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# Reforming Capital Requirements for Financial Institutions

Squam Lake Working Group on Financial Regulation  
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## Squam Lake Working Group on Financial Regulation

The Squam Lake Working Group on Financial Regulation is a nonpartisan, nonaffiliated group of fifteen academics who have come together to offer guidance on the reform of financial regulation.

The group first convened in fall 2008, amid the deepening capital markets crisis. Although informed by this crisis—its events and the ongoing policy responses—the group is intentionally focused on longer-term issues. It aspires to help guide reform of capital markets—their structure, function, and regulation. This guidance is based on the group’s collective academic, private sector, and public policy experience.

To achieve its goal, the Squam Lake Working Group is developing a set of principles and their implications that are aimed at different parts of the financial system: at individual firms, at financial firms collectively, and at the linkages that connect financial firms to the broader economy.

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# Reforming Capital Requirements for Financial Institutions

## *INTRODUCTION*

Banks play a critical role in the allocation of society's limited savings among the most productive investments, and they facilitate the efficient allocation of the risks of those investments. As the current crisis forcefully reminds us, a breakdown in this process can disrupt economies around the world. Because other financial institutions can step in to fill the gap, failure of an isolated bank is unlikely to cause serious economy-wide problems. Large banks, however, are rarely so isolated. Many are linked through tight webs of complex trading relationships, so the failure of one large bank can inflict significant losses on others.

The contamination across institutions is not limited to defaults. A bank that simply suffers large losses may be forced to reduce its risk by selling assets at distressed or fire sale prices. If other banks must revalue their assets at these temporarily low market values, the first sale can set off a cascade of fire sales that inflict losses on many institutions. Thus, whether through default or fire sales, one troubled bank can damage many others, reducing the financial system's capacity to bear risk and make loans.

Banks in the United States and many other countries must satisfy regulatory capital requirements that are intended to ensure they can sustain reasonable losses. These requirements are generally specified as a ratio of some measure of capital to some measure of assets, such as total assets or risk-adjusted assets. Capital requirements are typically designed as if each bank is an isolated entity, with little concern for the effect losses or default at one bank can have on other financial institutions. In this paper we argue that regulators should recognize these systemic effects when setting capital requirements. The failure of a large national bank, for example, is almost certain to have a bigger impact on the banking system and the wider economy than the failure of several small regional banks that, together, do the same amount of business as the large bank. Thus, if everything else is the same, large banks should face higher capital requirements than small banks.

Similarly, because the need to raise capital continuously provides valuable discipline, banks finance much of their operations by issuing short-term debt. Short-term financing, however, can create problems. In a crisis, banks may not be able to roll over short-term loans, perhaps because the value of their collateral has become too uncertain or because those who might provide the next round of financing fear a subsequent run. Unable to obtain short-term financing, they may be forced to sell assets at fire sale prices and reduce the number of loans they issue. Because of these adverse systemic effects, capital requirements should be higher for banks that finance more of their operations with short-term debt.

Capital requirements are not free. The disciplining effect of short-term debt, for example, makes management more productive. Capital requirements that lean against short-term debt push banks toward other forms of financing that may allow managers to be more lax. Similarly, some large banks may capture important economies of scale that reduce the cost of financial services. When designing

capital requirements that address systemic concerns, regulators must weigh the costs such requirements impose on banks during good times against the benefit of having more capital in the financial system when a crisis strikes.

Capital requirements can also affect the competitiveness of a country's banking sector. If capital requirements in the United States, for example, are too onerous, firms may turn to banks in other countries for financial services. This would undermine an important American industry. Perhaps more significant, if American firms move their banking relationships to less well capitalized financial institutions outside the United States, the U.S. government may be forced to bail out foreign banks to protect our economy in the next financial crisis. Finally, capital requirements that are too onerous may lead to a migration of activities from banks to other less regulated financial institutions either in the United States or offshore, making it harder to identify and control systemic risks to the financial system.<sup>1</sup>

### *BANK INCENTIVES TO RAISE ADDED CAPITAL*

Why do banks that have suffered substantial losses delever by selling assets and reducing the amount they lend? Why not simply replenish their capital by issuing equity? One important reason is related to what economists call the debt overhang problem. If a troubled bank issues equity, much of the value is captured by the bank's bondholders and by the insurer of the bank's deposits, because the new capital increases the likelihood that bondholders will be repaid and that deposit insurance will not be used. The old shareholders, on the other hand, bear all the costs because their claims on the firm are diluted. Thus, as we see in the current crisis, the shareholders would prefer that the bank satisfy its capital requirements by selling risky assets and reducing the amount it lends. Unfortunately, this method of delevering can impose substantial externalities—costs the bank does not bear—on other financial institutions. If several banks are rushing to the exits at the same time, the resulting fire sale can impose costs on all of them. Perhaps more important, the whole economy suffers when the banking sector delevers by lending less.

### *SYSTEMICALLY SENSITIVE CAPITAL REQUIREMENTS*

Banks that hold riskier assets have higher capital requirements. We argue that capital requirements should also vary with other characteristics that are linked to the systemic problems a bank might create.

#### **1. Size**

If losses force a large bank to sell assets at fire sale prices, the positions it sells are likely to be bigger than those of a similarly afflicted small bank. Thus, the large bank is likely to have a bigger adverse effect on prices and on the market value of other banks' assets. Similarly, when a large bank does not have enough capital to survive its losses in a downturn, many other banks may be among the creditors who suffer. In either case, diversification—spreading the initial positions among several small banks rather than one big bank—reduces systemic problems.

Consider default by a large bank. When it fails, the bank is likely to impose large losses on a relatively small number of counterparties, and the losses will occur simultaneously. If the same losing

positions were held by several small banks, rather than one large bank, some may survive and spare their creditors entirely. Even if none survive, the small bank failures will probably be scattered through time. Fragile firms will fail quickly, while others will be able to sustain larger losses before failing. This will give the financial sector and regulators more time to absorb the blow. Finally, a group of small banks is likely to have a wider range of counterparties than one large firm, so their defaults will be spread over a larger capital base.

In short, potential systemic problems are bigger if the same risky positions are aggregated in one large bank rather than spread among several small banks. *Thus, if everything else is the same, capital requirements, as a fraction of either total assets or risk-adjusted assets, should be higher for large banks.*

## 2. Illiquidity

When a bank sells a large asset position quickly, its impact on price depends on the liquidity of the asset. It can sell a huge Treasury bill position with essentially no impact on price, but the quick sale of asset-backed securities may require a large price concession. *Because such price concessions can cause systemic problems, capital requirements should depend on the liquidity of the assets held by a bank.*

## 3. Short-Term Debt

Agency problems can be especially severe in the financial services industry. For example, banks can choose from a huge range of assets and projects to invest in, from perfectly transparent and highly liquid Treasury bills to opaque and illiquid private loans or specialized over-the-counter securities. Banks add value due to specialized skill in selecting and monitoring these illiquid assets. However, a bank's managers have an incentive to select too many illiquid assets that surreptitiously increase their expected compensation by increasing the bank's risk. The managers also have an incentive to entrench themselves by selecting excessively illiquid investments that will require their special expertise to manage. It is difficult for the bank's stockholders or its board of directors to control this conflict directly because the managers have much more information about the bank's investment opportunities and the projects they select. Short-term debt can reduce these agency problems. With short-term debt, the bank must continuously raise new funding to repay the current creditors, so managers have less opportunity to enrich themselves at the expense of the bank's owners.

Short-term debt provides valuable discipline inside financial firms, but it can also create systemic problems. Specifically, the need to repay the debt may force banks to dump assets and reduce lending during a financial crisis. And because each bears only a tiny slice of the systemic costs it creates, banks issue more than the socially optimal amount of short-term debt.

Note that this systemic cost is in addition to concerns one might have about the mismatch between the maturities of a bank's assets and liabilities. Whether the bank's assets mature in two years or twenty, the risk that it will be forced to sell illiquid assets in a financial crisis increases with its use of short-term debt. Thus, it is not sufficient to make capital requirements increase in relation to the maturity mismatch between assets and liabilities. *Capital requirements for a financial institution should increase with the proportion of its debt that is short-term.*

## *CONCLUSION*

Regulators should consider systemic effects when setting bank capital requirements. Everything else the same, capital requirements should be higher for larger banks, banks that hold more illiquid assets, and banks that finance more of their operations with short-term debt.

Because they bear all the costs and receive only a small part of the societal benefits, we anticipate that banks will object to this proposal—even if regulators make the right tradeoff between the costs and benefits. These complaints should not persuade regulators to forego the benefits from systemically sensitive capital requirements.

## Endnotes

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1. Improved capital requirements are only one of several ways to reduce the systemic risks created by financial institutions. In a related paper in this series from the Squam Lake Working Group on Financial Regulation, “An Expedited Resolution Mechanism for Distressed Financial Firms: Regulatory Hybrid Securities,” we argue that regulators should support a new hybrid security that will expedite the recapitalization of distressed banks. The instrument we propose resembles long-term debt in normal times, but converts to equity when the financial system and the issuing bank are both under financial stress.

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