

# CENTRAL BANK MONITORING – SEPTEMBER

Monetary and Statistics Department  
Monetary Policy and Fiscal Analyses Division

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## In this Issue

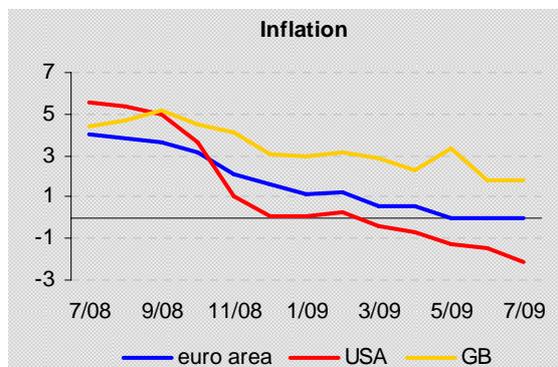
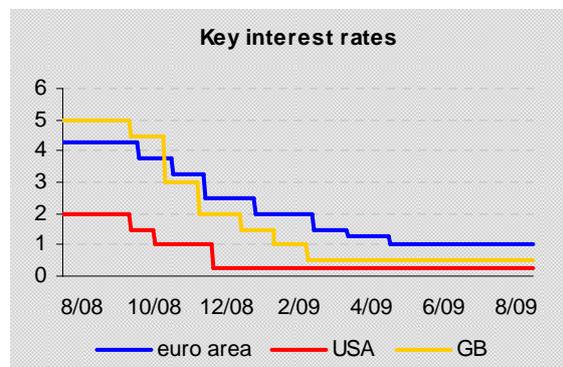
The past three months have again seen the continuation of monetary policy easing through both interest rate cuts, or in the case of key central banks, in the form of the continuing application of non-conventional monetary policy instruments. Central banks thus responded to weak economic activity and low, in many countries even negative, inflation. “Spotlight” is devoted to the ways of abandoning non-conventional monetary policy instruments, i.e. “exit strategy”. It is followed by A. Haldane’s speech on the lessons which the global financial crisis has taught the world economy.

## 1. Latest monetary policy development at selected central banks

### Key central banks of the Euro-Atlantic area

	<a href="#">Euro area (ECB)</a>	<a href="#">USA (Fed)</a>	<a href="#">United Kingdom (BoE)</a>
Inflation target	< 2% <sup>1</sup>	n.a.	2%
MP meetings (rate changes)	2 Jul (0.00) 6 Aug (0.00) 3 Sep (0.00)	23 – 24 Jun (0.00) 11 – 12 Aug (0.00)	8 – 9 Jul (0.00) 5 – 6 Aug (0.00)
Current basic rate	1.00%	0 – 0.25%	0.50%
Latest inflation	-0.2% (Aug 2009) <sup>2</sup>	-2.1% (Jul 2009)	1.8% (Jul 2009)
Expected MP meetings	8 Oct 5 Nov 3 Dec	22 – 23 Sep 3 – 4 Nov	9 – 10 Sep 7 – 8 Oct 4 – 5 Nov
Other expected events	3 Dec: publication of forecast	9 Sep, 21 Oct, 2 Dec: publication of Beige Book	11 Nov: publication of IR <sup>4</sup>
Expected rate movements <sup>3</sup>	→	→	→

<sup>1</sup> ECB definition of price stability according to the ECB; <sup>2</sup> preliminary estimate; <sup>3</sup> The direction of the expected change in rates in the coming three months is taken from the Consensus Forecast survey; <sup>4</sup> Inflation Report

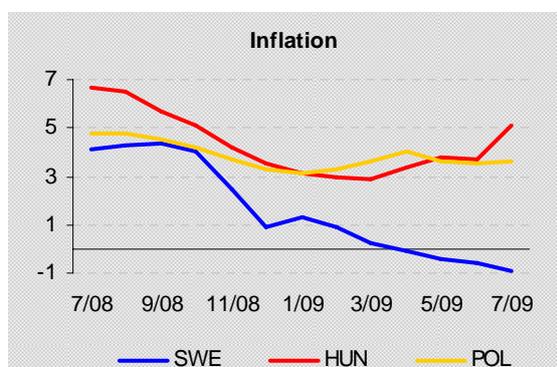
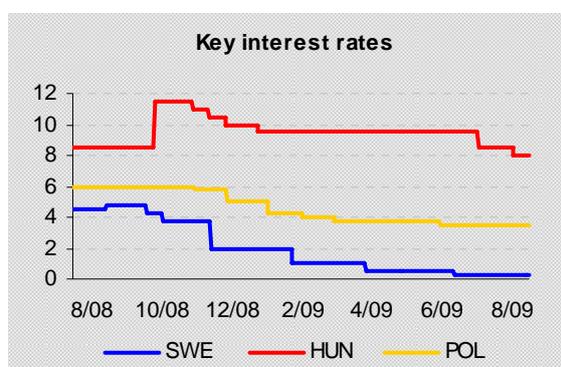


The Fed, ECB and BoE, owing to very low or almost zero interest rates, continued in their expansionary effect on their economies through the non-conventional monetary policy instruments (see Spotlight in the [previous Central Bank Monitoring](#)). The ECB is facing a low domestic demand and weak domestic inflation pressures. However, during August, external demand saw a recovery, there were moderate signs of the improvement of sentiment and confidence indicators and a fall in industrial production came to a halt. The **Fed** continues in its non-conventional monetary policy in an effort to ease monetary conditions, with purchases of debt instruments being likely to be completed in October 2009. A decline in economic activity was halted and financial market conditions further improved. Household consumption also stopped falling, however it remains subdued due to the weak labour market. The **BoE** left its key rate unchanged and continued to purchase securities, particularly government bonds. At its August meeting, the BoE increased its planned volume of purchases of debt securities by GBP 50 billion to GBP 175 billion (as of 27 August 2009, purchases were made worth GBP 137 billion).

## Selected inflation-targeting central banks of EU countries

	<u>Sweden (Riksbank)</u>	<u>Hungary (MNB)</u>	<u>Poland (NBP)</u>
<i>Inflation target</i>	2%	3.0%	2.5%
<i>MP meetings (rate changes)</i>	8 Jul (-0.25) 2 Sep (0.00)	22 Jun (0.00) 27 Jul (-1.00) 24 Aug (-0.50)	23 – 24 Jun (-0.25) 28 – 29 Jul (0.00) 25 – 26 Aug (0.00)
<i>Current basic rate</i>	0.25%	8.00%	3.50%
<i>Latest inflation</i>	-0.9% (July 2009)	5.1% (July 2009)	3.6% (July 2009)
<i>Expected MP meetings</i>	21 October	28 Sep 19 Oct 23 Nov	29 – 30 Sep 27 – 28 Oct 24 – 25 Nov
<i>Other expected events</i>	22 Oct: publication of Monetary Policy Report	25 Nov: publication of IR <sup>4</sup>	28 Oct: Publication of IR <sup>4</sup>
<i>Expected rate movements<sup>3</sup></i>	→	→	↓

<sup>4</sup> Inflation Report



The **Riksbank** decided in July to cut its key interest rate by 0.25 p.p. to 0.25% and clarified, that it was going to leave this low key rate unchanged until autumn of 2010. The deposit rate broke through a zero level and was set at -0.25%. Due to the fact, that the key interest rate bottomed out, the economic development continues to be weak and the situation in the financial markets has is still not normal, the Riksbank has decided to take supplementary measures to ease monetary policy. The Riksbank will extend loans to banks of up to SEK 100 billion at a fixed interest rate with maturity of 12 months. According to the Riksbank, this measure should contribute to lowering the interest rate on corporate and household loans. At the September meeting, the Riksbank pointed out that GDP growth in Q2 had been slightly stronger than expected.

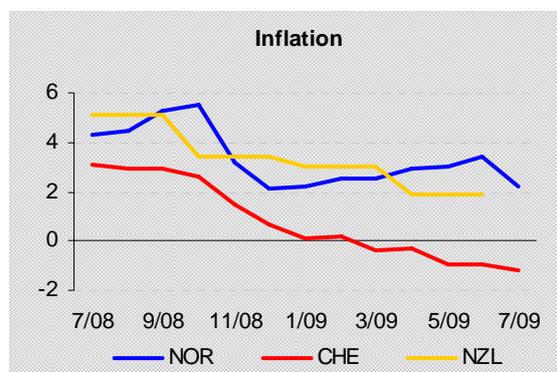
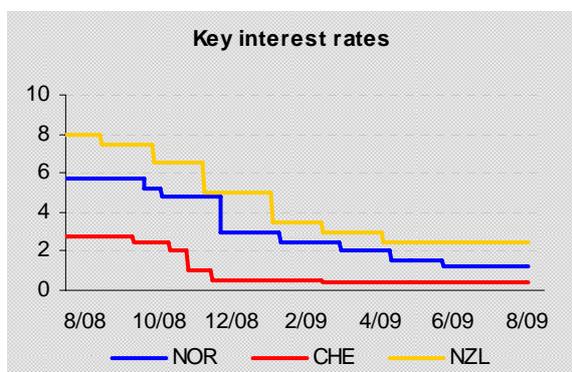
The **MNB** returned after a pause to monetary policy easing and cut the interest rates in two steps, by 1.00 p.p. and by 0.50 p.p., to 8%. The year-on-year inflation rate in Hungary rose from 3.7% in June to 5.1% in July, owing to a rise in indirect taxes. This increase can be viewed as temporary. The strong contraction of the Hungarian economy was attributable to a decline in domestic demand brought about by a significant decrease in fixed investment and inventories of firms. The economic recovery in Hungary is expected in 2010. According to the MNB, the biggest risk to the inflation long-term outlook is growth in inflation expectations in response to previous inflation shocks.

The **NBP** cut its key interest rates by 0.25 p.p. to 3.50% in June. At its meeting in July and August left its interest rates unchanged. Even despite the subdued economic activity and the industrial production fall, positive signals can be observed from the indicators of economic sentiment. GDP growth in Q2 not only remained positive, but compared to Q1, even picked up. The July inflation was slightly above the upper boundary of the inflation-target tolerance band, with tobacco prices growing due to the change in indirect taxes and increasing fuel prices contributing to rise in inflation. According to the NBP Council, the probability that inflation in the medium term will be below the inflation target is higher, than that it will be above the inflation target.

Other selected inflation-targeting countries

	<u>Norway (NB)</u>	<u>Switzerland (SNB)</u>	<u>New Zealand (RBNZ)</u>
<i>Inflation target</i>	2.5%	< 2%	2% <sup>6</sup>
<i>MP meetings (rate changes)</i>	17 Jun (-0.25) 12 Aug (0.00)	18 Jun (0.00)	11 Jun (0.00) 30 Jul (0.00)
<i>Current basic rate</i>	1.25%	0 – 0.75% <sup>5</sup>	2.50%
<i>Latest inflation</i>	2.2% (July 2009)	- 1.2% (July 2009)	1.9% (Q2 2009)
<i>Expected MP meetings</i>	23 Sep 28 Oct	17 Sep	10 Sep 29 Oct
<i>Other expected events</i>	28 Oct: publication of IR <sup>4</sup>	1 Oct: publication of Monetary policy report	10 Sep: Monetary policy statement
<i>Expected rate movements<sup>3</sup></i>	→	→	↓

<sup>4</sup> Inflation Report ; <sup>5</sup> Chart displays the centre of the band; <sup>6</sup> The centre of the band: 1 – 3%



The **Norges Bank (NB)** continued to ease its monetary policy in June and lowered its key rate by 0.25 p.p. to 1.25%. This was a reaction to a lower outlook for wage growth, low capacity utilisation and the possibility of inflation falling below the target. According to the Norges bank’s outlook and the assessment of general risks, the key rate reduction had been appropriate in June. The August meeting, affected by more favourable news, particularly regarding production and employment, did not bring any further easing of monetary policy and Governor Svein Gjedrem indicated that the key rate may be increased sooner than assumed at the June meeting.

The **Swiss National Bank (SNB)** did not change the corridor for its key interest rate (LIBOR on the Swiss franc-denominated deposits), but continued its expansive monetary policy through unconventional instruments. The SNB continues to provide liquidity and purchase private bonds denominated in CHF in order to decrease the risk premium in this segment. According to the forecast, the inflation outlook for 2010 increased slightly, from the original 0.1% to 0.4%.

The **RBNZ** left its key interest rates unchanged at 2.50%. The outlook for economic activity remains weak, its recovery should be slow. The outlook for inflation indicates a temporary fall to below the lower boundary of the target band at the end of 2009. Inflation should return to its target at the start of 2010. Lower-than-expected inflationary pressures still provide a slight room for key rate reduction. Governor A. Bollard expects the key rate to be at the current level until the second half of 2010, but at the same time he did not exclude its slight lowering in the forthcoming quarters.

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## 2. News

### [The Fed extends its liquidity programmes ...](#)

Although the financial market conditions have gradually improved, there are still problems in some areas. To ensure the availability of loans to businesses and households, some programmes have been extended until the start of 2010. The Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF), The Commercial Paper Funding Facility (CPFF), The Primary Dealer Credit Facility (PDCF) and The Term Securities Lending Facility (TSLF) have been extended until 1 February 2010. Other changes include, besides the extension of swap lines with other world central banks, a gradual reduction in the size of TAF (term auction facility). Because of the excess of funds' supply over demand, the size of TAF auctions was decreased from USD 150 billion to USD 125 billion in July and [USD 100 billion in August](#).

### [...the TALF programme has been extended as well...](#)

Owing to the problems persisting on the markets of asset-backed securities (ABS) and commercial mortgage-backed securities (CMBS), the Fed and the US Ministry of Finance extended the TALF programme for lending against newly issued ABS and the existing CMBS until the end of March 2010. The TALF lending against newly issued CMBS has been extended until the end of June 2010. The expansion of collateral eligible for the TALF is not expected at present.

### [...and the Fed starts to issue monthly reports on its credit and liquidity programmes](#)

The first monthly report on Federal Reserve Credit and Liquidity Programs and the Balance Sheet which releases the data on borrowing and collateral including the number of borrowers and borrowing amounts by type of institution, collateral by type and credit rating, and data on the concentration of borrowing, was issued in June. The report also includes information on liquidity swap line usage by country or the development of the individual Fed programmes. The reports should be [published](#) approximately two weeks after the end of month.

### [Ben S. Bernanke nominated for the second term as Fed Chairman](#)

The US President Barack Obama announced on 25 August 2009 the nomination of Ben S. Bernanke for Fed Chairman. Mr Bernanke's first four-year term as Fed Chairman ends in January 2010. The nomination has still been approved by the Senate.

### [ECB, BoE and SNB extend swap lines with Fed and continue to provide dollar liquidity](#)

The temporary bilateral currency arrangements (swap lines) between the Fed, the ECB, the Bank of England and the Swiss National Bank whereby the central banks make foreign currency liquidity available to one another have been extended until 1 February 2010. At the same time, the above European central banks will continue to provide dollar liquidity at terms of 7 to 84 days at least until the end of September 2009. Given the improved conditions on the financial market and the limited demand, the dollar liquidity-providing operations at terms of 28 days were discontinued.

### [ECB and SNB continue to provide franc liquidity](#)

The ECB in agreement with the Swiss National Bank will continue conducting one-week Swiss franc liquidity-providing swap operations until at least 31 October 2009 to support further improvements on the franc money market.

### [Bank of England introduces the Secured Commercial Paper Facility...](#)

At the end of July, the Bank of England introduced the Secured Commercial Paper Facility (SCP) to support the provision of liquidity to a broad range of companies. The SCP will offer to buy securities backed by assets (e.g. trade receivables), whose quality will be consistent with the requirements of the Asset Purchase Facility (APF) programme. The Facility will be available from August 2009 until the extraordinary conditions on the corporate credit market, which are disturbing the financing of real economic activity, have faded.

### [...and in August the BoE increases the size of the Asset Purchase Facility programme and](#)

**changes its approach to reserve provision**

In August, the Bank of England decided to increase the size of the Asset Purchase Facility (APF) programme by GBP 50 billion to GBP 175 billion. At the same time, it extended the group of British government bonds (gilts) that may be purchased. These at present include all common government bonds with minimal residual maturity longer than three years. The BoE at the same time cancelled open market operations for weekly liquidity provision and will provide reserves only in long-term open market repo operations.

**Norges Bank provides a loan to the International Monetary Fund**

The Norges Bank provided a borrowing facility to the International Monetary Fund amounting to NOK 30 billion with a five year maturity. The loan was approved by the Norwegian Parliament on 15 June 2009. The main reason is to ensure that the IMF has sufficient lending capacity to finance loans to countries experiencing balance of payments problems.

**Riksbank extends the swap line with the Fed and uses the swap line with the ECB...**

The Riksbank borrowed EUR 3 billion from the ECB within the swap line, which had been agreed already in 2007 up to EUR 10 billion. The reason is to strengthen foreign currency reserves in an effort to ensure the Riksbank's readiness to safeguard financial stability including the stability of payment systems in Sweden.

**...and reaches the bottom rate level and introduces new loans to banks**

In July, the Riksbank decreased the repo rate to 0.25%, the marginal lending facility to 0.75% and the deposit rate to -0.25%. According to the bank, the financial market situation is still not normal, although the rates have reached the lower limit. For this reason, a supplementary measure has been introduced in the form of loans totalling SEK 100 billion to the banks at a fixed interest rate and with a maturity of 12 months. This measure should help to reduce client interest rates for companies and households.

**Swiss Reference Rates – new rates for Swiss financial markets**

The Swiss National Bank and SIX Swiss Exchange Ltd have launched [new reference rates](#) for Swiss financial markets, Swiss Reference Rates. These rates will be based on transactions concluded and tradable Swiss franc repo interbank market quotes. They will be calculated for a term spectrum ranging from overnight to six months. The Swiss Average Rate Overnight (SARON) replaced the previously used repo overnight index and will be a basis for determining the franc's yield curve.

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### 3. Spotlight: Exit strategy from non-conventional monetary policy

*The previous Central Bank Monitoring discussed non-conventional monetary policy and its instruments as applied by selected central banks (the ECB, the Fed, the BoE and the SNB). We introduced the instruments that individual banks are currently using to ease monetary conditions, i.e. to reduce yields on selected financial asset classes in the situation of the global financial and economic crisis. In this Spotlight we take a look at considerations and options relating to the termination of the implementation of non-conventional monetary policy, or the so-called exit strategy.*

The implementation of non-conventional monetary policy is associated with a considerable degree of uncertainties and risks. Such uncertainties and risks reflect the fact that the introduction of such policy leads central banks to temporarily leave the familiar and well-tested framework of standard monetary policy whose channels of the transmission mechanism are at least broadly known. Given all the said uncertainties, it is naturally necessary to set the timing of the launching of the operations, their volume as well as a particular counterparty for the operation when introducing specific non-conventional instruments – thus, to draw up a relatively precise strategy for the “entry” to the given market or the introduction of the market support programme.

However, this necessary “entry” strategy should be followed by an equally important “exit” strategy. It lays down the manner of exiting a particular market or programme and estimates related effects. The prevailing view is that in the optimum case, the exit strategy should be outlined before the actual entry to a particular market or before a programme is launched. Central banks should be aware of the measures to which they will have to resort at a time when it will be necessary to terminate the easing of monetary policy, while rising inflationary pressure will, by contrast, require tighter monetary policy.

There is a view in the central bankers’ discussions that the timing and the speed of withdrawing non-conventional instruments from the central bank’s instruments, thus from the economy, are the key parameters when formulating and implementing the exit strategy. An early withdrawal of the measure may undermine the emerging economic recovery. By contrast, a belated decision in this matter may endanger the medium-term balance of the economy and the financial sector. The phase of withdrawing the measures from the economy should respect not only the narrower monetary-policy targets and the inflation outlook but also the need to maintain and strengthen financial stability and to renew an efficient functioning of the banking sector. Of course, central banks should not use such forms of non-conventional monetary policy, effects of which would be difficult to eliminate in a period of monetary policy tightening. Where a central bank’s non-conventional monetary instruments and a government’s fiscal measures to support the financial sector were combined, it seems appropriate to coordinate the formulation and implementation of the exit strategy between the two policy authorities. It may be also necessary to coordinate the exit strategies between individual central banks or states. The exit strategy may be regarded specifically with respect to a particular non-conventional monetary policy instrument used (see the items below), where Item 2 – Exit strategy from the purchase of debt securities seems to be most problematic.

#### 1. Exit strategy from lending programmes to support liquidity

The programmes were introduced in order to ease financing conditions on certain financial asset markets and the interest in such programmes was associated with the intensity of stress in the financial sector. The programmes – particularly those by the Fed<sup>1</sup> – were formed in such a manner

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<sup>1</sup> Programmes focusing on Primary dealers – *Primary Dealer Credit Facility (PDCF)* and *Term Securities Lending Facility (TSLF)*; Programmes focusing on particular markets and entities operating on them – *Asset Backed Commercial Paper Money Market Mutual Fund, Liquidity Facility (AMLF)*, *Commercial Paper Funding Facility (CPFF)*, *Money Market Investors Funding Facility (MMIFF)*, *Term Asset-Backed Securities Loan Facility (TALF)*.

that the exit is to some extent automatic – with the improving conditions on the markets concerned. Most Fed programmes explicitly include a clause that programmes will cease to be in operation once the conditions on markets have improved.<sup>2</sup> It has been also suggested that these programmes should be terminated in 2010. The latest developments suggested a declining trend in the use of these programmes; in particular, volumes of short-term lending fell by more than half (from USD 1.5 trillion at the end of 2008 to USD 600 billion in July 2009). With the volume of the applied liquidity instruments decreasing, there will also be a decline in the monetary base, which is affected by these programmes.

The **BoE** launched the [Special Liquidity Scheme](#) in April 2008, in which it allowed banking sector institutions to temporarily swap some of their illiquid assets for UK Treasury Bills. The option to apply to the scheme closed at the end of January 2009 and the participating entities are allowed to hold the „borrowed“ highly liquid assets for up to three years. The exit strategy in this programme specified in advance the approximate time and volume frames.

**The exit strategy from ECB’s refinancing programmes** theoretically means an adjustment to the conditions of the main liquidity-providing tender. It is provided at a fixed rate (currently at 1% for the 12M tender) with full allotment. We estimate that the exit strategy will probably be in this case a restoration of the original conditions. The tender will be thus probably again provided at a variable interest rate based on the auction, a specific volume of funds will be set for each tender, and maturity will probably be reduced to a maximum of 3 months. The conditions for collateral accepted will probably be tightened again. However, the ECB has not officially commented closer on the restoration of the original conditions.

## 2. Exit strategy from purchases of debt securities

By purchasing debt securities (for example, government and private bonds), a central bank expands its securities portfolio. The exit strategy from this form of non-conventional monetary policy can then be understood in two ways. In the narrower sense, as a termination of purchases of bonds; in the wider sense, as activities leading to the elimination of effects generated by previous purchases of bonds. Even in the case of these activities, there are in principle two potential procedures for the central bank:

- (a) It is possible to **hold** the bonds **until maturity** and to collect coupon payments while holding the bonds and principal at the end of their maturity, whereby there will be no additional impulses affecting the prices and bond yields or fluctuations or more serious distortions on the bond market. At the same time, when holding these bonds until maturity, liquidity issued by previous purchases, e.g. in the form of reverse repos, can be sterilised.
- (b) It is possible to **sell the bonds** in a situation when it is clear that economic activity has recovered and key interest rates have bounced from the bottom. Sales will push prices of bonds downwards and their yields upwards. It is thus clear that bonds will probably not be sold on a mass scale at a single moment but the sale will be divided into several phases in compliance with the central bank’s strategy reflecting its view of the economy and inflation and based on its knowledge of the given bond market. A gradual sale should not disturb stability of markets and lead to their volatility.

Specific procedures of individual central banks are likely to vary due to the volumes of purchased bonds, characteristics of individual markets and the chosen strategy.

## 3. Exit strategy from the obligation to keep nominal interest rates low

The Swedish central bank – Riksbank – communicated a commitment to maintain the key interest rate (repo rate) at a very low level for a time. After the last cut in the repo rate to 0.25% on [2 July 2009, it clarified](#) its communication and declared its willingness to maintain the repo rate at 0.25% until

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<sup>2</sup> Their introduction was explicitly conditional on persisting “*unusual and exigent circumstances*”.

autumn 2010<sup>3</sup>.

We believe that the exit strategy from the publicly declared commitment is possible either upon expiry of the time horizon of the declared commitment or if an increase in inflation or its outlook is reached. An immediate exit from the commitment would come into question if there was a danger of a sizeable overshooting of the inflation target. The central bank's credibility and communication are in this case the key parameters of a successful exit strategy from this form of non-conventional monetary policy.

**Combination of measures is most probable and the timing is important**

The key question is whether to withdraw all non-conventional measures from the economy first and only then to increase interest rates or whether to take all these measures simultaneously. The decision on the timing and the manner of the exit strategy is not trivial.

In this context, [Quarterly Bulletin 2009](#) (p. 98) issued by the BoE gives options for an exit strategy and simultaneous monetary policy tightening at a time when the outlook for inflation is expected to rise above the 2% inflation target. In order to tighten monetary policy, (i) a combination of instruments can be used, consisting in an increase in the key interest rate and simultaneous sales of purchased assets (government bonds); or (ii) the BoE may issue treasury bills which should reduce the volume of liquidity, without having to sell financial assets in the BoE's balance sheet. The decision on the way of tightening monetary policy will depend on the Bank of England's Monetary Policy Committee.

Fed Chairman Ben Bernanke outlined the exit strategy of the US central bank within his [hearing before the Congress](#). The FOMC plans to use the following tools (or their combination) to withdraw its policy stimulus in a smooth and timely manner as needed: (i) to raise the rate on interest paid on reserve balances of commercial banks held with the Fed; (ii) to drain additional liquidity from the system by conducting reverse repurchase agreements; (iii) to offer banks term deposits or to issue Federal Reserve bills; and (iv) to sell long-term securities on the open market. According to Bernanke, this strategy will allow Fed to raise the market interest rate and to curb growth in money and credit aggregates.

In conclusion to the above mentioned considerations and information, it should be reminded that one of the coveted effects of non-conventional monetary policy is a lowering of the real interest rate. Amid zero nominal interest rates, this can be reached by increasing inflation expectations. However, the increase in inflation expectations must not exceed a reasonable level as their long-term anchoring at low levels is a precondition for balanced economic developments in future and for fulfilling objectives of central banks in the form of price stability. An appropriately chosen and communicated exit strategy of non-conventional monetary policies should prevent an excessive rise in inflation expectations and, at the same time, help maintain credibility of central banks' long-term objectives.

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<sup>3</sup> [The previous monetary policy meeting](#) resulted in an announcement of willingness to maintain the repo rate at a low level until the start of 2011.

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#### 4. Selected speech: Small lessons from a big crisis

Andrew G. Haldane of the Bank of England derived [\*several lessons from the current crisis\*](#) and presented them at the Federal Reserve Bank of Chicago 45th Annual Conference on 8 May 2009.

The current crisis has raised a number of questions in the area of macro-prudential policy to which the answers will be formed over the next several decades. However, some lessons are already taking shape today. Mr Haldane's speech discusses seven issues, the unifying theme being informational failure.

##### **Lesson one: Finance is no golden goose**

Mr Haldane gives the following example: Imagine having placed a hedged bet back in 1900. A GBP 100 long bet is placed on UK financial sector equities together with a GBP 100 short bet on general UK equities. In effect, this is a gamble on the UK financial sector outperforming the market. How would that bet have performed over the intervening 110 years?

For the first 85 years this strategy would have been rather staid. By 1985 your profit would have been GBP 500, at an annual average return of 2%. However, the following twenty year period (1986–2006) transformed that picture – by the end of 2006 the once-staid strategy would have delivered GBP 10,000, at an annual average return of 16%. As Mr Haldane comments, banking became the goose laying the golden eggs.

The past two years have undone most of these gains. The cumulative fall in UK bank equities was 80% in March. By the end of 2008 the banking gamble would have delivered a capital sum of GBP 2,200, at an annual average return of 3% (for the period 1900–2008).

So what lessons do we take from this? At one point, banks appeared to have discovered a money machine, beginning to “lay golden eggs”. However, this notion has been buried for good by the events of the recent months. As Mr Haldane sums up the first lesson – to avoid similar situations in the future, we should aspire to a financial system where there is greater market and regulatory scrutiny.

##### **Lesson two: Unless the golden goose is geared**

Mr Haldane opens this part of his speech with an analysis of the ROE indicator as the product of return on assets and leverage. The former is a measure of management skill in extracting profits from a pool of assets, while the latter is a measure of success in gearing up those assets.

Movements in leverage have been the dominant driver underlying ROE developments in UK banks – both the rise to 24% in 2007 and the subsequent fall in 2008. Global banks seem to have targeted ROE, as they could not afford to have lower return on equity than their competitors. They made heavy use of leverage to reach the required ROE levels. Leverage thus increased in the financial system as a whole.

And what are the lessons according to Mr Haldane? First, when evaluating banks and their management, there is a need for greater focus on returns on assets rather than on equity. Second, there is a need to place much stricter system-wide limits on leverage.

##### **Lesson three: Size does matter**

The “80/20” rule has its origin in the study of contagious diseases: for a number of diseases, 20% of the population account for around 80% of the disease spread. The present financial epidemic has broadly mirrored those dynamics. The failure of a group of large, interconnected institutions (Fannie and Freddie, Bear Stearns, Lehman Brothers, AIG) contributed disproportionately to the spread of financial panic.

Epidemiology offers a solution – it is important to target vaccination at these “super-spreaders” of contagion. However, financial regulation has tended not to heed that message, as larger polygamous financial institutions often had lower capital buffers. There are two potential explanations: Basel II conferred diversification benefits on larger firms, and there was a market expectation that larger firms were more likely to receive government support. Thus, the third lesson Mr Hardane suggests is: improve the regulation of key institutions.

#### **Lesson four: Banks cannot “pass” a stress test**

Over the past few months, stress-tests have received significant media attention. While the inputs to, and outputs from, stress-testing are statistical (or objectivised), the inferences reached from them are necessarily subjective. Stress-tests are probabilistic and state-dependent judgements. Two of the key judgements are: what prescribed stress scenarios should be tested and what thresholds for satisfying these stress-tests should be set. Both are fiendishly difficult. The results of stress-tests need to be interpreted with a healthy dose of realism.

#### **Lesson five: The plumbing worked**

With so much having gone wrong during the current crisis, it would be easy to overlook what has gone right. Well-functioning payment and settlement systems – which Mr Haldane calls the plumbing of the financial system – are one such success.

These systems underwent substantial innovation over the past years, substantially reducing counterparty risk. Thus they supported the dynamics of financial activities, allowing risk to be traded and reallocated. Mr Haldane recommends that central banks focus on systemic oversight, and redesign, of payment and settlement infrastructures.

#### **Lesson six: But some plumbing was missing**

The infrastructure of financial markets extends well beyond payment and settlement systems – for example, into the area of trading and clearing systems. Here, crisis events suggest scope for improvement.

A number of markets have seized during the past months, including the corporate bond market, the financial derivatives market and the money market. These are all Over-The-Counter (OTC) markets, which do not typically use clearing through a central counterparty. US authorities have recently proposed the extension of central clearing to all standardised OTC derivative instruments. This measure deserves international support, as it brings numerous benefits. Central clearing encourages standardisation and simplification of the contractual terms of financial instruments. This step would also condense the dense network of interconnections between firms into a sequence of simple bilateral relationships with the central counterparty. Therefore Mr Haldane would welcome a reform of OTC markets.

#### **Lesson seven: Banks’ profits were the problem – but are now the solution**

Mr Haldane regards it as important that banks’ profitability picks up, sharply and durably, in the period ahead, adding that this is in the interests of both the financial system and the real economy.

In the short term, lending by banks is a necessary condition for recovery in the real economy. Over the medium term, banks have a hefty repayment schedule to governments and central banks. Banks’ future profit streams are a key means of securing these repayments and thereby restoring banks to normality. Bank profitability may well have been the route into the present crisis. But it may also be a route out.

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