My perspective on this interesting and stimulating paper by Raghu Rajan has been very much influenced by observing Alan Greenspan's approach to the development of financial systems and their regulation over the past eighteen years. I believe that the Greenspan doctrine, if I may call it that, has reflected the Chairman's analysis and deeply held belief that private interest and technological change, interacting in a stable macroeconomic environment, will advance the general economic welfare.

Chairman Greenspan has welcomed the ability of new technologies in financial markets to reduce transactions costs, to allow the creation of new instruments that enable risk and return to be divided and priced to better meet the needs of borrowers and lenders, to permit previously illiquid obligations to be securitized and traded, and to make obsolete previous divisions among types of financial intermediaries and across the geographical regions in which they operate. At the intersection of market developments and monetary policy, he has led the Federal Reserve's efforts to understand the implications of changing financial technology, such as the growing ease of housing equity extraction, and to use the newly available information about market expectations and the price of risk embodied in market prices.

The Greenspan doctrine holds that these developments, on balance, improve the functioning of financial markets and the real economies they support. By allowing institutions to diversify risk, to choose their risk profiles more precisely, and to improve the management of the risks they do take on, they have made institutions more robust. By making intermediaries more robust and by giving borrowers a greater variety of lenders to tap for funds, these developments have also made the financial system more resilient and flexible - better able to absorb shocks without increasing the effects of such shocks on the real economy. And by facilitating the flow of savings across markets and national boundaries, these developments have contributed to a better allocation of resources and have promoted growth.

That is not to say that the Greenspan doctrine holds that private markets always get it right. Prices in these markets are driven by the tendency of human nature to project the recent past - to waves of complacency and gloom - and hence are subject to overshooting. And private parties, left entirely to their own devices, do not always produce a market structure and market relationships consistent with adequate protection of financial stability. However, the actions of private parties to protect themselves - what Chairman Greenspan has called private regulation - are generally quite effective. Government regulation risks undermining private regulation and financial stability itself by distorting incentives through moral hazard and by promising a more effective role in promoting financial stability than it can deliver.

In this situation, government regulation has a function but it should be based on clear objectives, narrowly tailored to meet those objectives, and, given the iron law of unintended consequences, it should be clearly superior to private regulation. Regulation can be justified if incentives for private regulation are weak - perhaps because of other government programs, such as deposit insurance - or if market participants are likely to be ineffective, as for example small savers and borrowers. Regulation may also be justified to promote greater flow of accurate information to enable private participants to make better informed decisions.

1 The views are my own and do not necessarily reflect other members of the Board or its staff. I thank Athanasios Orphanides, Matthew Pritsker, Patrick Parkinson, and Vincent Reinhart, of the Board's staff, for valuable comments.
2 Chairman Greenspan has spelled out his views on markets and regulation in many places, and much of what follows is my synthesis of this material. His remarks on "Government Regulation and Derivative Contracts" on February 21, 1997 are an especially valuable source for his approach to government regulation of financial markets.
New technologies and changing market structures imply that regulation should be constantly under review; at times rolling back regulation - for example, by lifting the Glass-Steagall restrictions on banking organizations - will benefit competition and help the financial sector deliver services more efficiently and effectively. Moreover, regulation itself can benefit from competition. Running regulated and unregulated markets side by side gives people a choice of whether they want protection and helps to constrain regulation. Some of the same purposes can be served by having multiple regulators for the same function: in some circumstances, the possible adverse consequences of competition in laxity may be smaller than the potential for regulatory conformity and regulator risk-aversion to impinge on innovation and change.

The Greenspan doctrine has had a perceptible influence on the evolution of markets and the regulatory structure that applies to them. Raghu Rajan voices some concerns about this evolution. In particular, he posits that the shift from depository intermediation to professional asset management has increased tail risk to socially excessive levels and has left the world more vulnerable to rare but potentially very serious tail events; he suggests some ways in which regulation should be increased.

In assessing this argument, we might find it useful to separate the question of whether the world is riskier from the question of whether systemic risk has risen. The increased ability to disentangle the risk and tailor risk profiles should mean that risk has come to be lodged more in line with investor appetites, a change that has probably tended to reduce the price of risk and encouraged riskier capital projects to be funded. But individual investors at greater risk need not imply increased systemic risk - fatter tails and greater potential for losses feeding back on the macroeconomy.

In fact, industrial economies have been marked by much less variability in output and inflation over the past twenty years. Many reasons have been given for this so-called great moderation, but developments in financial markets have likely played a role in making the economy more resilient. As a consequence of greater diversification of risks and of sources of funds, problems in the financial sector are less likely to intensify shocks hitting the economy and financial market.

The experience of 2001-03 is instructive. Unusually large declines in equity prices and increases in defaults and risk spreads - surely tail events by most definitions - reduced wealth and raised the cost of capital but did not aggravate the downturn by impinging on the flow of funds. Financial intermediaries were not so troubled as to cut off the provision of credit, and in any case, many borrowers had alternative sources of funds.

In addition, we have not seen a clear upward trend in volatility of financial asset prices over the past twenty-five years, as one might expect if herding had increased in importance. Judging from options prices, market participants are expecting the volatility of financial asset prices to be damped in the future; they are also requiring lower-term premiums for placing funds for longer terms.

I do not share Raghu’s nostalgia for the systemic-risk implications of bank-dominated finance. Old-style crises involving impaired depository institutions had substantial spillover effects; their repair took time, during which economic activity was affected; and emergency measures to deal with them often involved moral hazard because they were aimed at stabilizing ailing intermediaries. I think we would all agree that the industrial economy that has suffered the greatest systemic strains from problems in the financial sector in the past fifteen years is that of Japan, which remained tied to the commercial bank model Raghu finds safest. The macroeconomic effects of new-style crises involving market liquidity, as in 1998, or outsized movements in asset prices may be more readily cushioned by monetary policies aimed at bolstering the general level of liquidity and reducing interest rates. Such policies also carry less risk of increasing moral hazard.

Although investment managers receive substantial funds directly from households, many of their counterparties are sophisticated investors in positions of fiduciary responsibility. In addition, most asset managers are employees of institutions - mutual fund families, bank holding companies - that are in the market for the long haul. It is not in their interest to reach for short-run gains at the expense of longer-term risk, to disguise the degree of risk they are taking for their customers, or otherwise to endanger their reputations. I would expect these counterparties and employers to enforce compensation schemes that foster their objectives. As a consequence, I did not find convincing the discussion of market failure that would require government intervention in compensation. Moreover, compensation regulation is likely to be easily evaded and fraught with risks of untoward consequences. One only has to recall the congressional action of 1993 that, by imposing less-favorable tax treatment on some forms of executive compensation, fostered the shift to stock options that in turn was thought to have contributed to some of the transparency and corporate governance problems of the late 1990s.
Regulatory and supervisory systems do need to evolve to reflect the shift to market-based transactions. As intermediation shifts from depositories, with their specialized knowledge of borrowers, to markets, disclosure and transparency become more important to allow diverse private parties to assess risk properly, exert appropriate discipline, and contribute to the efficient allocation of resources. Greater reliance on markets also elevates the importance of the safety of clearing and settlement systems. Private-sector participants have every incentive to demand these disclosures and to ensure that their trades go through as contracted. But government may need to act in concert with private parties to arrive at collective decisions that strengthen markets and reduce systemic risk but might not be in the interest of individuals acting separately. And with more of the fluctuations in asset prices passing through to a large number and wide variety of households, educating people to make informed choices and protecting retail customers from abusive practices remain key governmental functions.

A particularly interesting strand of the debate about excessive risk-taking concerns the interaction of monetary policy and perceptions of risk in financial markets. Some analysts are concerned that several aspects of the conduct of monetary policy in the United States have induced market participants to reduce their expectations about risk too far, setting up the financial markets and the economy for an unpleasant and possibly destabilizing surprise.

In this view, the low short-term interest rates that policymakers have thought were required over the past few years to meet macroeconomic objectives are said to have encouraged reaching for yield - settling for risk compensation that the investors themselves view as probably inadequate but which they feel compelled to accept, perhaps to achieve targeted levels of real or nominal returns. The tendency of policy to react strongly to sharp declines in key asset prices, and thereby limiting the extent of the decreases, has been thought to induce risk-taking by imparting an asymmetry to asset price movements. Finally, a concern is that the fairly new practice of telling the public about our expectations for the path of the federal funds rate may have given market participants a false sense of security about the future path of policy.

These practices have been the result of a monetary policy focused on price and economic stability over the intermediate term interacting with the particular characteristics of the economy. The global decline of inflation and spending induced a global reduction in interest rates to unusually low levels in recent years. Those low rates were, in fact, intended to stimulate risk-taking and investment when private agents pulled back. The tendency for asset prices to fall more quickly than they rise has largely produced the more rapid and noticeable response of stabilizing monetary policy to declines than to increases. And the importance for economic performance of more-accurate expectations about monetary policy, along with the unusually low policy rates, led the Federal Open Market Committee to undertake a more extended discussion of its policy expectations.

To the extent that these policy strategies reduce the amplitude of fluctuations in output and prices and contain financial crises, risks are genuinely lower, and that development should be reflected in the prices of assets. To the extent that the central bank can convey something useful about its intentions, markets that take account of these intentions will be priced more accurately.

The risk is that private agents overestimate the ability or willingness of central banks to damp volatility in asset prices or the economy, or that they fail to appreciate that future policy actions depend on an imperfectly predictable economic outlook. But developments should have partially alleviated some of these concerns. Investors have had an opportunity to observe that policy actions in 1987, 1998, and 2001-03 cushioned the economy, but they did not stop major declines in the prices of equity in 1987 and 2001 or of risky credits in 1998. Short-term rates have risen substantially in the past year, reducing the profitability of "carry trades" without triggering an unwinding that drove long-term interest rates higher or widened risk premiums. And expectations that policy tightening would remain gradual over the near-term have not stopped long-term rates from fluctuating substantially in response to incoming data; the movements of future or forward rates out the yield curve after surprises in data have been at least as large since 2003 as they were before.

That is not to say that we have nothing to worry about. As I already noted, Alan Greenspan, himself, has often been concerned about market complacency - as recently as his latest monetary policy testimony. People may well perceive the economy as more stable than it is or central banks with greater power than we have to smooth the economy or to foresee our own actions.

Clearly, reminders to the public of the inherent uncertainty in economic developments and policy responses are appropriate and should have some effect. The question is whether these warnings should be supplemented by actions to inject uncertainty into policy pronouncements by saying less
than we can or into the economy by shifting our objectives away from seeking the best outcome for the economy over the intermediate term. In my view, such policies would result in less accurate asset pricing, reduce public welfare on balance, and definitely be at odds with the tradition of policy excellence of the person whose era we are examining at this conference.