Stanley Fischer: The great recession – moving ahead

Speech by Mr Stanley Fischer, Vice-Chairman, Board of Governors of the Federal Reserve System, at "The Great Recession – Moving Ahead", a conference sponsored by the Swedish Ministry of Finance, Stockholm, 11 August 2014.

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The o*riginal* speech can be watched live on *the Board of Governors of the Federal Reserve System*'s *website*.

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The recession that began in the United States in December 2007 ended in June 2009. But the Great Recession is a near-worldwide phenomenon, with the consequences of which many advanced economies – among them Sweden – continue to struggle. Its depth and breadth appear to have changed the economic environment in many ways and to have left the road ahead unclear.

Today I will discuss three key aspects of the challenges policymakers face as they seek to move ahead. These are: (1) The impact of the Great Recession and the associated Global Financial Crisis on the growth of output, both in the short term and over the longer term. (2) The reform of the financial sector – in other words, how much progress have we made in creating a safer and more stable post-crisis financial environment? (3) The impact of the crisis on the conduct of monetary policy – in particular, how to balance the goals of achieving stable inflation and full employment while also taking into account the need to maintain financial stability. I will leave it to others to address the important challenges facing fiscal policymakers as they determine the appropriate roles and paths for fiscal policy at both the macro- and micro-levels.

To keep the focus sharp, I will deal primarily with the economy of the United States. But policymakers around the world confront related challenges and I will draw also on the post-crisis experiences of other economies. And I should make it clear that my comments today are mine alone and do not necessarily represent the views of other members of the Board of Governors of the Federal Reserve System or the Federal Open Market Committee.

Challenges arising from the growth slowdown

I begin by reviewing recent global economic developments and the questions they raise about where we are likely to go from here. There has been a steady, if unspectacular, climb in global growth since the financial crisis. For example, based on recent IMF data from the *World Economic Outlook,* which uses purchasing power parity weights, world growth averaged 3percent during the first four years of the recovery and as of July was expected to be 3.4 percent this year.[1] The IMF expects global growth to reach 4 percent next year – a rate about equal to its estimate for long-run growth. This global average reflects a forecast of steady improvement in the performance of output in the advanced economies where growth averaged less than 1percent during the initial phase of the recovery to an expected 2-1/2 percent by 2015. In contrast, the recovery in the emerging market economies started strong but has since fallen off, in part, as fiscal policy stimulus has been pared back.

But – and this is no small "but" – the global recovery has been disappointing. With few exceptions, growth in the advanced economies has underperformed expectations of growth as economies exited from recession. Year after year we have had to explain from mid-year

[1] Forecasts are from International Monetary Fund (2014), *World Economic Outlook: Recovery Strengthens, Remains Uneven* (Washington: IMF, April); whenever possible, they are updated using International Monetary Fund (2014), *World Economic Outlook Update: An Uneven Global Recovery Continues* (Washington: IMF, July).

on why the global growth rate has been lower than predicted as little as two quarters back. Indeed, research done by my colleagues at the Federal Reserve comparing previous cases of severe recessions suggests that, even conditional on the depth and duration of the Great Recession and its association with a banking and financial crisis, the recoveries in the advanced economies have been well below average.[2] In the emerging market economies, the initial recovery was more in line with historical experience, but recently the pace of growth has been disappointing in those economies as well. This slowing is broad based – with performance in Emerging Asia, importantly China, stepping down sharply from the post-crisis surge, to rates significantly below the average pace in the decade before the crisis. A similar step-down has been seen recently for other regions including Latin America.

These disappointments in output performance have not only led to repeated downward revisions of forecasts for short-term growth, but also to a general reassessment of longer-run growth. From the perspective of the FOMC, even in the heart of the crisis, in January 2009, the central tendency of the Committee members' projections for longer-run U.S. growth was between 2-1/2and 3 percent. At our June meeting this year, these projections had fallen to between roughly 2 and 2-1/4 percent. This downward revision is not unique to our institution or to the United States. Indeed, the IMF's expectation for long-run global growth is now a full percentage point below what it was immediately before the Global Financial Crisis.[3] This reconsideration reflects lower projected growth for both the advanced and the emerging market economies.

This pattern of disappointment and downward revision sets up the first, and the basic, challenge on the list of issues policymakers face in moving ahead: restoring growth, if that is possible. In some respects, we should not have been surprised at the prolonged hit to output growth following the global financial crisis. As Cerra and Saxena and Reinhart and Rogoff, among others, have documented, it takes a long time for output in the wake of banking and financial crises to return to pre-crisis levels.[4] Possibly we are simply seeing a prolonged Reinhart-Rogoff cyclical episode, typical of the aftermath of deep financial crises, and compounded by other temporary headwinds. But it is also possible that the underperformance reflects a more structural, longer-term, shift in the global economy, with less growth in underlying supply factors.

Separating out the cyclical from the structural, the temporary from the permanent, impacts of the Great Recession and its aftermath on the macroeconomy is necessary to assessing and calibrating appropriate policies going forward. The difficulty in disentangling demand and supply factors makes the job of the monetary policymaker especially hard since it complicates the assessment of the amount of slack, or underutilized productive capacity, in the economy. Over the longer term it will be possible to disentangle the amount of slack on the basis of the behavior of prices and wages as the levels of resource utilization in economies rise, but it would be better to understand why growth has been so slow without experiencing either a runup in inflation or a descent into deflation.

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[2] See Greg Howard, Robert Martin, and Beth Anne Wilson (2011), "Are Recoveries from Banking and Financial Crises Really So Different?" International Finance Discussion Papers 1037 (Washington: Board of Governors of the Federal Reserve System, November).

[3] This calculation compares the IMF WEO's forecast for global growth 5 years ahead from the April 2008 WEO to the WEO July 2014 forecast.

[4] See Carmen M. Reinhart and Kenneth S. Rogoff (2009), *This Time Is Different: Eight Centuries of Financial Folly* (Princeton: Princeton University Press); Moritz Schularick and Alan M. Taylor (2012), "Credit Booms Gone Bust: Monetary Policy, Leverage Cycles, and Financial Crises, 1870–208", *American Economic Review*, vol. 102 (April), pp. 1029–61; Valerie Cerra and Sweta Chaman Saxena (2008), "Growth Dynamics: The Myth of Economic Recovery", *American Economic Review*, vol. 98 (March), pp. 439–57; and Michael D. Bordo and Joseph G. Haubrich (2012), "Deep Recessions, Fast Recoveries, and Financial Crises: Evidence from the American Record (PDF)", Working Paper 12–14 (Cleveland: Federal Reserve Bank of Cleveland, June).

In the United States, three major aggregate demand headwinds appear to have kept a more vigorous recovery from taking hold. The unusual weakness of the housing sector during the recovery period, the significant drag – now waning – from fiscal policy, and the negative impact from the growth slowdown abroad – particularly in Europe – are all prominent factors that have constrained the pace of economic activity.

The housing sector was at the epicenter of the U.S. financial crisis and recession and it continues to weigh on the recovery. After previous recessions, vigorous rebounds in housing activity have typically helped spur recoveries. In this episode, however, residential construction was held back by a large inventory of foreclosed and distressed properties and by tight credit conditions for construction loans and mortgages. Moreover, the wealth effect from the decline in housing prices, as well as the inability of many underwater households to take advantage of low interest rates to refinance their mortgages, may have reduced household demand for non-housing goods and services. Indeed, some researchers have argued that the failure to deal decisively with the housing problem seriously prolonged and deepened the crisis.[5] Growth in other countries that experienced financial crises, including the United Kingdom, Ireland, and Spain, has been weighted down by struggling residential sectors. More recently, many of these factors have abated in the United States and yet, after encouraging signs of improvement in 2012 and in early 2013, over the past year the growth of residential construction has faltered and home sales have fallen off. The sharp rise in mortgage interest rates in mid-2013 likely contributed to this setback.

The stance of U.S. fiscal policy in recent years constituted a significant drag on growth as the large budget deficit was reduced. Historically, fiscal policy has been a support during both recessions and recoveries. In part, this reflects the operation of automatic stabilizers, such as declines in tax revenues and increases in unemployment benefits, that tend to accompany a downturn in activity. In addition, discretionary fiscal policy actions typically boost growth in the years just after a recession. In the U.S., as well as in other countries – especially in Europe – fiscal policy was typically expansionary during the recent recession and early in the recovery, but discretionary fiscal policy shifted relatively fast from expansionary to contractionary as the recovery progressed. In the United States, at the federal level, the end of the payroll tax cut, the sequestration, the squeeze on discretionary spending from budget caps, and the declines in defense spending have all curtailed economic growth. Last year, for example, the Congressional Budget Office estimated that fiscal headwinds slowed the pace of real GDP growth in 2013 by about 1-1/2 percentage points relative to what it would have been otherwise. Moreover, state and local governments, facing balanced budget requirements, have responded to the large and sustained decline in their revenues owing to the deep recession and slow recovery by reducing their purchases of real goods and services. Job cuts at federal, state, and local governments have reduced payrolls by almost 3/4 of a million workers, resulting in a decline in total government civilian employment of 3-1/4 percent since its peak in early 2009.[6] The fiscal adjustments of the last few years have reduced the federal government deficit to an expected level of 3 percent of GDP in 2014 and fiscal drag over the next few years is likely to be relatively low.

A third headwind slowing the U.S. recovery has been unexpectedly slow global growth, which reduced export demand. Over the past several years, a number of our key trading partners have suffered negative shocks. Some have been relatively short lived, including the collapse in Japanese growth following the tragic earthquake in 2011. Others look to be more structural, such as the stepdown in Chinese growth compared to its double digit pre-crisis

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[5] Atif Mian and Amir Sufi (2014), *House of Debt: How They (and You) Caused the Great Recession, and How We Can Prevent It from Happening Again* (Chicago: University of Chicago Press).

[6] None of this is to deny that it was necessary to reduce the large fiscal deficits in many countries that resulted from the combined effects of the recession and of expansionary fiscal policies at the early stages of the crisis; it simply reaffirms that the short-run impacts of contractionary fiscal policies are contractionary.

pace. Most salient, not least for Sweden, has been the impact of the fiscal and financial situation in the euro area over the past few years. Weaker economic conditions in Europe and other parts of the world have weighed on U.S. exports and corporate earnings; added to the risks that U.S. financial institutions, businesses, and households considered when making lending and investment decisions; and at times depressed U.S. equity prices.

The housing market, fiscal consolidation, and unexpectedly anemic foreign demand all play a significant role in explaining the weakness of aggregate demand in the U.S. economy, weakness that could not have been accurately predicted based on past recession experiences or by the fact that this recession started with a massive financial crisis. But, turning to the aggregate supply side, we are also seeing important signs of a slowdown of growth in the productive capacity of the economy – in the growth in labor supply, capital investment, and productivity. This may well reflect factors related to or predating the recession that are also holding down growth.

How much of this weakness on the supply side will turn out to be structural – perhaps contributing to a secular slowdown – and how much is temporary but longer-than-usual-lasting remains a crucial and open question.

Looking at the aggregate production function, we begin with labor supply. The considerable slowdown in the growth rate of labor supply observed over the past decade is a source of concern for the prospects of U.S. output growth. There has been a steady decrease in the labor force participation rate since 2000. Although this reduction in labor supply largely reflects demographic factors – such as the aging of the population – participation has fallen more than many observers expected and the interpretation of these movements remains subject to considerable uncertainty. For instance, there are good reasons to believe that some of the surprising weakness in labor force participation reflects still poor cyclical conditions. Many of those who dropped out of the labor force may be discouraged workers. Further strengthening of the economy will likely pull some of these workers back into the labor market, although skills and networks may have depreciated some over the past years.

Another factor that may be contributing to a slowdown in longer-run output growth is a decline in the rate of investment. As is typical in a downturn, movements in investment were important to the cyclical swings in the economy during the Great Recession. And, as would be expected given the depth of the downturn, investment declines were especially large in this episode. However, in the United States, and in many other countries as well, the growth rate of the capital stock has yet to bounce back appreciably – despite historically low interest rates, access to borrowing for most firms, and ample profits and cash – causing concerns over the long-run prospects for the recovery of investment.

Turning next to productivity growth, Solow's famous result over fifty years ago was that over eighty percent of growth in output per hour in the period 1909–1949 came from technical change.[7] Between 1964 and 2003 total factor productivity growth in the United States averaged around 1-1/2 percent, contributing to a 2percent expansion per year in U.S. GDP per capita. At this rate, American standards of living would double every 35 years.

However, productivity growth in recent years has been disappointing. Over the past decade, U.S. total factor productivity growth declined to 1percent, which some argue may represent the real norm for the U.S. economy.[8] In this view, the long period of rapid productivity growth

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[7] Robert M. Solow (1957), "Technical Change and the Aggregate Production Function", *Review of Economics and Statistics*, vol. 39 (August), pp. 312–20.

[8] See, for example, Tyler Cowen (2011), *The Great Stagnation: How America Ate All the Low-Hanging Fruit of Modern History, Got Sick, and Will (Eventually) Feel Better* (New York: Dutton); Robert J. Gordon (2010), "Revisiting U.S. Productivity Growth over the Past Century with a View of the Future", NBER Working Paper Series 15834 (Cambridge, Mass.: National Bureau of Economic Research, March); Robert J. Gordon (2012), "Is U.S. Economic Growth Over? Faltering Innovation Confronts the Six Headwinds", NBER Working Paper Series 18315 (Cambridge, Mass.: National Bureau of Economic Research, August); and John Fernald (2014),

spurred by the technological innovations of the first and second Industrial Revolutions ended in the 1970s and the economy has continued at a lower productivity growth rate since then, except for a brief burst in the mid-1990s. In particular, these authors argue that the information technology (IT) revolution of the past several decades – including the diffusion of computers, the development of the internet, and improvements in telecommunications – was an anomaly and is unlikely to generate the productivity gains prompted by earlier innovations such as electrification and mass production.

Obviously, future productivity growth in the United States and in the world is yet to be determined. Possibly we are moving into a period of slower productivity growth – but I for one continue to be amazed at the potential for improving the quality of the lives of most people in the world that the IT explosion has already revealed. Possibly, productivity could continue to rise in line with its long-term historical average.[9] After all, as the experience of the 1990s shows, productivity cycles are extremely difficult to predict and, even considering the slowdown of the past decade, U.S. total factor productivity growth fluctuated around 1-1/2 percent in the postwar period. In addition, the recent weakness could reflect Reinhart-Rogoff cyclical factors associated with the financial crisis, and pent up improvements could be revealed once confidence returns.[10] Finally, fears about the end of productivity gains are based on evidence from the United States and other advanced economies. Globally, however, there is tremendous scope for productivity gains reflecting technological catch up, infrastructure investment, and the potential for human capital increases due to improvements in education and nutrition, and the incorporation and inclusion of women into the labor force. These gains should benefit not just the emerging market economies but also the rest of world more generally, including the United States.

At the end of the day, it remains difficult to disentangle the cyclical from the structural slowdowns in labor force, investment, and productivity. Adding to this uncertainty, as research done at the Fed and elsewhere highlights, the distinction between cyclical and structural is not always clear cut and there are real risks that cyclical slumps can become structural; it may also be possible to reverse or prevent declines from becoming permanent through expansive macroeconomic policies.[11] But three things are for sure: first, the rate of growth of productivity is critical to the growth of output per capita; second, the rate of growth of productivity at the frontiers of knowledge is especially difficult to predict; and third, it is unwise to underestimate human ingenuity.

"Productivity and Potential Output before, during, and after the Great Recession (PDF)", Working Paper Series 2014–15 (San Francisco: Federal Reserve Bank of San Francisco, June).

9 For a fuller discussion, see, for example, Erik Brynjolfsson and Andrew McAfee (2011), *Race Against the Machine: How the Digital Revolution Is Accelerating Innovation, Driving Productivity, and Irreversibly Transforming Employment and the Economy* (Lexington, Mass.: Digital Frontier Press); Erik Brynjolfsson and Andrew McAfee (2014), *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies* (New York: W. W. Norton & Company); and Martin Neil Baily, James Manyika, and Shalabh Gupta (2013), "U.S. Productivity Growth: An Optimistic Perspective", *International Productivity Monitor*, no. 25 (Spring), pp. 3–12. See also Ben Bernanke (2013), "Economic Prospects for the Long Run", speech delivered at Bard College at Simon's Rock, Great Barrington, Mass., May 18.

10 Recent work includes Stijn Claessens, M. Ayhan Kose, and Marco E. Terrones, "What Happens during Recessions, Crunches and Busts? (PDF)" IMF Working Paper WP/08/274 (Washington: International Monetary Fund, December); Jane Haltmaier (2012), "Do Recessions Affect Potential Output?" International Finance Discussion Papers 1066 (Washington: Board of Governors of the Federal Reserve System, December); and Nicholas Oulton and Maria Sebastia-Barriel (2013), "Long and Short-Term Effects of the Financial Crisis on Labour Productivity, Capital and Output", Working Paper 470 (London: Bank of England, January).

11 See Dave Reifschneider, William Wascher, and David Wilcox (2013), "Aggregate Supply in the United States: Recent Developments and Implications for the Conduct of Monetary Policy", Finance and Economics Discussion Series 2013–77 (Washington: Board of Governors of the Federal Reserve System, November); and Christopher J. Erceg and Andrew T. Levin, "Labor Force Participation and Monetary Policy in the Wake of the Great Recession (PDF)", IMF Working Paper WP/13/245 (Washington: International Monetary Fund, July).

The post-crisis regulatory and supervisory environment

The severity of the Great Recession and its ongoing fallout, importantly including its influence on public opinion, has heightened the focus on the challenge of avoiding another such crisis. Indeed, financial sector reform proposals by groups such as the Basel Committee on Banking Supervision, the Financial Stability Board, and the Group of Thirty were circulating within a few months of the Lehman Brothers' failure. Since then, policymakers, acting in their own countries and in coordination with others, have enacted financial sector regulatory reforms on a scale and scope not seen since the Great Depression.

Designing, implementing, and understanding the consequences of these important reforms are major challenges for policymakers in a post-Global Financial Crisis world. Most of the initial proposals incorporated some or most of the following goals:

1. To strengthen the stability and robustness of financial firms, "with particular emphasis on standards for governance, risk management, capital and liquidity";[12]
2. To strengthen the quality and effectiveness of prudential regulation and supervision, with higher standards for systemically important firms;
3. To build the capacity for undertaking effective macroprudential regulation and supervision;
4. To develop suitable resolution regimes for financial institutions;
5. To strengthen the infrastructure of financial markets, including markets for derivative transactions;
6. To improve compensation practices in financial institutions;
7. To strengthen international coordination of regulation and supervision, particularly with regard to the regulation and resolution of global systemically important financial institutions, later known as G-SIFIs;
8. To better monitor risks within the shadow banking system, and find ways of dealing with them; and
9. To improve the performance of credit rating agencies, which were deeply involved in the collapse of markets for collateralized and securitized lending instruments, especially those based on mortgage finance.

More than six years later, policymakers around the globe have made substantial progress in strengthening the financial system and reducing the probability of future financial crises. Globally, the minimum tier 1 capital ratio has been increased, and a capital conservation buffer has been put in place. In addition, a countercyclical capital buffer has been created that enables regulators to raise risk-based capital requirements when necessary, and a minimum international leverage ratio has been set. Finally, global systemically important banks will face a risk-based capital surcharge based on their systemic risk. Global bank regulators have also developed, for the first time, liquidity regulations designed to improve the funding durability and overall liquidity resiliency of internationally active banks.

Additional steps have been taken in some countries. For example, in the United States, capital ratios and liquidity buffers at the largest banks are up considerably, and their reliance on short-term wholesale funding has declined considerably. Work on the use of the resolution mechanisms set out in the Dodd-Frank Act, based on the principle of a single point of entry – though less advanced than the work on capital and liquidity ratios – holds the promise of making it possible to resolve banks in difficulty at no direct cost to the taxpayer.

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[12] Group of Thirty (2009), *Financial Reform: A Framework for Financial Stability* (PDF) (Washington: Group of Thirty, January).

As part of this approach, the United States is preparing a proposal to require systemically important banks to issue bail-inable long-term debt that will enable insolvent banks to recapitalize themselves in resolution without calling on government funding – this cushion is known as a "gone concern" buffer.

At the same time, the introduction of macroeconomic supervisory stress tests in the United States has added a forward-looking approach to assessing capital adequacy, as firms are required to hold a capital buffer sufficient to withstand a several-year period of severe economic and financial stress. The stress tests are a very important addition to the toolkit of supervisors, one that is likely to add significantly to the quality and effectiveness of financial sector supervision, and one that should spread internationally as a best practice.

Still, more remains to be done. Although the Basel Committee on Banking Supervision and the FSB reached impressively rapid agreement on needed changes in regulation and supervision, progress in agreeing on the resolution of G-SIFIs and some other aspects of international coordination has been slow. It will also be important to ensure that coordination among different regulators of the financial system is effective and, in particular, will be effective in the event of a crisis.

In addition, policymakers still have a good deal to learn about how these various reforms will change financial market structure and functioning, how effective they will be in enhancing stability, and whether there will be unintended consequences. Among the most important of the possible unintended consequences is that toughened regulation of banks will move some financial activity out of the banking system and into the shadow banking system.

In summary, considerable progress has been made in strengthening bank capital and liquidity; in improving the quality and effectiveness of prudential regulation and supervision; in developing suitable resolution regimes for financial institutions; and in strengthening the infrastructure for the clearing and trading of derivative contracts. It is clear that further progress is needed with respect to goals 6–9, relating respectively to: improving compensation practices; strengthening international coordination, especially with regard to the resolution and regulation of G-SIFIs; finding ways of dealing with the shadow banking system; and improving the quality of credit rating agencies.

That leaves aside the question of the capacity for effective macroprudential supervision, an issue we will take up as we begin to discuss the optimal conduct of monetary policy in the wake of the crisis, given the heightened attention of monetary policymakers to the importance of maintaining financial stability.

Issues facing monetary policymakers in the wake of the crisis and recession

Prior to the global financial crisis, a rough consensus had emerged among academics and monetary policymakers that best-practice for monetary policy was flexible inflation targeting. In the U.S., flexible inflation targeting is implied by the dual mandate given to the Fed, under which monetary policy is required to take into account deviations of both output and inflation from their target levels. But even in countries where the central bank officially targets only inflation, monetary policymakers in practice also aim to stabilize the real economy around some normal level or path.

Much has changed in the world of central banking since the onset of the Great Recession. With short-term interest rates near zero, many central banks considerably expanded their balance sheets, for instance through large-scale purchases of assets or significant liquidity injections. They also engaged in forward guidance to put downward pressure on interest rates and support aggregate demand.

I consider quantitative easing to have been largely successful, and that data dependent forward guidance consistent with the central bank's expectations of its future intentions can also be successful. But the use of these tools – particularly as reflected in the size of central bank balance sheets – will make the conduct of monetary policy more complicated during the

recovery. In the United States, we have a number of tools to control short-term rates, despite the large level of reserves in the system. Raising the rate of interest paid on excess reserves should play a central role in the eventual normalization of short-term interest rates. An overnight reverse repo facility could also play a useful part in setting a floor under money market rates. With these and other possible tools, we will be able to raise rates and maintain them near their targeted level at the appropriate time.

Another important question is whether monetary policymakers should alter their basic framework of flexible inflation targeting to take financial stability into account. My answer to that question is that the "flexible" part of flexible inflation targeting should include contributing to financial stability, provided that it aids in the attainment of the main goals of monetary policy. The main goals in the United States are those of the dual mandate, maximum employment and stable prices; in other countries the main goal is stable prices or low inflation.

What can the central bank do when financial stability is threatened? If it has effective macroprudential tools at its disposal, it can deploy those. If it does not itself have the authority to use such tools, it can try to persuade those who do have the tools to use them. If no such tools are available in the economy, the central bank may have to consider whether to use monetary policy – that is, the interest rate – to deal with the threat of financial instability. At the moment in the U.S., though there may be some areas of concern, I do not think that financial stability concerns warrant deviating from our traditional focus on inflation and employment.

A decision on whether to use the interest rate to deal with the threat of financial instability is always likely to be difficult – particularly in a small open economy, where raising the interest rate is likely to produce an unwanted exchange rate appreciation. So a critical question must be whether effective macroprudential policies are to be found in the country in question.

I had some experience with these issues while at the Bank of Israel. In Israel, three separate regulators deal with different aspects of macroprudential policy, but there is no formal financial stability committee. The Bank of Israel is also the supervisor of banks, so has considerable power over housing finance, which essentially is available only from the banks. Starting in 2010, the Bank of Israel adopted several macroprudential measures to address rapidly rising house prices, including higher capital requirements and provisioning against mortgages; limits to the share of any housing financing package indexed to the short-term (central bank) interest rate to one-third of the total loan, with the remainder of the package having to be linked to either the five-year real or five-year nominal interest rate; and, on different occasions, limits to the loan-to-value (LTV) and payment-to-income (PTI) ratios. Additional precautionary measures were also implemented in the supervision of banks.

The success of these policies was mixed. The limit of one-third on the share of any housing loan indexed to the short rate substantially raised the cost of housing finance and was the most successful of the measures. Increases in both the LTV and PTI ratios were moderately successful. Increasing capital charges and risk weights appeared to have little impact in practice.

This experience led me to three conclusions on the effectiveness of macroprudential policies. First, we were very cautious in using these new tools because we did not have good estimates of their strength and effectiveness. Quite possibly, we should have acted more boldly on several occasions. Second, use of these tools is likely to be unpopular, for housing is a sensitive topic in almost every country. And third, coordination among different regulators and authorities can be complicated.

The difficulty of coordinating among different independent regulators makes it likely that the degree to which macroprudential policies can be successful depends critically on the institutional setup of financial supervision in each country. Different countries have structured their macroprudential policymaking institutions in different ways. In the U.K., the Financial Policy Committee has been set up within the Bank of England, with the power to make

financial policy – including macroprudential policy – decisions. In the U.S., the Financial Stability Oversight Council is a coordinating committee of the major regulators. And in Sweden, responsibility for macroprudential oversight and financial stability lies with the Financial Supervisory Authority, which is separate from the Riksbank.

Overall, it is clear that we have much to learn about both the effectiveness of different macroprudential measures, and about the best structure of the regulatory system from the viewpoint of implementing strong and effective macroprudential supervision and regulation. And, while there may arise situations where monetary policy needs to be used to deal with potential financial instability, I believe that macroprudential policies will become an important complement to our traditional tools. Learning how best to employ all of our potential policy tools, and arrive at a new set of best practices for monetary policy, is one of the key challenges facing economic policymakers.

Concluding remarks

As we continue to move forward in the aftermath of the global financial crisis and the Great Recession, policymakers around the world are dealing with new challenges that these historically important events have raised. In addition to the difficulties of assessing the relative importance of cyclical (short-term) versus structural (long-term) factors affecting the global economy, and in thinking about how to return to higher output and productivity growth, policymakers are focusing on the uses of monetary policy in attaining the dual goals of maximum employment and stable prices and in maintaining financial stability. They need also to strengthen financial sector regulation and supervision to reduce the probability of another crisis.

At the same time, and although I earlier foreswore discussion of fiscal policy, it is clear that fiscal policies can be used both to increase growth and to deal with potential problems of financial stability.

I look forward to hearing your views on the best way to move ahead on these and the other important issues we have gathered to discuss.

Thank you.