

Navigating Turbulent Waters: Central Banks and the Financial Crisis.

Memorial lecture in Honor of Dr Sam-Chung Hsieh, Stanford, May 7, 2009.

Andrew Crockett

It is a particular privilege and honor to be invited to give the inaugural Sam-Chung Hsieh memorial lecture. Dr. Hsieh had a distinguished career as an academic and policymaker in Taiwan, which culminated, fittingly, in his service as Governor of the Central Bank. Earlier in his public career, Dr. Hsieh had played a pivotal role in Taiwan's early economic successes. Under his guidance, the economy became one of the four original "Asian Tigers", using open markets and export-led growth as the foundation for rapid economic development. Later, as Governor, he had to steer the Taiwanese economy through the challenges of political isolation and periodic bouts of global financial turmoil.

I first met Sam Hsieh nearly two decades ago, when he was a regular visitor to BIS Annual General Meetings. At that time, if you didn't already know that Taiwan had the largest foreign exchange reserves in the world, he would make sure you were not in ignorance for long. Those were the days when \$100 billion was real money. Nowadays, of course, self respecting policy makers use trillions as the preferred unit of account. Such is progress.

In the early 1990s, however, Taiwan undoubtedly commanded attention for its reserve levels. Some people wondered whether this was a wise use of scarce financial resources. But Governor Hsieh knew that such a reserve would enable Taiwan to maintain confidence in its currency in an uncertain economic and political climate. The economy's financial strength also enabled it to be a major investor in the mainland economy, and so to contribute to the remarkable growth story of greater China.

I shall have more to say about the advantages and drawbacks of a policy of reserve accumulation later in this lecture. Before coming to that, however, I want to review the scale and scope of the present crisis, and the responses that are called for to restore confidence and facilitate a return to economic growth. Then I want to say something about the "exit strategy". How can central banks and governments extricate themselves from the extraordinary measures now being adopted, and return to a normal functioning of the economy and financial system? Finally, I will consider how to build a more resilient financial system, more resistant to external disturbances, and less subject to internally-generated volatility.

I will try to focus this story on the actions and objectives of central banks, although inevitably other government policies, including fiscal policies and regulatory intervention, are important parts of the narrative. Much of what I have to say concerns the role of the central banks in the advanced industrialized countries. But I will try to identify the ways in which the challenges facing central banks in emerging markets differ

from those of their counterparts in the more advanced countries, and draw out some of the lessons.

1. The scope and scale of the crisis.

It is becoming fashionable among some former policy makers of my generation to say that there is nothing new in the present crisis. The world, they say, has experienced significant financial turbulence at frequent intervals since the dawn of modern finance. Just as ordinary members of the older generation like to wax nostalgic about the “good old days”, former central bankers really become animated in talking about the “bad old days”. We like to believe that nothing today can surpass the difficulties we faced in our time.

Well, yes and no. Of course the world has had long experience of periodic financial crises. And many of the fundamental characteristics of crisis are unchanging. Common features include flawed credit origination and excess leverage, both of them compounded by hubris following prolonged periods trouble-free expansion.

But the current crisis also differs from recent bouts of economic turmoil in that it has shriveled the credit creation process in the financial systems at the center of the world economy. The vaunted business model of “originate-to-distribute”, thought to be the wave of the future, has been found severely wanting. Complex new products, far from containing risk and improving resilience, have been at the heart of the problems we have encountered.

The current financial and economic crisis is thus the most severe faced by the world economy since the Great Depression of the 1930s. In terms of its complexity, it may even be more severe, due to the unprecedented interconnectedness of financial institutions and markets. Few people, it turns out, truly understood the risks inherent in new derivative instruments, let alone how the risk profiles of market players would evolve as turbulence spread.

In terms of real economic impact, however, there is reason to hope that the fallout from the crisis will be more contained and that recovery will come earlier than in the 1930s. Lessons have been learned from the Great Depression, and if these are wisely applied, it is to be hoped that the devastating effects on output, unemployment and human welfare of that earlier episode, to say nothing of its political fallout, can be avoided.

Still, the consequences so far have been dramatic. Consider first the financial impact. In the United States, the five largest investment banks of two years ago no longer exist as independent broker dealers. Two have been merged into existing banks under imminent threat of failure. Two have survived only with infusions of cash from outside investors, and have converted themselves into bank holding companies. And one, Lehman Brothers, failed with near catastrophic consequences for the financial sector at large. Two gigantic specialized housing finance agencies, Fannie Mae and Freddie Mac, have been effectively nationalized, as has the world’s largest insurance company, AIG.

Among the six largest commercial banks, two have disappeared, and two have had to resort to special assistance from the Federal Government. Others have accepted Government assistance, even though not all of them faced life threatening problems. By early March, the trough of the stock market, the market capitalization of the banking sector had shrunk by some 85% from its level not much more than a year earlier.

Outside the United States, the consequences in Europe have also been severe. The United Kingdom faced its first bank run in 140 years. Two of the four largest banks in the country would almost certainly have failed without the large-scale government intervention they received. The story of Iceland is well-known. The country's economy has been devastated by the collapse of its banking sector. There have been bank failures in Germany, Austria, Spain and other European countries, although of lesser magnitude.

Outside the industrial countries, banks have been healthier, having largely avoided the investments in new financial products that brought large financial institutions in the developed world to their knees. In addition, the experience with earlier crises made them and their supervisors more cautious in maintaining adequate capital ratios and avoiding excess leverage. But they too have faced problems, particularly as exports have collapsed and the creditworthiness of their borrowers has been undermined. Capital cushions, which appeared generous before the crisis, now seem barely adequate.

Of course, difficulties in the financial sector would not be the source of so much concern, were it not for their impact on the real economy. The financial sector plays an essential role in the flow of credit that sustains demand and allows investment to take place. Both because of the direct effects of a drying up of credit, and because of the indirect effects on business and consumer confidence, it should come as no surprise to discover that financial turmoil has taken its toll on the real economy.

Latest IMF forecasts project that GDP in the advanced industrial countries will fall by some 3.8 percent in 2009. This decline is widely spread, with Japan and Europe expected to suffer even greater falls in output than the United States. For the emerging markets, growth is projected to remain positive, mainly due to the contribution of China and India. Other emerging markets, including the Asian "tigers" will be hard hit, with substantial declines in output projected. (The figure for Taiwan is minus 7.5 percent.)

If these forecasts are realistic, the impact of the current recession on living standards will be considerably greater than any other episode of the postwar period. Moreover, it appears that even if stabilization occurs in the second half of the current year, the subsequent recovery will probably be anaemic. The IMF projections foresee zero growth in the industrial countries from 2009 to 2010, so that unemployment will continue to increase, reaching over 10 percent in both the United States and Europe.

Not surprisingly, the effect on trade flows has been dramatic. In early 2009, world trade values were an astounding 30 percent below year earlier levels, with almost all the decline taking place in the second half of the period. The effect of this has been most dramatic for the exporters of manufactures in East Asia. In the final quarter of 2008 and

the first quarter of 2009, exports of Singapore and Taiwan dropped by about 60 percent at an annual rate; and of Korea and Japan by about 50 percent. Declines in GDP and in employment have been the inevitable result. Prospects for world trade are further exacerbated by pressures for protection that have followed the upsurge in unemployment. The World Bank estimates that 17 out of the 20 members of the Group of Twenty countries have adopted some protectionist measures since their pledge last November not to do so.

Just as troublesome has been the reversal of capital inflows. In 2003-06 net private capital flows into emerging and developing economies averaged some \$200 billion a year. They reached over \$600 billion in 2007, before declining to \$100 billion in 2008, and a projected negative \$200 billion in the current year. Prospects for a rapid revival in such flows are not good.

Policymakers in emerging markets thus now face an unpleasant combination of external circumstances. Foreign exchange earnings have fallen sharply as a result of the collapse of demand in export markets and the dramatic reversal in commodity prices. Capital flows have dried up. And employment growth in key sectors has halted. On top of this, the measures of stimulus open to advanced economies are circumscribed in many emerging markets by their lack of access to credit. More on this in a moment.

2. How to restore growth and employment

Given the scope of the crisis, and the magnitude of its effects on economic activity, the key priority in present circumstances is the rebuilding of confidence, the restoration of credit flows, and the promotion of business and consumer spending. For most industrial countries, the recipe is clear and the role of central banks pivotal.

The first priority is to ensure the stability of financial systems by providing support to threatened institutions and unclogging frozen credit markets. The classic form of central bank support is to lend to banks facing liquidity problems and to lower interest rates to stimulate demand for credit.

Central banks did this at the onset of the crisis, but it wasn't sufficient to restore financial confidence. Why not? Well, lower interest rates, which are effective in normal circumstances, are much less effective when confidence has evaporated, and lenders no longer trust borrowers. And liquidity support to banks is of limited use if the problem is perceived to be one of solvency or the institutions under threat are non-banks without access to the central bank lending window. More generally, in a financial system dominated by securitization and capital market intermediation, the problem lies in dysfunctional markets just as much as with weak banks. There is as yet no received central bank wisdom on how to tackle such a situation.

Faced with the ineffectiveness of existing instruments, central banks and governments have sought unconventional ways of shoring up financial stability and stimulating

demand. Central banks' open market operations have been widened to include a broader spectrum of instruments, maturities and counterparties. Quantitative easing has been used to generate excess deposits at the central bank and to try to stimulate lending. Guarantees and direct lending have been provided when financial institutions' basic solvency has come into question. And where markets have been frozen, central banks have stepped in to intermediate credit directly, and have been willing to generate almost unlimited quantities of liquidity.

We have thus gone well beyond traditional open-market operations to what might be called "open-wallet" operations. We have also gone beyond "lender of last resort" to the banking system, to "market-maker of last resort" to securitized credit markets. The longer term consequences of this remain to be seen. These monetary policy actions have usually been undertaken at the behest of, or at least in cooperation with governments. Governments, as the ultimate fiscal authority, have provided the implicit or explicit guarantee for the additional risks that have accumulated on central bank balance sheets.

These developments, I would argue, have been necessary to prevent an even more widespread collapse of financial confidence. However, they have led central banks far away from the traditional role envisaged by Bagehot in his classic exposition of the role of central banking, "*Lombard Street*".

Do they provide examples that can be used in emerging markets? Only to a limited extent. For one thing, central banks in these countries cannot always call on unlimited support from fiscal authorities, who face their own constraints. For another, emerging markets, as large borrowers in international markets, always need to keep a weather eye on the exchange market implications of open-ended credit easing. Fortunately, on this occasion, financial systems in emerging markets entered the crisis in relatively strong shape. Had they been weaker, it is far from clear that they could have used the techniques now being employed in the United States and Europe. This is an important lesson for the future conduct of policy in these countries.

Fiscal policy responses to the crisis also carry implications for central banks. Because monetary easing in a financial crisis can be like "pushing on a string" it has been necessary for governments to take actions that both generate spending directly, and help stimulate a demand for credit. These actions have been on an unprecedentedly large scale, well beyond what was undertaken in earlier bouts of recession. In the United States, for example, the overall sum of government guarantees, financial injections and stimulus measures now stands at \$2.7 trillion.

The fiscal packages that have been adopted, together with the operation of automatic stabilizers, have led to a major increase in prospective deficit and debt ratios. The IMF estimates that the average fiscal deficit in advanced industrial countries will go from about 2 1/2 percent of GDP in 2006-7 to over 10 percent in 2009. With only gradual reductions over the medium term, debt ratios rise alarmingly. IMF projections suggest the net debt ratio in the United States could increase from 43 percent of GDP in 2007 to 83 percent in 2014. The corresponding figures for the Euro area would be from 66

percent to 93 percent?; for the United Kingdom from 44 percent to 88 percent; and for Japan from 80 percent to 136 percent. When I was involved in the negotiation of the Maastricht Treaty on European Economic and Monetary Union we concluded the maximum safe debt ratio was 60% of GDP.

I do not draw attention to these figures to dispute the desirability of a strong fiscal response to the crisis. Rather, my point, which I will discuss in more detail in a moment, is to underline the need for a plausible “exit strategy” from a potentially unsustainable trend.

A further point is that, with some exceptions, like China, fiscal easing is not available to emerging and developing economies in anything like the same degree as it is to the major industrialized countries. For many of these countries, debt capacity is much less, and much of their borrowing is in foreign currency. Preserving credit standing is inevitably an issue, and they cannot afford to be unconcerned about consequences for the exchange rate, and the risk of self-reinforcing capital outflows.

What this means is that central banks and governments in these countries can ease policy only so far. Fiscal stimulus packages, and fiscal support to banking systems, have to be designed with a careful eye on long-run fiscal sustainability. Whether because debt levels are already high, or because of fears about the political will rein in expenditures in the medium term, investors are frequently hesitant to finance a substantial widening of fiscal deficits.

The foregoing suggests that emerging market central banks face a more delicate task than their counterparts in industrial countries. They are thus more directly dependent on a supportive international climate. This points to two important ways in which internationally-adopted policies can help restore stability in emerging and developing markets.

The first is through the provision of external financing to help maintain spending as export receipts fall. With the collapse of private capital inflows, official financing through the IMF can help finance well-designed stimulus packages and reduce the impact of the global downturn. The second is through the maintenance of an open trading and investment environment. With exports already hard hit, emerging economies risk being forced into even more painful retrenchment if protectionism in developed countries is allowed to gain force.

A larger role for the IMF in enabling emerging markets to pursue active countercyclical policy is not straightforward, however. Countries with past experience of IMF conditionality, and its political repercussions, will not place reliance on external help unless it is largely free of what they see as onerous conditionality. But the IMF, for its part, may find it hard to rely on promises of good fiscal behaviour in the future without some guarantees in the form of enforceable policy commitments.

This problem is not only a matter of crisis response at the present time. If emerging markets cannot count on ready assistance in circumstances like the present, their conclusion may well be that they need an even larger reserve cushion in the future, when export growth resumes. Since there is widespread concern that the reserve build up by Asian countries in the middle years of this decade was not only wasteful, but even contributed to the credit conditions that fuelled the housing bubble in the US and elsewhere, a return to large export surpluses by emerging markets would be a cause for systemic concern.

3. “Exit strategies” post-crisis.

I have argued so far that the direct intervention in financial markets, and the fiscal and monetary stimulus that have been applied are largely appropriate. But I have also tried to draw attention to the challenges they present for central bank and government policy in the future. This brings us naturally to the issue of “exit strategies” and the degree of “pre-commitment” necessary to maintain confidence in a return to monetary and fiscal discipline.

It is paradoxical, but largely true, that the policies needed in the short term to escape a downward spiral of economic activity are almost diametrically opposite to those required to sustain medium and long-term stability. In the short term, comprehensive official support to the financial sector is needed to regain stability and revive the credit extension process; longer term, however, efficient resource allocation requires the restoration of market discipline. In the short term, massive liquidity injections and low interest rates are needed to counteract risk aversion and stimulate the demand for credit; longer term, central banks have to limit liquidity creation to maintain price stability. In the short-term, massive fiscal stimulus is needed to jump start economic activity; longer term, fiscal restraint is needed to avoid “crowding out” productive private sector expenditure.

For the purposes of my remarks this afternoon, I will be particularly concerned about how central banks face the task of making a “U-turn” in policy, and how the challenges facing emerging market central banks may differ from those of industrial countries.

Ideally, an accommodative monetary stance should be kept in place just long enough to restore confidence and foster a self-sustaining expansion, but not so long as to permit the reemergence of inflationary psychology. This is, however, much easier said than done. Monetary policy, as is well-known, acts with a fairly long and variable lag. Central banks, if they seek to steer the economy, would therefore have to project economic developments some period ahead. They would also have to be willing and able to take monetary policy actions in advance of clear evidence from current economic statistics.

In the real world, however, economic analysis is hardly up to the task of forecasting output trends with any precision and estimating the lags in largely unprecedented circumstances. Even if it were, the political challenge of tightening policy while

unemployment remains high and recovery uncertain seems all but insurmountable. As if this is not enough, the politicization of central banks' decision making that has accompanied their role in crisis management makes it particularly hard for them to assert independence from political pressures. My conclusion is that central banks may be fated to "stay with" accommodative policy for a period that in hindsight will appear too long. This makes it all the more important for policy to be adjusted quickly when it is apparent that recovery is indeed well-grounded.

In the longer term, an even greater challenge will be presented by the burgeoning debt of so many economies. With debt ratios not far short of 100 percent, there will be strong implicit pressure to ease the financing burden by inflating away debt. It would be highly unfortunate if, having devoted the past three decades to restoring faith in price stability, central banks were forced to abandon this achievement for the sake of easing the fiscal burden. But if central banks resist this pressure, they will have to be willing to maintain relatively high interest rates, which will both intensify government financing constraints and depress investment.

To ease the pressure on monetary policy, and to prevent crowding out of productive investment, it will be particularly important for fiscal policy to be credibly directed at bringing debt ratios back down to pre-crisis levels, or below, in some reasonable time frame. Early fiscal restraint faces the same political economy difficulties as monetary restraint. Governments will be reluctant to cut spending or raise taxes in advance of clear evidence that the economy is recovering. And they will be mindful of the well-known historical examples of the US in the late 1930s and Japan in the mid 1990s, when fiscal policy was tightened and the economy slipped back into recession. Nevertheless, clearer indications than have yet been provided are needed about how fiscal sustainability is to be restored.

4. Preventing future crises

As if returning to normal after the present crisis was not challenge enough, central banks and governments are also being asked to provide credible assurance that similar financial turmoil will not be allowed to recur in the future. Of course, there can be no absolute guarantee of financial stability. Still, there is no doubt that public opinion expects that lessons of recent experience will be taken to heart, and reforms put in place to at least lessen the likelihood that financial excess will once again plunge economies into crisis.

It is, therefore, not too early to begin to think about strategies to reduce financial vulnerabilities. These can be divided into two broad areas: appropriate policies to provide a stable macroeconomic environment; and the regulatory architecture to maintain financial system stability. Regulatory policy can in turn be subdivided into the *content* of regulation, and the *structure* of the agencies to provide the desired regulatory coverage

- (i) Macro economic stability.

It should go without saying that a strong fiscal position is at the heart of macroeconomic stability. Unfortunately, however, when economic growth is strong and tax revenues rise more rapidly than expenditures, there is a strong temptation for taxes to be cut or expenditures to be allowed to increase. Central banks have always nagged the fiscal authorities to strengthen their budgetary positions – and repetitiveness does not mean that the advice is wrong. But it will in addition be important to preserve the central banks' independence from governments so that they are effectively able to resist pressures to monetize fiscal deficits.

Of more interest in the context of these remarks are central banks' actions with regard to monetary policy. In a longer term context, there can be little doubt that maintaining an appropriate degree of price stability, and building up credibility in central banks' attachment to this objective, is helpful in avoiding crisis, and opening a broader range of options if a crisis nevertheless occurs. But what, exactly, should we understand by price stability? A key question in this regard is whether, and to what extent, central banks should act to try and prevent asset price bubbles from developing.

The role of asset prices in monetary policy formulation is one of the most vexed questions in monetary policy. It is worth, therefore defining the points of dispute a little more carefully. Nobody pretends it is feasible or desirable to target asset prices directly. And everybody acknowledges that asset prices have wealth effects that can influence aggregate demand, and therefore inflationary pressures.

Those who argue for greater attention to asset prices in monetary policy believe that fluctuations in such prices can have an economic impact that goes beyond just wealth effects. They believe that some price trends are sufficiently outside historical experience to create prima facie evidence of a bubble. They believe that bubbles generate financial imbalances that create the potential for future financial instability. Such instability is undesirable in itself, and, moreover, gives rise to volatility in core inflation. "Leaning against the wind" in interest rate policy can be helpful, even if it means that inflation drops below the target range for a while.

Those who believe monetary policy should *not* be adjusted in response to asset price developments make three main points. First, it is rarely possible to identify a bubble as it is developing. Bubbles can only conclusively be identified in hindsight. Second, even if a bubble could be identified, small increases in interest rates would be unlikely to do much to deflate them, and large increases would risk precipitating a recession. Third, monetary policy can more effectively mitigate the adverse consequences of bubbles by moving quickly to ease policy when bubbles burst, rather than by trying to prevent them in the first place.

What is the balance of the argument? Recent experience seems to suggest there may be reasons to revisit central banks' traditional hands-off approach to asset prices. Many people did in fact warn that housing and equity prices had become over-extended in the run-up to the crisis. Easy access to credit seems to have played some role in the rapid escalation of house prices and equities. And ex post mopping up has not been able to

avoid severe consequences from earlier financial excesses. My view, therefore, is that monetary policy should be shaded in a more restrictive direction when asset prices are rising substantially faster than can be justified by fundamentals, and when at the same time the growth of monetary and credit aggregates is more rapid than nominal GDP. This would probably not be sufficient to prevent bubbles, but by at least marginally reducing their magnitude, would help shield the real economy from the worst effects of a potential crisis.

Emerging markets face many of the same issues. For them, however, the exchange rate typically plays a greater role in the price formation process, and the maintenance of international confidence in their currencies is correspondingly more central to decision making. It makes sense, therefore, for them to be willing to manage their currencies with a greater focus on exchange rate developments. To protect themselves against the kind of repercussions that were apparent in the Asian crisis, many central banks have sought a strong balance of payments and large holdings of foreign exchange reserves. This policy was questioned as wasteful up until a couple of years ago. It does not seem so unwise now.

For the future, emerging markets will need to feel protected against the consequences of financial crises in the industrialized countries. Reserve holding is one way of doing this. It is sub-optimal, however, for at least two reasons. First, the resources tied up in reserves could surely be put to better use. Second, the large flows of capital from emerging to developed countries stimulate excess borrowing in the latter countries, and risk fuelling asset price booms. So, as noted above, it would be desirable if an international mechanism could be found that would provide emerging markets of access to finance in crisis periods, without having to accumulate large exchange reserves in advance.

(ii) Regulatory policies

A major debate is now beginning concerning what regulatory tools can be used to counteract potential instability in financial markets and institutions. All major countries have pledged themselves to a regulatory overhaul that will improve their ability to maintain financial stability. This will involve changes in both the *content* of regulation, and the *structure* of the institutional arrangements to oversee the new regulations.

Turning first to the *content* of regulatory reform, the precise nature of the new rules is yet to be determined, but it seems clear that the following features should be part of the new regulatory model:

First, greater efforts should be made to counteract procyclicality in the financial system. It has become clear that lending standards ease during periods of expansion, financial institutions take on more leverage, and borrowers become less cautious. All this contributes to the magnitude of a boom, and the severity of the subsequent downturn, when it comes. Supervisory and accounting rules have arguably accentuated this tendency. What is needed are mechanisms to reduce the tendency to excessive risk

taking in boom times, so as to limit the extent of bubbles and permit the subsequent retrenchment to be less troublesome.

Second, a broader range of private sector financial institutions should become subject to closer prudential oversight than has hitherto been the case. In a number of countries, there have been major gaps in the content of regulation, which have unlevelled the competitive playing field, and created systemic vulnerabilities. Among the players whose activities have been subject to limited oversight in the past are: investment banks; insurance companies; private pools of capital (hedge funds and private equity funds); money market funds; centralized clearing and settlement systems; and off balance sheet vehicles. To this list should be added information-providing entities, such as credit rating agencies and accounting and auditing standard setters.

Third, the minimum capital cushions financial institutions are required to hold should be better calibrated to the risks (especially the systemic risks) they create. This can be achieved in a variety of ways – through simply increasing regulatory capital ratios; through adjusting upwards risk weights that have been shown to be too low; through bringing back within the regulatory net assets held off-balance sheet; and by a greater focus on higher quality equity capital as opposed to subordinated debt instruments. In addition, it will be important to consider sources of risk that are inadequately covered in current supervisory rules. In particular, funding risk, the risk that funding sources will not be available to cover maturity mismatches in portfolios, should assume a central role.

Fourth, there should be a greater focus on *macro-prudential* oversight, to complement *micro-prudential* regulation. This means that regulators will use stress test and other methodologies to assess the resiliency of financial institutions to system-wide sources of shock. Supervisors will consider the sustainability of new business models in the face of financial turbulence. And they will need to incorporate the capacity of market dynamics to magnify the impact of shocks. In other words, we need to go beyond considering the risks facing an individual institution in a static environment, and consider how the financial environment itself will be affected by exogenous shocks and endogenous responses.

Beyond the issue of the content of regulation is that of its *structure*. To whom should we look for oversight of the financial system? This is a question that has always concerned central banks, as most of them were established with the explicit purpose of acting to forestall financial turbulence. The *locus classicus* for this is Walter Bagehot's "Lombard Street". Still, it needs to be recognized that much has changed in the financial landscape since Bagehot's day, and a simple appeal to historical antecedents is scarcely sufficient.

A first important change is that central banks now have the responsibility for actively pursuing price stability, as opposed to simply assuring the link to gold, as in Bagehot's time. A second change is that the financial system is no longer made up primarily of banks, which make loans and hold them on their balance sheets. There are many other systemically important institutions, and a much greater share of financial intermediation takes place through capital markets.

The structure of regulation needs to reflect these new realities. What is required is effective supervision of all important financial players and markets, close cooperation among all supervisors, and an agency charged with taking a holistic view about overall financial system stability. Issues that arise in this context include: Should there be one integrated supervisor for the whole financial system, or individual regulators for different sectors? Should the central bank be directly involved in the supervisory process? and who should take the responsibility for systemic stability?

There is no single answer to these questions, which would be appropriate for all countries at all times. But we can perhaps venture some considerations that need to be taken into account as each country decides its own desired regulatory structure.

First, the greater the overlap between institutions operating in different parts of the financial sector, the stronger the argument for integrated supervision. Where conglomerate financial groups span commercial banking, investment banking, insurance and asset management, or where the risk profiles of institutions in different sectors tend to converge, it is important that they be subject to comparable regulation and supervision. If they are not, the danger of regulatory arbitrage arises. Comparable supervision is most effectively guaranteed through oversight by a single agency, such as the integrated regulators in the United Kingdom, Korea and Japan. At the very least, it would seem that the balkanization of supervisory responsibility among many agencies, as in the United States, is undesirable, unless close collaboration among the agencies can be assured.

Second, while the central bank has a legitimate concern for the stability of the banking industry, care should be taken not to dilute its focus on the goal of price stability. If the central bank was to take responsibility for the whole range of financial institutions, in all sectors, there is a risk both of spreading its resources too thinly, and politicizing its basic role. It seems undesirable, therefore, for the monetary policy authority to be the integrated regulator for the whole financial situation

Third, a body should be designated, or created, with the responsibility of protecting wider systemic stability. This body might have some or all of the following responsibilities: oversight of systemically important financial institutions, in whatever sector they operate; the identification of gaps in supervision as new players and instruments emerge; the tracking of emerging vulnerabilities in financial trends; and the coordination of crisis management. These functions could be given to the central bank; to an integrated regulator, or, where multiple regulators exist, to a college of supervisors, probably supported by an independent mandate and secretariat. But it would be important for the Systemic Risk Regulator to have the authority and resources to adjudicate disagreements among individual regulators.

Fourth, and last, since finance is quintessentially global, there should be institutional mechanisms that facilitate international cooperation and consistency in regulatory activity. The world is probably not ready for a global financial regulatory authority, but international bodies that set regulatory standards (such as the Basel Committee on

Banking Supervision); and foster cooperation among regulators and other financial officials (such as the recently re-designated Financial Stability Board) should be strengthened and given greater authority.

By and large, these observations apply to emerging as well as to advanced countries. But there may be differences between the two types of countries that need to be taken into account. In many emerging economies, there is still a fairly clear functional distinction among institutions in different sectors of the financial industry. The need for an integrated regulator may therefore be less pressing. Furthermore, in some emerging markets, the central bank may be the only governmental body with the expertise and independent authority to command respect as a non-political overseer of financial stability. If so, it might not be wise to try to create other bodies to perform supervisory functions

Concluding remarks

Learning the lessons from the current crisis, and adapting regulatory and other policies to avoid such problems in the future is a complex exercise. It is certainly important to set about this task with seriousness and a sense of urgency. But it is even more important to get the response right, as the new structures are likely to have to endure for a long time. The necessary time to secure the appropriate national and international consensus would be time well spent. Nothing that is done now will have much impact on the resolution of the present crisis. And we are not likely to face a new crisis for at least several years. Nor, in my judgment, are we likely to forget the importance of regulatory reform if final decisions are not taken immediately. To paraphrase Einstein, reform should proceed as rapidly as possible, but not more rapidly.