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Foreword

The 12th BIS Annual Conference took place in Lucerne, Switzerland on 20–21 June 2013. The event brought together a distinguished group of central bank governors, leading academics and former public officials to exchange views on the conference theme of “Navigating the Great Recession: what role for monetary policy?”. This volume contains the opening address by Stephen Cecchetti (former Economic Adviser, BIS), a keynote address by Finn Kydland (University of California, Santa Barbara) and the contributions of the policy panel. The participants in the policy panel, chaired by Jaime Caruana (General Manager, BIS), were Zeti Akhtar Aziz (Bank Negara Malaysia), Thomas Jordan (Swiss National Bank) and Glenn Stevens (Reserve Bank of Australia).

The papers presented at the conference and the discussants’ comments are released as *BIS Working Papers* 434 to 437.

Programme

Thursday 20 June 2013

12:15–13:30	Informal buffet lunch
13:45–14:00	Opening remarks: **Stephen Cecchetti** (BIS)
14:00–15:30	**Session 1: The Great Recession: what recovery?**
Chair:	**Amando Tetangco** (Bangko Sentral ng Pilipinas)
Author:	**Philippe Aghion** (Harvard University)
Discussants:	**Robert Hall** (Stanford University)
	Lucrezia Reichlin (London Business School)
Coffee break (30 min)	
16:00–17:30	**Session 2: Getting the policy mix right: is monetary policy overburdened?**
Chair:	**Graeme Wheeler** (Reserve Bank of New Zealand)
Author:	**Athanasios Orphanides** (MIT)
Discussants:	**Charles Bean** (Bank of England)
	Niall Ferguson (Harvard University)
19:00	Departure from the Palace hotel for dinner venue
19:30	Dinner
Keynote lecture:	**Finn Kydland** (University of California, Santa Barbara)

Friday 21 June 2013

09:00–10:30	**Session 3: Global spillovers and domestic monetary policy challenges**
Chair:	**Fahad Almubarak** (Saudi Arabian Monetary Agency)
Author:	**Menzie Chinn** (University of Wisconsin)
Discussants:	**Leszek Balcerowicz** (Warsaw School of Economics)
	Rakesh Mohan (IMF)
Coffee break (30 min)	
11:00–12:30	**Session 4: Monetary policy cooperation in the decade ahead**
Chair:	**Erkki Liikanen** (Bank of Finland)
Author:	**John Taylor** (Stanford University)
Discussants:	**Arminio Fraga** (Gávea Investimentos)
	Kenneth Rogoff (Harvard University)
12:30	Lunch

14:00–15:30	**Governors Panel**
Chair:	**Jaime Caruana** (BIS)
Panellists:	**Zeti Akhtar Aziz** (Bank Negara Malaysia)
	Thomas Jordan (Swiss National Bank)
	Glenn Stevens (Reserve Bank of Australia)
15:30	End of the Conference

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Five years in the tower

Stephen G Cecchetti[1]

It is my pleasure and privilege to welcome all of you to the 12th BIS Annual Conference. This is my fifth and last opportunity to deliver opening remarks. Consistent with this year's theme, "Navigating the Great Recession", I'd like to focus on what I have learned during my five years at the BIS and offer some insights in three broad areas: economic research, policy and, last, the work of the BIS itself.

Insights for economic research

For economic research, I draw two lessons from my experience:

(i) Quantities matter more than we thought.

(ii) Moral hazard is worse than we thought.

The importance of quantities

Let me start with quantities. I think it is fair to say that, in the past, monetary economics paid insufficient attention to quantities. Old-style monetarists would surely take issue with this claim. After all, didn't Milton Friedman and his acolytes always tell us that we should keep our eye on the quantity of money?

In fact, some people did, at least into the 1980s. But the way they did it was too mechanical. They focused on the stable historical relationship between money and the price level that Friedman and Schwartz had found.[2] This may have been fine for the pre-1960 period, but with rapid financial innovation and as intermediation shifted away from traditional banks, it worked less well.

Realising that the relationship between growth in conventionally defined monetary aggregates and inflation was too unstable to be useful in making monetary policy, we shifted our attention to interest rates, or prices more generally.[3] The equilibrium between supply and demand would take care of the quantity. And, since we thought of the interest rate as the primary link between the financial system and the real economy, this new focus made sense. By stabilising the interest

[1] Former Economic Adviser at the Bank for International Settlements (BIS), and Head of its Monetary and Economic Department.

I thank Dietrich Domanski, Andrew Filardo and Boris Hofmann for their contributions to this presentation. The views expressed here are those of the author and do not necessarily reflect those of the BIS.

[2] M Friedman and A Schwartz, *A Monetary History of the United States, 1867–1960*, Princeton University Press, 1963.

[3] As Gerald Bouey, Governor of the Bank of Canada, put it in 1982: "[w]e didn't abandon the monetary aggregates, they abandoned us." See "Dropping the anchor", *The Economist*, 23 September 1999.

rate, policymakers could isolate the real economy from movements in the demand for money arising from changes in behaviour or shifts in the supply of money because of changes in the financial system.[4]

The crisis reminded us that quantities tell us something important about the behaviour of individuals and the system as a whole; something that is not contained in prices. Quantities reflect exposures, constraints and vulnerabilities. This point becomes clear when we think about the role quantities play, or will play, in our models. Take the familiar structure where we have impulses and propagation mechanisms. In this standard formulation, quantities appear as state variables that affect the nature of the propagation mechanism. A vulnerability is then a situation in which some quantity increases in a way that amplifies the propagation of a shock so as to create a large movement in welfare.

As examples of quantities that signal vulnerabilities, let me cite international asset positions and cross-currency banking system exposures. Here, my focus is on the need to consider *gross* rather than *net*.

Prior to the crisis, large and persistent current account surpluses and deficits took centre stage in the discussion of *global imbalances*. Analysts and policymakers rightly noted that large current account imbalances were almost always a precursor to crises. And, what made people think that, just because the main culprits this time were very large countries, some of them advanced rather than emerging, it would be different this time?

Well, surely this mattered. As we said in June 2009, "the symbiotic relationship between leverage-led growth in several industrial countries and export-led growth in other economies contributed to sustaining the unsustainable for too long."[5] But this was about current accounts; about net flows. Financial vulnerability comes from gross stocks. A run, whether on a bank or a country, is devastating because of the size of the balance sheet; not because of net flows, but because of gross stocks.

This brings me to Graph 1, which plots international investment positions for 127 countries as a percentage of world GDP. We can see that, since the mid-1990s, gross international asset positions have risen steadily from roughly 50% to more than 150% of world GDP.[6]

To get some sense of whether this number is large, we can do a rough calculation. Since the capital stock is roughly four times GDP,[7] perfect risk-sharing would imply gross international asset positions on that scale. If cross-border positions were entirely equity, which they are not, we would be roughly half-way there. My point is that, assuming globalisation continues, we are likely to move

[4] This intuition was built on the result in William Poole's seminal contribution, "Optimal choice of monetary policy instruments in a simple stochastic macro model", *The Quarterly Journal of Economics*, vol 84, no 2, May 1970, pp 197–216.

[5] J Caruana, "The narrow path ahead", speech presented on the occasion of the BIS Annual General Meeting, June 2009.

[6] For a more detailed discussion, see S Cecchetti, "Global imbalances: current accounts and financial flows", remarks prepared for the Myron Scholes Global Markets Forum, University of Chicago, 27 September 2011.

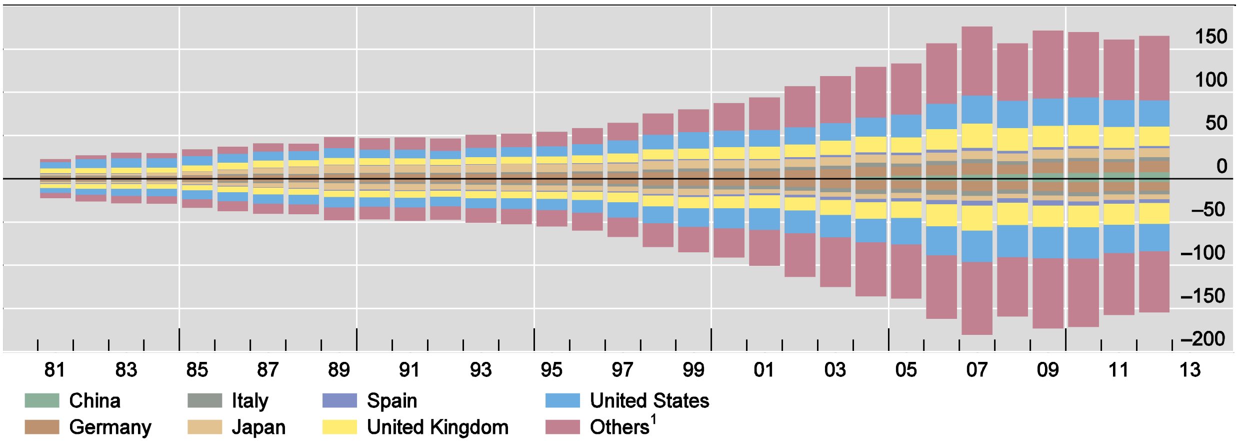
[7] For the United States, in the first quarter of 2013 nominal GDP was reported to be US$ 16,004.5 billion while the net worth of the country was estimated at US$ 70,349.1 billion. This is a multiple of 4.4.

further. But the move will not come without risks. The bigger cross-border positions become, the more damaging a sudden exit will be.

International investment positions of all countries

As a percentage of world GDP

Graph 1



[1] Sum of 120 economies.

Sources: IMF, *International Financial Statistics* and *World Economic Outlook*; BIS calculations.

My second example of a quantity that signals vulnerability is the dollar liabilities of non-US banks. Even though current account imbalances between Europe and the US were relatively small, continental European banks managed to acquire substantial quantities of mortgage-backed and US Treasury securities prior to the crisis. My BIS colleagues Patrick McGuire and Goetz von Peter estimated that these created short dollar positions in excess of US$ 1 trillion.[8] When interbank funding markets started to dry up in August 2007, these banks were left without sources for the dollars. And, since the banks were outside the US, the central bank could not lend to them – until the creation of the swap lines in December 2007. The BIS estimates that, at its peak in December 2008, the Fed lent US$ 583 billion to foreign central banks.

So, prices are not enough; think about quantities. And, net is not enough; think about gross.

Moral hazard is a big problem

The second lesson I have learned in my time in the BIS tower is that the nature and size of the risks financial institutions take on are much bigger than we thought. This really comes as no big surprise.[9]

The fundamental problem is that the private interests of banks and bankers diverge from those of society at large. This is especially true when it comes to the

[8] See P McGuire and G von Peter, “The US dollar shortage in global banking”, *BIS Quarterly Review*, March 2009, pp 47–63.

[9] This draws on S Cecchetti, “The future of financial intermediation and regulation”, remarks prepared for the Second Conference of the European System of Central Banks Macro-prudential Research Network, Frankfurt, Germany, 30 October 2012.

stability of the system and the direct or indirect burden on taxpayers. The source of this conflict is limited liability: the fact that owners and employees are not held financially accountable beyond their initial investment. In addition, any increase in leverage will raise the value of equity claims. What this means is that the bank's owners and managers have an incentive to take on risk.

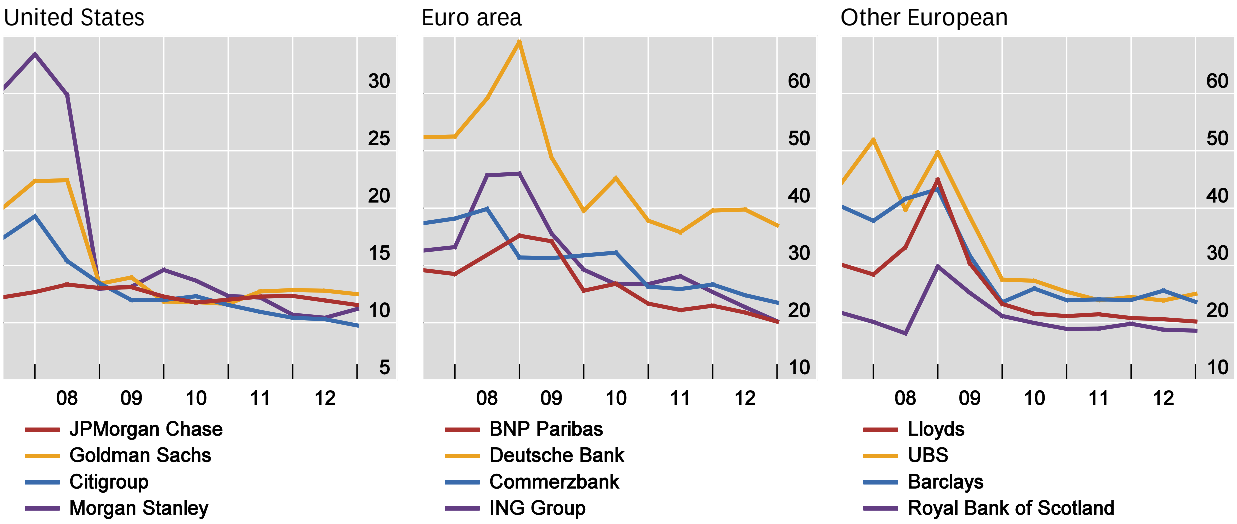
The problem with incentives is compounded by the increase in opportunities to take risk. That is, financial innovation has made things even worse. In the past, payment streams and risks tended to come bundled together. Today, you can purchase or sell virtually any payment stream with any risk characteristics you want – that's what financial engineering is all about. This ability to separate finance into its most fundamental pieces – the financial analogue to subatomic particles – has profound implications for the way in which risk is bought and sold. While it is true that risk can go to those most able to bear it, the ability to sell risk easily and cheaply comes along with the ability to accumulate risk in almost arbitrarily large amounts. The result is that small numbers of firms or individuals have the potential to jeopardise the stability of the entire financial system.

Graph 2 gives a sense of the extent of leverage that was created in the banking system prior to the crisis. As you look at the graph, note that the US data are based on GAAP while the other panels present data that use IFRS.[10] I draw your attention to the vertical scale on the centre panel, and the fact that Deutsche Bank's leverage was over 50 in early 2007.

Leverage ratios

Ratio of total assets to total equity

Graph 2



United States

Euro area

Other European

Note: financial accounts reported under IFRS except for US banks (US GAAP).

Source: Bloomberg.

Banks also knew that, by growing larger, they would become too big to fail. Once markets figured out the implicit or explicit official support for these too-big-to-fail institutions, they offered cheap funding. This was totally rational from a

[10] The two differ primarily in their treatment of derivatives and repurchase agreements, where GAAP allows for netting while IFRS does not.

private perspective but meant an underpricing of systematic risk, further increasing institutions' incentives to up load on it.

The conclusion is clear: moral hazard is much worse than we thought.

Insights for policy

In the area of policy and policymaking, I have three insights to offer:

(i) Short-term interest rates are not enough.

(ii) High debt levels are a drag on growth.

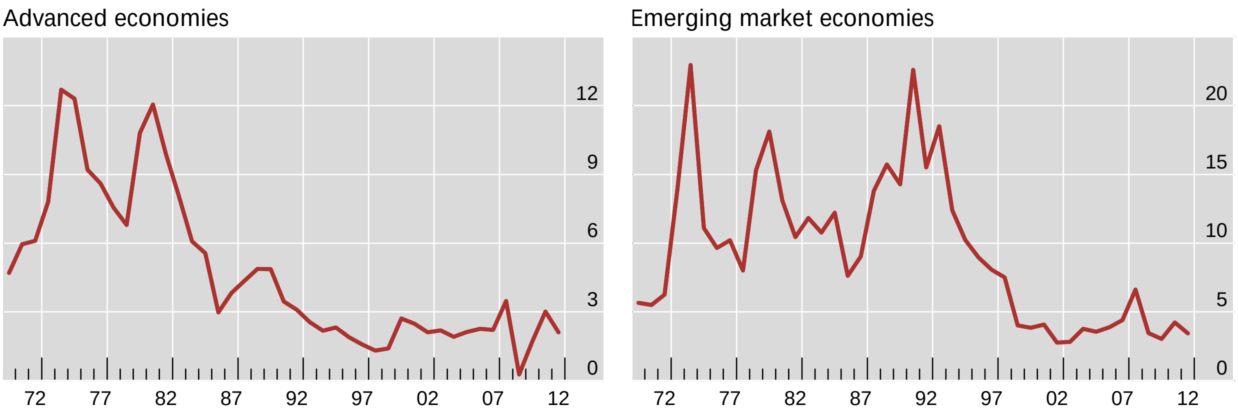
(iii) Market discipline is not enough.

Before discussing each in turn, I want to make sure that we don't lose sight of an enduring lesson from before the crisis: price stability is the foundation for strong, sustainable growth. Looking at Graph 3, you see one of the great successes of the past quarter-century: low and stable inflation! But the crisis taught us that price stability is not sufficient for economic stability. The achievement of low inflation, and the associated focus on deviations of output from potential and employment from full employment, did not prevent the build-up of financial imbalances. Looking forward, we now realise how integrating financial stability considerations into monetary policy frameworks is the most important required refinement for inflation targeting.

Historical inflation[1]

Average annual changes in consumer prices, in per cent

Graph 3



[1] Median of the economies listed. Advanced: AU, CA, DK, JP, NZ, NO, SE, CH, GB, US and 12 initial euro area members. EMEs: AR, BR, BG, CL, CN, CO, HR, CZ, HK, HU, IN, ID, IL, KR, LV, LT, MY, MX, PE, PH, PL, RO, RU, SG, ZA, TH, TR (based on available data).

Source: IMF, *World Economic Outlook*.

Short-term interest rates are not enough

As policy rates reached their lower bounds, central banks devised new tools to stabilise their financial systems and economies. Depending on the exact nature of the problem and structure of their financial system, central banks purchased securities directly, offered loans to institutions to whom they hadn't lent before, changed their collateral rules, and the like.[11] As they did this, the size and composition of their balance sheet changed.

With assets in excess of US$ 20 trillion, the balance sheets of the world's central banks today are twice what they were in 2007. Not only that, but their composition is quite different too. Most notably, the maturity of the assets has grown significantly.

Looking forward, there are several important lessons to be learned from this experience. First, the size and composition of central bank balance sheets matter. We now know that the size and the maturity structure of the consolidated government balance sheet influence the yield curve. This means that central bank bond purchases and sales can be used to influence steer both the level and slope of the term structure, but will also create overlaps and potential conflicts of interest with debt managers.[12]

Second, central banks will continue to have a wider-ranging role in financial markets than they did prior to the crisis. On an operational level, this will call for flexible collateral frameworks to target specific developments in different financial market segments. One way to think about this is through the lens of the lender of last resort function. Created in the 19th century for a financial system in which intermediation was almost entirely through traditional banks, this looks as if it will need an overhaul for the 21st century. Specifically, in a market-based financial system, being the lender of last resort to banks isn't enough. If we expect markets to remain liquid in all states of the world, we need a market-maker of last resort. Equivalently, when liquidity transformation is being done by financial institutions other than banks, access to discount lending facilities is not sufficient to ensure the liquidity of the financial system as a whole.

Taking all of this together, we will have to work hard to understand exactly how the monetary transmission mechanism works. How is it that the central bank can best stabilise the financial system and the real economy? What is clear is that the supply of central bank reserves remains the anchor of monetary control. But beyond that, many questions will have to be answered, including the role of interventions along the yield curve, collateral frameworks, and the role of central banks as lenders of last resort.

High debt levels are a drag on growth

In work with my BIS colleagues Enisse Kharroubi, Madhu Mohanty and Fabrizio Zampolli, I have explored the relationship of growth to debt and the size of the financial sector.[13] One would expect public debt to be a drag on long-term GDP growth for at least three reasons. First, higher debt means higher interest payments, and higher debt service means higher taxes and lower productive government

[11] For a summary of the myriad of actions taken through May 2009, see Chapter II of the *BIS 79th Annual Report*, June 2009.

[12] See J Chada, P Turner and F Zampolli, "The interest rate effects of government debt maturity", *BIS Working Papers*, no 415, June 2013.

[13] See S Cecchetti, M Mohanty and F Zampolli, "The real effects of debt", in *Achieving Maximum Long-Run Growth*, proceedings of the Federal Reserve Bank of Kansas City's Jackson Hole Symposium, 2011, pp 145–96; and S Cecchetti and E Kharroubi, "Reassessing the impact of finance on growth", *BIS Working Papers*, no 381, July 2012.

expenditure. Economics and politics both put limits on how high tax rates can go. The probability of hitting such limits increases with the level of debt. Second, as debt rises, so do sovereign risk premia. And with higher sovereign risk premia come higher borrowing costs, lower private investment and lower long-term growth. Third, with higher debt, authorities lose the flexibility to employ countercyclical policies. This results in higher volatility, greater uncertainty and, again, lower growth. Extensive empirical research confirms this negative link between public debt and trend growth: a 10 percentage point increase in the debt-to-GDP ratio is associated with a 13–17 basis point decline in trend GDP growth per capita for debt levels above about 80%.

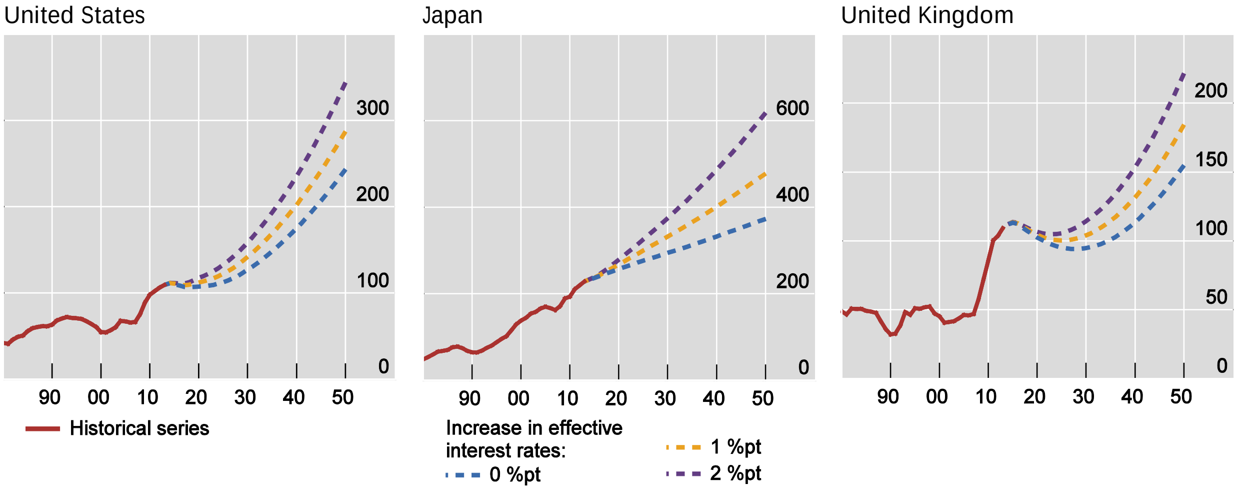
For a number of years, we have also emphasised the importance of ensuring that fiscal trajectories are sustainable. This is not a new lesson. As I discussed in my opening remarks at the 2011 Conference, nearly 20 years ago Paul Masson and Mike Mussa estimated the net present value of the unfunded pension liabilities of the G7 countries at something like two to four times their GDP.[14] Analysts and commentators rightly point to the impact of the financial crisis in driving up the level of government debt, but in reality all this has done is to accelerate by a few years what was already coming.

Graph 4 provides our most recent estimates of the trajectories for the United States, Japan and the United Kingdom. The different lines are based on different interest rate assumptions and serve as a reminder of how low interest rates provide a false sense of security. I doubt anyone here today finds these pictures very reassuring.

The lesson is that public debt is high, it is rising, and it is almost surely a drag on growth.

General government debt projections, 1990–2050

As a percentage of GDP (incorporating projected increases in age-related spending) Graph 4



Sources: IMF; OECD; Japanese Cabinet Office; UK Office for Budget Responsibility; US Congressional Budget Office; BIS calculations.

[14] P Masson and M Mussa, "Long-term tendencies in budget deficits and debt", in *Budget deficits and debt: issues and options*, Federal Reserve Bank of Kansas City, 1995, pp 5–55.

Market discipline is not enough

My next insight concerns the regulatory sphere. Before the crisis, the hope was that if investors, managers and traders were all forced to face the consequences of their own actions, then the system would operate efficiently and safely. Markets would provide the discipline. If only it were so easy. To quote Willem Buiter: "Self-regulation is to regulation as self-importance is to importance."[15]

We now know that the pre-crisis regulatory regime left the financial system vulnerable. Banks that found ways around the capital requirements had virtually no effective capital buffers at all. This prompted a switch in both the definition of capital, to ensure its quality, and the level of capital, to ensure resilience. Large global banks that face a capital surcharge will be required to hold capital equal to nearly 10% of their risk-weighted assets. Taking account of the changes in the definition of capital and the treatment of assets, this is an increase of roughly 10 times.

Related to this is the need to ensure that every financial institution is able to fail. One way to control moral hazard is to create a resolution system where managers, owners and liability holders are forced to face the consequences of their actions. Each of these groups must know ex ante what their responsibilities will be in the event that the institution gets into trouble. During the crisis, banks' bondholders were bailed out, and in some cases so were the stockholders. Next time, the capital structure of the bank must be honoured. And, the resolution regime that enforces losses must be one that is able to operate across international borders, minimising disruptions to the national and global financial system.

Not only will market discipline not save individual institutions, it will not save the system. This is no surprise, since system risk is not something private agents can insure against. Only the government can do that. But, more than that, as I mentioned earlier, private agents have an interest in hiding systemic risk. So, this leaves regulators and supervisors to guard the system. How should they do it?

The simplest way I have found to think about this question is this: following a macro shock, a common shock that affects everyone, there is no one to sell assets to, nor anyone to raise capital from. That means banks have to be able to stand alone when the shock hits. The best way to figure out whether banks can weather a large macro shock without resorting to any asset sales or capital-raising is through stress tests. When they can, that's fine. The issue, then, is how high capital levels need to be to meet that test.

I believe that stress tests are the most powerful tool we have discovered in the past five years. Policymakers should focus on understanding how to use them.

Overall, then, my regulatory insight is that market discipline is not enough.

[15] W Buiter, "Regulating the new financial sector", VOX, 9 March 2009.

Insights for the BIS

Finally, we come to the BIS. Here I will focus on two insights:

(i) Cross-border activity is even more important than we thought.

(ii) Global problems require global solutions.

Cross-border activity is even more important than we thought

Globalisation has brought tremendous benefits. Trade in commodities, goods and services has spurred development and reduced poverty. And, as the costs of communication and transport have fallen, the benefits have just gotten bigger. But global production and trade are supported by global finance. Without the ability to make payments; to buy and sell property and securities; and to borrow and lend across borders, the world would be a much poorer place.

Ensuring smoothly functioning and stable global finance requires constant effort. This has been the focus of the BIS's work during the past three years. We have done it in two ways. One is the setting of minimum standards: an international regulatory framework based on coherent principles and consistent implementation is critical for openness, fair competition and stability. Developing such a framework is a long and complex process. But the alternative to cooperation is fragmentation – with all its negative consequences.

We have also been working to better assess the vulnerabilities in the global financial system. We need to understand whether the consequences of a shock will be benign or catastrophic. Our work has three elements. First, as I already discussed, this means being able to analyse the vulnerabilities that arise from cross-border flows and asset positions. Second, it requires reliable data. And, third, this means understanding details about financial markets and institutions, knowledge that national central banks have. The BIS, through its research and cooperation with academia, through its function as the global hub for international banking statistics and through its cooperative activities with central banks, is in a unique position to bring these ingredients together.

Global problems require global solutions

The purpose of the BIS is to provide a forum for discussion and cooperation. In addition to helping groups of central bankers and supervisors forge agreements, we facilitate discussions on topics of common interest. That means helping people see the world through the eyes of others. It means putting people from all over the world in the same room so they can learn from each other.

I have listened to and participated in these discussions for five years. I have benefited greatly from this experience, not least because I have been able to prepare these discussions. But in addition I have learned how problems that are local in their origin can become global in their impact. And it is here that we need to work harder to understand how and when a narrow focus on local concerns is short-sighted. I believe that the crisis has sharpened our awareness of the need to overcome domestic biases.

My own change in perspective may serve as example. Before I arrived in Basel in 2008, I thought that for emerging market countries to succeed they should follow the path blazed by the advanced economies. Slowly, these less developed countries would prosper and become more like their older and richer siblings. The crisis taught me that something strange had happened. Yes, the emerging market countries were adopting institutional frameworks that mimicked those in advanced economies; they were laying the groundwork for prosperity. But at the same time, the advanced economies' financial systems were becoming fragile. And, in 2008 we found out that they bore a very strong resemblance to their crisis-prone less developed brothers and sisters. It was the advanced economies that, in an important way, had come to look like the emerging markets.

My point is that we all need to keep learning from each other. No one has a monopoly on either good policy or bad. This recognition underpins the BIS's cooperative approach. It is a strength that should help us to master the challenges that lie ahead.

What ails Europe and the United States?

Finn E Kydland[1]

I'm delighted to have the opportunity to speak to you while being surrounded here in Lucerne and on this boat by such beautiful nature. We Norwegians think of ourselves as experts on scenery. It would be hard even for us to match the beauty of this place!

Usually, in my speeches, I touch upon several interesting countries on various continents. But as I have only 20 minutes for this dinner speech, I decided to concentrate on Europe, especially the euro area, and the United States. Much of what I've seen in the world since 2008 I've found natural to interpret in the light of the theory underlying the time inconsistency of optimal government policy. I didn't use to focus on that, but starting with a speech in late 2008, that has been a main organising theme for me.

Something I find interesting is how different in nature the situations in different parts of the world are. That applies also to countries in the euro zone, in contrast to the United States. Let's start with the euro area. I have to warn you – I have some shocking pictures to show you!

But first, let's get a sense of the bigger picture for Europe. In Figure 1, real GDP per capita is plotted for eight nations. (Out of modesty, I decided not to include Norway.) Until 1990 or so, countries such as Spain, Greece and Ireland are hovering near the bottom. But then, starting in the early 1990s, Ireland takes off. In less than 10 years, it surpasses Denmark, Germany, the United Kingdom and France. Surely an important factor was the Irish government's decision on a policy of explicitly committing to their (reasonably low) levels of tax rates, especially for capital taxation, for the next 20 years, making it an attractive place for investment by domestic and foreign companies alike. (The fact that many of the new factories and office buildings were owned by foreigners means that the growth in real GNP is not quite as impressive. But presumably most of their employees were still Irish.) Unfortunately, as we all know, the story had an unhappy ending. Eventually, growth became debt-driven to an extent that by 2008, when the financial crisis hit, major banks faced insolvency. The government then made the terrible, in my opinion, decision to bail them out, at incredible cost to tax payers. This ending, however, to my mind doesn't take away from the success of the 1990s — a great example of policy consistency and removal of uncertainty about future taxes for the lifetime of a typical factory. Of course, if one were to guarantee the banks, as Ireland implicitly did, the government can be blamed for not putting in place an appropriate regulatory environment from the very beginning.

Since the failure of Greece, one often hears mentioned as potential additional problem nations Italy, Spain and Portugal. Let's get a sense of their backgrounds in terms of the main driving forces for sustainable growth: innovative activity and technological progress, as reflected in, say, total factor productivity (TFP) and, after appropriate capital accumulation to go with it, in labour productivity. In Figures 2

[1] University of California, Santa Barbara.

and 3, I show those two data series for each of the three nations. In each of the plots, the average growth from 1960 to 1990 is indicated as a straight line and extended to the present. The shocking thing is that, for all three countries, both TFP and labour productivity are more or less flat since the early 1990s! One might have suspected that the slowdown in these nations was partly a consequence of them having been tempted to take advantage of the low interest rates after joining the euro area and "live the good life". While there may be something to that, these charts show that these nations' problems are much more deep-seated and appear to date back to well before the euro. I'd be inclined to conclude that the attention to the problems that many ascribe to the euro are only a "red herring" which, if anything, has distracted from dealing with more fundamental underlying structural problems. Until these nations figure out how to make their respective curves in Figures 2 and 3 turn back to significant positive slopes, sustainable growth will be lacking.

For comparison, I include the plots also for Ireland, a nation sometimes mentioned in the same breath with these other three countries. TFP displays an impressive pick-up in the 1990s, but then flattens out. Eventually, so does labour productivity. Ireland surely has its problems but, at least from a productivity standpoint, the situation looks much less dire than for the other three nations, as the flattening started much later and from a substantially higher level. These labour productivity numbers suggest that those of Ireland currently are on the order of 40–50% higher than those for the other three countries.

Turning to the United States, Figure 4 plots real GDP per capita post WWII. The straight line represents average growth 1947–2007 and is extended to the present. There are, of course, ups and downs about that straight line – what we call business cycles – but it does an amazing job in accounting for the long-run growth over these 60 years. The startling part, as further emphasised in Figure 5, which "blows up" the most recent time frame of Figure 4, is how far below the trend line the economy fell in 2008 and after – by on the order of 12%. And worse, unlike prior recoveries, which were typically quite rapid, so far there's not been any sign of moving back towards the old trend. On the contrary, the two curves are still diverging more than four years on.

Of course, several factors are contributing to the severity of this recession. One thing is remarkable: unlike past recessions, the severe decline happened without an initial slowing of productivity. Another aspect has got some attention: the decline in consumption was relatively small by recession standards. The recession is largely investment-driven.

As Zarazaga and I (2012) show, a large portion of the recession can be accounted for as follows. Around 2008, the growth in the debt/GDP ratio, partly because of stimulus packages, partly for other reasons, started to generate attention in the press and elsewhere. Indeed, even before the financial crisis, the US debt had been projected to rise substantially, largely as a consequence of the "baby boomers" retiring in large numbers. The Bush tax-reduction law of 2001 already called for taxes to go back up starting on 1 January 2011. (As it turned out, this increase was postponed until 2013.) Suppose capital owners in 2008 were struck by the sentiment that taxes would rise in the future in order to keep the debt from growing further. Suppose, to be specific in our model experiment, they thought this tax increase would last for 10 years, starting in 2013. The insight from the time inconsistency literature would suggest that the tax increase would fall on capital income. Our experiment, using a standard neoclassical growth model calibrated to the US economy through 2007, accounts for most of the decline in investment, about half of the decline in labour input, and it is the only explanation we're aware of that is consistent with consumption not falling much. Moreover, the experiment indicates that it would take a long time to move back to the vicinity of the old trend. Interestingly, if we modify the experiment to make all of the tax increase fall on labour income instead of capital income, then it doesn't account at all for what has happened over these past five years.

Considering most of you are central bankers, I'm sure you pay a lot of attention to the goings-on at the Federal Reserve. In a recent op-ed, this is how Marty Feldstein explained what they're trying to do: Through their QEs, they're aiming to prop up the stock market so that people will feel wealthier and increase their consumption. As a consequence, the economy as a whole will grow faster. If that's really their thinking, that's insane! How could that policy possibly be associated with long-lasting growth if it does not translate into substantially increased investment, which so far evidently it hasn't? And what about the uncertainty as to what will happen when, at some uncertain point in the future, the Fed will start to unwind the huge positions they've taken in the debt market? What if, in the meantime, medium-to-long-term interest rates were to start rising, for example because of approaching good times with associated rising real interest rates, or because of an increase in the inflation premium in nominal rates as a consequence of higher inflation expectations? The point is, there's a lot of uncertainty about monetary policy for the next couple of years. Such uncertainty is not welcome for private economy decision-makers. Many things have the potential to go wrong. Ultimately, if bad things happen, the Fed's credibility would suffer and there likely would be pressure to curtail the Fed's independence. That would really be bad! One success story of the time inconsistency literature is the emphasis in many parts of the world on the importance of independent central banks (unfortunately with no real counterpart in the fiscal arena).

[In response to a question about low interest rates associated with the QEs, I contended that it's not obvious the QEs per se have had much of an effect on the interest rates, and certainly not on the economy as a whole. Typically, low interest rates are not the key factor associated with booms – on the contrary, real interest rates, at least, generally have been procyclical. The dominant factor has to be the private economy being confident enough in future productivity and profitability (after taxes!) to expand their capacities to produce. It's hard to see how the Fed's actions associated with the QEs could have done anything to shore up such confidence for the future.]

Where the euro zone is similar to the United States is in terms of lack of policy consistency; that is, lack of the clarity about future policy that is so essential for the private economy's forward-looking decisions required for sustainable growth. Such lack of clarity surfaced soon after the Greek crisis hit. Policymakers would try something – that didn't work – then try something else – that didn't work either – and so on. Is there any sense of clarity about what they will do over the next three to five years, say? I should think not. How can they expect the business environment to improve, then?

One of the issues they're grappling with is what to do about the banking sector. If the small- to medium-sized companies on whom well functioning economies rely to engage in much of a nation's innovative activity, development of new products, and so on, if they're having a hard time getting the financing needed to bring their ideas to fruition, then the economy won't do well. As an illustration of how important that issue may be, I'd like to end with a comparison of two nations – Chile and Mexico – in a banking crisis and the results of the different measures they took. [This comparison is taken from a study by Bergoeing, Kehoe, Kehoe and Soto (2007), as summarised in Fernandez de Cordoba and Kehoe (2009).]

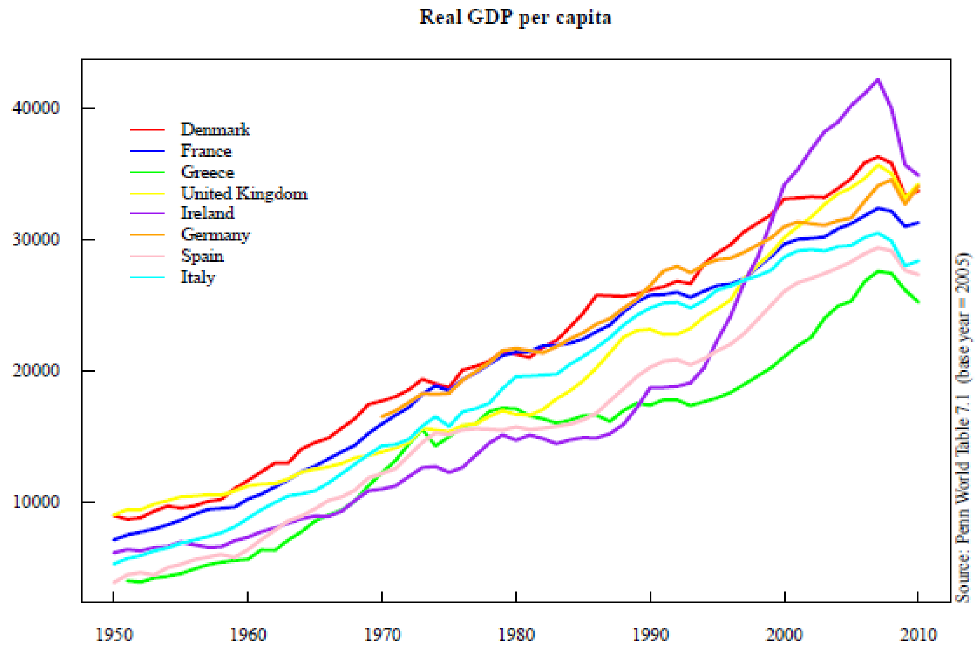
In 1981–82, both countries found themselves facing a financial crisis as a result of rising world interest rates and low prices for their main export products – copper in the case of Chile and petroleum in the case of Mexico. In Chile, banks accounting for half of the nation's deposits were illiquid. The government stepped in, decided which banks were viable for the long run, let those they deemed not to be go under, and within a couple of years reprivatised the solvent ones. With appropriate adjustment of regulations, credit started flowing to worthwhile projects. As you can see in Figure 6, the initial cost in 1982 and 1983 was dramatic (a decline in real GDP of about 20%), but then the economy started growing and has since been the fastest-growing in Latin America.

In Mexico, the banks weren't reprivatised until the early 1990s. In an effort to keep employment and investment from falling too much, government officials decided which companies (typically large ones) would get credit, while other companies got no credit. If you believe that government bureaucrats are the ones who best know which are the most productive projects, you probably also believe in Santa Claus! (I believe China suffers from a similar problem, leading to a lot of wasted resources, but that's another story.) Until the mid-1990s, Mexico experienced no growth.

So with those words to this group of bankers about the importance of a well functioning banking sector, I note that I have exceeded my allotted amount of time. Thank you for listening, and skål!

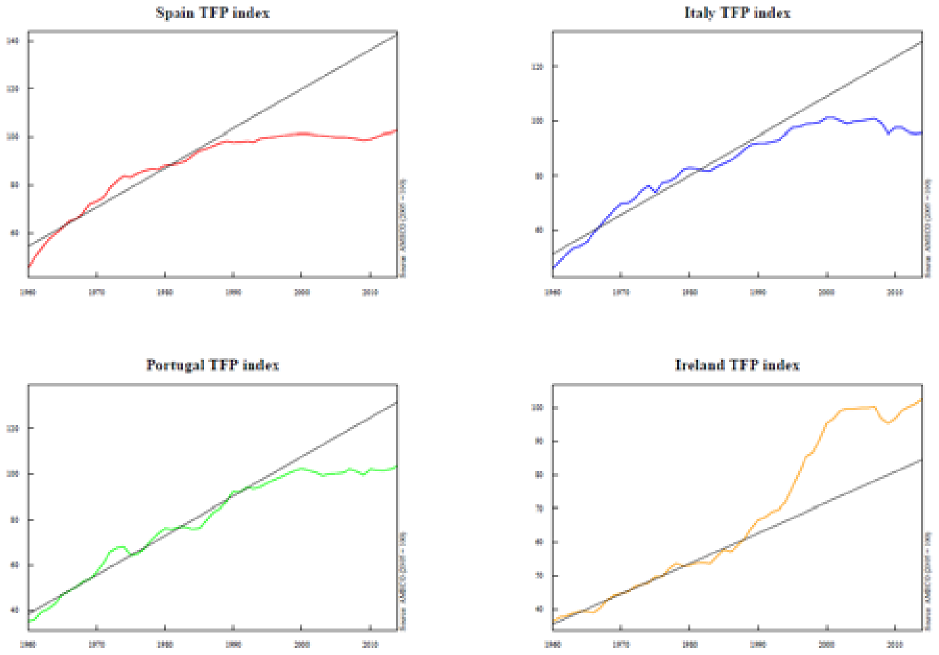
Real GDP per capita for eight European countries

Figure 1



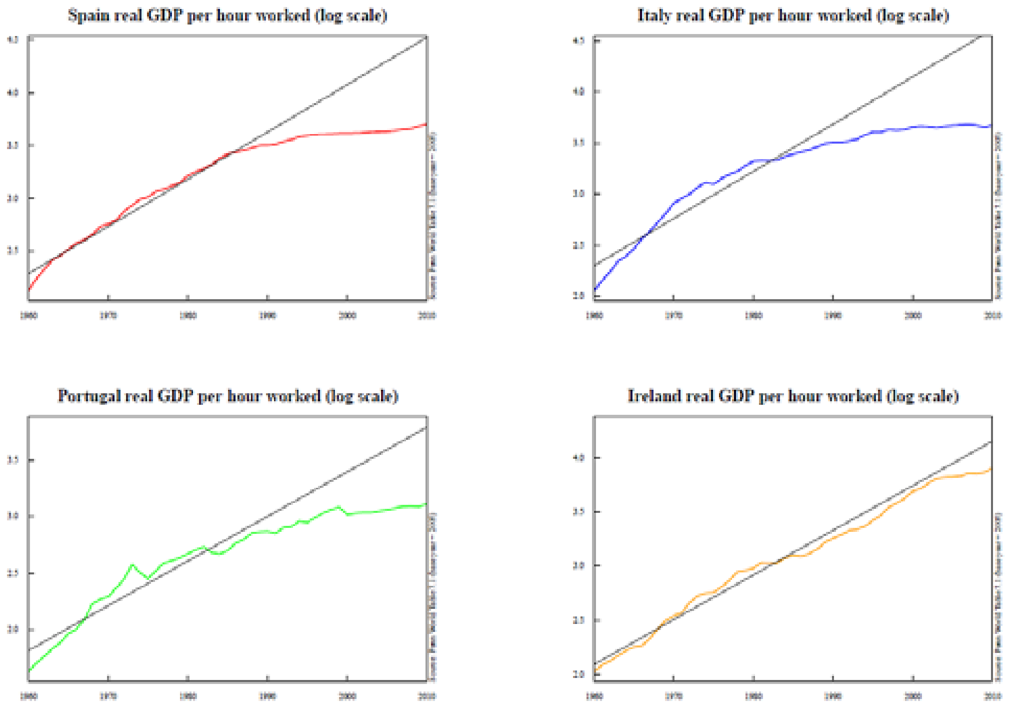
Total factor productivity for Spain, Italy, Portugal, Ireland

Figure 2



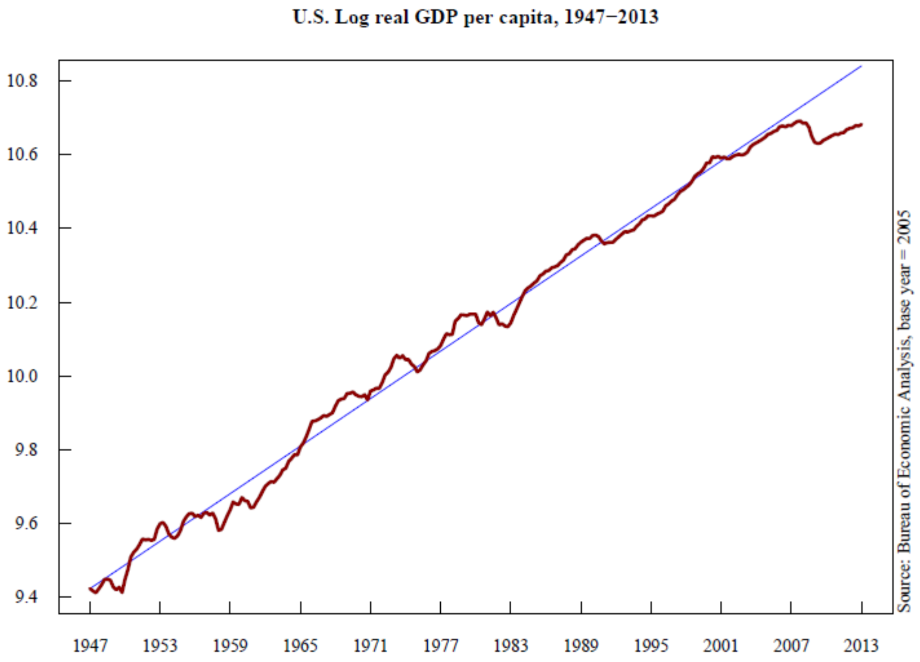
Labour productivity for Spain, Italy, Portugal, Ireland

Figure 3



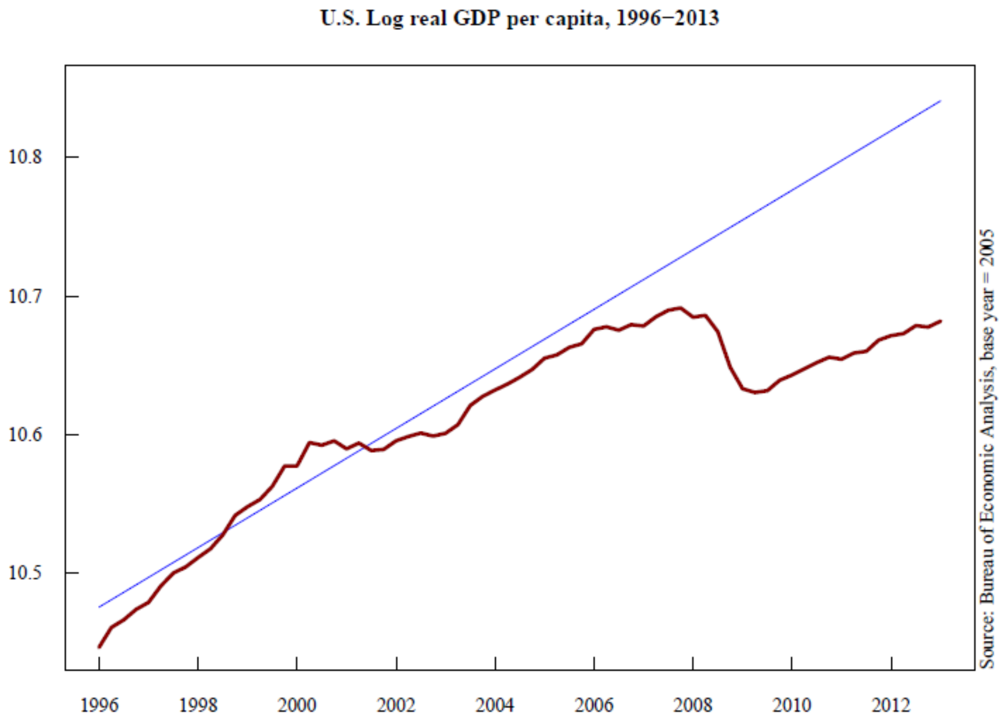
US log real GDP per capita, 1947–2013

Figure 4



US log Real GDP per capita, 1996–2013

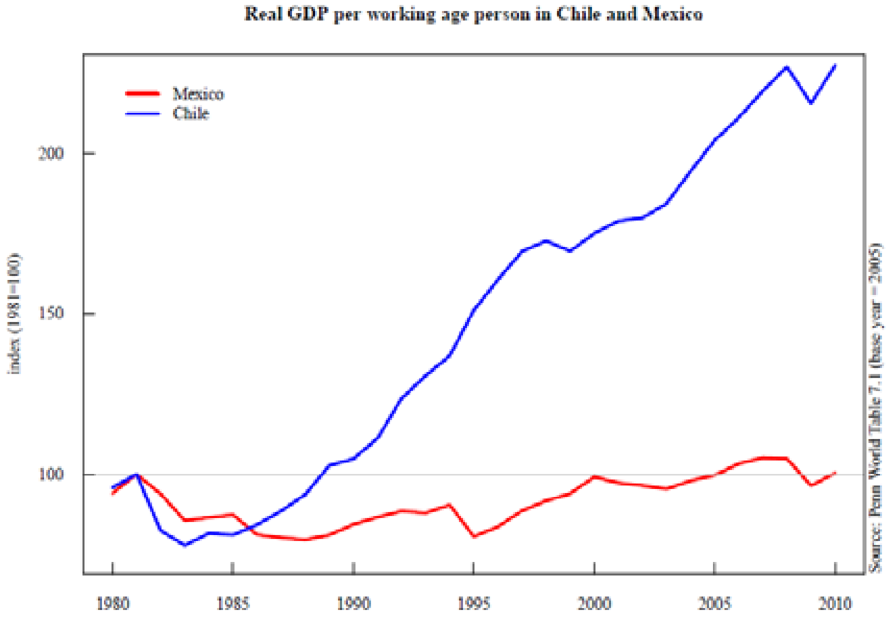
Figure 5



Source: Bureau of Economic Analysis, base year = 2005

Real GDP per working age person in Chile and Mexico

Figure 6



Source: Penn World Table 7.1 (base year = 2005)

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Introductory remarks for the panel session on "Navigating the Great Recession: what role for monetary policy?"

Jaime Caruana[1]

This is the last session of a very interesting conference in which we've heard a wide range of views on monetary policy from both domestic and global perspectives. In this panel, we have the opportunity to hear from experienced practitioners who need no introduction. We will learn their views on the policy challenges they face as they navigate towards more balanced, sustainable growth.

Let me introduce the discussion with four questions that arise from the papers presented yesterday and this morning. Panel members are welcome to give their views on issues other than those raised by these questions.

The first question relates to Philippe Aghion's paper about the implications of countercyclical policies on growth. There is no doubt that policy decisions can help stabilise the economy and this can be quite welfare-enhancing. But can policies generate too much deceptive stability? Did the so-called Great Moderation lull the private sector into taking too much risk and building up too much leverage? Could this happen again and have we not been seeing some worrisome signs already in economies less affected by the crisis but with high and rising debt levels?

My second question is exactly the one that Athanasios Orphanides has asked – is monetary policy overburdened? With evidence that the extraordinary monetary policies may be losing their effectiveness, weak balance sheets and structural impediments are clogging the monetary transmission mechanism, and with the growing costs of the prolonged low interest rate environment, has monetary policy taken too much responsibility by filling the vacuum left by other types of policy? In other words, is it the case that monetary accommodation can only be as effective as the balance sheet, fiscal and structural policies that accompany it? Should monetary policy be doing less?

Given the composition of our panel and the audience here today, it would be particularly enlightening to hear their views on global spillovers – the main focus of Menzie Chinn's paper. What are the channels through which the spillovers of extraordinarily accommodative monetary policy in advanced economies impact emerging market economies and the small advanced economies? And what next? How will the eventual exit from extraordinary monetary policy affect the ability of EMEs and small AEs to achieve their domestic stabilisation goals?

The last question draws on the paper by John Taylor, which asks whether greater central bank cooperation would help us navigate our way to prosperity and how this should best be accomplished. What should the "new normal" look like for monetary policy?

[1] General Manager, Bank for International Settlements.

I am looking forward to hearing the panel's opinions – and, in particular, their views on the limits of monetary policy and their approaches to dealing with global policy spillovers. I will not introduce the speakers, who are already very well known. I will follow the seating order, so I will ask Governor Zeti to give her presentation first.

Navigating the Great Recession: what role for monetary policy?

Dr Zeti Akhtar Aziz[1]

It is my honour to be invited to speak at this year's BIS Annual Conference, on this Governors' Panel, to discuss the role of monetary policy in this new environment. The most pressing challenge confronting policy makers in the world economy in this current environment in this current environment is to achieve sustainable growth amid the need to address the risks to financial stability, fiscal sustainability, the orderly functioning of financial markets and the risks associated with the implementation of the regulatory reforms and structural adjustments. My remarks will try to address some of the issues raised by previous speakers on the role of monetary policy during a crisis, its limits and the other policies that are needed for a sustainable recovery. The second part of my remarks will touch on the global policy spillover effects, in particular, on emerging economies.

It is well recognised that the synchronised and aggressive monetary accommodation and the earlier fiscal expansion at the start of the crisis have successfully prevented the global economy from plunging into a deep recession. It has also restored the functioning of financial markets that have since experienced improved performance, although from time to time, the markets have been vulnerable to setbacks. Despite this progress, a strong and sustained recovery has yet to be secured.

While an economic depression has been averted, monetary accommodation has continued on an unprecedented scale in several of the advanced economies with the aim of producing a stronger recovery. With diminishing fiscal flexibility, monetary policy has been at the forefront of this crisis management. Interest rates across the developed world have been brought to historical lows and this has been accompanied by large-scale financial market intervention. The central bank's role, policy tools and instruments have expanded significantly.

The potential effectiveness of further monetary policy action is, however, limited. We know from our own experience during the Asian financial crisis that ***the underlying environment will tend to work against monetary policy.*** Monetary policy cannot stimulate consumption and investment when confidence over the future economic prospects is low. The efficiency of the monetary policy transmission mechanism is also affected by the fragile financial system, volatile and disorderly conditions in the financial markets and the high levels of indebtedness in the economy. Moreover, as a countercyclical tool, monetary policy cannot address structural issues such as impaired balance sheets and low levels of economic competitiveness.

At the same time, the overreliance on monetary policy may result in unintended consequences. Low interest rates reduce the incentive for households to reduce their leverage, hence delaying the necessary balance sheet adjustments. In addition, economic agents tend to actively seek higher yields amid such

[1] Governor, Bank Negara Malaysia.

prolonged low interest rates, resulting in a shift of funds to less regulated sectors of the financial system. Other financial imbalances also tend to build up during such periods including the mispricing of risk with the consequent misallocation of resources in the economy. This also may result in the formation of asset bubbles. An abundance of global liquidity may also encourage the financialisation of commodities and significant inflows into emerging markets.

These limitations suggest that other policies are needed to complement monetary policy. During the Asian financial crisis, in addition to lowering rates, wide-ranging pro-growth measures were implemented. Priority was also given to enhance the flow of credit to the economy. This included the introduction of new institutional arrangements, mechanisms and schemes for funding, guarantees and credit enhancements, debt restructuring and resolution, in particular for small and medium-scale enterprises. In addition, to the extent that confidence was low and future economic prospects bleak, wide-ranging measures were introduced to stimulate consumption demand and investment. The rapid economic recovery that followed in Asia increased the potential for the successful implementation of structural and financial reforms. This included the restructuring and resolution of financial institutions and corporate balance sheets. This produced a V-shape recovery for Asia. In the current environment, while it is recognised that monetary policy needs to be reinforced by structural adjustments and reforms, it also needs to be complemented by pro-growth measures. It will also increase the prospects for the successful implementation of the structural reforms, in particular, in the labour market and the industrial sector, to improve competitiveness.

An area that has not been given significant attention is the redistributive effects of monetary policy. In this period of low growth, a focus on financial inclusion would also be important. It would ensure that growth is more balanced, equitable and sustainable. A key component to economic opportunity is providing more meaningful access to financial services to individuals and small businesses. This would not only assist the segments of society that are the most adversely affected by the crisis, ***but would also contribute towards more balanced growth.*** Financial inclusion is, however, not only about access to financial services. The financial crisis is also, in part, an outcome of financial inclusion gone wrong as households that otherwise would not have had access to financing were provided with financing that was beyond their means. Financial inclusion must therefore be also accompanied by incentives and education on responsible consumer behaviour as well as responsible lending behaviour by financial institutions. In addition, a robust consumer protection framework is needed.

Let me now turn to the policy spillovers emanating from the unprecedented monetary accommodation. It has generated higher global liquidity, contributing to surges in capital inflows to emerging economies and resulting in a significant strengthening of currencies, rising asset prices, and strong credit growth. In the current environment, new risks are emerging from these global spillovers arising from the expected scaling-back of quantitative easing (QE). Positive economic developments in the US in recent months have prompted market expectations for an early tapering. This has already resulted in a reversal of capital flows. Capital outflows have been prevalent across emerging market economies, resulting in a retracement in the capital markets and a depreciation of currencies. The expectation is now for a potential repricing in the bond markets, and amplified volatility in global financial and currency markets.

Most emerging economies in Asia are, however, in a better state of preparedness to cope with this environment. This is an eventuality that is expected. Central banking is all about being anticipatory. Following the Asian financial crisis, countries in the Asian region have built buffers, and undertaken structural improvements to the economy and to the financial system. The strengthened fundamentals, including greater exchange rate flexibility, a healthy level of international reserves, a more developed capital market as well as a more diversified economic structure, have improved Asia's resilience. As at end-2012, the international reserves position of the ASEAN-5[2] economies were, on average, sufficient to finance 9.2 months of retained imports and 3.5 times the short-term external debt, compared to 4.2 months and less than one times respectively in 1997.[3] More developed capital markets have also enhanced the potential for more effective intermediation of the capital flows. The average size of the bond market to GDP has grown from 49% in 2008 to 64% in 2012. The average size of the equity market to GDP has grown from 62% in 2008 to 121% in 2012.[4]

Regional cooperation has also been substantially strengthened. Efforts have been directed towards enhancing regional surveillance for a better understanding of the risks affecting macroeconomic and financial stability in the region. The introduction of an integrated crisis management framework will also facilitate pre-emptive management of risks of an imminent crisis in the region. In addition, the multilateralism of the Chiang Mai Initiative allows for reciprocal cross-border collateral and swaps arrangements between regional central banks, thereby effectively acting as a regional liquidity support facility.

Let me conclude my remarks on the questions that were raised by Jaime at the start of this session. Yes, monetary policy is being overburdened and, yes, its effectiveness is not only limited but also diminishing. And, yes, monetary policy must be complemented by other policies to produce a sustainable recovery. Finally, the effects of the global policy spillovers from the unprecedented monetary accommodation and its eventual withdrawal have been and are expected to be significant, in particular, in emerging economies. The best line of defence in this highly challenging environment is to remain at a high degree of readiness to manage the risks from these spillovers, including with strengthened cooperation.

[2] The ASEAN-5 countries comprise Indonesia, Malaysia, the Philippines, Singapore and Thailand.

[3] Source: Bloomberg.

[4] Source: Asian Bonds Online and Haver Analytics.

Unconventional policy measures in Switzerland

Thomas J Jordan[1]

I first present the key arguments for the introduction of the minimum exchange rate. Then I outline some operational aspects of its enforcement. Finally, I address another unconventional measure implemented in Switzerland: the countercyclical capital buffer (CCB).

1. Key arguments for the introduction of the minimum exchange rate

In summer 2011, the European sovereign debt crisis escalated as doubts about the solvency of Italy and Spain increased. In addition, financial markets were worried that the US Congress would not reach agreement on how to avoid hitting the debt ceiling. To make matters even worse, the global economic outlook turned noticeably gloomier.

As investors' fears sent jitters through financial markets, there was a surge in safe haven flows, which generated extreme reactions in terms of exchange rate movements.

The Swiss franc had already appreciated strongly between the onset of the financial crisis in August 2007 and spring 2011. Between early July and early August 2011, however, the development was exceptional in two ways. First, the yen, the US dollar and the Swiss franc have traditionally been regarded as safe haven currencies. But this time the franc appreciated against all other main currencies, that is, also against the dollar and the yen. Second, the appreciation of the franc accelerated dramatically, leaving our currency significantly overvalued.

This very substantial appreciation led to a sharp tightening in monetary conditions in Switzerland. This carried the risk of deflationary developments and posed a threat to the economy. Switzerland is a very small and open economy. Therefore, the exchange rate is a major driver of the price level, and annual inflation at that time was already very low and trending downwards. The exchange rate also has a substantial influence on the utilisation of production capacity.

As a result, the Swiss National Bank (SNB) had to act in order to fulfil its mandate. The SNB is required to ensure price stability, and in doing so, to take due account of economic developments in Switzerland.

While it was clear that we had to act to stop this appreciation, nominal interest rates were already close to zero. Lowering interest rates further to counter the strong appreciation was not possible. Moreover, given Switzerland's small domestic bond market, the purchase of domestic securities was not a viable option, either.

[1] Chairman of the SNB Governing Board.

Therefore, in early August 2011, we decided to embark on an unprecedented liquidity expansion – that is, quantitative easing – through repo and foreign exchange swap transactions. Market interest rates entered negative territory, and the Swiss franc weakened as a result of these measures. Ultimately, however, these liquidity measures were insufficient. In early September, the franc came under renewed pressure after further negative news from abroad.

On 6 September 2011, the SNB announced that it would no longer tolerate a EUR/CHF exchange rate below CHF 1.20 and that it would enforce this minimum exchange rate through unlimited foreign currency purchases if necessary.

In a nutshell, by introducing the minimum exchange rate, the SNB countered an inappropriate tightening in monetary conditions for Switzerland. This tightening was the result of a dramatic appreciation of the Swiss franc. This appreciation did not reflect fundamental factors. It was caused by international developments which unsettled financial markets, transforming the Swiss franc into a safe haven.

Such a monetary tightening would have compromised price stability and had potentially serious consequences for the Swiss economy. The SNB had to act, and there was no real alternative to the minimum exchange rate.

It is easy to see that the SNB is not pursuing a beggar-thy-neighbour policy. We set the minimum exchange rate at a level where the value of the Swiss franc remains high. The introduction of the minimum exchange rate has not created a competitive advantage for companies operating in Switzerland. On the contrary, it has reduced a competitive disadvantage that had arisen as a result of adverse developments on the foreign exchange markets.

2. Some operational aspects of the exchange rate enforcement

With respect to the operational enforcement of the minimum exchange rate, I would like to address a few points. First, for a minimum exchange rate to work in a very volatile market environment with nervous market participants, it is absolutely crucial to give the market a clear and unambiguous signal about the policy decision. Therefore, we determined a minimum exchange rate for the Swiss franc against one currency – the euro – rather than against a currency basket.

The introduction of the minimum exchange rate has indeed provided the foreign exchange market with clear guidance following a period of exceptional volatility. Nevertheless, the escalation of the euro area debt crisis in 2012 triggered another bout of intense upward pressure on the Swiss franc. As a result, we had to enforce the minimum exchange rate through extensive – unsterilised – foreign currency purchases. Overall, the SNB purchased foreign currency last year to the value of CHF 188 billion.

This leads me to the second operational aspect. The SNB was well prepared to purchase foreign currency if needed. We could count on our professional foreign exchange trading desk and an experienced asset management team, and we had the appropriate infrastructure in place. Moreover, with a network of well over 100 banks from around the world as counterparties, the SNB covers the relevant interbank foreign exchange market. Finally, order and execution process is highly automated.

The foreign currency purchases made in 2012 led to a significant rise in our foreign currency holdings. However, when managing its foreign currency assets, the SNB takes care to avoid its investments having any impact on financial markets, especially interest rates or exchange rates of other countries.

The increased volume in foreign currency holdings – and that is the last aspect I would like to mention here – also resulted in a considerably higher level of financial risk on our balance sheet. Yet these foreign currency purchases were necessary and we have to and can carry this risk. An appreciation of the Swiss franc would have compromised price stability.

3. The countercyclical capital buffer (CCB)

The minimum exchange rate is an important unconventional weapon in warding off an appreciation of the Swiss franc caused by investors' fears regarding the debt crisis. The minimum exchange rate was, however, not the only unconventional measure applied in Switzerland. The CCB, which can be used to target specific market segments, was another.

Persistently strong growth in both real estate prices and mortgage lending over the last several years in an environment of historically low interest rates has resulted in a build-up of imbalances in the real estate and residential mortgage markets. A sharp correction in property prices and an increase in mortgage defaults could impair financial stability in the medium term. These imbalances cannot be addressed by raising interest rates given the expansionary monetary policy stance in major advanced economies, the exchange rate concerns and inflation prospects.

Against this background, the Swiss Federal Council decided in February 2013 to activate the CCB following a proposal by the SNB. In Switzerland, the authorities are entitled to temporarily impose additional capital requirements of up to 2.5% of total domestic risk-weighted assets in the banking system, as imbalances in the credit market develop. At present, the buffer is activated to target mortgage loans financing residential property located in Switzerland and is set at 1% of the associated risk-weighted positions. The deadline for compliance is 30 September 2013.

When making its decision, the Federal Council took into account the fact that the imbalances are currently concentrated in this particular segment of the credit market and that, at the moment, they are still less pronounced than immediately prior to the onset of the real estate crisis in Switzerland in the early 1990s.

Conclusion

The two unconventional measures – the minimum exchange rate and the CCB – were not implemented as a direct result of unconventional monetary policies in other countries. The safe haven flows which led to the dramatic appreciation of the Swiss franc – and necessitated the imposition of the minimum exchange rate – are particularly related to uncertainty and financial stress. Due to these exchange rate concerns and inflation prospects, it is currently undesirable to raise interest rates in

Switzerland. Thus, the imbalances in the real estate market have been addressed through the activation of the CCB for specific market segments.

The threat that the Swiss franc could suddenly come under upward pressure again has not been averted. In the current low interest rate environment, therefore, the minimum exchange rate remains the key instrument for ensuring appropriate monetary conditions in Switzerland.

Challenges for Central Banks

Glenn Stevens[1]

My remarks today will address four key issues that were discussed during the Conference:

- the nature of the recovery that is underway, and the role of monetary policy in this process;
- whether monetary policy is overburdened, and why this may be so;
- cross-border spillovers in the current climate; and
- the scope for international cooperation among central banks.

I should be clear that these remarks are made in the general international setting, not specifically about my own country.

1. The recovery

There was some consternation about the sluggish nature of demand, particularly in the United States. That is a natural point of concern, and an important one. But it is worth remembering that this recovery was always going to be a slow one. That is the nature of a financial crisis. I also noted with interest the view that a number of "persistent factors" seem to be holding down the level of output – risk-aversion and deleveraging, among others. It is hard to disagree. I would only note that those processes reflect, at least in part, the reversal of some unusual behaviour that held up the level of output previously.

In this light, there was an interesting discussion of the role of monetary policy in offsetting the "persistent factors" that are weighing on demand. Participants were suitably candid about the limits of our knowledge – we cannot know the counterfactual. And whilst there is a renewed appreciation that quantities matter, we are still not sure how much of these are needed. There is not much to add here, except that an equally important question is what role monetary policy played in the lead-up to the crisis, in terms of the increase in risk appetite and leverage.

2. Is monetary policy overburdened?

In the second session of the Conference we were asked: "Is monetary policy overburdened?" The answer seems to be: "Yes." But it is useful to reflect on how we got here.

To the extent that the episode is inherently a financial one, central banks were bound to be at the centre of any tactical response, as they should be. The extent of

[1] Governor and Chairman of the Board, Reserve Bank of Australia.

the episode was such that positive interest rate "ammunition" was exhausted, balance-sheet measures became necessary, and central banks entered new territory.

Central banks can act quickly. So when market developments call for a decisive and rapid response, it is again only natural that central banks step up. What is more troubling is the sense that, and at more than one key juncture, other policymakers have not only been unable to act quickly, but have been almost unable to act at all. This may have led to the sense that, in moments of crisis, the central bank was the only game in town. I didn't have the sense that the central banks sought this role, more that they have not been able to avoid it. Either way, some central banks have perhaps been asked to save the day too often.

The paper by Orphanides argued that monetary policy is overburdened across three dimensions: combating high unemployment; assisting the pursuit of fiscal sustainability; and promoting financial stability. In some respects, this amounts to a requirement that central banks manage difficult trade-offs. Such trade-offs have always been there. But perhaps their extent and intractability have increased. Orphanides makes a persuasive case that there are dangers to the extent that we are asking the central bank to do something that it cannot do, or to make up for the incapacity of others.

We should also keep in mind that monetary policy is not the only policy that is overburdened. In fact, it is overburdened perhaps because some other policies are exhausted.

Public finances are overburdened. Governments are expected to both support growth and to pursue "growth-friendly consolidation", whatever that is, whilst back-stopping the banks if need be. Too many countries face acute problems of weak economies, high public debt, and so on. This may have arisen because fiscal policy decisions were weak in the past, but that is not much consolation for those there now. Given the scale of the challenges, there is an obvious desire for some other policy to help out.

One could argue that supervisory and regulatory policies are also overburdened – overburdened by the sheer size of the implementation task and the need for speed, not to mention an expectation that "never again" will one cent of public money be put at risk. To say this all amounts to a very ambitious agenda is a pretty big understatement.

Given all of these challenges, perhaps it is hard to escape central banks being asked to do too much. This is discomforting because it risks politicisation of central banks. There were some sobering comments during this conference that central bank independence is a passing fashion. Let us hope that that is not the case. Making central banks subservient would put at risk their effectiveness, not just because it could unanchor inflation expectations, but because the same policy paralysis that often seems to afflict fiscal and structural policies could end up applying to central bank policy too.

At its root, the problem here is that policymakers are not that good at understanding how to generate sustained growth. Inability to restart growth leaves fiscal burdens unsustainable, banks struggling, populations demanding quick and easy answers (hence fostering political instability), and central banks having to pull rabbits out of hats repeatedly.

3. Spillovers

There was some disquiet about the spillovers from the policies of major countries. The presence of these effects is not new; they have always been there. But there are perhaps three unusual factors currently in play.

First, the duration and extreme settings of the major countries' policies is certainly unusual. The relevant policymakers would reasonably argue that circumstances necessitated these measures. However, the limits of our knowledge as to the "right" quantities, combined with the difficulty in calibrating these balance sheet measures, makes the effects of these policies fertile ground for debate.

The second unusual factor is probably a positive one. Emerging economies have, on the basis of painful experience in the unwinding of other periods of abundant liquidity, become less inclined than they might once have been to simply enjoy the spillovers. They have perhaps worried more about the excesses that can arise and have done some things to try to limit them.

The third factor that I would like to emphasise is that spillovers go in more than one direction. Perhaps more than ever, there are spillovers from the emerging economies to the advanced world. Emerging markets' policies with respect to reserve accumulation are probably big enough to matter and likely played some role in the build-up of imbalances.

Turning to recent developments, we have recently had signals that the Federal Reserve may begin the process of changing direction before too much longer. I would argue that we should welcome the news that the Fed is in this position if it reflects a stronger US economy. When the Fed moves, there will be some disruption. We do not know whether it will be worse than on previous occasions. Reasons to think it might be stem from the unusually extreme position of US settings, and the length of time they have been in place. But, in truth, we cannot know.

Another thing that is perhaps a little unusual right now is the possibility of the Fed shifting course towards, eventually, less accommodation even as the Bank of Japan goes aggressively in the other direction. This may have non-trivial implications for financial pricing especially in exchange markets.

According to Taylor's paper, the argument that quantitative easing (QE) policies in the United States help emerging market economies more than they hurt, because of the rise in US demand, is perhaps not strongly supported by evidence. That would be the subject of debate of course. But if it is right, it must be more so in Japan's case where the domestic dynamism has clearly been weaker than in the United States. Hence there could be disquiet about the possibility that the only real transmission mechanism that Japan has available is a weaker yen, which would imply Japan is taking away from other countries' growth. Working the other way, the more structural change occurs in Japan, and the more successful they are at moving inflation expectations up a bit, the more Japanese monetary policy will be able to gain traction in Japan itself.

4. Cooperation

So there have, as I say, always been spillovers. But how might we take account of them? Central banks' mandates are framed in national terms, with the obvious exception of the ECB. There can be some informal cooperation, and even formal cooperation on technical matters (such as the US dollar swap lines that were set up during the crisis). But no central bank is going to act contrary to the self-interest of their own country to a material degree for the collective good; they don't have a mandate to do so. The only exception would be if there is agreement at the highest political level in the setting of an international agreement, which would need suitable conditions and safeguards.

Taylor's paper concludes by saying that it would be good to return to the "rule-like" system that was in place pre-crisis, in which policies seemed pretty sensible and gains from formal coordination small. I would agree. But how likely is it that we can return there any time soon? The first of the troubled countries to start the move would be the United States. Even there, and notwithstanding the recent signals, it will be some time yet before the Fed raises rates. Meanwhile there is Japan, going further with its balance sheet measures. So it seems likely that we will be in an unusual world for a while yet.

Still, if Steve Cechetti's opening remarks are right, we have to think differently anyway if we are to heed his various lessons. One question is whether our rule-like behaviour is only viable if someone is taking care of the various other things that the rules largely ignore. (Or do decision rules have to be more complicated?)

End-piece

Where does that leave us?

Central banking has become more complicated. Even if we do the "optimal" in the face of our constraints, we may still find our collective goals hard to achieve because the environment is more complex.

Maintaining the perception of independence may be more difficult. The unorthodox measures, and the blurring of the line between monetary and fiscal measures, mean that independence of action may be challenged. The prominence of regulatory tools is also an additional factor: not that we shouldn't use them, but that is another area in which controversy around decisions will inevitably arise.

That is the nature of the world we live in. How, then, might we respond?

We need to be innovative where appropriate but to be suitably modest about how much we know, and acknowledge that the cost-benefit calculations are hard to do. Perhaps in our communication we need to be clear about what central banks can and cannot do.

Closing remarks for the panel session on "Navigating the Great Recession: what role for monetary policy?"

Jaime Caruana[1]

Let me wrap up this interesting discussion with a personal view of the role of monetary policy in the Great Recession and beyond. This view is inspired by the papers at the conference and draws on the work being done at the BIS. In my view, we are seeing that there are limits to what monetary policy can prudently achieve at this stage in the recovery. And, we must be careful not to significantly overstep them. Of course the exact situation differs from one economy to another. But, in general, with monetary policy having become overburdened, repair and reform are needed so as to focus on the *quality* of growth, not just the *quantity* of growth.

Ever since the start of the Great Recession, central banks have had to look for and find new ways to deliver monetary accommodation, filling a void left by other policies. This no doubt avoided the implosion of the system in the acute phases of the crisis and has shored up demand in the short term.

But it is not clear to me that additional monetary easing will foster future success. In fact, I am worried that the opposite will be the case – because the impediments to the recovery now are no longer monetary in nature. Rather, the time has come for governments and the private sector to expedite plans to address the necessary adjustments.

In particular, households and firms must continue to make progress in repairing their balance sheets. Prudential authorities, with the help of governments if and where needed, should complete the repair of banks' balance sheets and regulatory reforms. And governments have to push on with structural reforms and should ensure that their fiscal position is sustainable. A self-sustaining and balanced recovery will remain a mirage while consumers continue to retrench and as long as firms are reluctant to invest, banks remain unable to allocate credit properly, structural rigidities in product and labour markets stifle potential growth, and fiscal positions remain unsound.

Efforts to reform would make it easier to normalise the monetary policy stance and mitigate the growing risks of keeping interest rates so low for so long.

At the same time, it is equally clear that the process of normalising monetary policy is not without its own risks. The exit from the accommodative monetary policies currently in place around the globe may well be bumpy and even disruptive at times, given the unprecedented initial conditions. In recent weeks, gyrations in global financial markets have demonstrated that such risks are not just theoretical possibilities. Yet, these gyrations should not dissuade policymakers from the task ahead. There is no substitute for sticking to a hard-nosed cost-benefit analysis.

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We have seen that monetary policy spillovers have created collateral damage in the EMEs and small advanced economies. Financial imbalances are building up in several countries, outcomes which in part can be traced back to accommodative global monetary conditions. The spillovers themselves do not necessarily call for greater global coordination of monetary policies, but they do call, at a minimum, for central banks to take better account of the global effects and feedback that arise from individual monetary policy stances. As John Taylor told us in the previous session, this may require a more global analytical approach to monetary policy. And, certainly, an open exchange of views as we have had here in the past two days is a good step towards better domestic policymaking as we continue to navigate towards an environment of sustained and balanced growth.

Finally, while central banks face daunting challenges in the near term and in the eventual exit, they also have to keep an eye on the longer-term challenges. Pre-crisis monetary policy frameworks did not ensure lasting financial and economic stability. Regulatory reform will surely play an important role in mitigating future financial stability risks, but it is not sufficient. Some parts of the financial system are difficult to regulate, and over time regulatory measures may lose some of their effectiveness owing to regulatory arbitrage. Monetary policy has an important complementary role to play, as the policy rate represents the universal price of leverage in a given currency that cannot be bypassed so easily. This suggests that there are gains from integrating financial stability considerations more systematically into the conduct of monetary policy. These efforts should help inform the adoption of a more symmetrical approach to financial booms and busts than in the past.