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The New Basel Capital Accord: Making It Effective with Stronger Market Discipline

Harald Benink

Erasmus University Rotterdam

Clas Wihlborg

Chapman University, wihlborg@chapman.edu

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**THE NEW BASEL CAPITAL ACCORD:
MAKING IT EFFECTIVE WITH STRONGER MARKET DISCIPLINE**
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Harald Benink*, Rotterdam School of Management, Erasmus University Rotterdam,
P.O. Box 1738, 3000 DR Rotterdam, The Netherlands
E-mail: h.benink@fbk.eur.nl
and

Clas Wihlborg*, Department of Finance, Copenhagen Business School, Solbjerg Plads 3,
DK-2000 Frederiksberg, Denmark &
School of Economics and Commercial Law, Gothenburg University, Sweden
E-mail: cw.fi@cbs.dk

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Abstract

In January 2001 the Basel Committee on Banking Supervision proposed a new capital adequacy framework to respond to deficiencies in the 1988 Capital Accord on credit risk. The main elements or “pillars” of the proposal are capital requirements based on the internal risk-ratings of individual banks, expanded and active supervision, and information disclosure requirements to enhance market discipline. We discuss the incentive effects of the proposed regulation. In particular, we argue that it provides incentives for banks to develop new ways to evade the intended consequences of the proposed regulation. Supervision alone cannot prevent banks from “gaming and manipulation” of risk-weights based on internal ratings. Furthermore, the proposed third pillar to enhance market discipline of banks’ risk-taking is too weak to achieve its objective. Market discipline can be strengthened by a requirement that banks issue subordinated debt. We propose a first phase for introducing a requirement for large banks to issue subordinated debt as part of the capital requirement.

JEL classification: C21, C28

* Chairman and member, respectively, of the European Shadow Financial Regulatory Committee (ESFRC). Other members of the ESFRC bear no responsibility for the contents of this paper. Information about the ESFRC can be found through the web-site of the Centre for European Policy Studies, www.ceps.be. No other link is implied.

THE NEW BASEL CAPITAL ACCORD: MAKING IT EFFECTIVE WITH STRONGER MARKET DISCIPLINE

1. Introduction

In January 2001 the Basel Committee on Banking Supervision proposed a new capital adequacy framework to respond to deficiencies in the 1988 Capital Accord on credit risk. “The New Basel Capital Accord” contains a number of new aspects to regulation and supervision of banks and other financial institutions. First, it contains new rules for calculating risk weights for different kinds of loans. Second, it calls for expanded, active supervision of financial institutions. Third, it specifies rules for expanded information disclosure in order to enhance the market discipline on banks’ risk taking. Fourth, it suggests that capital should be held against so-called operational risk. A number of the proposals are controversial, and they could be discussed at length.¹ In this paper we focus on the three “pillars” of the capital adequacy framework for credit risk--capital requirements, supervision, and market discipline--and ask whether the proposed “pillars” can be expected to achieve their objective of inducing banks to avoid “excessive” risk-taking that may threaten the stability of the financial system.

There is general agreement that the risk classification determining capital requirements in the 1988 Basel Accord was too broad making it possible for banks to shift assets to relatively high-risk categories. In the words of the Basel Committee when presenting an earlier version of the 2001 proposal in June 1999:

The current risk weighting of asset results, at best, in a crude measure of economic risk, primarily because degrees of credit risk exposure are not sufficiently calibrated as to adequately differentiate between borrowers’ differing default risks. Another related and increasing problem with the existing Accord is the ability of banks to arbitrage their regulatory capital requirement and exploit differences between true economic risk and risk measured under the Accord. Regulatory capital arbitrage can occur in several ways, for example, through some forms of securitization, and can lead to a shift in banks’ portfolio concentrations to lower quality assets.

The June 1999 version of the proposal was intended to replace the existing system of credit risk weightings by a system that would use external rating agencies’ credit assessment for determining risk weights. The Committee mentioned very briefly the possibility that “sophisticated banks” could be allowed to use their internal ratings as a basis for setting regulatory capital charges.

¹ The time schedule for implementing the New Accord has been extended by lengthening the consultation period. It was originally intended to end in May 2001 but is now expected to continue until mid-2002. The adoption period is to be finalized by the end of 2002, and implementation is planned for January 2005.

The debate triggered by the June 1999 proposal quickly led to greater emphasis on internal ratings. The banking community as well as the European Commission (1999) paid increased attention to internal ratings, and in a survey on the range of practices in banks' internal ratings systems the Basel Committee shifted its focus in the same direction (Basel Committee 2000). In the current proposed New Capital Accord the Committee has incorporated internal ratings as an alternative for "sophisticated" banks. Supervision and market discipline are emphasized as necessary supplements to capital requirements. Market discipline is supposed to be enhanced by information disclosure requirements for banks

An important factor in judging the new Basel-proposal is the incentive effects of the proposed regulations. As phrased in a March 2000 statement of the U.S. Shadow Financial Regulatory Committee (2000):

Sound policy requires the right blend of regulation, supervision, and market discipline to provide the proper incentives for banks to avoid excessive risks and to protect taxpayers, who ultimately stand behind the government funds that insure the deposits of those institutions.

In this paper we focus on incentive effects of the proposed regulation of bank capital. Although the proposal encourages the development of sound internal systems for risk evaluation, we argue that it does not resolve the incentive problems associated with current regulation, and it provides incentives for banks to develop new ways to evade the intended consequences of the proposed regulation. The proposed third pillar to enhance market discipline of banks' risk-taking is too weak to achieve its objective. We discuss how a requirement for banks to issue subordinated debt could strengthen market discipline.² We conclude by proposing a first phase for introducing a requirement for banks to issue subordinated debt as part of the capital requirement.

The paper is organized as follows. In section 2 we review the role of capital and capital requirements for risk-taking incentives of banks. Section 3 presents the Basel proposal for using banks' internal ratings to assign risk-weights to loans. Incentives for "gaming and manipulation" of capital requirements under an internal ratings standard, and the "power" of supervision and market discipline are discussed in section 4. Information disclosure requirements and subordinated debt as instruments for market discipline are discussed in section 5. Problems of implementing a subordinated debt requirement and our first phase proposal for such a requirement are presented in section

² The idea of using subordinated debt as an instrument of disciplining banks goes back to the 1980s, in particular to proposals made in the U.S. by the Federal Deposit Insurance Corporation (1983) and by Benston, Eisenbeis, Horvitz, Kane and Kaufman (1986). A more recent elaboration can be found in Calomiris (1999). The idea was part of a joint statement by a sub-group of the Shadow Financial Regulatory Committees of Europe, Japan, and the U.S. (1999) and of Europe, Japan, Latin America, and the U.S. (2001), a statement by the European Shadow Financial Regulatory Committee (2000), and it was a key, specific element in recent proposals from the U.S. Shadow Financial Regulatory Committee (2000 and 2001).

6. Our perspective here is primarily European. Finally, section 7 concludes with a summary of the incentive effects discussed in the paper.

2. The role of capital and capital requirements

Shareholder's capital in banks as in other firms serve three important functions. First, capital is a buffer against unexpected losses causing bankruptcy. Second, equity capital creates incentives for management to manage risk appropriately from the point of view of shareholders. Third, equity capital of sufficient magnitude signals that lenders to the bank will not be taken advantage of. Under limited liability for shareholders the third function is particularly important from lenders' point of view. Without sufficient capital shareholders have the incentive to invest in excessively risky projects, because the project risk will be borne primarily by lenders.

Banking and, to some extent other financial institutions, are special because most of their creditors are explicitly or implicitly insured. The rationale for this insurance is banks' role in the payment system and the risk of bank runs and potential contagion among banks caused by one bank's failure. Without going into the economic validity of the risk of bank runs and contagion it is a fact that supervisory authorities in all countries offer a degree of insurance of banks' creditors. There is explicit deposit insurance in many countries, and expected bailouts imply a degree of implicit insurance. This implicit insurance may be extended to shareholders as well.

The insurance of the banks' creditors implies that the latter will not monitor risks. If, in addition, the insurance is not priced, then banks have incentives to deliberately take too much risk, since relatively risky assets are likely to offer high returns.³ Furthermore, under any system wherein banks do not compete by risk evaluation skills there is a high likelihood that these skills will be "underdeveloped". Thereby, the banking system as a whole may non-deliberately fail to take important risks into consideration. Capital requirements in excess of the willingly held equity capital are intended to ensure that shareholders have a stake in all projects, and to reduce incentives for risk-taking.

The capital requirement for a particular asset determines its cost of capital. Thus, if assets with different risk-return characteristics have the same capital requirement, banks favor those assets that offer a relatively high expected rate of return. They can, as mentioned, engage in regulatory arbitrage and choose relatively risky assets offering the highest expected return among those with a certain cost of capital.

To avoid regulatory arbitrage it would seem that the "optimal" risk-weighting system should be detailed and based on the "true" or "best available" measure of the risk of each particular asset. This reasoning presumes that there exists a generally agreed upon "best" measure of risk for each loan. If such a "best" measure could be identified, then most economists' view of banking, and the role of competition among banks, must be false.

³ See, for example, Dewatripont and Tirole (1994) and Freixas and Rochet (1997) for expanded treatments of the economics of bank regulation.

Economic theory emphasizes that an important role of banks is to assess risk. Banks are expected to develop risk assessment expertise in competition, and individual banks are able to gain competitive advantages in different loan markets wherein they are relatively good at evaluating and pricing its risks. Unlike in equity markets there is in credit markets not one observable price reflecting market participants' aggregate risk assessment for an asset. This view implies that different banks may evaluate the same loan differently. A detailed, externally imposed, binding risk-weighting scheme renders each bank's internal risk-evaluation expertise irrelevant for the costs of capital for different bank loans. Thus, banks cannot gain competitive advantages by developing particular kinds of risk-evaluation expertise.

The regulatory dilemma that the Basel Committee has had to struggle with is therefore that if supervisors specify risk buckets that are too broad, then a bank's expertise can be used for regulatory arbitrage, while if they specify risk buckets that are too narrow, then the incentives for banks to develop expertise in risk assessment--their presumed comparative advantage--are removed.

3. The internal ratings proposal

The proposed solution to the regulatory dilemma of either allowing regulatory arbitrage with broad risk buckets or removing incentives for banks to develop risk-assessment expertise is to allow internal ratings as the basis for risk-weighting.

The New Basel Capital Accord allows two approaches to internal ratings of loans. In the first one--the foundation approach--the ratings are based on banks' estimates of probabilities of default (PD) on various loans. The second approach--the advanced approach--would take "loss given default" (LGD) into account as well. Any approach taken by a bank must be evaluated and accepted by the bank's supervisory authority. If a bank is able to apply only the foundation approach, then supervisors will provide the bank with a standardized method for arriving at LGD-estimates. Neither the foundations, nor the advanced approach, incorporates portfolio-considerations.

The Basel Committee's own survey on banks' practices in credit-risk assessment (Basel Committee 2000) shows that banks' practices vary from the highly intuitive placement of credits into risk categories to the use of fairly sophisticated risk-assessment models. However, all banks seem to allow room for intuitive or non-quantifiable elements to affect risk-assessment.

A substantial challenge facing banks and supervisors of the internal ratings approach is to map an internal ratings method into risk-weightings that are consistent across banks. Only if clear quantitative ratings are produced will it be possible to easily compare internal ratings across banks. To achieve comparability banks must at a minimum translate their ratings into estimates of probabilities of default (PD). A number of proposals for implementation of internal ratings approaches exist, however, and much work is on-going (see, for example, Krahen and Weber 2000). More refined approaches may be adopted in the future within the framework of the New Accord.

4. Gaming and manipulation; the role of supervision and market discipline

The potential for risk arbitrage existing under the current Accord will remain to an extent under the New Accord as well. First, all banks will not qualify for use of internal ratings either because they do not have sufficient expertise, or because they must have five years of history of estimating (at least) probabilities of default for various types of loans. Second, internal ratings need not be continuous, but loans may still be placed in relatively broad risk-buckets.

Additional opportunities for risk arbitrage exist under an internal ratings standard, because risk weights are based on banks' private information rather than on external, verifiable variables. A major problem facing the supervisors is to check the truthfulness of even estimates of probabilities of default. As noted, there are great difficulties already for the banks themselves to translate their own ratings into probabilities of default. Essentially, each bank must develop data similar to "mortality rate tables" that are applied in the corporate bond markets for bonds with different ratings.⁴ Input data for many years are needed to obtain estimates of mortality rates for all rating-categories over the lifetime of loans. Thus innovation to rating systems - and one would hope that innovations occur - make it more difficult both for banks and supervisors to gather the required data.

The additional opportunities for risk arbitrage under an internal ratings standard are created by the scope for "gaming and manipulation" of ratings. Banks generally have access to private credit risk-relevant information that can be excluded from the system for risk-weighting presented to the supervisory authority.

One type of "gaming and manipulation" would occur if a bank uses its private information to place relatively high-risk and high-return credits in a lower risk bucket. For example, if the foundation approach is used, then the probability of default reported to the supervisory authority can be made to differ from the bank's true estimate. The latter probability may have been updated by the bank based on information that is not available to supervisors. If the probabilities of default are based on a more refined credit scoring system that has been deemed acceptable by regulators, then private information within the bank would make manipulation of the credit scores prior to translation into probabilities of default possible. The quantitative importance of "gaming and manipulation" has been estimated by Carey and Hrycay (2000). They conclude that officially reported default rates for a given rating can be made as low as half the bank's private estimates.

There is some discussion of penalties to be imposed on banks that systematically and deliberately "miss-judge" risks, thereby placing the bank's liabilities at risk. The difficulties of implementing a penalty system are great, however. One reason is that the required data to prove deliberate, as opposed to non-deliberate, miss-judgement is hard to come by even if a bank's errors are systematic. A second reason is that the penalty-

⁴ Altman and Saunders (2000) discuss the use of bonds' mortality rates for calculation of externally imposed risk weights.

system may lack credibility if penalties primarily will have to be imposed on banks in distress.

Both the European Commission and the Basel Committee recognize the potential scope for gaming and manipulation. Two pillars of the capital adequacy framework, supervision and market discipline, carry the weight of having to limit this scope. Supervision and market discipline should also limit the scope for non-deliberate underestimation of risk by raising the consciousness and quality of risk assessment.

Under the New Accord most of the burden of controlling banks' internal risk assessment is placed on expanded and active supervision. Supervisory authorities are expected to build up their expertise substantially in both quantitative and qualitative terms. In fact, supervisors are expected to work closely with the banks, when they develop and upgrade their internal risk-scoring models. This envisioned very close cooperation between banks and supervisors is naturally intended to reduce the information- and knowledge asymmetry between banks and supervisors. However, banks will always be able to make decisions based on private information. The intensified involvement of supervisors could instead lead to greater "regulatory capture" in the sense that supervisors identify themselves more strongly with the banks they supervise.

The implication of the discussion so far is that the need for market discipline as an instrument to induce banks to hold sufficient capital is stronger under the proposed New Accord. By market discipline we mean that banks are given incentives by market participants' evaluation of banks' activities to assign costs of capital to credits reflecting the banks' best evaluation of credit risk from the point of view of share- and debt holders including depositors. To a particular cost of capital for a loan corresponds a choice of debt and equity financing including a certain amount of equity held against a loan. If debt holders are insured, the bank's risk-taking will not be reflected in its cost of debt. Therefore, shareholders have an incentive to use too much low cost debt financing to finance relatively risky loans.

Market discipline should also enhance incentives to compete by means of credit-evaluation skills for loans. Non-deliberate underestimation of risk seems to have been an important element of banking crises in, for example, the Scandinavian countries and Japan. Regulators have generally been unable to detect this kind of underestimation. There is obviously no guarantee that market discipline resolves this problem, but it increases the likelihood that underestimation will be detected by some market participants. One advantage of market discipline is that credit risk and bank procedures for assessing credit would come under the scrutiny of a larger number of observers with stakes in the banks.

The European Commission and the Basel Committee rely on information disclosure to enforce market discipline. However, effective market discipline requires not only that information is available to some observers, but also that the observers value the information, and are able to impose a cost on the bank that releases negative information (or abstains from releasing positive information). As long as depositors and other creditors of banks are insured, or implicitly expect to be bailed out, information about

potential credit losses is not going to be a major concern to creditors. Another aspect is that the disclosed information is going to be more relevant and effective, if the choice of disclosed information is based on demand for information in the market place.

By putting their faith in rules for information disclosure alone to create market discipline, the European Commission and the Basel Committee neglect 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.

5. Subordinated debt as an information and discipline device

Market discipline inducing a bank to serve the objectives of debt holders as well as shareholders requires that debt is priced according to the riskiness of the bank's asset. Such pricing could be achieved if most creditors of the bank were "credibly uninsured". An indirect method for imposing market discipline is for regulators to use information in the market risk premium on an uninsured portion of the bank's debt to assess a risk-premium on debt to insured creditors. Given the prevalence of explicit and implicit guarantees regulators must be involved in the process of assigning a risk premium to the bank's insured debt. Currently, regulators try to impose costs for risk-taking only by means of binding capital requirements. The difficult, not to say the impossible, task facing regulators relying entirely on capital requirements has been described. By requiring banks to issue a minimum amount of "credibly uninsured" subordinated debt regulators may obtain not only a discipline device, but also an information device for imposing costs on banks in proportion to asset risk.⁵ In principle the yield spread on subordinated debt could be used to determine a deposit insurance premium for the bank. The effective pricing of deposit insurance would essentially make capital requirements unnecessary even for banks that are "too big to fail". An alternative route for the regulator is to use the information in the yield spread to adjust capital requirements and to intervene in the activities of banks approaching distress ("structured early intervention and resolution" or "prompt corrective action").

Does subordinated debt add market discipline that is not already existing through the markets for banks' equity? Is there information in the yield spread on subordinated debt that cannot be obtained from equity prices? The argument for a requirement that banks issue subordinated debt rests on an affirmative answer to at least one of these questions.

Requiring issuance of subordinated debt implies that the market will determine a yield spread for each bank based primarily on market participants' perception of the bank's default risk, and their losses if default occur. The market imposes discipline if the yield spread increases with a bank's risk taking. However, Gorton and Santomero (1990) have

⁵ Subordinated debt proposals were mentioned in footnote 2. Recently, the literature analyzing the proposals has been growing rapidly. Examples are Federal Reserve Board (1999 and 2000), Federal Reserve Board and Department of the Treasury (2000), Calomiris (1999), Evanoff and Wall (2000 and 2001), Sironi (2000a and 2000b), and Benink and Benston (2001), and additional references below..

noted that subordinated debt may play an ambiguous role with respect to market discipline, because if the probability that subordinated debt-holders will lose their full investment is high, then increased risk may raise the value of their investment. The reason is that under these circumstances the pay-off distribution for the subordinated debt will have the same characteristics as the pay-off distribution for equity when the probability of bankruptcy is high. A minimum permissible equity capital base should ensure that the likelihood that subordinated debt holders find themselves in this situation is minimal. Furthermore, if supervisors intervene in a bank's operation when indicators of bankruptcy risk reach a pre-determined level (structured early intervention and resolution) this problem is reduced further.

Levonian (2000) and Osterberg and Thomson (1991) have analyzed the information contained in subordinated debt yields, and the incentive effects of subordinated debt. Nivorozhkin (2001) explores these issues further when there are bankruptcy costs. Such costs would include costs associated with a mandated reorganization or merger at the time of distress. With respect to information value Nivorozhkin argues that the information about the volatility of a bank's value based on a series of historical equity prices can be supplemented with the implicit volatility measure in subordinated debt yields. The same information can be obtained by observation of prices on options on bank's equity, however. Subordinated debt yields contribute information in addition to what other security prices can provide, if there is uncertainty about bankruptcy costs, and if subordinated debt-holders expect some repayment in case of bankruptcy of the bank.

One conclusion that can be drawn from these studies is that for the supervisory authority to detect when a bank suffering credit losses enters the region when the incentive effect becomes perverse, subordinated debt yields should be observed continuously even when the bank is healthy. Another conclusion is that the required amount of subordinated debt should be large enough so that it is not dominated in magnitude by bankruptcy costs.

So far it has been assumed that subordinated debt is credibly uninsured, and that the markets for the debt instruments are well functioning. These assumptions are discussed in the next section.

6. Implementation problems from a European perspective

Most of the theoretical and empirical work on subordinated debt proposals has been done in the U.S. An exception is Sironi (2000a), who 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.

Regulators and other observers in other parts of the world, and in Europe in particular, frequently raise questions and objections with respect to the implementation of a subordinated debt requirement on the following grounds:

1. How can subordinated debt be made credibly uninsured in all countries with more or less 'soft' or 'captured' supervisors?
2. Why rely on market participants' evaluation of banks' risk when supervisors are better able to get inside information about the riskiness of banks' assets?
3. Markets for debt instruments outside the U.S. may not be informative because such markets are not well developed.
4. Even if there are debt instruments traded in the market place, many banks are so small that markets for their debt would be illiquid and prices would not be informative.
5. In thin markets the yield on subordinated debt may be manipulated by insiders making the yield useless as an information device.

We address these questions and objections one by one below.

1. The credibility of non-insurance is a serious problem facing the European Commission if it proposes a subordinated debt requirement. The whole point of a proposal would be to introduce a category of debt-holders that are credibly uninsured while depositors remain protected. This objective can only be achieved if the proposal is implemented in all major countries with large banks in international competition, and if the proposal is accompanied by measures that signal commitment to the non-insurance. One possibility is that restrictions are imposed on the kind of investors that can hold the debt. Markets for subordinated debt will naturally provide some indication about the degree of credibility

The problem of lacking credibility of non-insurance may actually be greater for shareholders controlling banks. This group is often strongly connected to supervisors and it is an influential interest group in many countries. The connections between bankers and regulators may become even stronger under the New Accord, since it implies both a widening and a deepening of supervisory authorities' oversight of banks' procedures. If this expanded role of supervisors leads to greater "capture" of supervisors the need for another group of non-insured stakeholders is made even stronger. Regulatory traditions in many European countries indicate that the independence of the regulators relative to the regulated is far from complete.

2. Many regulators seem to have a strong belief not only in their ability to gather information but also in their ability to interpret and analyze data. DeYoung et al. (1998) conclude that markets gather some information faster than supervisors, while supervisors have an advantage for other types of information. Market participants do not seem to lag much, however, in obtaining what supervisors have access to. An additional point is that an important advantage of market valuation is that a large number of people with different information and special knowledge contribute to make yields an aggregate evaluation of risk.

3. Many of the problems mentioned here are discussed in a study from the Federal Reserve Board (1999). The focus is on the U.S. and it concludes that markets for subordinated debt are potentially informative about the risks taken by banks. Other studies focusing on the U.S. and summarized in Evanoff and Wall (2000) support this view. Bliss and Flannery (2000) argue that even though banks do not seem to respond strongly to increases in yield spreads, the market may respond to the risk-taking by banks. One study outside the U.S. by Martinez Peria and Schmakler (1998) refers to Argentina, Chile and Mexico. The results are consistent with those for the U.S. As noted, Sironi (2000a) finds in the only European study so far that yields on existing subordinated debt seems to adjust to banks' riskiness.
4. Relatively small banks may not issue sufficient debt to develop liquid markets with frequent trading. In such cases yields may be unreliable indicators of risk. A proposal to deal with this problem is that the bank auctions some fraction of its subordinated debt each month or quarter. The longer the maturity the smaller the fraction. Since the maturity of the debt must not be too short the frequency must be determined based on what would be a suitable size of each issue.
5. The scope for manipulation of yields by insiders is greater in relatively thin markets. The supervisory authority has an important role in overseeing market transactions and especially transactions by insiders. This is a role supervisory authorities already perform in many countries. The information supervisory authorities have about banks may also serve as an indicator of the quality of the market pricing mechanism. The information obtained directly by supervisors, and market information must be seen as complements and used according to the judgement of supervisors in countries with thin or undeveloped markets.

A first phase proposal

With the above objections in mind to the use of subordinated debt yields by regulators, it is not realistic to propose that only subordinated debt yields should be used by regulators as an information device to trigger, for example, prompt corrective action. Nevertheless, the Basel Committee could implement rather easily a first phase of a mandatory subordinated debt requirement. This first phase would include the following elements:

- (1) A mandatory subordinated debt requirement as part of the regulatory capital requirement, where the minimum percentage of subordinated debt to be issued is set in line with current levels of subordinated debt. The requirement should be limited to relatively large banks. Many large American and European banks already issue subordinated debt. On the average for the U.S. this debt amounts to more than two percent of total assets for the large banks according to a study by the Federal Reserve

Board (1999). Moreover, there is some evidence that many large banks in Europe also have a ratio of about two percent.

- (2) Attempts to signal strongly, and to ensure international agreement that subordinated debt is credibly uninsured. Even in case of a bail-out of other stakeholders, the holders of this debt must not be compensated for losses.
- (3) Close monitoring of the risk premium on subordinated debt of each individual bank in order to establish whether the market's perception of increased riskiness is consistent with a bank's internal rating system. This information should be integrated in the supervisory review process ("pillar II" of the Basel Committee proposal).

In this first phase of the subordinated debt proposal there would not yet be a system of automatic sanctions (such as prompt corrective action) when the risk premium goes up for a longer period of time. However, as part of the supervisory review process a supervisor might decide to increase the capital requirement of a particular bank. Since banks know that their supervisor is watching the yield spread on subordinated debt and might act on it, this will mitigate their incentives to underestimate the credit risk.

7. Summary

We have presented a proposal for a relatively modest first phase of a requirement that banks issue credibly uninsured subordinated debt as a part of their required capital. It is our view that a subordinated debt scheme should be an essential part of a capital adequacy framework based on internal ratings. Without such a scheme an internal ratings standard is not likely to function effectively, and without an internal ratings standard the capital adequacy framework is not likely to serve its purpose. The markets for subordinated debt must be watched closely, however, in order for information to be extracted and for incentive effects not to become perverse. Also, any implementation of a subordinated debt scheme must be accompanied by measures signaling the credibility of the non-insurance of the debt. The European Commission and Council have an important role in this respect, since these bodies are able to monitor national supervisory authorities and develop tools for dealing with those violating the principles of the regulatory framework.

The discussion in the previous sections can be summarized by the highlighting of the following incentive effects of the Basel Committee proposal, and of mandatory subordinated debt that is not part of the Basel proposal:

- (1) The proposed regulation would have a positive incentive effect in terms of stimulating banks to improve their internal risk management systems. Risk weightings based on the internal ratings are more refined compared to the 1988 Capital Accord. However, the approach is still additive, i.e. individual credit risks are summed up without consideration of portfolio effects.

- (2) Incentives and scope for regulatory capital arbitrage remain, although to a lesser extent.
- (3) Another, and potentially perverse, incentive effect of the current proposals is that banks might have incentives to design internal ratings systems that systematically underestimate credit risk and, hence, lower the regulatory capital requirement. A deliberate underestimation occurs when banks decide to manipulate the internal ratings systems. A non-deliberate underestimation of credit risk occurs when banks do not develop sufficient awareness and expertise in risk evaluation, because explicit and implicit insurance schemes reduce incentives to compete by developing such expertise.
- (4) Supervisors are facing an unequal battle with the banks, because banks can and will hire the best people and pay the highest salaries. For this reason and due to the lack of sufficient data, underestimation of credit risk is very difficult to prove. Even if it is possible to prove for a supervisor that an individual bank faces severe problems because of deliberate underestimation of credit risk, it is very hard to design credible penalty systems.
- (5) The more intensive supervision of internal ratings may lead to increased cooperation between banks and supervisors with respect to the development of methods for credit risk evaluation. This closeness may be particularly pronounced for large banks. As a result the New Accord may strengthen the competitive position of large banks.
- (6) Market discipline can mitigate the potential underestimation of credit risk but the Basel Committee proposal does not provide a strong mechanism for such discipline. Information disclosure and transparency will generate strong market discipline only if there is a group of investors having maximum incentives to use this information. Credibly uninsured subordinated debt-holders would be such investors.

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