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# A New Information Infrastructure for Financial Markets

Squam Lake Working Group on Financial Regulation

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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.

Our 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. We aspire to help guide reform of capital markets—their structure, function, and regulation. We base this guidance on the group’s collective academic, private sector, and public policy experience.

To achieve our goal, we are 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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# A New Information Infrastructure for Financial Markets

## I. INTRODUCTION

Information about prices and quantities of assets lies at the heart of well-functioning capital markets. In the current financial crisis, it has become clear that many important actors—both firms and regulatory agencies—have not had sufficient information. This paper proposes a new regulatory regime for gathering and disseminating financial market information. We argue that government regulators need a new infrastructure to collect and analyze adequate information from large (systemically important) financial institutions. Our new information framework would bolster the government’s ability to foresee, contain, and, ideally, prevent disruptions to the overall financial services industry.

## II. WHY INFORMATION IS CRITICAL AND WHAT INFORMATION GAPS CURRENTLY EXIST

Much of the information regulators currently collect from U.S. financial institutions focuses on the health and potential failure of each one individually. Regulators collect far less information about the systemic interactions between all these institutions. The failure of one bank, for example, might have little impact on other intermediaries, while the failure of another bank might have a devastating impact on the whole financial system. Knowledge of such differences is important for effective regulation of the financial system.

Each financial institution is vulnerable to institution-specific risks, such as the performance of its particular assets and the quality of its management. But financial institutions also face two important forms of systemic risk. *Counterparty risk* arises when one institution owes money to a trading partner, either because the trading partner has posted collateral with the institution or because the partner has unrealized gains on the contracts that link the firms. The trading partner has counterparty risk because it will suffer losses if the other firm defaults.

*Fire-sale risk* is a bit more complicated. Firms often push security prices down when they sell large positions. Part of the price drop is permanent and is attributable to (1) any information revealed by the firm’s decision to sell at the current price and (2) the fact that others must now absorb the risk formerly borne by the firm. Fire-sale risk arises because the price drop also has a second—temporary—component. If the firm tries to sell a large position quickly, it must offer a price concession to attract the limited number of buyers who are currently in the market. The size of the temporary price concession depends on how much is being sold, how quickly the firm wants to sell, and how many buyers are available and ready to trade.

As the name implies, the temporary part of the price drop is temporary; the price will eventually move to the new permanent level. Nevertheless, the temporary component can have real effects. For example, the temporary price concession reduces the amount a firm receives if it must sell large posi-

tions quickly to reduce its risk. The temporary component can also affect firms that do not sell but are forced to mark their assets to another firm's fire-sale price when determining their capital requirements.

Fire-sale risk can be systemic for a couple of reasons. First, the magnitude of the temporary component of the price drop depends on how much is being sold. Thus, if many firms rush to the exit simultaneously, the price concession can be especially large. Second, because of mark to market accounting, fire sales by some firms may force others to liquidate positions to satisfy capital requirements. These successive sales can magnify the original temporary price drop and force more sales.

Because of counterparty and fire-sale risk, an otherwise sound firm can be dragged down by the failure of others. As the insurer and lender of last resort for banks and many other financial institutions, the government needs sufficient information to monitor these risks. We believe that the government should collect information from all systemically important institutions, including both heavily regulated institutions such as large commercial banks, and less regulated institutions such as hedge funds.

In order to monitor systemic risk, the government needs information about two broad categories of financial instruments:

1. *Derivative positions*, such as forward contracts, swaps, and options. Since the firm's payoff on these contracts depends on the performance of a clearing house or trading partner, they contribute to *counterparty risk*. This information should be detailed enough to allow regulators to identify significant counterparties shared by many systemically important institutions, such as Lehman Brothers and AIG during the current crisis.
2. *More general asset positions*, such as bonds, mortgages, and asset backed securities. Together with the information about derivative positions, regulators can combine this information across institutions to identify large aggregate positions that create systemic fire-sale risk. Recent examples of large common holdings include real estate CMOs and credit card debt.

What specific information is needed about these positions? A starting point is the current valuation of a firm's positions, but this is not enough by itself. The government also needs to be able to assess the risk exposures of the firm's positions, the sensitivities of their values to changes in market conditions. This is particularly important for derivative positions, which are often structured so that cash transfers between counterparties keep current values at or close to zero, but which can create large gains or losses as market conditions change.

The importance of linking this information across institutions is obvious. Regulators cannot assess the status of the financial system without knowledge of the interactions between firms. *Currently, U.S. regulators do not systematically gather and analyze much of the information outlined above, and the information they do have is often difficult or impossible to aggregate across institutions. This constrains the government's ability to foresee, contain, and, ideally, prevent disruptions to the overall financial services industry.* The September 2008 failure of AIG is a good example. It is now clear that few, if any, regulators understood AIG's outsized credit default swap positions until AIG itself approached regulators under great duress.

### III. OUR PROPOSAL: A NEW INFRASTRUCTURE FOR INFORMATION COLLECTION AND ANALYSIS BY REGULATORS

Currently, different government regulators do collect some information from financial institutions, such as the quarterly 10Q accounting statements firms must file with the Securities and Exchange Commission and the Reports of Condition and Income banks must file with the Federal Reserve. But this information does not cover the full set outlined above. *Government regulators need new authority and a new infrastructure to collect and analyze adequate information from all financial institutions. This new information regime should be structured with five main features.*

*First, all large financial institutions should report information about asset positions and risks to regulators each quarter.* Quarterly disclosure will balance timeliness against reporting burden. “Window dressing,” in which an institution alters its exposures at quarter-end to mask its typical risk, is a potential problem. But we do not think it will undermine the usefulness of our proposed regime, and its incidence will be curbed by the cost of temporarily shifting positions.

We stress that in this new framework, greater information would be collected from some institutions that currently face limited oversight, such as hedge funds. We are sensitive to the potential burden a reporting requirement such as this can create for these firms. Nevertheless, as the hedge fund Long-Term Capital Management demonstrated vividly in 1998, these institutions can have systemic effects.

More generally, one of the benefits of broader information disclosure could be to force more companies to generate and aggregate this information themselves. This could foster better internal risk management in firms, something that seemed acutely lacking in many companies in the run-up to the current financial crisis.

*Second, to maximize the value of information collected, regulators need to standardize the process used to measure valuations and risk exposures.* Where they are available, firms should report the current market values of their asset and derivatives positions. Market values should also be used as inputs when firms calculate their risk exposures. When model-based valuations are used for hard-to-value assets, regulators should enforce some consistency across institutions. One possibility is for each firm to value its positions using a standard set of models. Regulators should also develop a standard set of factors (such as movements in short-term and long-term interest rates, domestic and foreign stock returns, real estate prices, and foreign currencies) that institutions should use to assess their risks. Firms could then report the dollar amount of their gains and losses from specific changes in these factors, both for the assets they own and for their derivative positions. The asset values and risk sensitivities should be reported for standardized asset classes and the sensitivities for derivative positions should be broken down by counterparty. Of course, the asset classes and standard factors must be redefined periodically as market conditions change.

Although we advocate the use of market values wherever possible in value and risk reporting, in this paper we are not arguing for or against using market values for other purposes, such as mark to market accounting or the calculation of regulatory capital for commercial banks. It is clear that the advantages of market valuations outweigh the disadvantages when measuring systemic risks, but the more general use of market values is a separate issue that we do not address here.

*Third, to foster sound analysis of the information collected, different regulatory agencies need authority to share information.* We see at least two distinct merits in widespread information sharing across agen-

cies. One is to allow each agency to better conduct its specific functions. The other is to foster among all agencies greater awareness of systemic patterns.

*Fourth, after some time lag the information collected by regulators each quarter should be released to the private sector.* Regulatory capacity is limited: despite the talented individuals with sound intentions throughout regulatory agencies, the inherent complexity of financial markets means potential problems can be difficult to recognize and respond to. Given this, there is high value in complementing government analysis of financial-system information with that of private actors.

That said, it is important to protect proprietary business models and incentives to innovate. Public disclosure of a firm's sensitivities also raises concerns about predatory trading by competitors. To mitigate these problems, public disclosure will be delayed and the length of this delay will depend on the extent to which information is aggregated. For example, industry-wide exposures should be released soon after the information is collected, while exposures for individual firms may be withheld for three, six, or even twelve months.

*Fifth, to elevate the importance of financial-system information, regulators should prepare for the president and Congress an annual "risk of the financial system" report.* This report could provide summary statistics for different points in the year on asset positions, fire-sale exposures, and counterparty exposures for various parts of the U.S. financial system. The report will add value both directly, through its contents, and indirectly, by fostering a higher public profile for sound regulation of capital markets.

#### *IV. Conclusion*

The new information infrastructure for capital markets that we have outlined in this paper would likely need new legislation to be integrated into the existing procedures used by financial-market regulators such as the Federal Reserve, the Federal Deposit Insurance Corporation, the Securities and Exchange Commission, and the Commodities and Futures Trading Commission. Guidance for how best to create this infrastructure would likely be needed from heads of these (and other) agencies.

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