands-off, certification-type regulatory structures.[14]

How do certification requirements work, and how should they be implemented? Certification requirements by their very nature only impose minimum standards on the industry. Supervision is needed to verify compliance, and timely intervention is also important. Above all, certification requirements aim at providing a more hands-off approach, and seek to minimize regulatory interference in the operations of the financial sector.

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[13] In a complementary paper (Boot, Dezelan, and Milbourn (1999)), we provide an analysis of these distortions in an industrial organization model.

[14] It is important to observe that we ignore the potential causality between the type of regulation and the competitive environment. In particular, the common direct and indirect approaches to regulation often seek to soften competition, for example by creating entry barriers and protecting established institutions.

Such a regulatory framework can only function if there is sufficient confidence in the stability and prudential operations of financial institutions. We concluded earlier that reputation-building incentives in banking may well have improved, which would foster confidence in the assessment of the operations of financial institutions. While important, this is still inadequate and an insufficient foundation for supporting certification requirements as the main regulatory instrument. What is needed is a broader balance between certification requirements, complementary supervision (including timely intervention[15]) and market discipline on the one hand, and internal control systems and internal supervision on the other. The latter are needed to create the right incentives *within* financial institutions, and are particularly important given the increased opaqueness of banking institutions.

We will first discuss the importance of internal control systems and supervision, and then add further detail to the design of a regulatory system based on certification requirements.

4.2 The Broader Context of Certification Requirements: The Importance of Internal Supervision and Internal Incentives

The noteworthy – and much publicized – internal control failures in recent years clearly point at the importance of internal supervision. However, internal supervision will not be effective or sufficient unless the *incentives* within the organization are aligned. For financial institutions, this has become even more important with the changing nature of activities that allows institutional risk profiles to be changed overnight. Also, the increasing diversity of bank activities – with (short-term) transaction-oriented proprietary trading activities and (long-term) relationship-oriented lending activities at the extremes – elevates the potential for diverging incentives, particularly considering the differences in risk profiles. Internal capital allocation schemes – including VAR and RAROC based approaches – could serve a useful purpose by charging each activity a risk-based cost of funding.[16] Similarly, more traditional

[15] See Kwast (1996).

[16] Internal capital allocation systems are a step in the right direction in that these help the different activities/departments in a bank internalize the costs of risk-taking. In designing such a system, it is important to note that the cost per unit of capital depends on the risks that unit is exposed to. In other words, capital does not have one price. Thus, the internal allocation of capital should not be based on the average price of capital of the

accounting approaches, like activity-based costing could be interpreted as aimed at aligning internal incentives. As the cultural clashes between bonus-oriented traders and conservative relationship bankers within today's financial institutions show, much more might be needed to align incentives. This would include not only remuneration systems, but also promotion opportunities, among other things.

The cost of failing to align incentives could be enormous. Organizations themselves may then have to "brute-force" desired behavior by using rigid rules. These rules would come with substantial cost, particularly because they would 'bite' more often than desired.[17] In this context, the emphasis that external regulators have put on the banks' internal control systems and integrity is justified. Misaligned incentives force regulators to implement (intrusive) direct and indirect forms of regulation, with their associated costs.

4.3 **The Design of the Regulatory System: Evaluation of Reform Proposals**

One interpretation of our analysis is that we have provided a foundation for more hands-off approaches to regulation. From this perspective, how should we evaluate the various (reform) proposals to regulatory design?

There have been several proposals put forth recently that stress an individual bank's involvement in settings its level of capital (see also the Introduction). One is the pre-commitment approach to capital regulation. It advocates that banks should set their individual capital ratios, based on their own (superior) information set. Alternatively, internal control systems (e.g., VAR and RAROC) could be used to dictate the level of capital. If the actual level of capital is then too low, the banks in question will be fined.[18] The pre-commitment approach to capital regulation could potentially mitigate the distortions associated with direct and indirect forms of regulation. The main concern lies in the imposing of penalties. Generally,

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institution, but should differentiate the cost according to the risks faced by the different activities.

[17] This also highlights the importance of corporate culture. With the right corporate culture, internal checks and balances are 'automatically' in place and rigid rules might be superfluous.

[18] Effectively, this approach lets each bank choose from a menu of contracts. Each level of capital is then complemented with its own fine for non-compliance (see Prescott (1997)).

there is a need to penalize when capital levels have become low. But how can it be time-consistent to fine banks in such states? Moreover, as Bliss (1995) observes, this approach may cause "gaming" in the choice of internal control systems.

Our approach does not have the self-regulatory flavor of the pre-commitment approach, but seems complementary to proposals that explicitly give a role to internal control systems. We advocate a well-defined role for regulators: they set the "certification" levels that need to be maintained for retention of the bank's license. Falling below certification levels should induce swift regulatory intervention. Along this dimension there is little discretion for either banks or regulators. However, certification requirements (and the swift and timely non-discretionary intervention in case of violation) should not exclude complementary *discretionary* supervision. As the guardian of the integrity of the financial system, regulators need to be able to intervene when they believe it is warranted. That is, intervention is sometimes needed on qualitative grounds alone. The possibility of these interventions requires accountability on the part of regulators, but a discretionary element can, in our view, not be totally excluded.[19]

5 REGULATION IN TRANSITION ECONOMIES

5.1 **Some Relevant Characteristics**

The design of regulation in emerging and underdeveloped financial systems should differ from the one in established and developed financial systems. The rationale for the differences in regulation comes from the specific economic environment that many of these countries are facing. One of their characteristics is that it is hard to disentangle the banking sector from the rest of the economy. That is, there is either little distance between the banks and the rest of economy (i.e., banks take equity positions in the corporate sector) or the financial market is of little importance. Consequently, information problems are typically much larger, with more dramatic changes taking place on the borrowers' side. The information systems

[19] These observations are also put forward in Estrella (1998). He warns against exclusive reliance on mechanical rules. Qualitative assessments are needed as well.

are also underdeveloped, the banking sector has no reputation and corruption poses a serious problem. Moreover, the shortage of skilled and experienced bank supervisors is extreme. All of this calls for different regulation than the environments where financial systems are highly competitive.[20]

In addition, excessive concentration, preferential treatment by governments and limited entry stymie the progress of banks in transition economies (Claessens (1997)). Because of a weak legal infrastructure, highly leveraged financial intermediaries, limited institutional development, great uncertainty and inside information, the role of banks and financial markets is likely to remain limited in many transition economies.[21]

5.2 **Regulatory Considerations**

The common feature for the regulation of transition and other emerging economies should be increased disclosure and transparency, and strengthened incentives (through personal liability, for example) of the owners and managers. The regulatory structure should give the right incentives to managers of banks to take responsibility for their own actions (see Caprio (1996)).[22] Sound fundamentals can only be maintained through high capital adequacy and liquidity ratios, prudent loan classification and provisioning, and sound risk management. Increased disclosure and transparency are necessary to reduce market uncertainty and limit the risk of contagion.

The diffuse situation existing in most transition economies makes these forms of intrusive regulation indispensable. Indirect regulation, however, seems less desirable. Such an approach depends crucially on the ability of regulators to fine-tune price signals, and grants them substantial discretion on whether or not to intervene. Both issues are likely to create major problems in transition economies. Informational problems are clearly much bigger there, often with the entire corporate sector going through a

[20] See also Boot and van Wijnbergen (1995) for a discussion of these issues in the context of Eastern Europe.

[21] Claessens (1997) suggests that in the short run, self-finance, intermediation among enterprises, and financing via non-bank financial institutions might be preferable for many transition economies.

[22] Honohan and Vittas (1995) also emphasize that transition economies primarily need to establish basic mechanisms and incentive structures.

transformation process with both a highly uncertain outcome and direction.

The high degree of regulatory discretion that indirect approaches lead to is also a problematic aspect in emerging economies. Most countries lack a strong civil service tradition, pay their civil servants little and also have a legal environment that often lacks clarity. All this makes indirect approaches very prone to corruption. This problem is exacerbated by the common structure of vesting enforcement authority in the same institution that is charged with supervision, the Central Bank. While it is natural to place supervision responsibility in the Central Bank, it is less clear that enforcement responsibility should rest there too. There is certainly an argument to be made to separate the two. Since the need to intervene to enforce regulation often suggests that prior supervision efforts have failed, an institution that is responsible for both supervision and intervention is likely to hesitate too much with intervention so as not to admit that it failed in its prior duty to supervise (Boot and Thakor (1993)).

A case can therefore be made to vest enforcement authority with a Banking Commission, where, like in Mexico, several agencies are represented. Such a set-up will reduce the cover-up incentives built in the currently more widely adopted model of the Central Bank acting as both supervisor and enforcer. It would also make the system much less susceptible to corruption because more than one institution is involved in the decision. For obvious reasons, a committee of only loosely related persons is much harder to bribe than a single individual.

But even such a change in structure, advisable as it may be in fraud-prone environments, is unlikely to solve all problems with the indirect approach to regulation. How is capital adequacy evaluated? This requires risk assessment and valuation of on- and off-the-balance sheet assets and liabilities. But with the much higher degree of uncertainty, how could we ever feel confident about the assessment of the value of contingent liabilities such as those incurred in insurance activities? Similarly, activities in corporate restructuring, while clearly requiring banks, will often involve taking equity stakes. However, given that most companies' shares are untraded, evaluating such stakes for capital adequacy assessment is an impossible task. The problem is thus threefold: greater informational distortions than in Western banking, many more exceptional transactions and a weakly developed regulatory and legal structure.

Indirect regulation therefore imposes an unrealistic informational burden on the regulator. With the val-

ues of so many bank assets inherently ill-defined, the regulator's assessment of an institution's risk, on which so many requirements are to be conditioned, is simply too fragmentary. These unrealistic informational requirements of indirect regulation will inevitably degenerate into a dependence on intrusive, discretionary, fraud-prone supervision. It is therefore the discretion-armed regulators, not regulation per se, that subverts banks in their competitive pursuits.

A strong case can be made for a substantially larger direct element in bank regulation than can currently be found in Western banking. The main objective is to augment the transparency of the banks' activities, not to unduly restrict the banks' activities. Therefore, it does not necessarily conflict with the granting of universal banking licenses. Even when such licenses are granted, direct regulation could still stipulate that insurance activities and corporate restructurings be placed in separate subsidiaries, which will then fall under specialized regulatory agencies where necessary.

6 CONCLUSION

Our main conclusions on how the competitive environment and the degree of development of the financial system affect the desirable design of regulation are summarized in *Table 1*. Moving to the top in the case of a developed system (upper left hand side of the table) shows that the more competitive the environment, the less intrusive the regulation should be. We have characterized this type of regulation as certification-oriented (certification requirements). This hands-off approach to regulation goes hand in hand with supervision to monitor compliance and provide timely intervention. Moreover, feasibility dictates adequate internal control systems.

The certification orientation is not sustainable in case of underdeveloped financial systems (right hand side of the table). A control-oriented and intrusive direct approach to regulation may then be necessary. Excessive competition in an undeveloped system is not advisable, but will generally not be feasible in such an imperfect environment anyway. As we have concluded in Section 5, in these emerging economies the emphasis should be on transparency. Improving disclosure and accountability are paramount.

Table 1: Competition, the development of financial system and regulatory design

Competitive Environment	**Developed Financial Systems**	**Underdeveloped Financial Systems**
Highly competitive environment	Certification requirements	No excessive competition
Intermediate and low competition	Direct and indirect forms of regulation are feasible Monopoly rents help control incentives.	Mainly direct regulation, but supplemented with some indirect controls.

The main message of our analysis is that the hands-off approach to regulation – as embodied in the certification requirements – is desirable for Western banking. Beneficiaries would be the existing banking institutions that can better face (imminent) competitive threats. Society, however, would gain most. It would face a more efficient financial system. The ball is in the court of the financial institutions; they should put their internal control systems in order to facilitate a shift to certification requirements as the main regulatory tool.

REFERENCES

Bhattacharya, S., A.W.A. Boot and A.V. Thakor, 1998, The Economics of Bank Regulation, *Journal of Money, Credit and Banking*, 30-4, 745-770.

BIS Review 24, 1998: On the Conference of State Bank Supervisors, New York (1-3), 9/3/98.

Bliss, R.R., 1995, Risk-Based Capital: Issues and Solutions, *Federal Reserve Bank of Atlanta Economic Review*, 80, (September/October), 32-40.

Boot, A.W.A., 1999, European Lessons on Consolidation in Banking, *Journal of Banking and Finance*, 23, 609-614.

Boot, A.W.A., S. Dezelan, and T.T. Milbourn, 1999, Regulatory Distortions in a Competitive Financial Services Industry, forthcoming *Journal of Financial Services Research*.

Boot, A.W.A. and S.I. Greenbaum, 1993, Bank-Regulation, Reputation and Rents: theory and Policy Implications, in C. Mayer and X. Vives: Capital Markets and Financial Intermediation, Cambridge University Press.

Boot, A.W.A. and A.V. Thakor, 1993, Self-Interested Bank Regulation, *American Economic Review*, 83, 206-212.

Boot, A.W.A. and S. van Wijnbergen, Financial Sector Design, Regulation and Deposit Insurance in Eastern Europe, in Banking Reform in Central Europe and the Former Soviet Union, Jacek Rostowski (ed.), Central European University Press, 1995.

Caprio, G., 1996, Bank Regulation: The Case of the Missing Model, WB Policy Research Working Paper 1574.

Chari, V.V. and R. Jagannathan, 1988, Banking Panics, Information, and Rational Expectations Equilibrium, *Journal of Finance*, 43, 749-761.

Claessens, S., 1997, Banking Reform in Transition Countries, *World Development Report*, 1996, World Bank.

Demsetz, R.S., M.R. Saidenberg and P.E. Strahan, 1996, Banks With Something to Lose: The Disciplinary Role of Franchise Value, *Federal Reserve Bank of New York Economic Policy Review*, 2, 1-14.

Dewatripont, M. and J. Tirole, 1993, Efficient Governance Structure: Implications for Banking Regulation, in C. Mayer and X. Vives: Capital Markets and Financial Intermediation, Cambridge University Press.

Diamond, D. and P. Dybvig, 1983, Bank Runs, Deposit Insurance and Liquidity, *Journal of Political Economy*, 91, 401-419.

Estrella, A., 1998, Formulas or Supervision? Remarks on the Future of Regulatory Capital, *FRBNY Economic Policy Review*, 191-200.

Euromoney, September 1997, Can Bankers Be Their Own Cops?, 128-128.

Flannery, Mark, 1999, Financial Convergence: An Overview, University of Florida working paper.

Freixas, X. and J.C. Rochet, Microeconomics of Banking, MIT Press, 1997.

Hoenig, T.M., 1997, Bank Regulation: Asking the Right Questions, *Federal Reserve Bank of Kansas City Economic Review*, 82 (First Quarter), 5-10.

Honohan, P. and D, Vittas, 1995, Bank Regulation and the Network Paradigm: Policy Implications for Developing and Transition Economies, The World Bank working paper.

Keeley, M.C., 1990, Deposit Insurance, Risk and Market Power in Banking, *American Economic Review*, 80, 1183-1201.

Kupiec, P.H. and J.M. O'Brien, 1997, Deposit Insurance, Bank Incentives, and the Design of Regulatory Policy, FEDS Finance and Economics Discussion Series, No. 98-10.

Kwast, M.L., 1996, Supervising the Universal Bank, in Universal Banking: Financial System Design Reconsidered, A. Saunders and I. Walter (eds.), Irwin.

Llewellyn, D.T. 1999, Alternative Approaches to Financial Regulation, paper presented at the 1999

Institute of Economic Affairs Financial Regulation Lecture, Royal Society of Arts, London.

Prescott, E.S., 1997, The Pre-Commitment Approach in a Model of Regulatory Banking Capital, *Federal Reserve Bank of Richmond Economic Quarterly*, 83 (Winter), 23-50.