



# Monetary policy in the crisis: testing the limits of monetary policy<sup>1</sup>

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It is a great pleasure and honour to join you on the occasion of the 2012 SEACEN Governors' Conference in Seoul. For this privilege, I thank Governor Kim, SEACEN and all those who have contributed to the excellent organisation of this Conference at the Bank of Korea.

The theme of today's meeting is "Monetary policy in times of high external vulnerability". In my remarks, I will focus on the rising risks to monetary policy that are associated with the spreading of what I would call the illusion of unlimited intervention.

In the wake of the crisis, demands on monetary policy have grown beyond recognition, putting frameworks under enormous pressure. Central banks are increasingly seen as being able to do everything: ensure price stability; resolve balance sheet problems; shape the yield curve; deliver low unemployment; relieve sovereign credit problems; and prevent undesirable exchange rate constellations. Likewise, the instrument set has expanded in a way that would have been inconceivable some years ago. Large-scale interventions in financial markets aimed at reviving dysfunctional market segments or providing additional monetary stimulus have become routine.

We should not underestimate the welcome role such policy actions played in the darkest days of the crisis. They were critical in preventing unfettered financial instability and a potential deflationary spiral. Extraordinary times call for extraordinary measures. But we should not lose sight of the limits of monetary policy. By trying to do everything, central banks may end up putting at risk their main achievement: the credible establishment of price

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<sup>1</sup> This speech was prepared together with Boris Hofmann, and benefited from comments by Claudio Borio, Andrew Filardo, Robert McCauley and Bruno Tissot.



stability. There is a need to forge a new consensus that fully recognises the inherent limits of monetary policy. The “new frontier” of monetary policy is, in some sense, an old one. It is to delineate the boundary of monetary policy and to clarify what its limits are.

## **I. Monetary policy response to the crisis: interest rate and balance sheet policies**

As the international financial crisis unfolded, central banks responded by taking unprecedented measures. The unconventional monetary policy framework comprised three elements: (i) slashing policy rates towards zero and in several cases all the way to the zero lower bound; (ii) forward guidance of ultra-low policy rates over extended policy horizons; and (iii) large-scale financial market interventions, in particular huge asset purchases. At the time of their introduction, these measures were understood to be extraordinary ones to address unique pathologies and to prevent them from spreading rapidly around the globe. And, most importantly, they were expected to be temporary.

Where do we stand now?

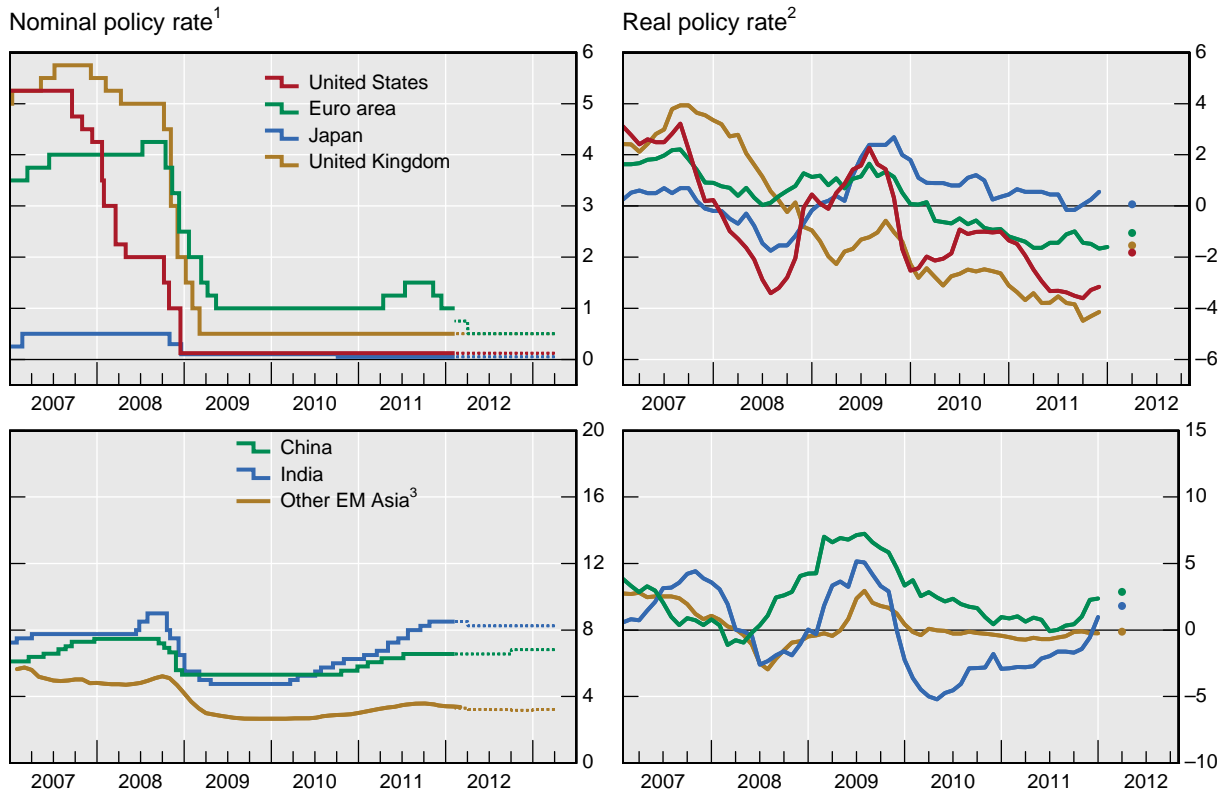
### **Interest rate policy**

In most advanced economies, policy rates remain at their effective lower bounds. They have been stuck there for three years now (Graph 1). And central banks have discouraged expectations that they will raise them any time soon. In real terms, policy rates have been essentially negative for almost two years.

In emerging market economies, policy rates were raised modestly in the past year from their crisis troughs as the domestic recoveries gained traction. But inflation also picked up. And in some countries, policy rates have recently been cut in response to Europe’s economic and financial troubles. Taken together, real policy rates have been and remain very low.



Graph 1  
**Policy rates**  
In per cent



<sup>1</sup> For the United States, target federal funds rate – as of mid-December 2008, midpoint of the target rate corridor (0–0.25%); for the euro area, minimum bid rate up to October 2008 and fixed rate of the main refinancing tenders thereafter; for Japan, target for the uncollateralised overnight call rate – as of October 2009, midpoint of the target range (0–0.1%); for the United Kingdom, Bank rate; for Brazil, target SELIC overnight rate; for China, benchmark one-year loan rate; for India, repo rate. The dotted lines show the JPMorgan Chase forecast as of 2 January 2012 for the policy rate in March 2012, June 2012, September 2012, December 2012 and March 2013. <sup>2</sup> Nominal policy rate minus annual headline inflation. Projections (dots) are based on forecasts from JPMorgan Chase and Consensus Economics. <sup>3</sup> Weighted average of Chinese Taipei, Hong Kong SAR, Indonesia, Korea, Malaysia, the Philippines and Thailand based on 2005 GDP and PPP exchange rates.

Sources: Bloomberg; © Consensus Economics; JPMorgan Chase; national data; BIS calculations.

### Balance sheet policy

Central banks' balance sheets have globally reached unprecedented levels – around US\$ 18 trillion (Graph 2).

In the major emerging market economies, the expansion of central bank balance sheets has been driven by a massive build-up of foreign exchange reserves. For this group, central bank assets now stand above 40% of GDP.

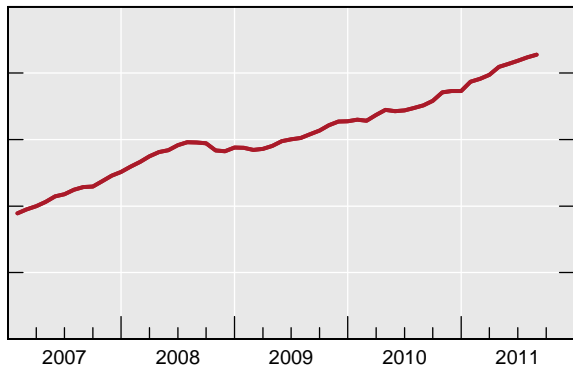


Graph 2

**Central bank assets**

In trillions of current US dollars

Emerging market economies<sup>1</sup>

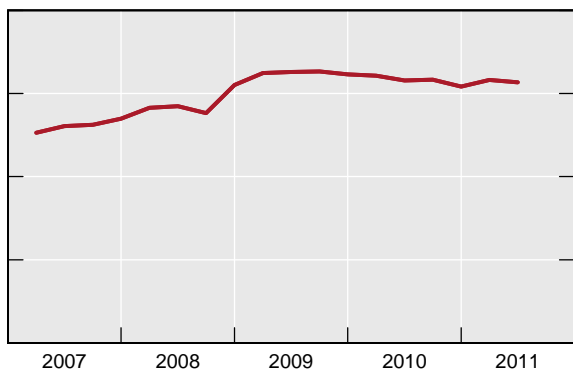


Advanced economies<sup>2</sup>

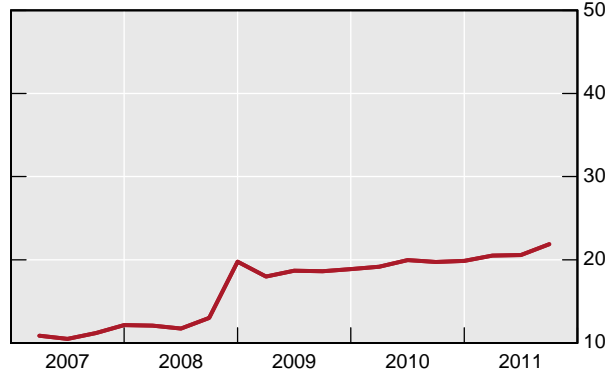


As a percentage of GDP

Emerging market economies<sup>1</sup>



Advanced economies<sup>2</sup>



<sup>1</sup> Total of major emerging market economies (China, Hong Kong SAR, India, Indonesia, Korea, Malaysia, the Philippines, Singapore, Thailand, Argentina, Brazil, Chile, Colombia, Mexico, Peru, the Czech Republic, Hungary, Poland, Russia, Turkey and South Africa). <sup>2</sup> Total of the euro area, Canada, Japan, Sweden, Switzerland, the United Kingdom and United States.

Sources: IMF; Datastream; national data.

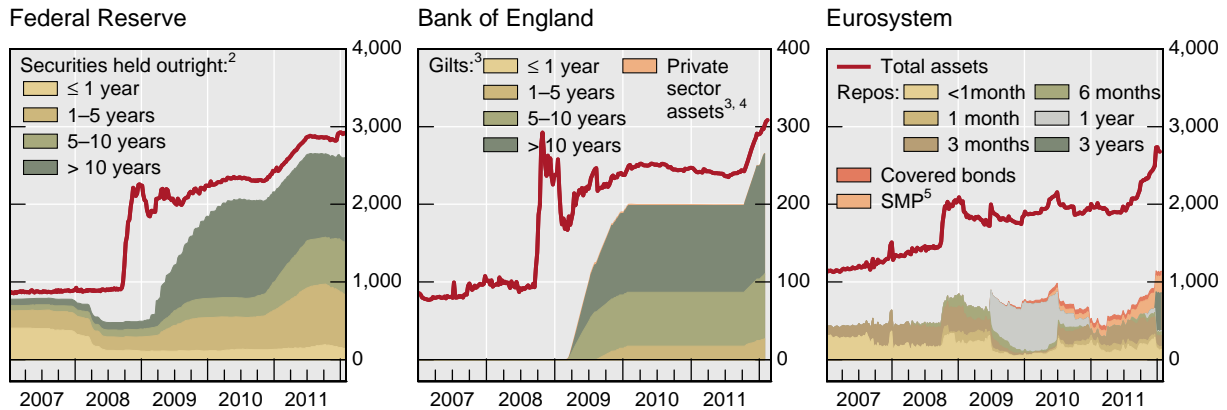
In the major advanced economies, central bank balance sheets ballooned in the aftermath of the recent crisis and have shown no signs of returning to their pre-crisis levels. Indeed, markets expect these balance sheets to expand further, as central banks continue to experiment with new measures to revive their economies and to counter new rounds of financial market stress. For this group, central bank assets now exceed 20% of GDP. In addition, some advanced economies have seen the average maturity of central banks' assets lengthen markedly over time (Graph 3), thereby increasing the time it would take for these assets to run off the balance sheet.



Graph 3

**Central bank balance sheet size and maturity<sup>1</sup>**

In billions of units of national currency



<sup>1</sup> For the Bank of England and the Federal Reserve, breakdown by remaining maturity; for the Eurosystem, breakdown of outstanding repo operations by original maturity. <sup>2</sup> Includes agency debt securities, mortgage-backed securities and US Treasuries held outright; face value. <sup>3</sup> Holdings of the Asset Purchase Facility (APF); proceeds. APF transactions are undertaken by the Bank of England Asset Purchase Facility Fund Limited. The accounts of the Fund are not consolidated with those of the Bank. The Fund is financed by loans from the Bank, which appear on the Bank's balance sheet as an asset. <sup>4</sup> Includes holdings of sterling commercial paper, secured commercial paper and corporate bonds financed by the issue of treasury bills and the Debt Management Office's cash management and by the creation of central bank reserves. <sup>5</sup> Securities held under the Securities Markets Programme (SMP).

Sources: Datastream; national data.

**Is the unconventional becoming the new normal?**

The bottom line is simple. More than four years after the start of the credit crisis in mid-2007, there is no sign of monetary policy normalisation: interest rates remain extremely low, and balance sheets continue to expand and are becoming more sticky. The need for an exit strategy from the unconventional monetary policy actions is no longer at the top of the policy agenda. There is a risk that the unconventional might surreptitiously become the new normal. This is a dangerous precedent if it takes hold in the minds of policymakers and of the public.

**II. Monetary policy at risk: the illusion of unlimited intervention**

No one in central banking circles believes that the power of monetary policy is limitless – far from it. But the illusion of unlimited intervention is peddled daily by pundits in the global financial markets. The relentless daily market commentary produced by the major financial firms amounts to a consistent and continuous call for low policy rates and more and more central bank intervention in financial markets. Central banks are increasingly seen by market participants as all-powerful, able to intervene without any limit: the belief is that they can always counteract the fallout of a financial crisis by keeping policy rates near zero as long as necessary; and that they can intervene in an unlimited way as lender of last resort for both banks and sovereigns.



## The illusion

Consider recent calls for central banks to use their balance sheets to resolve the sovereign debt crisis in Europe. The two most popular terms used in the market literature capture the idea very well: the “printing press” and the “bazooka” metaphors. Some market commentators believe that the ECB should just ramp up its “printing press” and use it as a “bazooka” to solve the sovereign debt and bank funding problems in the euro zone. Behind these proposals lies a simple notion: if only central banks would forcefully commit to do whatever it takes through unlimited interventions, with the trillion as the new unit of measurement, any threat to the world economy could be averted.

The debate on the best way to solve the sovereign debt problem in the euro area is only the latest example of the illusion of unlimited central bank intervention. There are other examples. Large-scale asset purchase programmes are continuously extended; liquidity-providing operations at ever longer terms are carried out with full allotment to meet banks’ liquidity demand at the policy rate; and exchange rate pegs are introduced with the declared determination to buy foreign currencies in unlimited quantity if needed. The phenomenon is global.

<b>From large-scale to unlimited intervention: a few examples</b>				
<b>Foreign exchange intervention</b>	<b>Liquidity provision to banks</b>	<b>Asset purchases</b>	<b>Bailout of systemic banks</b>	<b>Bailout of sovereigns</b>
<p>Resistance to exchange rate appreciation</p> <p>Large-scale FX intervention to enforce a peg/exchange rate target</p> <p>SNB’s unlimited intervention to enforce a minimum exchange rate of CHF 1.20 per euro</p>	<p>Longer-term refinancing operations (LTRO):</p> <p>ECB offering banks three years money at the average repo rate over the life of the operation (unlimited provided collateral is posted)</p>	<p>Large-scale asset purchases (US)</p> <p>Asset Purchase Facility (UK)</p> <p>Securities Markets Programme (ECB)</p> <p>Asset Purchase Program (BOJ)</p>	<p>G7 leaders’ statement, 10 October 2008:</p> <p>“Take decisive action and use all available tools to support systematically important financial institutions and prevent their failure”</p>	<p>“Big bazooka”:</p> <p>markets and academics call for the unlimited purchase by the ECB of peripheral euro zone sovereign bonds</p>



During the crisis, central banks had to step in to address severe tensions in interbank, foreign exchange swap and segments of securities markets – including, lately, government bond markets. These tensions hampered the monetary policy transmission mechanism and threatened financial stability. The proper transmission of monetary policy impulses to the economy is impaired when “risk premia become so large that they dominate the signal from the key policy rates”.<sup>2</sup> Clearly, if credit and liquidity spreads widen beyond any reasonable level, central banks should intervene in order to ensure consistency between the policy rates and financing conditions that determine funding costs for households, financial institutions, non-financial corporations and governments. By the same token, when in a crisis central banks push policy rates to their lower bounds, purchases of long-term securities can be seen as a valid tool to provide additional monetary stimulus across the entire yield curve whenever the economy is faltering badly and deflation threats loom.

Yet the very real achievements on these fronts, such as the successful interventions to counter the surge in Libor-OIS or FX swap spreads during the crisis, appear to have fostered a widespread but illusory view among market participants that central banks can intervene in unlimited ways and solve any problem. Near zero interest rate policy and large-scale intervention by central banks in financial markets, while justified and understandable as an exceptional response to the crisis, if prolonged, have adverse side effects that are likely to become more harmful the longer the “medicine” is applied.

Let me highlight a number of these side effects that are currently developing.

First, there is the side effect of delaying balance sheet adjustments in the economy. Central banks can supply liquidity, but cannot solve underlying solvency problems. They can, at best, buy time, but at the risk that that time is wasted. Let me give you just a few examples. Large-scale asset purchases and large-scale lending to troubled banks can stabilise conditions in the short run, but they can ultimately undermine the incentives for fundamental balance sheet repair in the private sector. Similarly, low interest rates, by reducing the opportunity cost of carrying non-performing loans on the portfolio, delay the recognition of losses. In the public sector, low yields hold down the interest cost of government debt and risk sending the message that growing stocks of debt have little effect on the ability to spend or the need to

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<sup>2</sup> “The ECB’s response to the recent tensions in financial markets”, speech by Jean-Claude Trichet, President of the ECB, at the 38th Economic Conference of the Austrian National Bank, Vienna, 31 May 2010.



tax. Thus, the combination of aggressive and prolonged near zero interest rate policy and balance sheet policies, with no strings attached, risks delaying necessary adjustment.

Second, there is the risk of encouraging a new round of risk-taking and leveraging in the financial system. The policy rate represents the universal price of leverage in a currency area. Extremely low policy rates therefore not only reduce incentives for necessary deleveraging, they also create incentives for leveraging-up and renewed risk-taking, eg by encouraging carry trades. More generally, when central banks give the impression that they stand ready to do “whatever it takes”, and hence offer unpriced insurance, moral hazard risk arises. Over time, this can lead to ever greater leverage and financial fragility.

Third, there is the concern that financial markets lose their capacity to discover prices. As their interventions expand in size and scope, central banks risk crossing the boundary between monetary policy and asset price formation, exerting an overwhelming influence on long-term sovereign bond rates, credit spreads, mortgage rates, covered bond spreads, etc. For instance, the expectation that the central bank will remain involved for a long time in shaping long-term yields can undermine the markets’ role in determining those yields. In the end, large public sector ownership of financial assets may prevent markets from sending signals to policymakers – or may degrade those signals to mere guesses of what policymakers will do next.

Fourth, and closely related, too dominant a role on the part of central banks in market-making could contribute to an atrophy of markets. Central banks, directly or indirectly, end up taking over financial intermediation functions from the private sector.

Finally, the longer the policies are in place, the harder the exit is likely to be. The combination of delayed adjustment, growing fragilities, distorted market signals and market atrophy will arguably make central banks more hesitant about normalising policy. And while markets and governments are all too eager to see central banks come to the rescue, they are bound not to be pleased to see them withdraw. All this increases the risk of exiting too late and too slowly, as has been the case all too often in the past.

## **The risks**

Yet the trend towards unlimited intervention combined with ultra-low interest rates does not only have potentially serious side effects on the functioning of the market economy. It also gives rise to three major risks and one ultimate possible consequence for monetary policy itself: these three risks are those of financial dominance, exchange rate dominance and fiscal





dominance. The ultimate possible consequence is an inflation surprise that could severely damage central banks' hard-earned credibility. Let me elaborate.

***The risk of financial dominance***

The first type of risk that I see is the risk of financial dominance, ie the risk that monetary policy becomes increasingly dominated by short-term concerns about adverse financial market developments. This may over time distract monetary policy from its primary task of maintaining lasting price stability.

My point here in no way contradicts, and in fact reinforces, the long-standing BIS view that the integration of financial stability considerations in monetary policy frameworks is warranted. The issue is not whether but how. The concern is with an asymmetric interpretation of this integration. The risk of financial dominance arises when central banks factor in financial stability considerations in their monetary policy decisions in times of financial bust but fail to do it in times of financial boom when financial imbalances are building up.

Indeed, over the past 10 to 15 years, central banks have tended to respond to financial stability concerns in an asymmetric way. In advanced economies, policy rates were slashed aggressively in response to financial headwinds (the LTCM crisis, the bursting of the dotcom bubble, and the recent international credit and sovereign financial crisis) but subsequently raised only hesitantly and gradually. Moreover, such low policy rates in advanced economies were transmitted to the rest of the world as emerging market central banks, particularly in Asia, set policy rates with an eye on the exchange rate, not least because their economies are heavily export-dependent. The end result was that, globally, policy rates stayed low and, as inflation rates rose, real policy rates continued to trend down, persistently falling well below the levels of real output growth (Table 1 and Graph 4).



**Table 1 Real policy rates and real growth**

In per cent

	World															
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average
Real policy rate <sup>1</sup>	3.0	5.4	3.7	3.3	3.0	2.2	0.9	0.4	0.8	1.5	1.5	-1.1	0.3	-1.2	-2.1	1.6
Real GDP growth	4.1	2.6	3.6	4.8	2.3	2.9	3.6	4.9	4.6	5.3	5.4	2.8	-0.7	5.2	3.8	3.7
	Advanced economies															
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average
Real policy rate <sup>1</sup>	2.3	2.8	2.3	2.5	1.5	0.7	-0.1	-0.3	0.2	1.2	1.9	-0.6	0.5	-1.0	-2.0	0.9
Real GDP growth	3.5	2.6	3.7	4.2	1.4	1.7	1.9	3.1	2.7	3.1	2.8	0.1	-3.7	3.2	1.6	2.2
	Emerging economies															
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average
Real policy rate <sup>1</sup>	4.7	9.6	5.7	3.8	4.7	4.0	2.2	1.3	1.6	1.9	1.0	-1.4	0.5	-0.9	-1.2	2.8
Real GDP growth	5.0	2.5	3.6	5.9	3.7	4.7	6.2	7.5	7.3	8.2	8.9	6.0	2.8	7.3	6.2	5.7

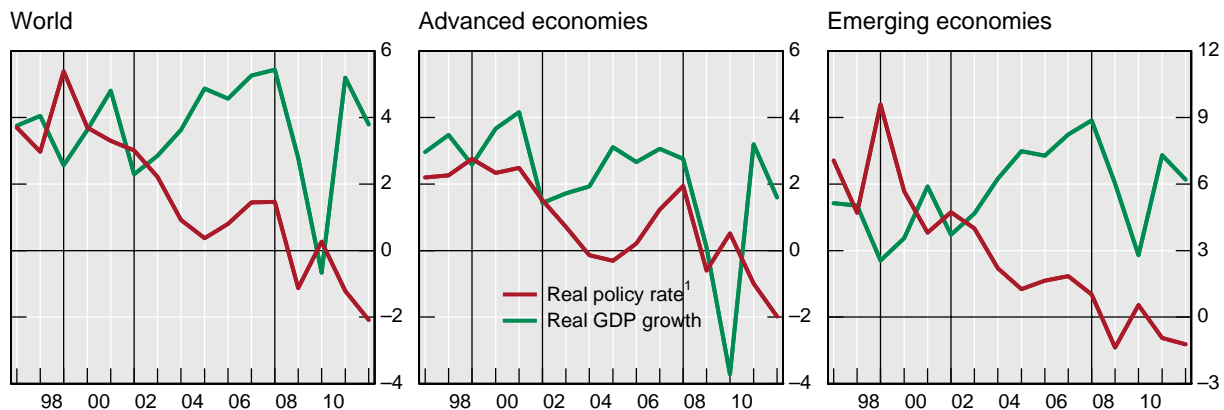
<sup>1</sup> Weighted average based on 2005 GDP and PPP exchange rates of 62 economies for world, major advanced economies or major emerging economies. Nominal policy rates adjusted for consumer price inflation.

Sources: IMF; Bloomberg; CEIC; Datastream.

Graph 4

**Real policy rates and real growth**

In per cent



<sup>1</sup> Weighted average based on 2005 GDP and PPP exchange rates of 62 economies for world, major advanced economies or major emerging economies. Nominal policy rates adjusted for consumer price inflation.

The vertical lines indicate the LTCM crisis (1998), the bursting of the dotcom bubble (2001) and the beginning of the global credit crisis (2007).

Sources: IMF; Bloomberg; CEIC; Datastream.

The global accommodative bias in interest rate policy is visible in standard policy rate benchmarks. One such, admittedly rough, benchmark is the gap between real interest rates and the trend rate of GDP growth. On this score, real interest rates, both short-term and long-term, have dropped steadily and far below measures of trend real growth in the course of the past decade (Graph 5, left-hand panel). Another benchmark is the gap between actual

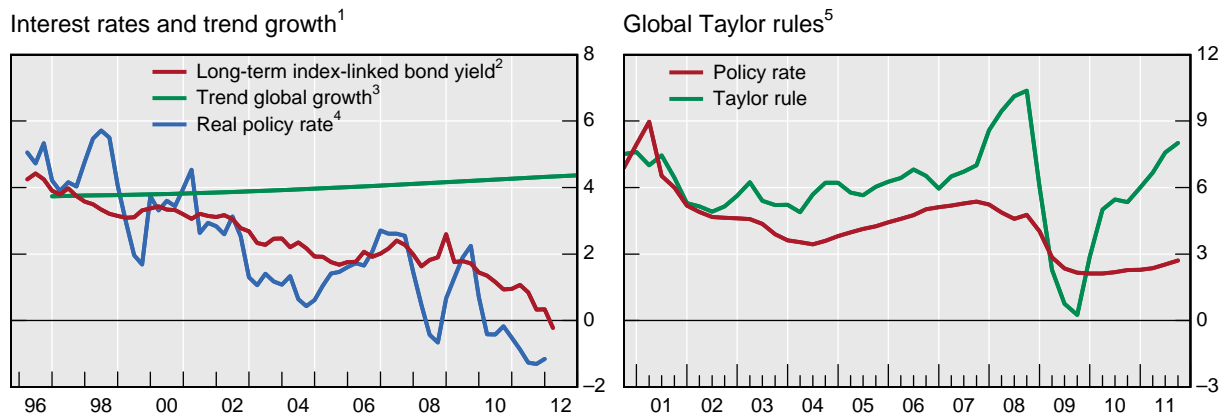


policy rates and the level of policy rates implied by the Taylor rule, which links policy rates in a mechanical way to inflation and the output gap. Over the past decade, policy rates have generally hovered below the level implied by a simple Taylor rule (Graph 5, right-hand panel).

Graph 5

**Policy rate benchmarks**

In per cent



The Taylor rules are calculated as  $i = c + 1.5(\pi - \pi^*) + 0.5y$ , where  $\pi$  is headline inflation and  $y$  is the output gap obtained from estimating potential output using the HP filter. The constant  $c$  is defined as the average of the sum of the inflation rate and the real GDP growth since Q1 2000.  $\pi^*$  is computed as the average level of the inflation rate since Q1 2000.

<sup>1</sup> In per cent. <sup>2</sup> From 1998; simple average of Australia, France, the United Kingdom and the United States; otherwise only Australia and the United Kingdom. <sup>3</sup> Trend world real GDP growth as estimated in IMF, *World Economic Outlook*, April 2009. <sup>4</sup> G20 countries; weighted averages based on 2005 GDP and PPP exchange rates. <sup>5</sup> Taylor rule calculated for world aggregates constructed from weighted averages of national policy rates, inflation and GDP using 2005 PPP weights.

Sources: IMF; OECD; Bloomberg; © Consensus Economics; national data; BIS calculations.

A new aspect of this asymmetric response to financial booms and bust developed in the course of the latest crisis: the extensive use of central bank balance sheets. At the depth of the crisis, these balance sheet policies added accommodation that could not be achieved by interest rates alone. Central bank balance sheets ballooned, and there is little evidence that their size is likely to shrink to pre-crisis levels any time soon. And there are also indications of an asymmetric intention in entering and exiting balance sheet policies: while assets are purchased with a view to moving markets, they are to be sold in a manner tailored not to move markets.

***The risk of exchange rate dominance***

Financial dominance is primarily a concern in advanced economies. In emerging market economies, the main risk is exchange rate dominance: the risk that the goal of stabilising the



exchange rate dominates the conduct of monetary policy and ultimately distracts central banks from the goal of achieving lasting price stability.

The risk of exchange rate dominance is not new. In Asia, in particular, it has manifested itself in keeping interest rates low for fear of seeing unwelcome capital flows and appreciation of the currency and, most visibly, in an unprecedented increase in foreign exchange reserves since 2001 (Graph 6).

This accumulation of foreign exchange reserves in Asia reflects two different motives. On the one hand, reserve accumulation is often seen as an element of a self-insurance policy against the possibility of sudden reversals and capital flow volatility. Viewed from this perspective, foreign exchange reserves serve as a countercyclical tool, with buffers accumulated in good times that can be drawn down in times of financial system stress. In this case, many emerging market economies would argue that foreign exchange reserves are an integral part of a global financial stability framework.

On the other hand, foreign exchange reserve accumulation has in some cases also been a by-product of an exchange rate policy designed to resist appreciation in the currency. In fact, the appreciation of Asian currencies against the US dollar has been fairly limited despite considerably stronger growth performance. Since 2001, Asian currencies have appreciated against the US dollar by less than 20%, while foreign exchange reserves have increased by more than 600% (Graph 6).

Graph 6  
Foreign exchange reserves and exchange rates in Asia<sup>1</sup>  
End 2001 = 100



<sup>1</sup> China, Hong Kong SAR, India, Indonesia, Korea, Malaysia, the Philippines, Singapore and Thailand. <sup>2</sup> In US dollar terms; sum of the economies listed. <sup>3</sup> Weighted average based on 2005 GDP and PPP exchange rates. <sup>4</sup> Against the US dollar; an increase indicates an appreciation.

Source: IMF.



Exchange rate dominance, as reflected in large-scale foreign exchange reserve accumulation, is often seen as one element that contributed to the build-up of global imbalances. Indeed, in the mid-2000s the large purchases of US Treasury notes by Asian central banks most probably put downward pressure on medium-term interest rates. In turn, these low bond yields contributed to a search for yield, which, along with a number of other factors, contributed to mounting financial imbalances in the run-up to the crisis.

But exchange rate dominance has been generating risks at home too. In particular, in emerging Asia low policy rates have been fuelling strong credit growth and in some cases worrisome asset price developments. And the possible impact on inflation risks should not be underestimated either.

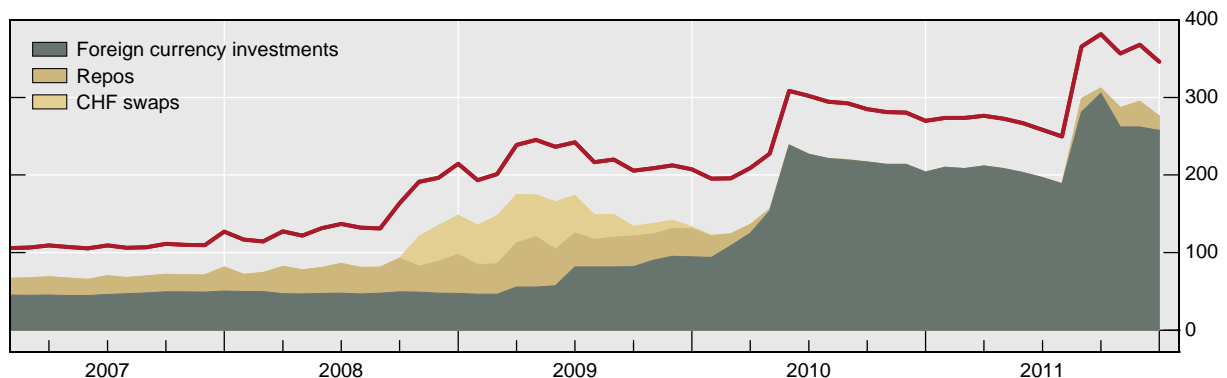
Admittedly, many emerging market economies have a vital interest in stable exchange rates given the heavy export dependence of their economies. In addition, the pressures on their exchange rates resulting from persistently and extraordinarily low policy rates in the major advanced economies should not be underestimated. That said, the long-term risks of exchange rate dominance for financial and monetary stability should not be ignored.

It is noteworthy that also some advanced economies have recently adopted measures to counter upward pressures on their exchange rates in the wake of the debt crisis. The experience of Switzerland is an obvious example (Graph 7). The risk of exchange rate dominance is therefore not limited to emerging market economies.

Graph 7

**Swiss National Bank balance sheet**

In billions of Swiss francs



Source: Datastream.

**The risk of fiscal dominance**

Let me now turn to a more traditional central bank concern: fiscal dominance.

In the wake of the global financial crisis, public debt levels in advanced economies have surged dramatically (Table 2). This raises the risk that monetary policy could become subordinated to the needs of fiscal policy, so as to ease the financing of the sovereign and ultimately monetise the public debt. History has repeatedly shown that highly indebted governments put pressure on central banks to inflate away their debt.

Are there indications that the risk of fiscal dominance has been rising recently? Monetary policy, by setting the policy rate and by additionally influencing the long-term interest rate via large-scale bond purchases, is an important determinant of governments' refinancing costs. Strikingly, despite surging public debt levels, the interest expenses of governments have actually fallen recently (Table 2). This eases the burden of high debts. But it potentially also reduces incentives to take decisive action to address them, reflecting again the delaying effects of ultra-accommodative monetary policy on balance sheet repair. All this could indicate rising risks of fiscal dominance if monetary policy were seen to hold interest rates down for the purpose of easing financing conditions for governments.

Table 2	Government debt and interest expense									
	In per cent									
	General government debt					Effective nominal interest rates <sup>1</sup>				
	2007	2010	2011	2012	2013	2007	2010	2011	2012	2013
United States	62	94	98	104	108	5.1	3.3	3.2	3.3	3.3
Japan	167	200	212	219	227	1.5	1.4	1.3	1.3	1.5
United Kingdom	47	82	90	97	102	5.1	4.2	3.8	3.5	3.3
Euro area	72	93	96	98	98	4.6	3.6	3.6	3.6	3.8

<sup>1</sup> Effective nominal interest rates are calculated as interest payments as a fraction of total debt from previous period.

Sources: IMF; OECD, *Economic Outlook*.

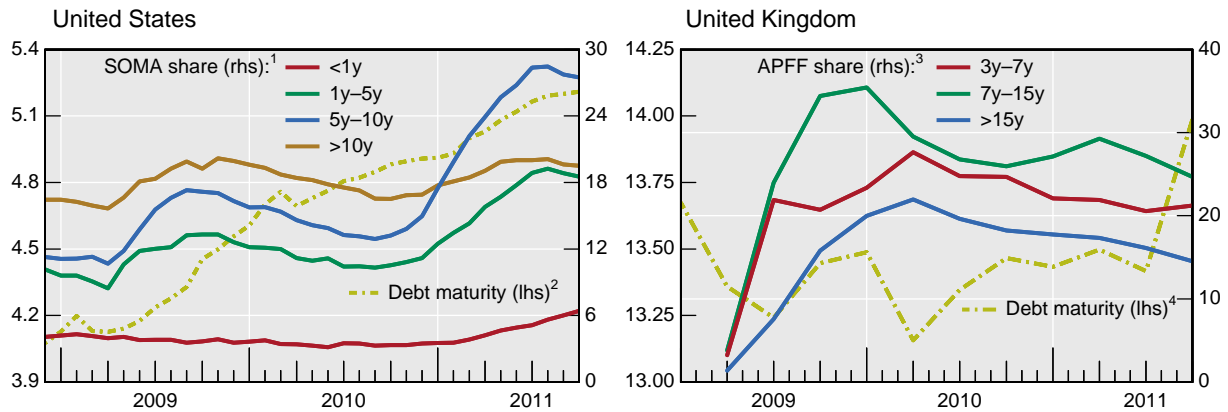
These concerns are reinforced by the large-scale bond purchase programmes implemented by some major central banks. In some countries, central banks now hold a considerable share of their economies' outstanding public debt (Graph 8). The declared goal of these programmes is to stimulate the economy by lowering long-term interest rates or to restore monetary transmission blocked by illiquid sovereign bond markets. But at some point, financial markets may perceive enormous holdings of government bonds as just an indirect way of easing the public debt burden.



Graph 8

**Central bank government bond holdings**

In per cent



<sup>1</sup> Share of the System Open Market Account in Treasury securities outstanding, in per cent. <sup>2</sup> Average maturity of outstanding Treasury securities (including Federal Reserve holdings), in years. <sup>3</sup> Share of Asset Purchase Facility Fund holdings in gilts and Treasury bills outstanding, in per cent. <sup>4</sup> Average maturity of the gilt and Treasury bill portfolio (including Bank of England), in years.

Sources: Bank of England; Federal Reserve; Treasury Direct; UK Debt Management Office; BIS calculations.

Large-scale bond purchases also create overlaps between monetary policy and government debt management. As central banks try to push down long-term bond yields by buying long-dated sovereign debt, debt managers may be tempted to take advantage of this situation by increasing issuance of long-dated paper. It is interesting to note that the average maturity of outstanding debt has indeed increased in those countries where central banks are implementing large-scale government bond purchase programmes (Graph 8). Central banks and debt managers have to be careful not to work at cross purposes. A key question, of course, is what will happen when central banks look to sell government bonds – and so reverse extraordinary policy accommodation. What will be the reaction of debt managers who naturally want as little competition as possible for their own new issuance?

***The ultimate risk of an inflation surprise***

The ultimate possible consequence of the three risks of financial, exchange rate and fiscal dominance is an inflation surprise that could damage central banks' credibility.

Over the past two decades, central banks around the globe have made significant progress on the inflation front. Inflation rates have come down and their variability has shrunk. This is a powerful testimony to what central banks *can* do – they can achieve and maintain price stability. But there may be a temptation to take this achievement for granted and to underestimate the costs of reversing inflation pressures once entrenched.



In emerging market economies, and to a lesser extent also in some advanced economies, inflation rates have picked up recently (Graph 9, left-hand panel). In fact, there have been two bouts of rising inflation since 2006. Both were associated with rising commodity prices. The first episode ended in 2008, as the international banking crisis deepened. The second appears to have ended last year, as the sovereign risk crisis in Europe intensified. One way to read this record is that central banks have been successful in curbing the worst inflation pressures. An alternative way is that inflation pressures are poised to rise again at some point in the future in the absence of significant financial headwinds.

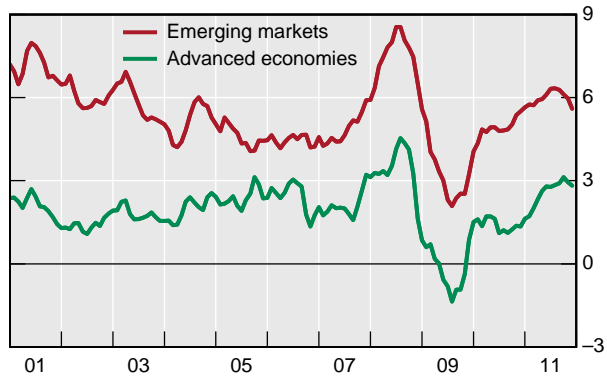
Reinforcing this concern is a recent pickup in the volatility of long-term inflation expectations (Graph 9, right-hand panel). While the level of inflation expectations remains anchored in the core advanced economies, the increase in their volatility potentially indicates rising uncertainty about the longer-term inflation outlook, with the caveat that this increase might also be driven at least in part by purely technical factors such as liquidity effects.

Graph 9

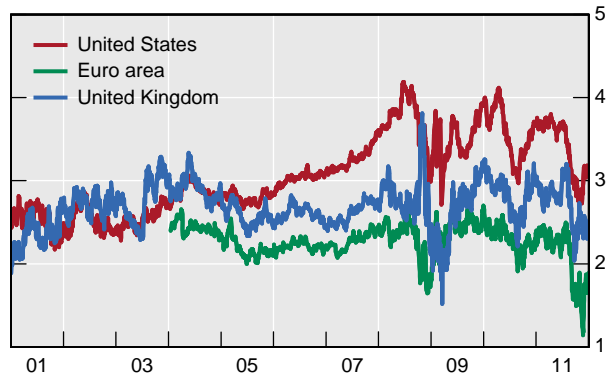
**Inflation and inflation expectations**

In per cent

Headline inflation rates<sup>1</sup>



Inflation expectations<sup>2</sup>



<sup>1</sup> Year-on-year percentage changes. Aggregates based on 2005 GDP and PPP exchange rates of the countries listed. Emerging markets: Argentina, Brazil, Chile, China, Colombia, the Czech Republic, Hong Kong SAR, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Peru, the Philippines, Poland, Russia, Saudi Arabia, Singapore, South Africa, Thailand and Turkey. Advanced economies: the euro area, Japan, the United Kingdom and the United States. <sup>2</sup> Five-year forward five-year-ahead inflation-linked swap rate.

Sources: Bloomberg; Datastream; national data.

Against this background, it is useful to hark back to the lesson of the “Great Inflation” of the 1970s (Graph 10). At that time, central banks tried to stimulate growth and employment by maintaining an extremely accommodative monetary policy stance for an extended period of time. The result, however, was only runaway inflation. And bringing inflation back under control required a very aggressive and persistent monetary tightening which contributed to the deep recessions of the early 1980s. Of course, the economic environment today appears



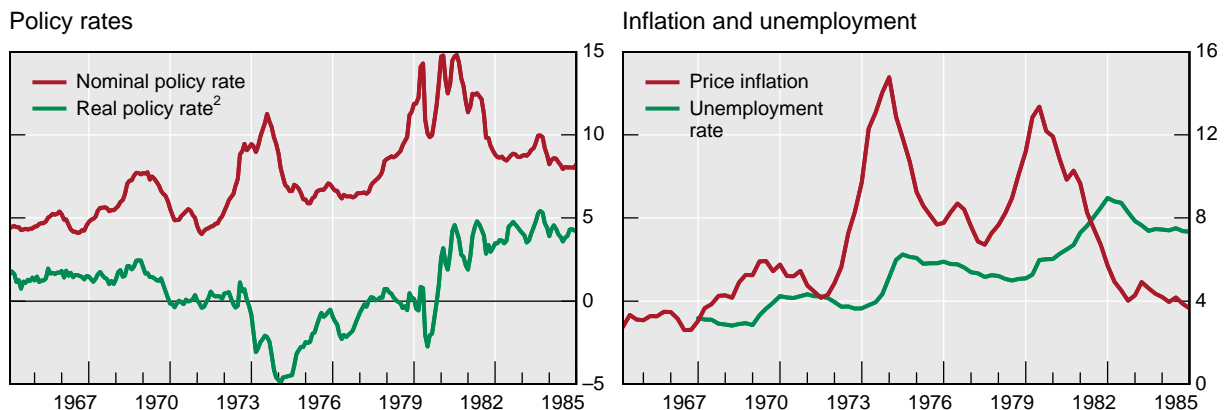


to be very different from that in the 1970s. In particular, globalisation and greater flexibility in labour markets have contributed in a powerful way to price stability. But it is not clear how long the “globalisation dividends” will last. And it is hard to imagine how keeping an unusually accommodative monetary policy for unusually long could ultimately fail to raise risks to price stability.

Graph 10

**The Great Inflation of the 1970s<sup>1</sup>**

In per cent



<sup>1</sup> Weighted averages of major advanced countries (G7), based on 2005 GDP and PPP exchange rates. <sup>2</sup> Nominal policy rates adjusted for consumer price inflation.

Sources: Bloomberg; Datastream; national sources.

### III. A new frontier for monetary policy

How to prevent the risk of inflation surprises? To answer this question, we need to forge a consensus on what we could call “the new frontier of monetary policy”, ie clarify the boundaries between monetary policy and the respective domains of financial stability, exchange rate policy and fiscal policy. Let me outline what I see as the main elements of such a consensus.

#### Monetary policy and financial stability: addressing the asymmetry problem

Addressing the financial dominance risk requires moving towards a more symmetric conduct of monetary policy over the financial cycle. Monetary policy needs to lean more aggressively against the boom and ease less aggressively and persistently in the bust.

As long advocated by the BIS, central banks need to put more weight on the risks associated with the build-up of financial imbalances. Low and stable inflation in the short term is no



guarantee of lasting price stability. In the past decade, accommodative monetary conditions have arguably contributed to massive underpricing of risk and unsustainable increases in credit and asset prices without sending consumer price inflation higher. The corresponding financial imbalances resulted in financial instability with serious macroeconomic consequences, damaging the transmission of monetary policy and threatening deflation.

The main lesson from this experience is that achieving lasting price stability requires monetary policy to lean against the build-up of financial imbalances, even if near-term inflation remains low and stable. Addressing this problem calls for an extension of policy horizons beyond the two years typical of inflation targeting regimes. That way, the risks to macroeconomic stability posed by destabilising financial cycles would be more likely to appear on a central bank's radar screen. And by lengthening the horizon, central banks could gain room for manoeuvre to lean against financial booms even when near-term inflation remains low and stable. Obviously, lengthening the policy horizon should not be interpreted in a mechanical way, since no one can predict the timing and macroeconomic costs of the unwinding of financial imbalances. Rather, it is simply a means of assessing more systematically the balance of risks.

I am pleased to see that central banks are taking steps in this direction. For instance, the Canadian authorities changed their inflation targeting framework to address financial cycles. The recent renewal of the policy framework explicitly recognised that “a tighter monetary policy that allows inflation to run below target for a longer period than usual could help to counteract pre-emptively excessive leverage and a broader build-up of financial imbalances”.<sup>3</sup>

Restoring symmetry in the monetary policy response to financial cycles also requires reconsidering monetary policy responses to financial busts.<sup>4</sup> The prevailing view, which prescribes very aggressive and prolonged monetary easing, drove policy rates into the ground and balance sheets through the roof. To my mind, such a view underestimates the resulting collateral damage. When a crisis erupts, central banks should certainly do everything in their power to prevent the collapse of the system. But once crisis management is over, the policy focus should shift towards promoting the necessary post-crisis adjustments in balance sheets. Obviously, this is a task that goes well beyond what monetary policy can

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<sup>3</sup> See Bank of Canada, “Renewal of the inflation-control target. Background information”, November 2011.

<sup>4</sup> See C Borio, “Central banking post-crisis: what compass for uncharted waters?”, *BIS Working Papers*, no 353, September 2011.



do. It calls for in-depth intervention in the balance sheets of the sectors affected, not least banks, underpinned by the use of any available fiscal capacity, ie putting the government's balance sheet to effective use. The way Nordic countries dealt with their banking crises in the early 1990s is a role model for others.

Another aspect of the asymmetry problem is the bias of the global financial communication system towards accommodative monetary policy. Central banks' communication is not the only source contributing to the formation of market expectations of monetary policy decisions. The large financial institutions that dominate the global communication in financial markets also exert influence on market expectations of monetary policy measures. This is done via the host of monetary policy analyses and comments produced each day by the research departments of these financial firms, which in most cases call consistently for ever lower policy rates and ever larger interventions from central banks. Through this public communication channel, the global financial firms can influence expectations of monetary policy decisions. One response to this in the conduct of monetary policy is for central banks to move away from the almost full predictability of their decisions, the advisability of which was the mainstream view for the past 15 years, and instead to reaffirm their full capacity, if necessary, to surprise the market.

### **Monetary policy and exchange rate policy**

How should one address the exchange rate dominance risk? First of all, there is a need to recognise that exchange rate targeting can easily be inconsistent with the preservation of domestic price stability. A monetary policy that strives to maintain a given level of the exchange rate will only by accident achieve a given level of the inflation rate.

The simplest way to address the exchange rate dominance problem would be to allow for greater exchange rate flexibility. Of course, this does not, and should not, rule out interventions to limit excessive exchange rate volatility. They would, however, occur more symmetrically and not lead to a steep trend increase in foreign exchange reserves.

In addition, enhanced central bank cooperation may be needed to better internalise the global side effects of individual monetary policies. This applies to both emerging economies, which have to consider the global implications of their exchange rate policies, and advanced economies, which have to consider the global spillover effects on exchange rate constellations of their ultra-accommodative monetary policies.

We are, of course, far from forging effective cooperative arrangements. But we are making progress. The frameworks for global economic policy cooperation now involve both



advanced and emerging market economies. In addition, regional efforts are also contributing to a strengthening of global central bank cooperation. The success of SEACEN is a good example of this. It will be important to ensure that regional efforts effectively complement global cooperation.

### **Monetary policy and fiscal policy**

Avoiding fiscal dominance will require decisive steps by central banks, but also by other policymakers. Central banks will need to restore a clearer separation between monetary and fiscal policy. The central bank has a monopoly over interest rate policy, but not over balance sheet policy. Almost any balance sheet policy of the central bank could be replicated by the government. Conversely, any balance sheet policy the central bank implements has an impact on the consolidated government sector balance sheet. Balance sheet policy needs to be viewed as part of this larger balance sheet. As a consequence, the line between monetary and fiscal policy becomes blurred when the central bank continuously engages in balance sheet policies.<sup>5</sup> Exiting from their unconventional balance sheet policies as soon as circumstances permit would be an important step for central banks to restore a clearer boundary vis-à-vis the fiscal domain. In particular, central banks need to consider that large-scale purchases of government bonds may ultimately give rise to the impression that they are monetising the public debt.

This brings me to an important question that has become topical in the policy debate: whether the long-term interest rate may become, as Keynes advocated, a policy variable,<sup>6</sup> a permanent instrument for monetary policy. High government debt will increase the uncertainty about the future path of interest rates. This may well reduce the degree of asset substitutability between short-dated and long-dated paper, possibly weakening the predictability of the impact of short-term rates along the yield curve. On these grounds, it would be tempting to rely on operations in long-term bond markets to increase the effectiveness of monetary policy. But there are also strong counterarguments. Against the background of rising risks of fiscal dominance, and the possibility that central bank bond purchases may be seen as a manifestation of that risk, there appears to be a strong case for

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<sup>5</sup> See C Borio and P Disyatat, "Unconventional monetary policies: an appraisal", *BIS Working Papers*, no 292, November 2009.

<sup>6</sup> See P Turner, "Is the long-term interest rate a policy victim, a policy variable or a policy lodestar?", *BIS Working Papers*, no 367, December 2011.



central banks to go back, in normal times, to operating only at the short end of the yield curve.

Fiscal policymakers should also make their contribution to avoiding the risk of fiscal dominance. They should make clear that inflation cannot be the solution to the problem of government debt overhang, and take decisive actions to ensure the sustainability of public finances. If fiscal sustainability is in doubt, sooner or later concerns will mount that monetary policy will ultimately be subordinated to the fiscal authority and serve the government's budgetary needs rather than price stability. This would undermine central bank credibility even if central banks intended to remain firmly focused on maintaining price stability. Credible fiscal consolidation is essential.

### **Refocusing monetary policy on lasting price stability**

The bottom line of all these considerations is that monetary policy should be refocused on maintaining lasting – and the key word here is “lasting” – price stability. In some respects, the adoption by the Federal Reserve of a clearer inflation objective of 2% is a very positive development, elevating the probability that central banks will succeed in preventing inflation in the perilous period ahead.

We need to make sure that the benefits of price stability are not forgotten. Recently, there have been recommendations by prominent economists that central banks should, as a lesson from the crisis, aim for higher inflation targets.<sup>7</sup> Some go even as far as to propose that “inflation is not the problem, but the solution”.<sup>8</sup> There is a clear risk of a resurgence of such calls for higher inflation as the “solution” to global overindebtedness. These calls need to be forcefully resisted. Monetary policy's primary role is to preserve price stability. And price stability is in turn the only goal monetary policy can effectively pursue over the longer term.

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<sup>7</sup> See eg O Blanchard, G Dell'Ariccia and P Mauro, “Rethinking macroeconomic policy”, *IMF Staff Position Note* 10/03, February 2010.

<sup>8</sup> “L'inflation n'est pas le problème, c'est la solution”, interview with Paul Krugman, *Le Monde*, 30 January 2012.



## **Setting limits to central bank intervention in financial markets**

I have argued that the very short-term success of unconventional measures leads to expectations that central banks will continue to intervene heavily in markets. Central banks should strive to avoid creating such expectations, by making it clear that there are time and size limits to their interventions, while at the same time keeping open the option to intervene again if circumstances require it. More generally, as crisis management gives way to crisis resolution, it is important that central banks highlight the limitations of their actions and the need for other policies to take over in order to ensure the necessary balance sheet repair and adjustment of the real economy.

There are good reasons for setting clear time limits to unconventional balance sheet policies. Central banks should let financial markets grope towards their own prices rather than serving as the “lenders (or buyers) of first resort” each time stress in markets appears. Unconventional balance sheet policies need to be withdrawn without delay once central banks judge that these policies have achieved their goal.

Likewise, size limits are important. Over time, central banks should look to unwind their intervention in financial markets so as to reduce the credit and market, including exchange rate, risks accumulated on their balance sheets. In a word, they should dial back their risk tolerance to pre-crisis levels. This implies extending credit on a fully collateralised basis, leaving the risky and discretionary art of unsecured lending to private bankers answerable to their shareholders or possibly, during the crisis resolution stage, to the government. Ultimately, this should also help to safeguard their precious operational independence.

## **Conclusion: rejecting the theory of the printing press**

Central banks need to recognise, and to communicate, the limitations of monetary policy. They should reject calls for unlimited intervention to pursue goals that are beyond their reach. Not least, the perception that the central banks can do “whatever it takes” to address any solvency problem of banks and sovereigns is dangerous. The ultimate source of central banks’ power is their ability to supply funding liquidity ex nihilo. That is what underpins the smooth functioning of payment and settlement systems, their control over short-term rates and their influence on broader financial conditions. But that power has to be used wisely. For it is effective only as long as the central bank retains the confidence of the public. And that confidence can evaporate faster than we think.

Let me finally comment on the increasingly popular view among market commentators that access to a printing press boosts the solvency of the sovereign. The general sovereign debt



crisis in advanced economies has raised crucial questions about what is mislabelled a lender of last resort in the government bond market, namely a central bank with the capacity to buy, if necessary, unlimited quantities of government debt, using money produced by the “printing press”.

It is argued in some circles that governments that issue bonds in their own currencies benefit from having a central bank guaranteeing that the cash will always be available to pay back the bondholders at maturity (the so-called lender of last resort for sovereigns). By contrast, the argument goes, the euro zone governments issue debt in a “foreign” currency which they do not control by fiat, and thus these governments cannot guarantee to the bondholders that they will always have the necessary liquidity to pay off the bond at maturity.<sup>9</sup> This line of argument suggests that there is no such thing as a generalised sovereign debt crisis among major advanced economies and that the crisis is limited to euro area sovereigns that are unable to print their own money.

It is important for the central bank community to refute this argument made in the context of the euro zone debate that a country with command of its own printing press has a comparative advantage over a country belonging to a monetary union because of its ability to inflate away its nominal debt. According to this view, the probability of sovereign default would be lower in countries with their own central bank since, in the worst case, the central bank’s printing press could be used to pay back the government’s debts. This argumentation overlooks the fact that inflation, which erodes the real value of public debt, is just another form of default. Whether the debt is not paid back in full or whether its real value is eroded by inflation ultimately does not make any difference to investors. Inflation destroys the value of fixed income claims as surely as default.<sup>10</sup> Central banks, as the guardians of price stability, should universally dismiss the notion of being the lender of last resort for their respective sovereigns, a notion that backs us onto the slippery slope of debt monetisation. The theory of the printing press is just another illustration of the illusion of unlimited intervention.

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<sup>9</sup> See P de Grauwe, “The European Central Bank: lender of last resort in the government bond market?”, *CESifo Working Papers*, no 3569, Category 7: Monetary Policy and International Finance, September 2011.

<sup>10</sup> See C Goodhart, “Sovereign ratings when default can come explicitly or via inflation”, *VOX*, 2 February 2012. Goodhart suggests that government credit ratings should be augmented with a second rating measuring the potential loss of real value of government debt obligations, whether by default or inflation.