Remarks by

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The theme of this year's conference is the possibly declining role of banking. This is obviously an important topic, and one that is receiving a great deal of attention from observers of the financial industry. When considering this year's theme, I would first highlight the words "possibly declining," because it is far from clear that banking considered in its widest context really is a declining industry. I shall return to the subject of what we really mean by banking in a moment, but whatever is happening to the correctly defined and measured market share of banks, it is abundantly clear that the means by which banks perform their economic functions are changing. Indeed, these changes, at least for some institutions and markets, often appear to be proceeding at a breathtaking pace.

I will focus my comments this morning on some possible implications of this rapid change. In particular, I'll concentrate on the need for bank supervision to evolve as banking products and services evolve. I shall argue that while the basic functions of banking and the core objectives of bank supervision remain fundamentally unchanged, the technological characteristics of banking products and services are changing profoundly. As a result, the ways in which we conduct bank supervision must also change. But before I proceed to those issues, I would like to briefly raise some questions regarding what has become the conventional wisdom in banking—that banking truly is a declining industry.

A Brief Critique of the Conventional Wisdom

The conventional wisdom looks at banks' declining shares of various types of traditional "banking" assets, the
corresponding rise of "nonbank" providers of financial products and services, and the record numbers of bank failures during the 1980's, and concludes that banking must be a declining industry. It may be that this is a correct view. Indeed, as I have maintained at previous banking conferences, it is clearly the case that the traditional franchise value of banking is under competitive attack, and that policymakers need to act to allow banks greater freedom to respond to technological and other market changes. But it is also true that the conventional wisdom to which, by definition, most of us have subscribed may reflect too narrow a vision of the role of banks in a modern, technological society.

Research to be presented later at this conference suggests that we should at least question the notion that banking is a declining industry. John Boyd and Mark Gertler attempt to adjust traditional measures of the relative size of the banking sector for major changes that we know have occurred in banking, such as the rise in off-balance sheet activity, and for certain measurement problems with off-shore loans. Their adjustments substantially weaken the conventionally measured decline in the banking industry's holdings of intermediated assets. Most interesting, Boyd and Gertler estimate that banks' share of total value-added by financial intermediaries has remained fairly constant since World War II, and that banks' value-added as a share of GDP has actually been increasing. Are these signs of a declining industry?

Another approach to assessing the changing role of banks is to consider what the market is saying about the state of the banking industry. Here the evidence also appears to be mixed. Consider the price-earnings ratio of banks relative to that of other firms. On the one hand, the average P-E ratio of a sample of large bank holding companies relative to that of firms in the S&P 500 has a
significant downward trend over the last 30 years. This suggests that the market perceives that the net present value of growth opportunities in banking has been declining relative to the value of growth opportunities outside of the industry. On the other hand, if we look at the P-E ratio of a somewhat broader sample of major banks relative to the general market over only the last ten years, the downward trend is not obvious. Is this a hint that the market is altering its view of banking's future?

The Changing Nature of Banking

Let me now turn to the changing nature of banking, and potential implications of that change for bank supervision.

In traditional theory, the basic function of banks is to "intermediate" between lenders and borrowers by using the proceeds of liquid, short-term liabilities to fund illiquid, intermediate-term loans. Thus, banks provide their deposit customers with liquidity, but as part of this process banks pool risky assets and thereby provide risk diversification benefits to themselves and their customers. An important and closely related function is the provision of a variety of payments services that often involve banks accepting and managing significant amounts of credit and market risk. Therefore, traditional banking can be viewed, at an elemental level, as simply the measurement, management, and acceptance of risk.

Banks still perform these traditional functions. But today we are increasingly recognizing that banking also involves understanding, processing, and using massive amounts of information regarding the credit risks, market risks, and other risks inherent in a vast array of products and services, many of which do not involve traditional lending, deposit taking, or payments services. Today, banks
can be said to be part of a technological revolution in risk information processing. Moreover, risk information processing—defined broadly to include the measurement, management, and taking of risk—can be said to have remained the basic business of banking. A crucial difference between the banks of today and those of our traditions, however, is that risk information processing now lies more visibly closer to the core of the banking business because of the blossoming of new financial products and services that rely so critically on fast and high quality risk information and risk analysis.

It is easy to become awed by the incredible variety of new financial instruments that this risk management revolution has helped to bring about. It is even easier to become convinced that banking has been transformed into a completely new creature. But at root I believe that the basic functions of banks remain unchanged.

Let me give a few examples. As I just indicated, the traditional bank provides risk reduction benefits associated with asset pool diversification, with the asset pool remaining on the bank's books. More recently, banks have continued to combine assets into pools, but now these pools are often sold rather than kept on the balance sheet. Often, a bank guarantee, such as a standby letter of credit or a limited recourse agreement, is attached to these pools. The resulting products are "new," but has the fundamental banking function really changed? Banks perform the same functions for the economy through overall risk reduction and bring the same skills to bear whether they are selling a liability backed by a diversified asset pool plus bank equity—which we call traditional intermediation—or selling a share in a diversified asset pool backed by limited recourse—which we call securitization. Similarly, bank functions remain essentially the same if banks are selling shares in a diversified, but unbacked asset pool managed by,
but not owned by, a bank—a product we call a mutual fund. While in the case of mutual funds banks may not assume explicit credit risk, they are performing identical tasks for the economy. Moreover, bank guarantees are a natural outgrowth of the bank's value added in collecting, processing, and understanding the information needed to assess the riskiness of the pool. Similar arguments can be made regarding the basic functions being performed by banks in assessing and managing the credit and other risks associated with, for example, underwriting many other types of securities, or creating and dealing in swaps and other derivative products.

Some observers believe that the technological changes I have outlined will eventually lead to a system in which bank loans and bank deposits will be all but eliminated. Rather, households and businesses will exchange perfectly divisible and marketable financial assets via nearly instantaneous electronic transfers. Such a system would make obsolete the traditional on-balance sheet banking and payments system. In such a world, banks would have evolved into financial management, advisory, and communications firms that have small balance sheets, but still take on and manage large amounts of financial risk.

Is such a world ultimately credible? Perhaps. Is such a world imminent? I think not. For one thing, the rapid evolution of products and services is still concentrated at the relatively large banking organizations. More important, demand for traditional banking services by smaller businesses and by households is likely to continue for some time. And, the information revolution, while it has deprived banks of some of the traditional lending business with their best customers, has also benefitted banks by making it less costly for them to assess the credit and other risks of customers they would previously have shunned. Thus, it seems most likely that banks of all types
will continue to engage in a substantial amount of traditional banking, delivered, of course, by ever improving technology. Community banks in particular are likely to provide loans and payments services via traditional on-balance sheet banking. Indeed, smaller banks have repeatedly demonstrated their ability to survive and prosper in the face of major technological and structural change by providing traditional banking services to their customers.

Nevertheless, smaller banks are not and will not be immune to the profound changes that are today concentrated at the larger banks. The boundaries of technological change are being pushed ever outward. And, pro-competitive legislative changes, such as nationwide interstate branching, will only accelerate the process. Thus, smaller banks, as well as larger institutions, have a strong interest in seeing that regulators' actions and policies are prudent and do not distort or misdirect the technological innovations, thereby creating unnecessary inefficiencies in the production of new banking services.

**Supervision of the Future Banking Industry**

Bank supervisors have at least as strong an interest as does the banking industry in responding in an optimal way to the changing nature of bank products and services. As I have argued on many occasions, it is one thing to see banks decline because they are bested in a fair competition with nonbanks. But it is poor public policy to allow antiquated and obsolete laws, regulations, and supervisory policies to force banking to become a truly declining industry. And, as I review my last five presentations to this conference, I am struck by the continued unwillingness of Congress to authorize banks to compete more broadly in securities underwriting and insurance sales. While interstate branching has been
virtually adopted by the Congress, other antiquated laws still keep banks in a competitive straitjacket.

Independent of congressional action, the question for banking supervisors remains: What do the sea-changes in banks' risk management practices imply for how banks--especially the largest banks--should be regulated and supervised? I can think of several categories of regulatory concern:

First, what do we mean by rational capital and supervisory standards in a system in which traditional deposit taking and lending become increasingly less important?

Second, given the heightened interdependence between banks and other financial institutions within increasingly global financial markets, how should we define and manage systemic risk?

Third, in this rapidly evolving industry, how do we define "banking products" and "banking markets" for purposes of our regulatory responsibilities?

Fourth, as the process of financial innovation works its way through worldwide markets, how will we manage the increased need for regulatory coordination across countries?

Clearly, each of these issues cannot adequately be addressed today. Rather, I will focus only on the first concern--the supervision of risk at the individual bank level.

Banks now face more complexity in the measurement and management of overall portfolio risk than ever before. Having identified a number of kinds of risk--including interest rate risk, credit risk, foreign exchange risk, market risk, and business risk--the industry and its regulators must now worry about how these various risks interrelate. The fact that several major private financial institutions have recently created a new staff position...
called Chief Risk Management Officer underscores this concern, and the industry should be praised for its efforts in this area. Still, at the frontiers of risk management practice, little is known about how various portfolio risks interrelate. Only recently, for example, have some banks begun to measure the loss covariances within their sub-portfolio of credit risks. Models that would measure loss covariances across the bank-wide portfolio of all risk positions still are in their infancy.

Also, the risk measurement process is hampered in many instances by a proliferation of management information systems within a single institution. For example, several separate information modules may need to be combined in order for a bank to know its credit exposure to a single client that has a loan outstanding, is also a counterparty to an interest rate swap, and has a forward FX agreement with the bank.

While the industry wrestles with this new complexity in risk measurement and management, the industry's regulators also must wrestle with the complexity of it all. The traditional supervisory strategy for dealing with bank risk has been to employ a combination of bank capital standards and the supervision of individual banks. This combination has served regulatory objectives well. The establishment of uniform minimum regulatory capital standards in the 1980s, beginning with the primary capital and other leverage standards at the start of the decade and culminating in the Basle Accord in 1988, can be said to have had an important moderating influence on bank behavior. For these and other reasons, equity ratios in the industry are higher today than at any time since the mid-1960s, and it is commonplace to see the maintenance of "adequate capital" among the list of strategic objectives for banking corporations. Also, the importance of setting minimum capital standards has become even more imbedded within
regulatory practice as the result of portions of FDICIA, such as prompt corrective action.

As the complexity of banking has increased, so have regulatory capital standards been evolving to address this complexity. For example, while the risk-based capital standards were themselves in part an effort to address the deficiencies of a fixed leverage ratio, from the start it was widely recognized that the weights used for loans only roughly approximate risk differences across asset classes, and make no distinctions within asset categories. Almost immediately, calls arose for a more realistic set of weights. Similar problems and calls for revision exist for the weights given off-balance sheet items. Today, virtually as we speak, the regulatory community is debating how to incorporate interest rate risk and market risk into the capital standards. Other, less visible issues surrounding bank capital regulations, such as the impact of partial market value accounting and the treatment of multi-level securitizations, are continually being analyzed by regulatory staff with an eye toward possible refinements in the capital regulations.

In short, the temptation seems great to make regulatory capital rules ever more complex, as complicated as the ever increasing array of credit and credit substitute products. But if we start down the road of varying capital requirements by fine risk gradations, where would it all end? Greatly increasing the complexity of capital regulations can only lead to inefficiency as I see it. No matter how complex capital requirements might become, we can be confident that new products would be developed that would seek to exploit the remaining inevitable distortions in the capital regulations. To illustrate, consider the process of securitization. Under current rules, a securitization can be structured so as to entail significantly lower capital requirements than if the whole loans are held on the books.
Furthermore, research conducted at the Board suggests that loans currently being securitized by banks—mainly credit card receivables, car loans, and various home equity loans—tend to be of lower risk than typical bank business loans. In effect, banks are securitizing the high-quality loan pools, while holding onto lower quality assets. They may be doing this partly because regulatory capital requirements may be higher than economic capital requirements for holding onto loans of low risk, while regulatory capital requirements may be too low for pools of higher risk loans. Moreover, no matter how complex they become, so long as capital regulations are written in piecemeal fashion, by placing weights on individual balance sheet or off-balance-sheet categories, they will not solve the problem of how much capital is appropriate to the overall portfolio of risk positions of the bank.

The bottom line, it would appear, is that increasingly intricate and supposedly elegant capital requirements would, at a minimum, cause inefficiencies resulting from banks' attempts to avoid uneconomic capital regulations. At worst, efforts to avoid inappropriate requirements could lead to less measurable and perhaps greater risks.

At least part of the solution to the increasing complexity in bank risk positions may be to rely less on the writing of rules, such as capital regulations, that apply generally to all banks, and to concentrate more on the development of supervisory procedures that can accurately distinguish risks on a bank-by-bank basis. Such an approach is entirely consistent with my own, and indeed the Federal Reserve Board's long-held view that banks must hold sufficient capital to make the deposit insurance guarantee moot, and that the core of bank supervision must continue to be the on-site evaluation of the individual bank. But, I am arguing that the focus of individual bank evaluation needs
to shift somewhat. The basic "unit of supervision," if you will, should become increasingly the evaluation and stress-testing of the bank's overall risk position, along with evaluation of the current value of individual bank assets. Indeed, the evaluation of risk should become, within the supervisory process, as important as assessment of the value of capital via the on-site examination of the quality of assets and the adequacy of loan loss reserves.

In this regard, supervisors are going to have to judge the level of risk from overall market movements for which banks should be appropriately capitalized, while recognizing that there are some highly unlikely, extreme market conditions which may call for government actions to backstop bank capital in avoiding systemic problems. Setting capital requirements to insure against all risk is neither feasible nor desirable. Risk taking, as I emphasized at last year's conference, is a necessary activity for wealth creation. Zero bank insolvencies is not a proper goal of bank supervision.

Considerable progress has already been made in moving toward the kind of supervision required by modern financial practices. For example, in February of this year the Federal Reserve released a new trading activities examination manual. This manual provides our examiners with the tools necessary to assess the effectiveness of a bank's systems and controls for managing the full range of risks that arise in trading activities. Examiners' activities will focus on the process by which portfolios are selected and risks are managed, rather than solely on the instruments held at a point in time.

No matter how good we become at bank supervision, however, we should always keep in mind that the first line of supervisory defense must be the quality of the risk management systems used by banks themselves. While this is hardly a new concept, it is one that deserves reinforcing.
A good example of its application is the fact that we have recognized for some time that capital rules are often less meaningful than the sophisticated internal models used by some banks to test the sensitivity of their net worth to possible future changes in asset prices.

But the use of such models itself raises concerns. Looking forward, our continuing challenge as supervisors is to make sure that we have the ability to assess industry "best practices" with respect to the measurement and management of risk. And while it may not be our role to disseminate best practices, at a minimum we must be able to distinguish between good practices and unacceptably crude risk management. Put another way, it is not sufficient to simply instruct a bank to allocate enough capital to its overall risk portfolio to cover, say, 99 percent of the loss probability distribution. We must be able to evaluate how accurately banks estimate these portfolio loss probabilities. This in turn requires that regulators be able to attract and retain a highly trained and capable staff, so that we have the skills to assess best practices. Frankly, I am concerned about our ability to continue to do this, given what appears to be a widening gap between the returns that the brightest financial minds can make in the private marketplace compared to what they can make in government.

Even as we place greater emphasis on the use of sophisticated simulation models, we must recognize that such models have, and will always have, significant shortcomings. For example, the assumptions regarding the parameters of portfolio loss distributions are based inevitably on historical experience, and the models may therefore not be sensitive to occurrences outside this experience, which by definition is always evolving. Also, it is not sufficient that banks simply estimate a loss variance-covariance matrix and be done with it. The validity of the raw data used by
these models must be questioned, and questioned repeatedly. In particular, the development of bank risk models cannot simply be turned over to mathematicians, engineers, or even economists. Bankers and managers with judgement must be involved. In the area of credit risk, for example, the basic building blocks of the risk models are the risk classifications of the credit officers, which, despite the advancements in credit scoring, remain largely subjective. This is as it should be, since nothing is likely to replace sound credit judgement.

Underlying all the more sophisticated market risk models are outcomes that depend critically on the presumption that certain risks are independent of others, and that certain market pricing is random. But what often seem random events may rather be ignorance of an as yet undiscovered relationship. How many failed hedging strategies of recent years rested on assumptions of a model's underlying structure which proved false under the pressures of new products and markets, or undiscovered propensities of consumers or investors? Risk measurement and risk management, in the end, are time consuming, never-ending jobs of real people, not machines.

Conclusion

Where does all of this leave us as bankers, bank regulators, and students of the banking industry? I have argued that the fundamental purpose of banks is to assess, assume, and manage risks. By doing so banks contribute to economic growth. Last year I concluded to this conference that regulators and legislators must realize these truths, and appropriately trade-off the need for bank risk taking with the need for bank safety and soundness.

This year I am arguing that a forward-looking attitude on the part of supervisors is a key element of
making this trade-off While the basic functions of banks remain the same, the means by which those functions are performed, and the precise character of the risks involved, are changing and will continue to change. For these reasons, while the basic functions of bank supervision remain the same, the means by which those functions are performed are changing and must continue to change.

In particular, we clearly need an increased emphasis on supervisory processes as crucial to containing banking industry risk. Those supervisory processes should focus equally on the evaluation of risk as well as the evaluation of the quality of assets and the adequacy of loan loss reserves. Finally, supervision should continue to be an exercise in the understanding of best risk management practices and must include an ongoing dialogue with the industry on the nature of rapid improvements in those risk practices. Only by embracing such changes can supervisors hope to ensure that their actions both continue to maintain a safe and sound banking system and do not result in banking becoming a truly declining industry.

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