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## **Basel II and the Need for Bank Distress Resolution Procedures**

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### Comments

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# Basel II and the Need for Bank Distress Resolution Procedures\*

BY CLAS WIHLBORG

It is argued that without increased market discipline Basel II is not likely to resolve the regulatory problem caused by explicit and implicit guarantees of depositors and other creditors of banks. One way to enhance market discipline is to implement proposals for mandatory subordinated debt. For these proposals to achieve their objective, the non-insurance of holders of subordinated debt must be credible. Increased credibility of non-insurance of one or several groups of creditors could be enhanced if distress resolution procedures for banks were pre-specified, and if they made possible bank failures without serious disruption of the financial system. The existence of rules for dealing with banks in distress not only enhances the credibility of non-insurance of some creditors, it also allows for predictability of distress resolution costs for shareholders and management of banks. Such costs—if predictable—reduce the moral hazard incentives caused by deposit insurance schemes.

## I. INTRODUCTION

The use of banks' internal ratings to determine capital requirements for different kinds of loans may have appeared to the Basel Committee as the solution untying the Gordian knot of regulatory capital requirements. The dilemma facing the Basel Committee lies in the assignment of risk weights for different kinds of loans when calculating the regulatory capital requirement. On the one hand, assigning the same risk weight to a wide variety of loans with different risks invites risk arbitrage. Such arbitrage implies that banks tend to favor loans with relatively high risk and return among loans with the same risk weight. On the other hand, specifying the risk weight in a detailed manner for each type of loan renders banks' expertise in risk evaluation irrelevant for the funding costs of different loans. Risk evaluation is supposed to be the basis for banks' competitive advantage in loan markets of different kinds.

The internal ratings standard under Basel II would ideally strengthen the incentives of banks to develop and use risk-evaluation skills in order to enhance

\*This paper is based on comments on presentations by Andrew Crockett, Mark Tilden and Hyun Shin at a conference on The Future of Banking Regulation organized by the Financial Markets Group, London School of Economics and Political Science, April 7—8, 2005. The specifics of these presentations will not be addressed, however.

their competitiveness. This reasoning presumes either that banks' risk-taking incentives become appropriate or that supervisors are able to monitor banks' risk-scoring systems, as well as their use in credit allocation. However, the rationale behind regulatory capital requirements in the first place is that banks do not have appropriate incentives as a result of explicit and implicit guarantees of depositors and other creditors of banks. Supervisors' ability to monitor banks' credit allocation is constrained by lack of supervisory capability or capacity, as well as by being dependent on banks' information systems and reports.

The Basel Committee is well aware of the incentive problems and the limitations of supervisors. Therefore, the committee has recommended "expanded supervision" as Pillar 2 of Basel II, and "strengthened market discipline" as Pillar 3. The specifics of these proposals have been developing over the last few years of committee work. The more specific the Basel Committee has become the stronger are the reasons to doubt that Basel II will achieve its objective. In this paper it will be argued that the current Basel II proposals with respect to supervision and market discipline seem to defeat the whole purpose of using banks' internal ratings to determine risk weights.

In section II the concepts of economic and regulatory capital are discussed. It is often stated that an objective of Basel II is to achieve equality between these two concepts. This objective may lead the debate astray, however. In this section the role of distress resolution costs for banks is emphasized as they determine banks' desired capital relative to regulatory capital. The meaning and consequences of expanded supervision under Pillar 2 are discussed in section III. In particular, political economy aspects of expanded supervision are considered. Market discipline and Pillar 3 are the subjects of section IV. Finally, in section V, it will be argued that enhanced market discipline is required for Basel II and any other capital adequacy standard to work properly in the sense that it enhances the efficiency of the financial system in terms of credit allocation and sets the stage for a dynamic development towards greater efficiency. These objectives require the development of ex ante rules for dealing with banks in distress.

## II. ECONOMIC AND REGULATORY CAPITAL

One of the stated objectives of the capital adequacy regime according to the Basel Committee is to achieve equality between regulatory and economic capital of banks. This objective seems to mean that banks holding capital in accordance with regulation would hold an amount corresponding to what the market would induce banks to hold if markets were competitive, banks' creditors were well informed, and there were no guarantees of deposits and other claims on banks. Under these conditions banks would choose optimal debt-equity ratios and the share of equity financing of an individual loan would depend on the contribution of this loan to the probability of bankruptcy for the bank. The equity capital of a bank would serve its buffer role for a bank facing risk of its assets.

Capital adequacy regulation could properly have as its objective to induce banks to choose an optimal or at least an efficient capital structure. However, this objective is different from saying that the capital required should equal the efficient amount of capital. It can be expected that the required capital would be lower than the desired capital as well as the economic capital because banks would want to hold a buffer above the regulatory requirement. The size of this desired buffer depends on the costs for the banks' shareholders and management associated with falling below the required capital.

The formulation of capital requirements as minimum amounts implies that supervisory authorities are expected to impose costs on banks when they fall below the required level. If these costs are substantial, one can think of the minimum capital ratio as the ratio where bankruptcy de facto occurs and bankruptcy costs are incurred. Therefore, banks have an incentive to keep a buffer above the minimum capital. The costs of falling below the required capital vary from country to country depending on the degree of forbearance of supervisors and the "distress resolution costs" supervisors impose.

The confusion created by the Basel Committee's terminology refers to implications of banks generally holding a statistically larger amount of capital than required. The excess capital may be interpreted to mean that capital requirements are not binding. This interpretation is erroneous, however, if there are costs associated with insufficient capital relative to the regulatory minimum. Interview studies of banks' potential responses to Basel II are also difficult to interpret as a result of the confusing terminology. Tilden (2005) reports on an interview study of credit and non-credit financial firms wherein the firms evaluate the potential impact of Basel II on competition, risk evaluation procedures, regulatory capital levels, and costs and prices of loans. The financial firms generally indicate substantial effects on regulatory capital levels and competition in the credit markets but little effects on costs and prices. Furthermore, the responding firms generally indicate that there will be little impact on them specifically.

One possible explanation for the seemingly contradictory responses is that most banks hold substantially more capital than required. Therefore they believe that they are not constrained by regulatory capital. However, they may not realize how and to what extent the desired amounts of capital they hold are influenced by the regulatory levels through the markets for equity and debt. Thus, they may believe that they individually will not be affected while the industry will be.

Once distress resolution costs are considered it follows that such costs (associated with falling below the required capital), and the level of required capital should be determined jointly within a capital adequacy regime. As it is, countries differ in terms of enforcement of capital requirements and costs associated with a deficiency of capital. Thus, equal capital requirements across countries do not create "a level playing field."

A second implication of the view of required capital ratios as trigger ratios for distress-related costs is that the required capital should be set below the

economic capital. A country imposing “Prompt Corrective Action”—as the US does at a level of capital above the Basel level of 8%—should perhaps have a required capital ratio much below the level other countries apply.

Another aspect of regulatory relative to economic capital requirements is the relative risk weights assigned to different loans. On this issue the objective of the use of banks’ internal ratings is to enable banks to assign regulatory risk weights in accordance with their true evaluations of economic risk. Thus, assuming that supervisors are able to monitor banks’ internal risk-scoring systems it would seem that Basel II should be able to achieve equality between regulatory and economic capital in relative terms, i.e. in terms of risk weights for different loans. Can the relative risk weights imposed by Basel II be binding on the banks when the desired amounts of capital lie substantially above the minimum regulatory levels? If a bank holds twice the regulatory minimum amount of capital, will the share of capital held against each loan be determined by the regulatory requirement?

Consider a situation where a bank’s assets amounting to USD 100 consist of two equal size loans, with risk weights of 0.5 and 1.5. Assume that the regulatory capital requirement is 8% of risk-weighted assets.

$$\text{Regulatory capital requirement: } 0.08[.5 \cdot 50 \text{ p } 1.5 \cdot 50] \text{ } \frac{1}{4} \cdot 8$$

The bank chooses to hold capital at a level 12% of risk-weighted assets. This level is well above the required level but the risk-weights need not be the same as the regulatory weights. Denote the bank’s choice of risk weights in its capital  $w_1$  as  $w_2$ . Does the bank choose capital for the loans using the formula:

$$:12\frac{1}{2}w_1 \cdot 50 \text{ p } w_2 \cdot 150] \text{ } \frac{1}{4} \cdot 12;$$

or using

$$:12\frac{1}{2}w_1 \cdot 50 \text{ p } w_2 \cdot 150] \text{ } \frac{1}{4} \text{ X subject to } X > 8?$$

Using the first formula the weights must clearly be the regulatory weights. In the second case the bank may choose different risk weights but the amount of capital, X, must exceed the regulatory minimum. In this case the marginal funding costs for the two loans is not determined by the regulatory risk weights if  $X > 8$ .

There is a strong incentive for the bank to use the first model for risk weights if there are substantial distress resolution costs imposed on the bank when the capital reaches the regulatory minimum, and if the regulatory risk weights coincide with the bank’s risk evaluation. On the other hand, if the supervisor does not impose substantial costs at the regulatory minimum the bank chooses risk weights based on the probability that the capital will be exhausted and costs associated with insolvency. In this case the bank’s choice of risk weights is subject to moral hazard to the extent that bank’s creditors are insured. In other words, the regulatory capital requirements are binding only up to the regulatory minimum.

The fact that banks seem to choose levels of capital above the regulatory minimum can be viewed as evidence that there are some distress resolution costs when the regulatory minimum is reached. It does not follow, however, that these costs are sufficient for the bank to choose the regulatory risk weight or weights that reflect the bank's perception of relative economic risk.

The key issue here is who bears the costs if the capital falls below 8%? Clearly, the larger the share of these costs that fall on shareholders and bank managers, as opposed to insured depositors and the government, the greater is the likelihood that banks will use the probabilities of loan losses to determine the risk weights  $w_1$  and  $w_2$ . Since Loss Given Default (LGD) typically is far greater than the average capital held by the bank it can be assumed that the probability of default on each loan determines the likelihood that credit loss can be shifted to depositors or deposit insurance systems. Since shareholders' stake is limited, distress resolution costs on management may be required for the bank to use their actual risk assessment to set risk weights.

The conclusion of this discussion is that distress related costs imposed by corrective action rules are important both for the banks' choice of capital ratio above the required level, and for the relative risk weights banks want to assign to loans with different kinds of risk. If substantial distress related costs are imposed, banks have an incentive to hold capital ratios above the required level and the desired risk weight will be close to those reflecting economic risk. On the other hand, if distress related costs are small, banks' desired capital will be close to the regulatory minimum, and banks have incentives to choose risk weights that differ from those reflecting economic risk. The need for strict supervision of credit scoring systems is therefore great if supervisors do not or cannot impose substantial costs on banks that fall below the regulatory capital level.

### III. THE POLITICAL ECONOMY OF EXPANDED SUPERVISION UNDER PILLAR 2

Expanded supervision is proposed by the Basel Committee in order to compensate for the inherent information advantage of banks with respect to internal risk-scoring systems, and to counteract incentives of banks to assign risk weights that do not properly reflect the economic risk of loans.

The issues discussed in this section are based on political economy arguments that, taken together, lead to serious doubts about the possibility of Basel II achieving its objectives. A first issue having political economy consequences is the sheer complexity of implementing an internal ratings based capital requirement regime. This complexity has made the Basel Committee increasingly open to "supervisory discretion." The second aspect of Basel II with political ramifications is the deep involvement of supervisors in the validation process for risk-scoring systems and their implementation.

The complexity of Basel II has been widely recognized. Although the intention of the Basel Committee has been to create a capital standard that can be implemented across jurisdictions in such a way that banks compete on a “level playing field,” the many dimensions of bank risk make national and bank-specific discretion inevitable.

Two banks with similar loan portfolios in different countries will not contribute equally to systemic risk. Bankruptcy laws, rules for collateral, debt recovery procedures, the ability to securitize loans, accounting systems, etc. vary across jurisdictions. These aspects of the legal and regulatory systems are clearly relevant for the risk banks face on loans. The differences among countries provide a logical reason for differences in the application of Basel II rules. For example, for a given probability of default on a loan, Loss Given Default is likely to be lower in a country with creditor oriented bankruptcy law, and banks’ ability to monitor borrowers depend on accounting rules and information systems.

Comparing banks with similar loan portfolios within a country is also not without ambiguity. Collateral arrangements may differ across banks, the use of other risk mitigation techniques like securitization, credit swap arrangements and the like differ as well, and these differences are not captured formally in the Basel II rules for risk evaluation. Furthermore, the quality of the risk-scoring models is likely to vary across banks. Thus, it is only appropriate that capital requirements are adjusted for such factors.

The problem that arises as a result of “supervisory discretion” is that the capital requirements faced by individual banks within a country, as well as the national application of Basel II rules, are not determined entirely by “objective” risk factors, but also by the subjective evaluation by national supervisors. There are simply too many objective factors for the Basel II formulas to capture them in estimates of probabilities of default and LGD.

Supervisory discretion also applies to actions taken when a bank’s capital falls below the required limit. Thus, costs of distress vary across countries and, as noted in the previous section, they influence the actual amount of capital banks want to hold. The scope for supervisors’ subjective evaluation of banks’ risk taking implies that the objectives of supervisors and the political setting they are operating in affect the implementation of the capital adequacy rules.

It has been pointed out by, for example, the European Shadow Financial Regulatory Committee<sup>1</sup>, that supervisors’ important role in validating risk-scoring models and their implementation carries with it the danger of “regulatory capture,” as well as the possibility that supervisors will be held politically responsible for bank failures. These political economy considerations imply that the implementation of Basel II could lead to a strengthening of implicit guarantees of banks.

<sup>1</sup> Statement No. 16, 2003.



“Regulatory capture” is a well-known consequence of a close relationship between a regulator and regulated firms. It implies that the regulator fails to keep an arm’s length relationship with the industry but tends to incorporate the interests and objectives of the regulated firms in its own objectives.

The implementation of Basel II seems to create an almost perfect setting for “regulatory capture.” Supervisors are expected to be deeply involved with the banks when validating and implementing risk evaluation models. The success of the national banks under an authority’s jurisdiction reflects positively on the supervisor. Thus, supervisors are likely to be reluctant to impose requirements that make domestic banks less competitive. Since funding costs increase with higher risk assessment for a bank, supervisors in some countries may turn a blind eye to internal risk scoring models that underestimate the riskiness of banks’ loan portfolios.

Regulatory capture can also influence the competitiveness of individual banks within a country. Relationships between the supervisor and large, complex banks with well-connected managers are likely to be relatively close. Therefore, forbearance towards such banks is likely to be relatively great.

The deep involvement of supervisors in critical areas of bank management implies that the failure of a bank may be interpreted as supervisory failure in the eyes of public opinion and policy makers. This increased political responsibility for the health of the domestic banks could induce supervisors to be strict in their supervisory role. If so, the dangers of “regulatory capture” would be reduced. On the other hand, when a bank approaches distress the supervisor has an incentive to show forbearance and to avoid the imposition of costs on the bank in the hope that the bank can ride out the storm. The supervisor may even use political clout to persuade the government to bail out the bank by means of more or less obvious financial aid. Of these two effects on supervisory incentives the latter one is most likely to dominate. If supervisors have the ability to influence the survival of banks, the importance of being strict *ex ante* is reduced.

These political economy arguments leading to the conclusion that Basel II can increase forbearance with respect to risk-taking, would not be present if banks’ depositors and other creditors would penalize risky banks with higher funding costs. In other words, if banks face market discipline with respect to risk taking, the coincidence of banks’ and supervisors’ objectives would induce supervisors to favor banks with economically sound risk-scoring and management models. Unfortunately, Basel II fails to contribute to the enhancement of market discipline.

#### IV. MARKET DISCIPLINE IN PILLAR 3

The Basel II proposal pays attention to market discipline and its potential complementarity with supervision. Market discipline has also received a lot of academic attention with research focusing on the potential role of a mandatory

subordinated debt requirement as a device to induce banks to consider the impact of risk on market yields on debt instruments issued by banks.<sup>2</sup> The yield on subordinated debt could also serve as a market signal to supervisors about the riskiness of a bank's loan portfolio.

The specific proposals of Basel II with respect to market discipline is not likely to increase the sensitivity of banks' funding costs to changes in bank risk-taking. The main reason for this assessment is that the proposal is limited to information disclosure. By putting their faith in rules for information disclosure alone to create market discipline, the Basel Committee neglects that the amount and truthfulness of information available in the market place depend on incentives on the demand as well as supply side for information.

The disclosure of information to creditors, who feel essentially insured is not going to have much impact on the relationship between risk-taking and yields on banks' debt instruments. There is little doubt that creditors of banks in most countries perceive themselves as insured with a high probability. Even when banks issue subordinated debt, the holders of these debt instruments may perceive themselves as insured.<sup>3</sup> The objective of making subordinated debt—issued to specific target investors—a mandatory part of capital requirements is that the non-insurance of the instruments should be made credible.

The Basel Committee has not made subordinated debt a part of Pillar 3. The most common arguments against subordinated debt are that market participants are not likely to be more informed than supervisors under any circumstances, and that markets for debt securities are too thin for yields to be reliable market signals. If these are the arguments against the subordinated debt proposals one wonders why the Basel Committee has given market discipline the weight of a Pillar. Market discipline under the current proposal must be provided by markets for bank equity alone. However, shareholders provide only a small part of banks' funding and they are subject to the moral hazard problem caused by limited liability.

## V. ENHANCING MARKET DISCIPLINE AND DISTRESS RESOLUTION PROCEDURES

It has been argued that without increased market discipline Basel II is not likely to resolve the regulatory problem caused by explicit and implicit guarantees of depositors and other creditors of banks. This problem is made worse by having

<sup>2</sup> See Benink and Wihlborg (2002) for information about the large number of proposals with respect to mandatory subordinated debt as a part of capital requirements. Empirical literature on subordinated debt is also reviewed.

<sup>3</sup> The empirical evidence with respect to the market discipline effects of subordinated debt is ambiguous. There is some evidence of such effects in the USA (see, for example Evans and Jagtreni, 2004). Sironi (2000) presents European data indicating that subordinated debt yields are related to banks' riskiness in spite of the ambiguity with respect to the credibility of the non-insurance of the debt in the current regulatory regime.

shareholders also perceiving themselves as insured to some extent by many banks being “too big to fail.”

One way to enhance market discipline is to implement proposals for mandatory subordinated debt. For these proposals to achieve their objective the non-insurance of holders of subordinated debt must be credible. As long as supervisors, central banks and governments fear that bank failures are going to be disruptive and costly, the incentives to resolve a banking crisis by saving banks in distress are strong. There is generally a need for a speedy intervention in a banking crisis in order to avoid a bank run and potential contagion effects to other banks. Absence of ex ante procedures for resolution of a banking crisis implies that authorities must intervene with urgency and without a well-prepared plan. Such an ad hoc approach often includes the extension of a blanket guarantee to all creditors of banks. For these reasons, statements about the non-insurance of creditors tend to lack credibility.

Increased credibility of non-insurance of one or several groups of creditors could be enhanced if distress resolution procedures were pre-specified, and if they made possible bank failures without serious disruption of the financial system. “Prompt Corrective Action Procedures” such as those implemented by the FDIC in the USA represent one approach to rule based distress resolution in banking. Another approach would be to specify bank insolvency procedures taking into account banks’ role in providing liquidity. This liquidity role implies that the appropriate insolvency law would be comparable to Chapter 11 in American bankruptcy law, allowing temporary protection against creditors while normal business operations are allowed to continue.<sup>4</sup>

The existence of rules for dealing with banks in distress not only enhances the credibility of non-insurance of some creditors. It also allows for predictability of distress resolution costs for shareholders and management of banks. It was argued above that such costs—if predictable—reduce the moral hazard incentives caused by deposit insurance schemes.

## VI. CONCLUSIONS

The New Capital Accord proposed by the Basel Committee (Basel II) is intended to make banks more sensitive to the riskiness of loans by allowing “sophisticated” banks to use their internal ratings systems for the assignment of risk weights. In the short run the Basel II proposal is likely to partially achieve its objective by inducing banks to develop state of the art risk evaluation systems. The success is bound to be short lived, however, because Basel II contains the seeds of its own failure over a longer time horizon. The need for “supervisory discretion” to implement the complex rules for using banks’ internal risk scoring models, and the deep involvement of supervisors in the process

<sup>4</sup> The first statement of the European Shadow Financial Regulatory Committee (1998) calls for the specification of ex ante insolvency or distress resolution procedures for banks.

of validation and implementation of these models, create incentives for supervisors to become more rather than less tolerant of underestimation of credit risk. “Regulatory capture” is an almost inevitable consequence of Basel II in many countries, and the increased political responsibility for the health of major banks creates incentives for regulatory forbearance and bail-outs.

Two approaches are available to strengthen Basel II. First, market discipline could be enhanced by a mandatory subordinated debt requirement. Second, the specification of distress resolution procedures for banks imposing predictable costs on banks’ shareholders, management, and non-insured creditors would reduce banks’ incentives to shift risk to creditors and governments. Such procedures are probably required to make a subordinated debt requirement effective with respect to market discipline as well. Thus, the two approaches are complementary rather than substitutes.

A final observation is that if market discipline is strengthened successfully and distress resolution costs are made predictable, then there is no need for a Pillar 1 with detailed rules for the determination of risk weights for different kinds of loans. Under these conditions banks have incentives to use their best available information to determine the economically efficient sources of funding of assets with different risk.

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## VIII. NOTE ON CONTRIBUTOR

Clas Wihlborg is Professor of Finance at the Copenhagen Business School (CBS). Since 2002 he has been the Director of the Center for Law, Economics and Financial Institutions (LEFIC) at CBS. Before taking up the position at CBS in 2000, he held positions at New York University, the University of Southern California and Gothenburg University. He obtained his Ph.D. in

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