

Subordinated debt as bank capital: A proposal for regulatory reform

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Introduction and summary

Last year, a Federal Reserve Study Group, in which we participated, examined the use of subordinated debt as a tool for disciplining bank risk taking. The study was completed prior to the passage of the 1999 U.S. Financial Services Modernization Act and the results are reported in Kwast et al. (1999). The report provides a broad survey of the academic literature on subordinated debt and of prevailing practices within the current market for subordinated debt issued by banking organizations. Although the report discusses a number of the issues to be considered in developing a policy proposal, providing an explicit proposal was not the purpose of the report. Instead, it concludes with a call for additional research into a number of related topics.

In this article, we present a proposal for the use of subordinated debt in bank capital regulation. Briefly, our proposal would require that banks hold a minimum level of subordinated debt and be required to approach the marketplace on a somewhat regular basis to roll over that debt. We believe the proposal is particularly timely for a variety of reasons, one of which is that Congress recently demonstrated its interest in the topic when it passed the U.S. Financial Services Modernization Act (Gramm-Leach-Bliley Act). The act instructs the Board of Governors of the Federal Reserve and the Secretary of the Treasury to conduct a joint study of the potential use of subordinated debt to bring market forces to bear on the operations of large financial institutions and to protect the deposit insurance funds.¹ The act also requires large U.S. national banks to have outstanding (but not necessarily subordinated) debt that is highly rated by independent agencies in order to engage in certain types of financial activities. Another reason to consider alternatives now is that banks in most developed countries, including the U.S., are relatively healthy. This reduces the

probability that a greater reliance on market discipline will cause a temporary market disruption. Additionally, history shows that introducing reforms during relatively tranquil times is preferable to being forced to act during a crisis.²

Perhaps the most important reason that now may be a good time to consider greater reliance on subordinated debt is that international efforts to reform existing capital standards are highlighting the weaknesses of the alternatives. In 1988, the Basel Committee on Banking Supervision published the *International Convergence of Capital Measurement and Capital Standards*, which established international agreement on minimum risk-based capital adequacy ratios.³ The paper, often referred to as the Basel Capital Accord, relied on very rough measures of a bank's credit risk exposure, however, and banks have increasingly engaged in regulatory arbitrage to reduce the cost of complying with the requirements (Jones, 2000). The result is that by the end of the 1990s, the risk-based capital requirements had become more of a compliance issue than a safety and soundness issue for the largest and most sophisticated banks.

Bank supervisors have recognized the problems associated with the 1988 accord, and the Basel Committee recently proposed two possible alternatives: a standardized approach that uses credit rating agencies to evaluate individual loans in banks' portfolios and an internal ratings approach that uses the ratings of individual loans that are assigned by banks' internal ratings procedures. An important element of both

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of these proposals is that they rely on risk measures obtained from private sector participants rather than formulas devised by supervisors.⁴ The use of market risk measures has the potential to provide substantially more accurate risk measurement than would any supervisory formula. Market participants have the flexibility to evaluate all aspects of a position and assign higher risk weights where appropriate.

Whether either of these approaches would result in a significant improvement, however, is questionable. The approaches share two significant weaknesses. First, both ask for opinions rather than relying on private agents' behavior. Economists have long been trained to focus on prices and quantities established in arms-length transactions rather than on surveys of individual opinions. The problem with opinions is that individuals' responses may depend not only on their beliefs but also on what they want the questioner to think. Second, the reliance in this case on opinions is especially problematic because the two parties being asked about a bank's risk exposure both have an incentive to underestimate that exposure. The firm seeking a rating compensates the ratings agencies. If the primary purpose of the rating is to satisfy bank supervisors, then firms will have a strong incentive to pressure the agencies to supply higher ratings.⁵ The incentive conflict for banks is even more direct. The intent of Basel's capital proposal appears to be to require banks to hold more capital than they otherwise would. If this is true, banks will have incentives to systematically underestimate their risk exposure.

The use of a risk measure obtained from the subordinated debt market has the potential to avoid both of these problems. The measure could use actual prices rather than some individual's opinion. Further, the interests of subordinated debt creditors are closely aligned with those of bank supervisors, in that subordinated creditors are at risk of loss whenever a bank fails.

Below, we summarize some of the existing subordinated debt proposals. Then, we introduce our new proposal, address some of the common concerns raised about the viability of subordinated debt proposals, and explain how our proposal addresses these concerns.

Brief summary of past proposals

Since the mid-1980s there have been a number of regulatory reform proposals aimed at capturing the benefits of subordinated debt (sub-debt).⁶ Below, we provide a partial review of previous proposals that emphasizes the characteristics on which our proposal rests. (These are surveyed in greater detail in Kwast et al., 1999). It was common in the earlier proposals for the authors not to provide a comprehensive plan,

but instead to stress the expected benefits and describe how these could be realized. Specific characteristics were typically excluded to avoid having the viability of the proposals determined by the acceptance of the details. The typical benefits of the proposals relate to the ability of sub-debt to provide a capital cushion and to impose both direct and derived discipline to banks and from the tax benefits of debt.⁷ These benefits include the following:

- a bank riskiness or asset quality signal for regulators and market participants,
- a more prompt failure resolution process, resulting in fewer losses to the insurance fund,
- a more methodical failure resolution process because debtholders unlike demand depositors must wait until the debt matures to “walk” away from the bank rather than run, and
- a lower cost of capital because of the tax advantages of deducting interest payments on debt as an expense, enabling banks to reduce their cost of capital and/or supervisors to increase capital requirements.

Horvitz (1983, 1984) discusses each of these advantages in his initial sub-debt proposal and extends that discussion in Benston et al. (1986). He challenges the view that equity capital is necessarily preferable to debt. While equity is permanent and losses can indeed be charged against it, he questions why one would want to keep a troubled bank in operation long enough to make this feature relevant. Similarly, while interest on debt does represent a fixed charge against bank earnings, whereas dividends on equity do not, a bank with problems significant enough to prevent these interest payments has most likely already incurred deposit withdrawals and has reached, or is approaching, insolvency. Arguing that higher capital levels are needed at the bank level and are simply not feasible through equity alone, Horvitz states that sub-debt requirements of “say, 4 percent of assets” are a means to increase total capital requirements to 9 percent to 10 percent. Without providing specifics, he argues that debtholders would logically require debt covenants that would give them the right to close or take over the bank once net worth was exhausted. Thus, sub-debt is seen as an ideal cushion for the Federal Deposit Insurance Corporation (FDIC).

Keehn (1988) incorporates sub-debt as a centerpiece of the comprehensive “FRB-Chicago Proposal” for deregulation.⁸ The plan calls for a modification of the 8 percent capital requirement to require that a minimum of 4 percent of risk-weighted assets be held as sub-debt. The bonds would have maturities

of no less than five years, with the issues being staggered to ensure that between 10 percent and 20 percent of the debt would mature and be rolled over each year. A bank's inability to do so would serve as a clear signal that it was in financial trouble, triggering regulatory restrictions and debt covenants.⁹ Debt covenants would enable the debtholders to initiate closure procedures and would convert debtholders to an equity position once equity was exhausted. They would have a limited time to recapitalize the bank, find a suitable acquirer, or liquidate the bank. Keehn argues that debtholders could be expected to effectively discipline bank behavior and provide for an orderly resolution process when failure did occur. The discipline imposed by sub-debt holders could differ significantly from that imposed by depositors as holders of outstanding sub-debt could not run from the bank, but could only walk as issues matured. The potential for regulatory forbearance is also thought to be less as holders of sub-debt would be less concerned with giving the troubled bank additional time to "correct" its problems and would pressure regulators to act promptly when banks in which they had invested encountered difficulties.

To address concerns about the mispriced bank safety net and potential losses to the insurance fund, Wall (1989) introduces a sub-debt plan aimed at creating a banking environment that, while maintaining deposit insurance, would function like an environment that did not have deposit insurance. Wall's plan is to have banks issue *and maintain* "puttable" sub-debt equal to 4 percent to 5 percent of risk-weighted assets. If debtholders exercised the put option, that is, if they required the bank to redeem its debt, the bank would have 90 days to make the necessary adjustments to ensure the minimum regulatory requirements were still satisfied. That is, either retire the debt and continue to meet the regulatory requirement because of excess debt holdings, issue new puttable debt, or shrink assets to satisfy the requirement. If the bank could not satisfy the requirement after 90 days, it would be resolved. The put characteristic has advantages in that it would force the bank to continually satisfy the market of its soundness. Additionally, while earlier plans discussed the need for bond covenants to protect debtholders, *all* contingencies would be covered under this plan as the market could demand redemption of the bonds without cause. This would essentially eliminate the practice of regulatory forbearance, which was a significant concern at the time, and would subject the bank to increased market discipline. Wall also stresses the need for restrictions on debtholders to limit insider holdings.

Calomiris (1997, 1998, 1999) augments previous sub-debt proposals by requiring a minimal requirement (say 2 percent of total assets) *and* imposing a yield ceiling (say 50 basis points above the riskless rate). The spread ceiling is seen as a simple means of implementing regulatory discipline for banks. If banks cannot roll over the debt at the mandated spread, they would be required to shrink their risk-weighted assets to stay compliant. Debt would have a two-year maturity with issues being staggered to have equal portions come due each month. This would limit the maximum required monthly asset reduction to approximately 4 percent of assets. To ensure adequate discipline, Calomiris also incorporates restrictions on who would be eligible to hold the debt.¹⁰

The effectiveness of any sub-debt requirement depends critically on the structure and characteristics of the program. Most importantly, the characteristics should be consistent with the regulatory objectives, such as increasing direct discipline to alter risk behavior, increasing derived discipline, or limiting or eliminating regulatory forbearance. Keehn, for example, is particularly interested in derived discipline. Wall's proposal is most effective at addressing regulatory forbearance. Calomiris's spread ceiling most directly uses derived discipline to force the bank into behavioral changes when the spread begins to bind.

We believe that sub-debt's greatest value in the near term is as a risk signal. The earliest proposals had limited discussion of the use of sub-debt for derived regulatory discipline. The next round of plans, such as those by Keehn and Wall, use derived discipline, but the only signal they obtain from the sub-debt market is the bank's ability to issue the debt. We have considerable sympathy for this approach. These types of plans maximize the scope for the free market to allocate resources by imposing minimal restrictions while eliminating forbearance and protecting the deposit insurance fund. However, the cost of providing bank managers with this much freedom is to delay regulatory intervention until a bank is deemed by the markets to be "too risky to save." As Benston and Kaufman (1988) argue, proposals to delay regulatory intervention until closure may be time inconsistent in that such abrupt action may be perceived by regulators as suboptimal when the tripwire is triggered. Moreover, market discipline will be eroded to the extent that market participants do not believe the plan will be enforced. Benston and Kaufman argue that a plan of gradually stricter regulatory intervention as a bank's financial condition worsens may be more credible. A version of that proposal, prompt corrective action, was adopted as part of the FDIC Improvement Act of 1991 (FDICIA).

Using sub-debt rates, Calomiris provides a mechanism for this progressive discipline that in theory could last approximately two years. In practice, however, his plan would likely provide the same sort of abrupt discipline as the prior proposals, with the primary difference being that Calomiris's plan would likely trigger the discipline while the bank was in a stronger condition. His plan requires banks to shrink if they cannot issue subordinated debt at a sufficiently small premium. This would provide a period during which the bank could respond by issuing new equity. If the bank could not or did not issue equity, then it would most likely call in maturing loans to good borrowers and sell its most liquid assets to minimize its losses. However, the most liquid assets are also likely to be among the lowest risk assets, implying that with each monthly decline in size, the bank would be left with a less liquid and more risky portfolio. This trend is likely to reduce most banks' viability significantly within, at most, a few months. Yet, the previous proposals that would rely on a bank's ability to issue subordinated debt at any price also give managers some time to issue new equity either by automatically imposing a stay (Wall's proposal) or by requiring relatively infrequent rollovers (Keehn's proposal). Thus, Calomiris's proposal is subject to the same sorts of concerns that arise with the other proposals.

Although Calomiris's proposal for relying on progressive discipline is more abrupt than it appears at first glance, his suggestion that regulators use the rates on sub-debt provides a mechanism for phasing in stricter discipline. In the next section, we describe our proposal, which offers a combination of Calomiris's idea of using market rates with Benston and Kaufman's proposal for progressively increasing discipline.¹¹

Our sub-debt proposal differs from previous ones in that it is more comprehensive, with an implementation schedule and a discussion of the necessary changes from current regulatory arrangements. The timing for such reform also seems particularly good as there is a growing consensus that a market-driven means to augment supervisory discipline is needed. Furthermore, banks as a group are relatively healthy, creating an environment in which a carefully thought-out plan can be implemented instead of the hurriedly imposed regulations that sometimes follow a financial crisis.

A new comprehensive sub-debt proposal

As discussed earlier, banking organizations' entry into new activities is raising additional questions about how best to regulate their risk behavior. Ideally, the new activities would avoid either greatly extending

the safety net beyond its current reach or requiring costly additional supervision procedures. A plan incorporating sub-debt could help in meeting these challenges. Markets already provide most of the discipline on nondepository financial institutions, as well as virtually all nonfinancial firms. A carefully crafted plan may be able to tap similar market discipline for financial firms to help limit the safety net without extending costly supervision.

Below, we describe our detailed sub-debt proposal. Although our target is the U.S. banking sector, the plan has broader implications as international capital standards come into play.¹² While others have argued that U.S. banking agencies could go forward without international cooperation, we think there are benefits from working with the international banking agencies, if possible. The explicit goals of the proposal are to: 1) limit the safety net exposure to loss, 2) establish risk measures that accurately assess the risks undertaken by banks, especially those that are part of large, complex financial organizations, and 3) provide supervisors with the ability to manage (but not prevent) the exit of failing organizations. The use of sub-debt can help achieve these goals by imposing some direct discipline on banks, providing more accurate risk measures, and providing the appropriate signals for derived discipline and, ultimately, failure resolution.

Setting the ground rules

As a starting point, we need to consider whether a new sub-debt program should fit within the existing regulatory framework or require adjustments to the framework in order to effectively fulfill its role. In our view, the goals of the proposal cannot be effectively achieved in the current regulatory environment, which *allows* banks to hold sub-debt, but does not *require* that they do so. As a result, banks are most likely to opt out of rolling over maturing debt or introducing new issues precisely in those situations when sub-debt would restrict their behavior and signal the market and regulators that the bank is financially weak. Only a mandatory requirement would achieve the expected benefits. Thus, our proposal requires banks to hold minimum levels of sub-debt.

Similarly, other restrictions in the current regulatory environment limit the potential effectiveness of a sub-debt program. In the current regulatory environment, the role of sub-debt in the bank capital structure is determined by the Basel Accord, which counts sub-debt as an element of tier 2 capital, with the associated restrictions, and limits the amount that may be counted as regulatory capital.

Maintaining the current restrictions has two both-ersome implications. First, it dictates almost all of the terms of the sub-debt proposal. For example, U.S. banks operating under current Basel constraints have generally chosen to issue ten-year sub-debt. If there are perceived benefits from having a homogeneous debt instrument, in the current regulatory environment the optimal maturity would appear to be ten years. This is not to say that if left unconstrained financial firms would prefer ten-year maturities. Indeed bankers frequently criticize the restrictions imposed on sub-debt issues that, as discussed above, make it a less attractive form of capital. Ideally, without the restrictions imposed by Basel, the maturity would be much shorter to allow it to better match the duration of the bank balance sheet. However once the ten-year maturity is decided upon as a result of the restrictions, the frequency of issuance is operationally limited to avoid “chopping” the debt requirement too finely. For example, with a 2 percent sub-debt requirement, mandating issuance twice a year would require a \$50 billion bank to regularly come to the market with \$50 million issues—significantly smaller than standard issues in today’s markets. Thus, adhering to the current Basel restrictions would determine one of the interdependent parameters and thus drive them all. Adjusting the Basel restrictions frees up the parameters of any new sub-debt proposal.

The second implication of following the current Basel Accord is that sub-debt is not designed to enhance market discipline. Given that sub-debt is considered an equity substitute in the capital structure, it is designed to function much like equity and to provide supervisory flexibility in dealing with distressed institutions. In particular, the value of the sub-debt is amortized over a five-year period to encourage banks to use longer-term debt. Furthermore, the interest rate on the debt does not float, thus it is limited in its ability to impose direct discipline when there are changes in the bank’s risk exposure. Finally, because sub-debt is regarded as an inferior form of equity, the amount of sub-debt is limited in the accord to 50 percent of the bank’s tier 1 capital.¹³

If indeed there are benefits to giving sub-debt a larger role in the bank capital structure, then consideration should be given to eliminating the current disadvantages to using this instrument as capital. That is the approach we take in our proposal.

The proposal

Our sub-debt program would be implemented in stages as conditions permit.

Stage 1: Surveillance stage (for immediate implementation)

- Sub-debt prices and other information would be used in monitoring the financial condition of the 25 largest banks and bank holding companies in the U.S.¹⁴ Procedures would be implemented for acquiring the best possible pricing data on a frequent basis for these institutions, with supplementary data being collected for other issuing banks and bank holding companies. Supervisory staff would gain experience in evaluating how bank soundness relates to debt prices, spreads, etc., and how changes in these elements correlate with firm soundness.
- Simultaneously, in line with the mandate of the Gramm-Leach-Bliley Act, staffs of regulatory agencies would complete a study of the value of information derived from debt prices and quantities in determining bank soundness and evaluate the usefulness of sub-debt in increasing market discipline in banking. Efforts would be made to obtain information on the depth and liquidity of debt issues, including the issues of smaller firms.¹⁵
- If deemed necessary, the regulatory agencies would obtain the necessary authority (via congressional action or regulatory mandate) to require banks and bank holding companies to issue a minimum amount of sub-debt with prescribed characteristics and to use the debt levels and prices in implementing prompt corrective action. The legislation would explicitly prohibit the FDIC from absorbing losses for sub-debt-holders, thus excluding sub-debt from the systemic risk exception in FDICIA.
- The bank regulatory agencies would work to alter the Basel Accord to eliminate the unfavorable characteristics of sub-debt (the 50 percent of tier 1 limitation and the required amortization).

Stage 2: Introductory stage (to be implemented when authority to mandate sub-debt is obtained)

- The 25 largest banks would be required to issue a minimum of 2 percent of risk-weighted assets in sub-debt on an annual basis with qualifying issues at least three months apart to avoid long periods between issues or “bunching” of issues during particularly tranquil times.¹⁶
- The sub-debt would have to be issued to independent third parties and be tradable in the secondary market. The sub-debt’s lead underwriter and market makers could not be institutions affiliated with the issuing bank, nor could the debt be held by affiliates. Additionally, no form of credit enhancement could be used to support the debt.¹⁷

- The terms of the debt would need to explicitly state and emphasize its junior status and that the holder would not have access to a “rescue” under the too-big-to-fail systemic risk clause. It is imperative that the debtholders behave as junior creditors.
- Failure to comply with the issuance requirement would trigger a presumption that the bank is critically undercapitalized. If the bank’s outstanding sub-debt trades at yields comparable to those of firms with a below investment grade rating (Ba or lower—that is, junk bonds) for a period of two weeks or longer, then the bank would be presumed to be severely undercapitalized.¹⁸
- Regulators would investigate whether the remaining capital triggers or tripwires associated with prompt corrective action could be augmented with sub-debt rate-based triggers. The analysis would consider both the form of the trigger mechanism (for example, rate spreads over risk-free bonds or relative to certain rating classes) and the exact rates/spreads that should serve as triggers.
- The sub-debt requirement would be phased in over a transition period.

Stage 3: Mature stage (to be implemented when adjustments to the Basel Accord allow for sufficient flexibility in setting the program parameters, or at such time as it becomes clear that adequate modifications in the international capital agreement are not possible)

- A minimum sub-debt requirement of at least 3 percent of risk-weighted assets would apply to the largest 25 banks, with the expressed intent to extend the requirement to additional banks unless the regulators’ analysis of sub-debt markets finds evidence that the costs of issuance by additional banks would be prohibitive. The purpose is to allow for an increase in the number of banks that can cost effectively be included in the program.
- The sub-debt must be five-year, noncallable, fixed rate debt.
- There must be a minimum of two issues a year and the two qualifying issues must be at least two months apart.

Discussion of the proposal

Stage 1 is essentially a surveillance and preparatory stage. It is necessary because the rest of our proposal requires that regulators have the ability to require sub-debt issuance and access to data to implement the remaining portion of the plan.

At stage 2, regulators introduce the sub-debt program and begin using sub-debt as a supplement to the current capital tripwires under prompt corrective

action. The ultimate goal of stage 2 is to use sub-debt-based risk measures to augment capital-based measures, assuming a satisfactory resolution of some practical problems discussed below. The sub-debt tripwires initially set out in stage 2 may reasonably be considered “loose.” Banks that cannot issue sub-debt are probably at or near the brink of insolvency, especially given that they only need to find one issuance window during the course of a year. If a bank’s sub-debt is trading at yields comparable to those of junk bonds, then it is most likely having significant difficulties, and supervisors should be actively involved with the bank. We would not ordinarily expect supervisors to need assistance in identifying banks experiencing this degree of financial distress. However, the presence of such tripwires would reinforce the current mandate of prompt corrective action. Further, it would strengthen derived discipline by other market participants by setting lower bounds on acceptable sub-debt rates.

The use of sub-debt yields for all of the tripwires under prompt corrective action could offer significant advantages. As discussed earlier, market-based tripwires are expected to be more closely associated with bank risk. However, two dimensions need further work before heavy reliance on sub-debt spreads is possible. First, regulators need to review the history of sub-debt rates to determine how best to use them as risk measures and how best to deal with periods of illiquidity in the bond market.¹⁹ Second, the linking of sub-debt rates to prompt corrective action will imply a tighter link between the prompt corrective action categories and the risk of failure than is possible under the Basel Accord risk measures. Senior policymakers will need to decide where to set the tripwires. What risk of failure is acceptable for a bank to be considered “well capitalized,” “adequately capitalized,” or “undercapitalized”? Thus, at this stage we recommend further study by regulators, academics, and bankers to determine the proper course.

At stage 3, the mature stage, the increased amount of required sub-debt and the shorter maturity should significantly enhance the opportunity for sub-debt to exercise direct market discipline on banks. Another advantage of this proposal is that banks would be somewhat compensated, via the increased attractiveness of sub-debt as regulatory capital, for any increased regulatory burden from holding the additional debt. The removal of the restrictions would make the cost of holding the debt less burdensome than under current regulatory arrangements. While it is not certain, it seems likely that the net regulatory burden would also be less. The five-year maturities in this

stage allow for more frequent issuance, which should increase direct market discipline and market information. At the same time, we believe five years is sufficient to tie the debt to the bank and avoid bank runs.

The principal difference in this stage is the recommendation to shorten the maturity of the sub-debt. Requiring a shorter maturity will allow more frequent issuance and result in a larger fraction of the sub-debt being repriced every year. Banks should find this advantageous, because the maturity would more closely align with the maturities on its balance sheet. A minor downside is that it may require regulators to recalibrate the sub-debt yield trigger points for prompt corrective action for the categories of well capitalized, adequately capitalized, and undercapitalized. However, as indicated above, this recalibration will most likely be an ongoing process as regulators obtain additional market expertise.

One aspect of our proposal that may appear to be controversial is the movement toward eliminating the sub-debt restrictions imposed by the Basel Accord. However, once the decision is made to employ sub-debt for overseeing bank activities, the restrictions appear unnecessary and overly burdensome. They only serve to increase the cost to participating banks and to limit the flexibility of the program. Without the current restrictions, banks would prefer to issue shorter-term debt and, in some situations, would be able to count more sub-debt as regulatory capital. Similarly, as discussed above, the parameters of any sub-debt policy will be driven in great part by current regulatory restrictions. Keeping those restrictions in place would therefore place an unnecessary burden on participating banks, and would limit regulators, without any obvious positive payoff.²⁰ The effort to adjust Basel also does not slow the movement toward implementation of a sub-debt program since it would be phased in through the three-stage process. However, laying out the broad parameters of the complete plan in advance would indicate a commitment by regulators and could increase the credibility of the program.²¹ Once fully implemented, sub-debt would become an integral part of the regulatory structure.

Concerns and frequently asked questions about sub-debt

There are a number of issues raised about the viability of sub-debt proposals. Below, we address some of these issues and clarify exactly what we expect sub-debt programs to accomplish.²² We also highlight where our proposed sub-debt program specifically addresses these issues.

Won't the regulatory agencies "bail out" troubled institutions by making sub-debt holders at failed institutions whole if they would have suffered losses otherwise, thus eliminating the purported benefits of a sub-debt program? This is probably the most fundamental concern raised about the viability of sub-debt proposals. An implicit guarantee may at times be more distorting to market behavior than an explicit guarantee. If debtholders *believe* that regulators will make them whole if the issuing bank encounters difficulties and cannot make payment on their debt, then they will behave accordingly. Acting as if they are not subject to losses, they will fail to impose the necessary discipline on which the benefits of sub-debt proposals rely. There was evidence of such indifference to bank risk levels in the 1980s when the bailout of the Continental Illinois National Bank ingrained the too-big-to-fail doctrine into bank investors' decision-making. In essence, if the market discipline is not allowed to work, it will not. This applies to sub-debt.

However, a sub-debt bailout is unlikely under current arrangements and our proposal makes it even less likely. Holders of sub-debt are sophisticated investors, who understand their position of junior priority and the resulting potential losses should the issuing firm encounter difficulties. Additionally, since banks are not subject to bankruptcy laws, debtholders cannot argue for a preferred position by refusing to accept the bankruptcy reorganization plan. Thus, they are unable to block the resolution. So pressures to rescue debtholders should not arise either from a perceived status as unsophisticated investors or from their bargaining power in the failure resolution process.

The FDIC guaranteed the sub-debt of Continental of Illinois in 1984, but it did so to avoid having to close the bank and not to protect the sub-debt investors per se. The effect of FDICIA and its prompt corrective action, least cost resolution requirements, and too-big-to-fail policies was to significantly curtail and limit the instances when uninsured liability holders would be protected from losses. Benston and Kaufman (1998) find that policy did change as a result of FDICIA, as significantly fewer uninsured depositors were protected from losses at both large and small banks after passage of the legislation. Similarly, Flannery and Sorescu (1996) find evidence that the markets viewed FDICIA as a credible change in policy and, as a result, sub-debt prices began reflecting differences in bank risk exposures. Thus, the market apparently already believes that sub-debt-holders will not be bailed out in the future.

Under our sub-debt proposal, there would be still lower potential for debtholder rescue. Unlike

depositors, who can claim their assets on demand, holders of the intermediate-term debt could only claim their assets as the debt matured instead of initiating a “bank run,” the kind of event that has typically prompted the rescues we have seen in the past. Additionally, there is much less subjectivity if the sub-debt price spreads are used for prompt corrective action rather than book value capital ratios. Finally, under our proposal, the sub-debt holder would be explicitly excluded from the class of liabilities that could be covered under the systemic risk exception. This exclusion should be viewed favorably by banks. Under the terms of the too-big-to-fail exception in FDICIA, losses from the rescue would have to be funded via a special assessment of banks. Therefore, banks should encourage the FDIC to strictly limit the extent of the liabilities rescued.

Are there cost implications for banks? Interestingly, the costs associated with issuing sub-debt have been used as an argument both for *and* against sub-debt proposals. The standard argument is that there are relative cost advantages from issuing debt resulting from the favorable tax treatment.²³ It is also argued that closely held banks may find debt to be a less expensive capital source as new equity injections would come from investors who realize they will have a minor ownership role.²⁴ Both arguments suggest that an increased reliance on sub-debt would result in cost savings.

There are, however, some additional actual or potential costs associated with increased sub-debt issues. First, increased reliance on relatively frequent debt rollovers would generate transaction costs or issuance costs. There is disagreement as to just how expensive these costs would be. Some argue that the cost would be similar to that required for issuing bank certificates of deposit, while others argue that the cost could be quite substantial. The issuance frequency discussed in most sub-debt proposals, however, is not very different from the current frequency at large banking organizations. Two issues per year, which is well within the recommendations in most sub-debt proposals, is relatively common in today’s banking markets.²⁵

A more significant concern seems to be where, within the overall banking organization, the debt would be issued. Most sub-debt proposals require the debt to be issued at the bank level whereas, until recently, most sub-debt was issued at the bank holding company level. This allowed the holding company the flexibility to distribute the proceeds throughout the affiliated firms in the organization. This occurred in spite of the fact that the rating agencies typically rated bank debt higher than the debt of the holding

company, and, similarly, holding company debt typically traded at a premium to comparable bank debt.²⁶ This would suggest that the additional flexibility from issuing debt at the holding company level is of value to the banking organization. Removal of this flexibility would impose costs. The recent trend toward issuing more debt at the bank level, however, would suggest the value of this flexibility is becoming less important.

A more important cost implication is imbedded in our sub-debt proposal. In the past, regulators have restricted the use of sub-debt by limiting the amount that could count as capital and by requiring that the value of the sub-debt be amortized over the last five years before maturity. These restrictions are imposed because the firm needs to make periodic payments on the debt, regardless of its financial condition. However, this does not decrease the effectiveness of sub-debt in serving the capital role as a cushion against losses. It still buffers the insurance fund. By eliminating these restrictions in our sub-debt proposal, we enhance the value of the debt as capital and decrease the net cost of introducing the proposal.

Isn’t there a problem in that sub-debt proposals are procyclical? A possible concern with sub-debt requirements is that they may exacerbate procyclical behavior by banks—increased lending during economic expansions and reduced lending during recessions. However, this is not unique to sub-debt programs; any regulatory requirement that does not adjust over the course of a business cycle has the potential to be procyclical if banks seek to only satisfy the minimum requirements. For example, appendix D of Kwast et al. (1999) points out that bank capital adequacy ratios are likely to decline during recessions as banks experience higher loan losses, implying that regulation based on capital adequacy ratios has the potential to be procyclical.²⁷

The procyclicality of a regulatory requirement may be at least partially offset if banks seek to maintain some cushion above minimum regulatory requirements that they may draw on during economic downturns. In the case of the regulatory capital adequacy requirements, both casual observation of recent bank behavior and formal empirical analysis from the 1980s and early 1990s suggest that banks do indeed seek to maintain such a cushion for contingencies.²⁸

Moreover, a regulatory program that uses sub-debt yields as triggers for regulatory action may be designed to induce less procyclical behavior than would other types of regulatory requirements. Consider two ways to design the sub-debt triggers as discussed in Kwast

et al. (1999). One design is to base regulatory action on a constant basis point spread over bonds with little or no credit risk, such as Treasury securities. Such a standard is more likely to become binding during recessions when banks are experiencing loan losses and investors demand higher risk premiums to continue holding bank bonds. Thus, a policy that sets triggers at a constant premium over Treasuries may result in procyclical regulation in a manner similar to that of standard capital requirements.

Another way of designing the triggers, however, is to base them on a measure that offers countercyclical yields over the business cycle, for example, the yields on corporate bonds of a given rating. There is evidence that bond-rating agencies seek to smooth ratings through business cycles. For example, Theodore (1999, p. 10) states Moody's policies:

Moody's bank ratings ... aim at looking to the medium- to long-term, through cyclical trends. For example, a drop in quarterly, semi-annual or even annual earnings is not necessarily a reason to downgrade a bank's ratings. However, if the earnings drop is the result of a structural degradation of a bank's fundamentals, credit ratings need to reflect the new developing condition of the bank.

If the rating agencies are trying to "look through the business cycle," then the spreads on corporate bonds over default-free securities should be small during expansions because investors, but not the rating agencies, recognize a lower probability of default during expansions. Similarly, the spreads on corporate bonds over default-free bonds should rise during recessions as the markets, but not the rating agencies, recognize the increased probability of default. Thus, prompt corrective action triggers based on sub-debt yields relative to corporate yields introduce an element of smoothing. The triggers may be relatively tight during expansions when banks should be building financial strength and relatively loose during downturns as they draw down part of their reserves.

One case where the use of sub-debt yields may tend to reinforce the business cycle is when liquidity drops in all corporate bond markets and risk premiums (including liquidity risk premiums) temporarily soar.²⁹ However, our proposal recognizes this potential problem and provides for temporary relief until liquidity improves.

Aren't supervisors better gauges of the riskiness of a bank because they know more about each bank's exposure than the market does? If so, then why not rely exclusively on the supervisors instead of holders of sub-debt? In some cases the market's knowledge of a bank's exposure may indeed be a subset of the

examiner's knowledge. However, we rely on markets to discipline firm risk taking in virtually every other sector of our economy, so markets must have some offsetting advantages. One such advantage is that the financial markets are likely to be better able to price the risks they observe because market prices reflect the consensus of many observers investing their own funds. Another advantage of markets is that they can avoid limitations inherent in any type of government supervision. Supervisors are rightfully reluctant to be making fundamental business decisions for banks unless or until results confirm the bank is becoming unsafe or unsound. Further, even when supervisors recognize a serious potential problem, they have the burden of being able to prove to a court that a bank is engaged in unsafe activities. In contrast, in financial markets the burden of proof is on the bank to show it is being safely managed. A further weakness of relying solely on bank supervisors is that they are ultimately accountable to the political system, which suggests that noneconomic factors may enter into major decisions no matter how hard supervisors try to focus solely on the economics of a bank's position.³⁰ Sub-debt investors have no such accountability; they may be expected to focus solely on the economic condition of individual banks.

A typical concern surrounding sub-debt proposals is that the perceived intent is to supplant supervisors and rely solely on the forces of the marketplace to oversee bank behavior. In our proposal, the intent is to augment, not reduce supervisory oversight. If supervisors have additional information about the condition of a bank, there is nothing in the sub-debt proposals limiting their ability to impose sanctions on the activities of the bank. In addition to sub-debt serving the standard role as a loss-absorbing capital cushion, it serves as an additional tool for use by both the private markets *and* the regulators to discipline banks objectively. In fact, one of the major components of our proposal is to have the supervisors incorporate the yield spreads for use in prompt corrective action. With private markets providing information, supervisors can focus their efforts on exceptional circumstances, leaving the well-understood risks for assessment by the marketplace.

Do we currently know enough about the sub-debt market to proceed? Although we would like to know more about the sub-debt market, we think considerable information is already available. The studies surveyed and the new evidence presented in Kwast et al. (1999) provide considerable insight into the subordinated debt market. These studies suggest that investors in sub-debt do discriminate on the basis of the riskiness of their portfolios.

Moreover, a review of the regulatory alternatives suggests that any durable solution to achieving an objective measure of banks' risk exposure will look something like our proposal. The problems that plague the existing risk-based capital guidelines are inherent in any attempt by the supervisors to measure the riskiness of a bank's portfolio based on a pre-specified set of criteria. Over time, banks will find or will manufacture claims whose intrinsic contribution to the riskiness of the bank's portfolio is underestimated by the supervisory criteria.³¹ That is, banks will attempt to arbitrage the capital requirements.

An alternative to supervisory determined criteria is to use market evaluations. The Basel Committee on Banking Supervision correctly moved in this direction with its proposed new capital adequacy framework. However, it chose to ask opinions of market participants rather than observing market prices and quantities. The committee then compounded this by proposing to ask the opinions of the two parties, the banks and their rating agencies, that have incentives to underestimate the true risk exposure.

A superior system for obtaining a market-based risk measure will use observed data from financial markets on price or quantity, or both. That is, it will use a market test. The relevant question to be addressed is which instruments should be observed, how these instruments should be structured, and how supervisors can best extract the risk signal from the noise generated by other factors that may influence observed prices and quantities. In principle, any uninsured bank obligation can provide the necessary information. We favor sub-debt because we think it will provide the cleanest signal.

There are alternatives to sub-debt. Common equity may currently have the advantages of being issued by all large banks and of trading in more liquid markets. However, investors in bank common equity will sometimes bid up stock prices in response to *greater* risk taking, so their signal can only be interpreted in the context of a model that removes the option value of putting the bank back to the firm's creditors (including the deposit insurer). In contrast, valuable information can be extracted from subordinated debt without a complicated model. If a bank's debt trades at prices equivalent to Baa corporate bonds, then its other liabilities are at least Baa quality.

Banks also issue a variety of other debt obligations that could be used to measure their risk exposure.³² The use of any debt obligation that is explicitly excluded from the systemic risk exception in FDICIA could provide a superior risk measure to those proposed by the Basel Committee. Thus, we conclude

that sub-debt is the best choice because it is the least senior of all debt obligations if a bank should fail and, therefore, its yields provide the clearest signal about the potential risk that the bank will fail. We think sufficient information exists to adopt a sub-debt proposal with the understanding that the plan will be refined and made more effective as additional information and analysis become available.

Conclusion

FDICIA sought to reform the incentives of both banks and their supervisors. The least cost resolution provisions were intended to expose banks to greater market discipline and the prompt corrective action provisions were intended to promote earlier and more consistent supervisory discipline. Ongoing developments are undercutting both sources of discipline. Whether the government would have been willing to take the perceived short-term risks associated with least cost resolution procedures for a very large bank immediately after their introduction is debatable. Arguably, those risks have increased significantly as banks have grown larger and more complex. Whether prompt corrective action based on book values would have been effective in closing banks before they became economically insolvent is also questionable. Unquestionably, however, banks' ability to "game" regulatory risk measures has grown over the last decade.

Although ongoing developments are undercutting the intent of FDICIA, the premise that banks and their supervisors should be subject to credible discipline remains. Ideally, this discipline would come from financial markets. While markets do not have perfect foresight, they are both flexible enough to accept promising innovations and willing to acknowledge their mistakes, even if such recognition is politically inconvenient.

Sub-debt provides a viable mechanism for providing such market discipline. It is already providing useful signals in today's financial markets. We propose to combine these signals with the gradual discipline provided under prompt corrective action in a form that is credible to banks and other financial market participants.

This article provides a feasible approach to implementing enhanced discipline through sub-debt. Our proposal draws on the existing evidence on market discipline in banking and the insights of previous proposals and policy changes. The new plan provides for phased implementation and leaves room for future modifications as additional details concerning the market for sub-debt are determined. The plan calls

for specific changes in those areas where we believe the evidence is relatively clear, such as the fact that large solvent banks should be able to issue sub-debt at least once a year. In those areas where the evidence is weak to non-existent, we defer decisions pending additional study. This approach should enhance the

credibility of the plan. Although the details of the plan would evolve over time, once the basics are implemented the industry and the public would see bank behavior being significantly influenced by both market and supervisory oversight. The combination should make for a more effective, safe, and sound industry.

NOTES

¹See Title 1, Section 108 of the Gramm-Leach-Bliley Act entitled “The use of subordinated debt to protect the deposit system and deposit system funds from ‘too big to fail’ institutions.”

²During crises, the pressure of having to respond quickly increases the likelihood of introducing poorly structured regulation. Industries where regulatory reforms introduced during crises may have caused significant long-term problems include banking in the 1930s (Kaufman, 1994) and the pharmaceutical industry following the infamous Thalidomide incidents in the 1950s (Evanoff, 1989).

³An index of papers that can be downloaded from the Basel Committee on Banking Supervision website may be found at www.bis.org/publ/index.htm.

⁴See Bank for International Settlement (1999).

⁵The rating agency obviously has an incentive to maintain its credibility as an objective entity and could resist the pressure. The incentives, however, would work in this direction.

⁶More generally, in recent years there has been growing concern about the need to increase the role of market discipline in banking. See, for example, Ferguson (1999), Meyer (1999), Stern (1998), Boyd and Rolnick (1988), Broaddus (1999), and Moskow (1998).

⁷Direct discipline would result from an expected increase in the cost of issuing debt in response to an increase in the bank’s perceived risk profile. To avoid this increased cost the bank would more prudently manage risk. Derived discipline results when other agents (for example, supervisors) use the information from sub-debt markets to increase the cost to the bank. For example, as discussed below, bank supervisors could use debt yields as triggers for regulatory actions.

⁸Additional discussion of the role of sub-debt in this plan can be found in Evanoff (1993, 1994).

⁹Regulatory restrictions would be prompt-corrective-action-type constraints such as limits to dividend payments or deposit and asset growth rates once core equity fell below 2 percent of risk-weighted assets.

¹⁰The sub-debt requirement is one component of Calomiris’s regulatory reform proposal aimed at modifying industry structure and the operating procedures of the International Monetary Fund. It would also include a mandatory minimum reserve requirement (20 percent of bank debt in Calomiris, 1998), minimum securities requirement, and explicit deposit insurance. Although some details of his proposal, such as requiring the debt be issued to foreign banks, may not be feasible for U.S. banks, the general approach provides interesting insights into the issues in designing a sub-debt plan for the U.S.

¹¹This is not the first time proposals have suggested sub-debt be linked with prompt corrective action; see Evanoff (1993, 1994) and Litan (2000).

¹²The term banking is used generically and could include all depository institutions.

¹³As discussed earlier, the current bank capital requirement framework is being reevaluated (see Bank for International Settlements, 1999). As part of the debate, some have recommended total elimination of the tier 1 versus tier 2 distinction, (for example Litan, 2000). If this approach is taken, we would recommend that minimum leverage requirements be maintained to ensure sufficient levels of equity (although it would be in sub-debt holders self interest to ensure this occurs) and to provide supervisors with an official tool for intervening when equity levels fall to unacceptable levels.

¹⁴When fully implemented, the policy would apply to “banks” instead of the bank holding company. During this surveillance stage, however, information could be gained at both levels.

¹⁵Actually, progress is currently being made on these first two items. The Board staff are actively involved in collecting and analyzing sub-debt price data, and System staff are evaluating how the markets react to debt spreads.

¹⁶The only exception would occur if general market conditions precluded debt issuance by the corporate sector (both financial and nonfinancial firms). This exception requires more specific details, but it would be an industry-wide rather than a bank-specific exception.

¹⁷The objective is to limit “regulatory gaming”; see Jones (2000). Additional minimum denomination constraints could be imposed to further ensure that debtholders are sophisticated investors, (for example, see U.S. Shadow Financial Regulatory Committee, 2000).

¹⁸Depending on the depth of the secondary market, this may need to be extended to a couple of weeks. Again, the timeframe could be modified as more market information is obtained. Additionally, to allow for flexibility under extreme conditions, procedures could be introduced by which the presumption could be overturned given the approval of the FDIC upon request by the bank’s primary federal supervisor. The procedures for this exception, however, would be somewhat similar to those currently in place for too-big-to-fail exceptions, for example, submission of a public document to Congress, etc.

¹⁹For example, should risk be measured as the spread between the yield on a sub-debt issue and a comparable maturity Treasury security, the yield on a bank’s sub-debt versus the yield on comparable maturity corporate bonds in different ratings classes, or the spread over LIBOR (London Interbank Offered Rate) after the bond is swapped into floating rate funds.

²⁰This is not to say that initiating changes to the accord would be costless. Obviously negotiations would be required since other country members may want to continue to have sub-debt be an inferior form of capital. But from the participating U.S. banks' perspective and the regulators' perspective (concerning program flexibility), the elimination of these restrictions should result in net benefits.

²¹We are not saying that detailed parameters should be introduced at this time. As argued above, additional analysis is required before these could be decided upon.

²²Another potential issue is how the banks will respond to the new regulation in an attempt to avoid sub-debt discipline. A review of this issue is included in Kwast et al. (1999), and our proposal raises no new concerns. The recently passed Financial Services Modernization Act addresses some of these potential concerns by significantly limiting credit enhancements on sub-debt.

²³Jones (1998) suggests the cost of equity could be twice that of debt once the tax differences are accounted for. Benston (1992) discusses the cost differences and other advantages of sub-debt over equity capital.

²⁴Alternatively, the current owners could inject equity but that may be costly in that it places them in a situation where they are relatively undiversified.

²⁵For example, see Kwast et al. (1999). The exception is Calomiris (1998) which would require monthly changes via either debt issues or asset shrinkage.

²⁶This holding company premium is typically associated with the bank having access to the safety net and the associated lower risk of default during times of financial stress. Alternatively, it has been argued the differential results from the different standing of the two debtholders. Holders of bank debt have a higher priority claim on the assets during liquidation of the bank than do the holders of holding company debt which essentially has an equity claim on the bank.

²⁷The appendix was prepared by Thomas Brady and William English of the Board of Governors of the Federal Reserve System. Most of the comments in this section attributed to Kwast et al. come from this appendix.

²⁸Arguably, to the extent the capital requirements caused a reduction in bank lending during the early 1990s, it was because banks were trying to increase their capital ratios due to new requirements at the same time they were experiencing higher loan losses. A discussion of the "capital crunch" is provided in Hancock and Wilcox (1997, 1998). After banks have time to rebalance their portfolios in response to new capital requirements they are likely to have a cushion to absorb the higher loan losses incurred during recessions. Wall and Peterson (1987, 1995) find evidence that banks seek to maintain capital ratios in excess of regulatory requirements and speculate that part of the reason for the higher ratios is to absorb unexpected losses.

²⁹The liquidity crunch in the fall of 1998 and the Long-Term Capital episode are possible examples of such a problem period.

³⁰For example, the *American Banker* reports that the Office of the Comptroller of the Currency is threatening to downgrade bank's safety and soundness rating if they fail to supply accurate Community Reinvestment Act data; see Seiberg (1999).

³¹Supervisory agencies could short circuit this avoidance by having their examiners conduct subjective evaluations but that could easily result in examiners serving as shadow managers of banks.

³²Preferred stock is a form of equity but it would yield a clean signal unlike common equity. We do not propose the use of preferred stock for two reasons. First, dividend payments on preferred stock are not a deductible expense to the bank. Thus, forcing them to issue preferred stock would increase their costs. Second, discussions with market participants, as reported in Kwast et al. (1999, p. 45), indicated that the preferred stock market is more heavily influenced by "relatively uninformed retail investors."

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