



Remarks by Governor Laurence H. Meyer

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Financial Globalization and Efficient Banking Regulation

The highly publicized recent events in the world's financial system have served to make certain things abundantly clear. In particular, we now have further evidence that there is a large and growing disparity between the risk management practices of what might be called the "best practice" financial institutions and those of their competitors around the globe. This disparity, moreover, runs much more deeply than the weaknesses exposed during the Asian financial crisis. In that event, bankers were seen to make the kinds of basic mistakes that have been oft repeated at other times and in other places. For example, loans were made to government-supported enterprises, either at the behest of the government itself or under the assumption that official support would be provided if the loans turned bad. At times, these loans were made to highly leveraged companies whose underlying financial ratios did not justify the origination of the loans on the terms under which they were made. To add insult to injury, the offending banks sometimes borrowed in dollars and lent in their home currencies, without hedging, believing that their government could and would continue to stabilize exchange rates.

While these practices are troublesome, I am much more concerned with what I believe is both an exciting and disturbing aspect of the evolution of financial markets. Spurred by improvements in computer technology and advances in financial theory -- most notably in option-theoretic models -- new financial products, as well as the markets supporting traditional banking products, are becoming ever more sophisticated and ever more global in nature. While financial innovation and globalization can only be applauded for their salutary impact on market efficiency, they present some difficult problems for market practitioners and, where the practitioners are regulated entities, their supervisors.

Today, I should like to concentrate on three themes, or principles, related to the evolution of financial markets: First, there exists a significant and dynamic connection running between market innovation and market regulation. Financial innovation often occurs in response to regulation, especially when such regulation does not make economic sense. Conversely, the evolution of regulation often is spurred by advances in the market. Second, the globalization of financial markets means that mistakes in risk management made by one or more significant players in world markets can result in real losses not only to the entity making the mistake, but also to other participants and to other countries' banking systems. Third, the economic efficiencies that are potentially associated with financial innovation can be negated by inefficient banking regulation. Efficient banking regulation, by contrast, not only provides the background against which financial advances can occur, but also permits governments to achieve social objectives where otherwise they might not, or might achieve them only at higher cost.

To demonstrate these three principles, we need discuss only one aspect of banking regulation, albeit the most important -- namely *prudential* regulation as currently embodied within the international capital standard for banks. The Basle Accord of 1988, while it was critical to reversing the decades-long decline in bank capital ratios, has come under frequent and strong attack in recent years, both by regulators and those that are regulated. In particular, there is considerable concern that technological advances and rapid evolution in financial products are reducing the meaningfulness and effectiveness of the capital standards, at least for the largest, most sophisticated institutions.

The deficiencies of the Accord are well known, but bear repeating here: First, while intended to be "risk-based," the formal capital ratio requirements nevertheless lump most bank risk positions into a single "bucket" corresponding to a rather arbitrary, minimum total capital requirement of 8 percent against the book value of the position. Second, the capital rules do not explicitly account for certain risks that may be important, such as operating risk. Finally, portfolio composition, hedging, and general portfolio management techniques are explicitly considered only within the market risk requirements for *trading account* activities, not for the credit or other risks that dominate within the *banking book*.

This arbitrary, one-size-fits-all minimum capital ratio has spurred what can only be termed an avalanche of financial innovations aimed at either evading or taking advantage of the capital standard. Such regulatory capital arbitrage, as we call it, currently is carried out primarily via the securitization markets. While securitization may serve useful economic purposes having nothing to do with regulatory arbitrage, a properly structured securitization conduit can assist the sponsoring bank in lowering its effective regulatory capital requirement against a group of assets or other risk positions. In many cases, the securitization results in the bank retaining essentially all of the risk of the underlying assets, through the provision of credit enhancements to the conduit, but at lower capital requirements than if the assets remained on the bank's books. This is accomplished, for example, by having the conduit "remotely originate" credits, thus allowing the bank to circumvent recourse capital requirements that apply only to assets sold to the conduit. Alternatively, the bank can provide *indirect* credit enhancement to the conduit by, for example, supplying backup lines of credit to the obligors that use the conduit to raise funds.

To a significant degree, the growth in securitization and other forms of regulatory arbitrage has been spurred by the inadequacies of the international capital standard. This has occurred largely because, over the last decade, many of the larger banks have developed fairly sophisticated internal models for formally *quantifying* risk, including credit risk within the banking book. These models are used to calculate internal *economic* capital allocations for various sub-portfolios of the bank, and it is because these *internal* capital allocations often differ substantially from the 8 percent regulatory standard that the problems arise.

In the typical case, the bank attempts to formally measure each major type of risk associated with a product or business line -- credit risk, market risk, and operating risk. In the credit risk arena, for example, risk is measured as the estimated shape of a loss probability distribution over a particular horizon, generally one year. Economic, as opposed to regulatory, capital is then allocated against this loss distribution in an amount necessary to meet some corporate goal for insolvency probability. For example, several large banks allocate enough capital internally for credit risk so as to reduce to 0.03 percent the probability that credit losses will exceed allocated capital. Why is this 3 basis point standard chosen? Because that is the historical average default probability, over a one-year horizon,

for double-A rated corporate instruments. In other words, the banking firm wants to hold enough capital so that the chances of it becoming insolvent are low enough to win a double-A rating on the bank's own liabilities.

The problem is that, when these economic capital calculations are made, they result in a very wide range of *internal* capital allocations for individual positions or subportfolios -- as low as several basis points up to more than 30 percent of the carrying value of the risk position. When a group of loans is assigned an *internal* capital requirement that is very low compared with the 8 percent regulatory standard, the bank has a strong incentive to restructure the positions to allow them to be reclassified into a lower regulatory risk category, by using securitization or other devices. If the bank doesn't do this, it cannot make a market rate of return on the regulatory capital of 8 percent on the loans.

Regulatory arbitrage, from the perspective of proper resource allocation, can be a good thing. If there were no way for the bank to avoid the uneconomically high regulatory requirement, it would need eventually to exit its low risk businesses because of insufficient returns to equity. In the long run, this would serve no purpose other than causing the regulated entity to shrink in size relative to its unregulated competitor. At the extreme, the one-size-fits-all capital standard, if there were no arbitrage safety valve, would cause the bank to engage in only those activities for which the economic capital requirement is *greater than* the 8 percent regulatory standard. That is, the regulatory standard would *induce* risk-taking -- perhaps excessive risk-taking

While regulatory arbitrage can be useful in negating improperly high regulatory capital requirements, it can also be used to mask the true riskiness of the bank. In the United States, for example, the top 50 bank holding companies have a mean total risk-based capital ratio of 12.1 percent. The standard deviation of this ratio across the 50 institutions is only 0.8 percent. In other words, everyone seems to be holding about the same amount of capital. Indeed, since a bank is declared to be "well-capitalized" when its total risk-based capital ratio is over 10 percent, it is not surprising that we see *no* top-50 banking company with its ratio *less than* 10 percent. But do all these banks have equally low insolvency probabilities? One simply can not tell much of anything by looking at capital *ratios*. It is perfectly possible that a bank may hold 12 percent capital when a more carefully constructed internal risk model would call for holding 15 percent, or even 18 percent, capital to meet the bank's internal insolvency standard. Or, the bank could have a great model, but simply have a preference for risk that is unacceptable to regulators. Such a bank may be holding risky positions for which even its own model would call for more capital, if the bank were to adhere to a lower insolvency probability standard. For such a bank, the regulatory "well-capitalized" designation may provide little comfort to supervisors or to the taxpayers we are supposed to protect. That is why, in this country, we have placed a great emphasis on the bank-by-bank *supervisory* process, as opposed to the formal capital regulations that apply to *all* banks.

Just as the most sophisticated large banks have gone through a rapid evolution of their risk measurement, management, and pricing systems, so must supervisors follow suit. At the Federal Reserve we have ongoing projects aimed at providing supervisors with better tools to assess banks' internal risk systems and, ultimately, to make determinations regarding the real adequacy of bank capital on a case-by-case basis. Among these efforts is a review of the credit risk aspects of asset securitization at our major banking companies. Also, we are studying the possible uses within the supervisory process for the internal *rating systems* used

by almost all large banks. In the past, supervisors made risk distinctions only among and between *classified* assets, not *pass* assets. Now, we are studying the possibility that future deterioration in asset quality can be foreseen to some extent by changes in the average rating, or the distribution of ratings, in a bank's *pass* assets.

We are also spending considerable effort in tracking and understanding the developments in risk modeling, including the modeling of credit risk. At last week's conference on bank capital, hosted by the Federal Reserve, the Bank of England, and the Bank of Japan, our economists discussed the prospects of moving to a full-fledged, models-based approach to bank capital standards for the largest banks. In my personal view, moving from a ratio-based capital standard to an internal models based standard for our most complex institutions, should be high on our agenda. For the first time, we would be setting a maximum insolvency probability standard rather than simply a minimum capital ratio. This may be the only avenue before us if we wish to achieve an *efficient* regulatory system. In the absence of a thorough revamping of the international capital standard, we will continue to be plagued by regulatory capital ratios that, on the one hand, say little about insolvency probability, while on the other hand induce banks to engage in sometimes inefficient regulatory arbitrage simply to avoid an inherently uneconomic capital rule.

Please do not misinterpret my remarks. I believe, like almost all risk practitioners, that there is no substitute for good human judgment and experience when making credit decisions. Total reliance on models is neither feasible nor desirable. But failure to use the best possible tools at hand is to fall further and further behind the best-practice techniques of the industry, with a resulting decline in risk-adjusted profitability and, inevitably, an increase in insolvency probability. We must remember that any improvement in the *accuracy* with which risk is measured is tantamount to a *reduction* in risk. Continual improvements in risk measurement techniques, therefore, should be the norm for all banks that intend to play in the global financial marketplace. Institutions, and entire banking systems, that do not adhere to this principle are doomed to repeat the blunders of the past.

In this new world of financial complexity and globalization, it is extremely important that the large institutions among the developed nations *all* strive to keep up with the best-practice frontier. These institutions are the ones that are the price-leaders, the drivers of markets locally and internationally. If a group of important institutions in only one or two countries fails to keep pace with risk measurement practices, all banking systems are placed at risk. This risk, moreover, is not simply that a large bank failure in one country can cause counterparty failures in other countries. Systematic under-pricing of credit and other risks can be damaging to all players, not only to the bank making the pricing errors.

Fortunately, the free-market mechanism for the dissemination of best-practices appears to be functioning reasonably smoothly, at least in the global sense. No single developed nation appears to have a monopoly on best-practice risk measurement techniques, if innovations in complex financial products are any indication. For example, European banks were market leaders in introducing CLOs, or collateralized loan obligations. In the field of asset-backed commercial paper facilities, U.S. banks were the initiators, but now European and Japanese institutions are significant players. And the ubiquitous consulting firms around the world can be relied upon to spread the word of worthwhile advances in risk techniques.

Still, the individual bank in each country must face the proper incentives to keep up with the most cost-effective risk techniques. Lax supervisory practices -- or, worse, government

support of banks with poor risk practices -- do not provide these proper incentives. Thus, each supervisory authority in each developed nation must be ever vigilant that the disparity between the world's best-practice institutions and those large banks that are "inside" the best-practice frontier does not grow wider. Indeed, an important function of supervisors is to act as something of a clearinghouse for best practices. If the supervisor perceives a deficiency in practice, it is his responsibility to engage the bank manager in a discussion as to whether the shortcoming really exists and, if so, how to fix it.

I will conclude by reiterating the three points I made at the beginning. First, there is a strong and dynamic thread running between regulation and market innovation. While the Basle Accord of 1988 was entirely appropriate to its time and circumstances, it is now clearly in danger of becoming outmoded by the pace of financial innovation. Conversely, the regulation has contributed to some market innovations that appear to be driven, if not solely, at least primarily by the need to engage in regulatory capital arbitrage.

Second, the reality of globalization must be accounted for in designing and implementing our regulatory and supervisory systems. Especially among developed nations, we cannot afford a growing disparity in the quality of risk practices at our important institutions, nor a disparity in the quality of supervision of those institutions. As bankers like to say, the worst competitor is an uninformed competitor -- and that goes doubly for the competitor's supervisor.

Third, given that financial markets are constantly evolving, this means that our regulatory framework must also continually evolve. The international capital standard has not changed in basic form for almost a decade -- it is still a ratio-based rule. While it may still be adequate for the vast bulk of banking institutions, it clearly is *inadequate* for the world's most complex banks. For these institutions, high capital ratios do not necessarily equate with low insolvency probabilities. Thus, the ratio-based standard is *inefficient* in achieving the supervisors' objective of limiting bank failure to acceptable levels. Worse, it may be fostering other inefficiencies in the banking system, to the extent the capital standard encourages regulatory arbitrage that entails significant transaction costs.

In the absence of any viable alternatives, it is my view that we should begin now to plan for a models-based successor to the Accord. Inevitably, this will take a tremendous effort, given the complexity of the subject and the differences across institutions and between countries. Moreover, a models-based system of capital regulation would require a degree of *cooperation* among supervisors, quite apart from having similar written rules, that is unprecedented. But I believe the effort will be worth it.

Thank you for the opportunity to air these concerns and I am looking forward to continuing the dialogue on this subject.

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