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Monetary Policy and Fiscal Analyses Division

CNB CZECH NATIONAL BANK

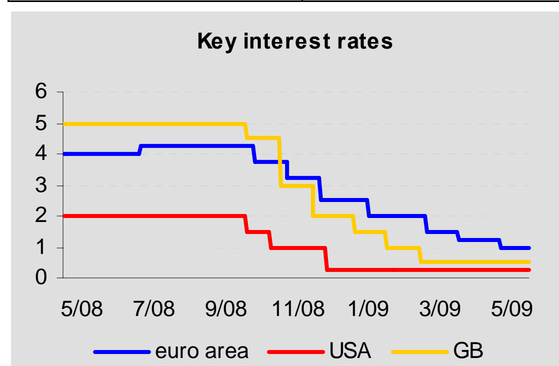
In this issue

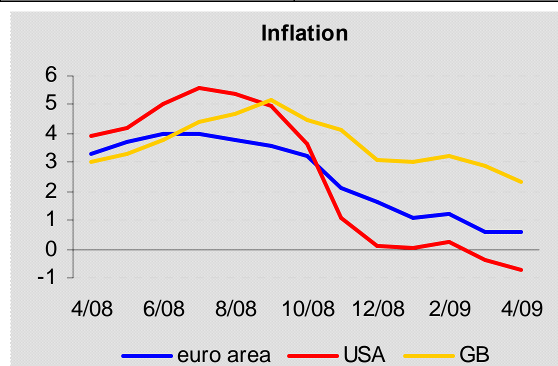
The past three months have seen the continuation of monetary policy easing through both interest rate cuts and non-conventional monetary policy instruments – quantitative easing. Central banks thus responded to the economic activity downturn and the related decline in inflation. Starting with this issue of Monitoring, the introductory survey of the latest monetary policy development at selected central banks will include the Swiss National Bank, which is targeting inflation in a small open economy. In Spotlight we focus on the non-conventional monetary policy and practical examples of its implementation. Our selected speech is B. Bernanke´s address on the impacts of the current extraordinary measures on the Fed´s balance sheet.

1. Latest monetary policy development at selected central banks

Key central banks of the Euro-Atlantic area

	Euro area (ECB)	USA (Fed)	United Kingdom (BoE)
Inflation target	< 2%[1]	n.a.	2 %
MP meetings (rate changes)	2 Apr (-0.25) 7 May (-0.25) 4 Jun (0.00)	17–18 Mar (0.00) 28–29 Apr (0.00)	8–9 Apr (0.00) 6–7 May (0.00) 3–4 Jun (0.00)
Current basic rate	1.00%	0 – 0.25%	0.50%
Latest inflation	0.00% (May 2009) [2]	-0.7% (Apr 2009)	2.3% (Apr 2009)
Expected MP meetings	2 Jul 6 Aug 3 Sep	23–24 Jun 11–12 Aug	8–9 Jul 5–6 Aug
Other expected events	3 September: publication of forecast	10 June and 29 July: publication of Beige Book	12 August: publication of IR[4]
Expected rate movements[3]	→	→	



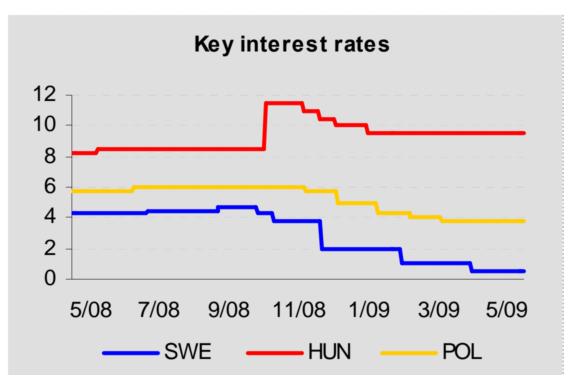


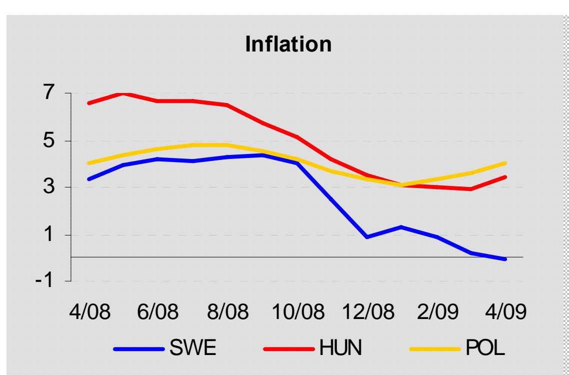
[1] ECB definition of price stability ; [2] preliminary estimate; [3] The direction of the expected change in rates in the coming quarter is taken from the Consensus Forecast survey;
[4] Inflation Report

The financial crisis´ responses have fully passed through to the real economy, generating a significant slowdown across the world economy. The **ECB** responded to the negative news about weak economic activity and weak domestic and external inflation pressures in April and May by further lowering its main refinancing rate by 0.25 p.p. each time, to 1.00%. The ECB´s meeting in May brought a non-symmetric lowering of its key interest rates, when the reduction in the main refinancing rate was accompanied by a cut in the marginal lending rate (the Lombard rate) by 0.50 p.p. to 1.75%. The marginal borrowing rate remained unchanged at 0.25%. A rate corridor around the main refinancing rate was thus narrowed to +/-0.75 p.p. Since the **Fed**´s key interest rate remains at its very bottom, the Fed continued in its non-conventional monetary policy in an effort to ease credit market conditions. It continued to purchase large volumes of government agencies´ debts and mortgage-backed securities. In addition, it purchased government bonds in order to lower their yield. The **BoE** left its key rate unchanged owing to its very low value, but it purchased government and corporate bonds, which was financed by newly issued cash (see Spotlight).

Selected inflation-targeting central banks of EU countries

	Sweden (Riksbank)	Hungary (MNB)	Poland (NBP)
Inflation target	2%	3.0%	2.5%
MP meetings (rate changes)	20 Apr (-0.50)	23 Mar (0.00) 20 Apr (0.00) 25 May (0.00)	24–25 Mar (-0.25) 28–29 Apr (0.00) 26–27 May (0.00)
Current basic rate	0.50%	9.50%	3.75%
Latest inflation	-0.1% (Apr 2009)	3.4% (Apr 2009)	4.0% (Apr 2009)
Expected MP meetings	1 Jul 2 Sep	22 Jun 27 Jul 24 Aug	23–24 Jun 28–29 Jul 25–26 Aug
Other expected events	2 July: publication of Monetary Policy Report	26 August: publication of IR[4]	26 August: publication of IR[4]
Expected rate movements[3]	→	→	→





[4] Inflation Report

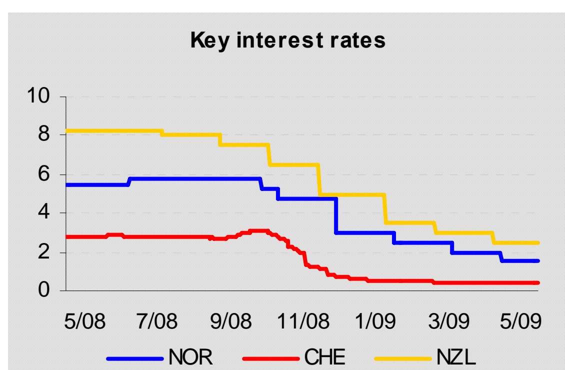
The **Riksbank**´s Executive Board decided to cut its key interest rate by 0.50 p.p. to 0.50% and announced, that it was going to leave this low rate unchanged until the beginning of 2011. By this lowering, the Riksbank responded to the stronger than expected worsening of economic activity particularly due to a fall in foreign trade. The Riksbank sees justification for this measure in a worsened labour market situation (increases in unemployment) and in a weak household consumption.

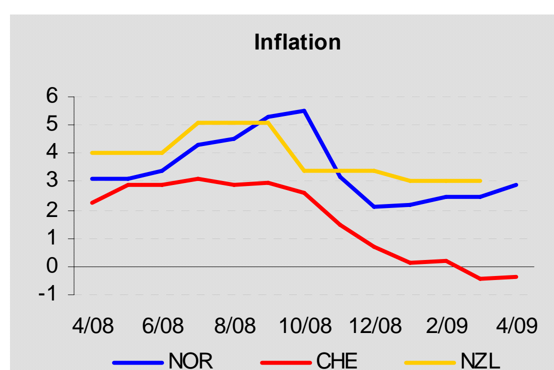
The MNB, after a series of monetary policy easing in the past quarter, did not continue in this trend and left its key rate unchanged at 9.50%. Year-on-year HICP inflation rate, which increased more than it was expected, has taken Hungary by surprise. This was due particularly to the pass-through of the recently weakened Hungarian forint to consumer prices. In addition, consumer price inflation in summer will be affected by the planned rise in the VAT rate. The Hungarian economy has already experienced recession in full, when GDP is estimated by the Hungarian Statistical Office to have decreased by 6.4% in Q1.

The NBP terminated in March a series of the continuous lowering of its key interest rate by cutting it by 0.25 p.p. to 3.75% and at its meeting in May left its interest rates already unchanged. The decision on the interest rate stability in May was to a certain extent affected also by the uncertainty regarding the current development and waiting for the message of the June forecast. Nevertheless, the impact of the exchange rate depreciation on inflation was observed similarly as in Hungary. Despite sufficient liquidity in the financial system, credit conditions are tight, particularly due to a rise in the risk premium.

Other selected inflation-targeting countries

	Norway (NB)	Switzerland (SNB)	New Zealand (RBNZ)
Inflation target	2.5%	< 2%	2%
MP meetings (rate changes)	25 Mar (-0.50) 6 May (-0.50)	12 Mar (-0.25)	12 Mar (-0.50) 30 Apr (-0.50)
Current basic rate	1.5%	0-0.75%	2.50%
Latest inflation	2.9% (Apr 2009)	- 0.3 (Apr 2009)	3% (Q1 2009)
Expected MP meetings	17 Jun 12 Aug	18 Jun	11 Jun
Other expected events	17 June: publication of IR[4]	2 July: publication of Monetary policy report	12 March: Monetary policy statement
Expected rate movements[3]	↓	→	→





The **Norges Bank (NB)** continued to ease monetary policy and in March and May it lowered its key rate by 0.50 p.p. each time, to 1.50%. This was in response to the deeper than expected downturn in domestic economy, a possibility of a fall in inflation to below the inflation target and an adverse effect of the global recession. According to the Norges Bank, the low inflation abroad and the low utilization of capacities will continue to exert downward pressure on inflation in the future, which is a further factor justifying the interest rate decline.

The Swiss National Bank (SNB), which is targeting inflation in a small open economy, is being introduced in Central Bank Monitoring for the first time. In March, i.e. at the beginning of the period under review, the SNB was very active in terms of conventional, and in particular non-conventional monetary policy. The bank did not only narrow its usual one percentage corridor for the LIBOR key rate on the Swiss franc – denominated deposits to 0.75 p.p. (0-0.75), but also intervened directly in the foreign exchange market by selling its currency approximately in the volume of CHF 14 billion in order to weaken it. Moreover, the bank announced the purchase of "covered bonds" in an effort to lower the capital market risk premium.

The **RBNZ** in a follow-up to its previous decisions, lowered again the key interest rate twice by 0.50 p.p., to 2.50%. This was due to the markedly worsened outlooks for domestic and external economic activities. Monetary policy has been gradually eased since July 2008, with the rates having been cut by 5.75 p.p. in total. According to the RBNZ, the lowering of interest rates is also a reaction to excessively tight monetary conditions in both the high long-term interest rates and the stronger exchange rate than expected. Governor A. Bollard expects the key rate to be at the current level until the second half of 2010 and he did not exclude its slight lowering in the forthcoming quarters.

2. News

Fed, BoE, ECB, Bank of Japan and Swiss National Bank announce new swap arrangements

Major central banks – the Bank of England, the European Central Bank, the Federal Reserve, the Bank of Japan and the Swiss National Bank – announced on 6 April 2009 the conclusion of new swap agreements, allowing to exchange foreign currency funds with the Fed. Unlike previous agreements, new swap lines are denominated in other currencies than the US dollar, namely the euro (up to EUR 80 billion), yen (up to ¥ 10 trillion), sterling (up to GBP 30 billion) and Swiss franc (up to CHF 40 billion). The agreements are limited to 30 October 2009 and are demonstrating the willingness of selected central banks to restore stability in global financial markets.

ECB adopts a set of unconventional measures

On 7 May 2009, the Governing Council of the ECB decided to conduct one-year refinancing operations at a fixed rate and with full allotment. There should be three operations by the end of 2009 (June, September and December). At the same time the European Investment Bank (EIB) was declared an eligible counterparty to trade with the ECB, which means that it has access to ECB loans. The ECB also announced its intention to purchase covered bonds worth EUR 60 billion. The ECB will make purchases from eligible counterparties on the primary and secondary markets in the period between July 2009 and June 2010.

Fed continues its unconventional monetary policy programme

The Fed continues to purchase problem assets (see the list) and is easing lending conditions, e.g. (collateral requirements) for its lending operations.

Bank of England uses Asset Purchase Facility (APF) as a monetary policy instrument

Under this facility, the BoE purchased commercial paper worth GBP 1,966 million in 2009 Q1, half of which was financed by newly issued T-bills and the other half by the issuance of new reserve money by the central bank. The gilts purchased amounted to GBP 12,993 million and were all financed by the newly created central bank reserves. Also purchased, so far at a minimum amount, were corporate bonds (GBP 128 million) financed also by the issuance of new reserve money by the central bank. The BoE makes purchases once a week in view of the needs of the British economy and following consideration by the Monetary Policy Committee.

….and BoE Governor M. King sends a letter to Chancellor A. Darling

As the inflation rate in the last twelve months (by February 2009) reached 3.2%, which is more than 1 percentage point above the inflation target, BoE Governor sent a letter to the Chancellor of the Exchequer as required by law. The letter listed the reasons why the inflation target had been exceeded. The Governor says that although commodity prices decreased significantly, helping reduce inflation from 5.2% in September to 3.2% in February, import prices did not allow inflation to fall closer to the inflation target owing the depreciated pound.

Riksbank is still helping to finance some market segments

The Riksbank continued the series of auctions from 2008 Q4 and 2009 Q1 with further auctions in 2009 Q2 supplying three- and six-month loans against commercial paper as collateral. The Riksbank thus wanted to improve the supply of loans to the corporate sector. The Riksbank focused also on other auctions of collateralised loans in SEK with maturities of 3 and 6 months with a variable rate (the effective repo rate +0.15 percentage point). The auctions are not limited only to auctions in SEK, and the Riksbank also fosters financing in US dollars by loans with maturities of three and six months.

…and is strengthening foreign currency reserves

On 27 May 2009, the Executive Board of the Riksbank decided to restore the level of the foreign currency reserve by borrowing the equivalent of SEK 100 billion. The reason was to be ready to supply the Swedish banks with foreign currency. The commitments to international institutions

(IMF) and swap lines with some economies (e.g. Estonia and Lithuania) are among other reasons. The technical arrangement of the loan will be secured by the *Swedish National Debt Office* (www.riksgalden.se). The increase in foreign currency reserves is planned as temporary and closely related to the financial crisis.

NBP decreases the reserve requirement

On 27 May 2009, the NBP Council decided to reduce the required reserve rate by 0.50 percentage point to 3%. The decision comes into effect on 30 June 2009 and its aim is to release more funds for credit expansion of commercial banks.

…and continues to use the foreign exchange swap arrangement

The National Bank of Poland, the European Central Bank, the Swiss National Bank and the National Bank of Hungary agreed to continue in the currency swap arrangement in effect since 15 October 2008 on conducting EUR/CHF foreign exchange swaps. The EUR/CHF swap operations will be conducted every week to support the liquidity of the Polish interbank Swiss franc market. Specifically, the SNB will provide the NBP with Swiss francs against euro, while the NBP will provide the Swiss francs to its counterparties against Polish zloty. Magyar Nemzeti Bank joined the swap arrangement on 28 January 2009. The arrangement can be used until the end of July 2009.

MNB changes the terms of its operations

In an effort to support domestic credit institutions, Magyar Nemzeti Bank changes the terms of some operations. From 5 May 2009, the number of bids submitted at six-month collateralised loan tenders will increase from one to three. In addition, the possibility of entering the tender has been extended until 30 June 2010 and will be extended further according to interbank market conditions.

A change in the Swiss central bank's management from January 2010

At its meeting on 8 April 2009, the Swiss Federal Council appointed Philipp M. Hildebrand to be the new Chairman of the Governing Board of the Swiss National Bank. Philipp M. Hildebrand will take over the Board's management at the start of 2010 and will replace Jean-Pierre Roth who is retiring at the end of this year. Philipp M. Hildebrand is currently a Vice-Chairman of the Governing Board. Thomas Jordan will become Vice-Chairman and Jean-Pierre Danthine will become a new Governing Board member.

3. Spotlight: Non-conventional monetary policy of selected central banks

Selected central banks (the Fed, the BoE, the ECB and the SNB) resorted to non-standard monetary policy instruments to ease monetary conditions in the situation of the global financial and economic crisis and very low monetary policy interest rates. In this Spotlight we thus focus on the presentation of a wide range of these measures as applied by these central banks. Spotlight is then followed up by Ben Bernanke's speech on the impacts of measures implemented by the Fed on its balance sheet.

1. The background of non-conventional monetary policy

Major world central banks slashed their monetary policy interest rates in response to the global financial crisis. Some of them – e.g. those in the United States or the United Kingdom – have already used up room for manoeuvre for the easing of monetary policy through interest rate cuts, as their key rates have already reached levels close to zero. A decline in nominal short-term interest rates below zero is not possible from the practical point of view since economic entities would prefer holdings of currency with zero income to holdings of investment instruments with negative income. Problems for policy-makers occur when interest rates are close to zero, economic performance is weak, due mainly to a sharp fall in aggregate demand, and the economy is threatened by deflationary expectations or deflation. In this situation, interest rate-based monetary policy is replaced by non-conventional monetary policy, e.g. a quantitative easing. The selected speech of the March issue of Monitoring addressed the drawbacks and possibilities of monetary policy amid very low nominal interest rates. As a follow-up, we will now address specific examples of non-conventional monetary policy measures as applied by selected central banks over the past few months.

The central bank has the option of conducting non-conventional monetary policy where conventional[1] monetary policy instruments are not sufficiently effective to achieve the central bank's objectives. It cannot be determined clearly when this will happen; however, there can in general be the following two situations. **First**, the transmission mechanism is disrupted, e.g. due to a malfunction of financial intermediation, and the interest rate or credit channels are non-functional, while, in general, the short-term nominal rates need not be at their bottom. **Second**, this situation may arise where short-term nominal rates are close to zero, deflationary pressures persist in the economy and the economy shows no signs of a recovery in its activity. The economy is thus in the situation where interest rate cuts have insufficient effects on certain segments of financial markets, in particular the credit market, or the central bank can no longer use interest rate policy by means of which it would further ease the monetary conditions. In either case, the desirable stimulus impulse to the real economy is not observed. In such cases, room may be given to the non-conventional monetary policy, which has been recently launched – based on the assessment of the situation in the domestic economy – by some central banks, e.g. the Fed, the BoE, the ECB or the Swiss National Bank.

In particular, "quantitative easing" and its various parallels (e.g. credit easing) are currently regarded as non-conventional monetary policy. The quantitative easing policy includes measures which exert downward pressures on the cost of money (interest rates) by increasing the quantity of money in the economy, the aim of which is to ease the financial conditions to such extent that aggregate demand recovers, an upturn in economic activity is achieved and thus the inflation target is fulfilled. At the same time, non-conventional policy in principle focuses directly on costs and availability of external financing of banks, households and non-financial corporations. The aim is thus to influence long-term real interest rates which is possible by (i) influencing both interest rate and inflation expectations as important indirect determinants of the long-term real interest rate; (ii) by affecting financial asset markets in order to directly lower the long-term nominal interest rate, for example by purchasing government bonds, or to reduce the risk spread in income across more or less functional asset markets.

[1] The setting of the monetary policy interest rate and the execution of open market operations.

2. Practical examples of the application of non-conventional monetary policy

Following a brief summary of common features of monetary policy in this group of central banks since the start of the crisis, the aim of this section is to outline a possible range of the measures applicable within non-conventional monetary policy with reference to specific examples.[2]

The global financial and economic crisis has grown gradually into its current size; the problem appeared first mainly on global interbank markets and we were speaking of a liquidity crisis, a credit market crunch or only of a temporary credit squeeze. A very similar reaction from the selected central banks (the Fed, the ECB, the BoE and the SNB) at that time also stems from this. All the above mentioned banks increased the volume of liquidity-providing repo operations (or similar instruments) with a maturity of over 1 month approximately from August to October 2008 in an effort to mitigate interbank market tensions and to facilitate access to sources of liquidity for financial institutions. The first wave of reactions from central banks to difficulties on interbank markets was thus along very similar lines. Subsequently, as problems with solvency[3] of financial institutions occurred, reactions from the above mentioned central banks started to differ. Nevertheless, the third wave was a situation when these central banks' interest rates were very close to zero, financial systems had not been stabilised yet and the economic situation started to sharply deteriorate. This was when the non-conventional monetary policy started to be applied, in the form of concrete central bank measures. While these measures are country-specific, their aim is the same – to prevent deflation and to start up economic activity.

Federal Reserve System (Fed)

The first central bank on our list is the Federal Reserve System (Fed) which actively responded to the changing situation in the financial system by creating new programmes. In doing so, the Fed changed very significantly not only the structure of its balance sheet but also its volume in order to foster credit markets and thus indirectly the real economy. Since the Fed's balance sheet has been widely discussed in this respect, we analyse this specific area in greater detail in „*Selected speech*“ which

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[2] Therefore, the aim is not to make an exhaustive comparison of central banks in terms of the monetary policy conducted by them and to analyse their measures in great detail as we are aware that each economy is unique in its own way and has a financial system functioning in a different manner.

[3] The December issue of Central Bank Monitoring describes in detail the story of the financial crisis.

[4] The final part of Monitoring („Selected speech“) provides a more detailed description of the measures, mainly in terms of their impact on the Fed's balance sheet.

[5] Government bonds with maturities between 2 and 10 years amounting to USD 300 billion; mortgage-backed securities amounting to UDS 1.25 trillion and agency bonds amounting to USD 200 billion, thus totalling USD 1.75 trillion.

[6] In the case of entities directly entering operations with the BoE as well as those that hold securities whose price changes (increases) as the BoE enters the market and purchases them. This should affect relative demand for those securities.

[7] Initially, this asset purchase facility was funded by issuance of government securities, but later it was decided to finance it by creating money. The intended volume of the facility is up to GBP 150 billion. Currently it includes about GBP 50 billion of private assets and GBP 75 billion of Gilts.

[8] There was an increase in the SNB's balance sheet even before 12 March 2009, due to swap lines, loans to stabilise the financial system and issuance of SNB bills.

[9] These bonds are covered mainly by Swiss mortgages and issued under strict rules. The SNB revealed relatively little detail about the non-standard instruments. Above all, it refused to publish the intended volumes of purchases of bonds and covered bonds.

[10] The extension of the *main refinancing operations (MRO)*, supplementary *longer-term refinancing operations (LTRO)* and provision of USD-denominated liquidity. The measures focused mainly on the interbank money market.

[11] And narrowing of the corridor between the rate on the deposit facility and the main refinancing rate to 0.75 percentage point, as the rate on the deposit facility was left unchanged at 0.25%.

[12] It was indicated that the purchases may also relate to other financial asset classes. The market in covered bonds *(Pfandbriefe)* is the largest market in this financial asset category in Europe, amounting to EUR 1,500 billion, or double the volume of the corporate bond market (EUR 700 billion). Some German private banks and regional banks (Landesbanks) refinance on this market.

[13] Unlike ABS, covered bonds do not transfer credit risk, which remains with the originator.

brings Ben Bernanke's speech discussing the impacts of the current extraordinary measures on the Fed's balance sheet. The following paragraph will thus only outline the three basic groups of measures in terms of their implementation:[4]

(i) *provision of short-term liquidity to „sound" financial institutions*. This includes loans to deposit institutions with maturities of up to 3 months; the Fed also enables primary dealers to borrow government securities against less liquid collateral, allowing them thus access to liquidity. According to the Fed, credit risk is very small here since loans are provided against sufficiently "large" collateral, i.e. they are „overcollateralised"; **(ii)** *provision of liquidity directly to debtors and investors on credit markets*. These are largely measures to foster markets for short-term debt securities issued by private entities and asset-backed securities markets; **(iii)** *purchase of long-term securities* which will subsequently become part of the Fed's portfolio. This includes purchases of agency debt securities and purchases of government bonds. The announced volume totals USD 1.75 trillion.

What these three groups of measures have in common is that their aim is to ease the monetary conditions on a specific credit market and to help squeeze interest rates on credit markets after the standard arsenal of the central bank's instruments has been used up by lowering the rates on the short end of the yield curve to almost zero (the Fed's policy rate). At the same time, all the groups focus on the asset side of the Fed's balance sheet. The purchase of long-term debt securities[5] since 18 March can be regarded as a direct adoption of the quantitative easing policy in contrast to credit easing communicated previously (being rather characteristic of groups (i) and (ii)).

Bank of England

Bank of England has openly adopted quantitative easing in the period between March and May 2009, announcing purchases of Gilts with maturities ranging from 5 to 25 years on the secondary market, totalling around GBP 75 billion and funded by new money. To ensure that this measure is effective, the BoE selected non-bank institutions (insurance companies and pension funds) as counterparties. The BoE relies on the effect of portfolio shifts[6] and believes that non-bank entities will allocate the cash obtained through sales of Gilts in other forms of investment (longer-term investments with direct or indirect effects on the real economy – e.g. corporate bonds or shares). However, the efficiency of portfolio shifts is very uncertain and will depend on the specific strategies of the individual non-bank entities and the volumes of securities purchased. Quantitative easing as implemented by the BoE does not concern only unsterilised purchases of government bonds but also purchases of bonds issued by private entities, namely bonds and corporate bonds that are part of the *Asset Purchase Facility*.[7] These unsterilised purchases from non-bank entities aim to increase the intermediate target for Britain's broad monetary aggregate M4, boosting nominal expenditure in the economy as a consequence.

Swiss National Bank

The Swiss National Bank also eased its monetary policy continuously and was the first to speak openly about the risk of deflation. A turning point in its monetary policy occurred on 12 March 2009, when it announced its intention to use non-standard instruments, i.e. adopted non-conventional monetary policy. Until then, it intervened along the entire yield curve using longer-term repos, supporting these interventions by issuing "SNB bills" from October 2008.[8] Three main steps taken at the following "more aggressive" stage were as follows:

- a substantial increase in the volume of repos to provide liquidity in response to the disproportionate developments in monetary aggregates, i.e. strong growth in M1 and M2 compared to only modest growth in M3, and an increase in the monetary base of almost 100% (since November 2008);
- purchases of franc-denominated bonds issued by private entities, aimed at reducing the risk premium on the capital market that has increased since the intensification of the financial crisis after the fall of Lehman Brothers. These purchases include above all covered bonds (*Pfandbriefe*)[9];
- direct intervention on the foreign exchange market in the form of CHF sales, aiming to prevent further appreciation of the Swiss franc vis-à-vis the euro.

European Central Bank

Like the central banks referred to above, the ECB responded to unfavourable economic and financial developments by lowering its main refinancing rate. Compared to the BoE or the Fed, it adopted fewer new non-conventional monetary policy measures. Since the beginning of the credit market weakness in August 2007, the ECB has implemented measures aimed at providing liquidity[10] to the financial sector (de facto the banking sector in the case of the euro area) and its stabilisation. In addition to that, it only adjusted the settings of its instruments by expanding the list of eligible collateral. As mentioned above, six-month refinancing operations (LTROs) conducted at a fixed rate and with full allotment were the main instrument for a relatively long time during the crisis. In addition to a further decrease in the key interest rate,[11] the meeting of the *Governing Council* on 7 May resulted in the adoption of the following three measures:

- the ECB plans to purchase euro area "covered bonds"[12] denominated in euro on the primary and secondary market, totalling around EUR 60 billion. The purchases will be made from July 2009 until June 2010. The move by the ECB to purchase these securities can be understood as "forced" in the sense that purchases of corporate bonds would disadvantage small and medium-sized enterprises, whose access to the capital market is limited. Government bond purchases are not possible in such a direct way as in the US given the institutional framework of the euro area involving the prohibition of monetary financing and the measures restricting circumvention of this prohibition. Moreover, covered bonds are low-risk assets[13] with a strong link to long-term financing of banks. The functioning of banks and the forms of their financing are important to the Eurosystem. Therefore, a reduction in banks' financing costs must be facilitated in order to lower the financing costs of the real sector. That is why purchases of covered bonds were established for the longer maturities;
- furthermore, the ECB extended the maturity of its existing credit instrument from 6 to 12 months at a fixed rate and with full allotment and expanded the list of eligible collateral. This instrument is designed to help banks reduce financing costs at maturities around one year;
- the European Investment Bank (EIB) has become the first (and so far the only) non-commercial counterparty of the ECB in liquidity operations. Therefore, the EIB can refinance with the ECB at more favourable terms. This expands the scope for the EIB to support European infrastructure projects or provide funding to corporations. By taking this step, the ECB endeavours to finance the real economy without the involvement of commercial banks in the lending process.

The first two instruments in particular focus on the bank lending channel, aiming to reduce the constraints on longer-term financing of banks. The ECB's crisis management and its mandate do not enable it to include in its rescue plan the cleaning up of balance sheets of financial (banking) institutions and EU ministers are also reluctant to adopt further fiscal stimuli. While the BoE and the Fed purchase private assets, the ECB's approach differs in that it accepts roughly the same range of assets as collateral for refinancing operations.

Overview of operations of selected central banks

	Indirect easing – easier conditions in terms of				**Direct purchases of financial assets**			
	Counterparty	*Collateral*	*Maturity*	*FX swaps*	Government bonds	Covered bonds	Other private assets	FX
Fed	yes	yes	yes	yes	yes		yes	
BoE	yes	yes	yes	yes	yes		yes	
ECB	yes[1]	yes	yes	yes		yes		
SNB			yes	yes		yes		yes

Source: Fed, BoE, ECB and SNB; [1] In relation to the EIB.

It is now still too early to assess the success of the non-conventional monetary policy measures adopted by individual central banks, as quantitative easing in the form of purchases of government bonds has been used only since March 2009 (Fed and the BoE).

4. Selected speech: Ben Bernanke on the Fed's balance sheet

Ben S. Bernanke, Chairman of the Board of Governors of the Federal Reserve System, made a speech at Federal Reserve Bank of Richmond 2009 Credit Markets Symposium held on 3 April 2009 in Charlotte, North Carolina. The speech focused on the US central bank's balance sheet and the way it reflects the current extraordinary measures.

Ben Bernanke opened by pointing out that financial markets and institutions have been under extraordinary stress for a year and a half. The reduction in the Fed's interest rate to the minimum exhausted the traditional possibilities of monetary policy. New tools have therefore been developed, affecting the size and structure of the central bank's balance sheet. The Fed introduced and developed liquidity programs and recently launched an extensive assets purchase program. Its balance sheet more than doubled as a result of these measures, from USD 870 billion before the crisis to USD 2 trillion now.

Before analysing the balance sheet as such, Mr Bernanke noted the main principles of the current policy. In addressing the crisis, the Fed cooperates closely with the Treasury and other agencies. However, the independence of its monetary policy is still maintained. Emphasis is placed on prudence. The Fed avoids credit risk and sees to it that loans are not allocated to narrowly defined sectors. The credit easing strategy is designed so that the funds can be withdrawn when the economy recovers.

Mr Bernanke devoted a significant part of his speech to the asset side of the Fed's balance sheet. For decades, it consisted almost exclusively of Treasury securities. However, their share has declined since late 2007, while the holdings of other financial assets have expanded dramatically. Short-term *liquidity programs for financial institutions* now total USD 860 billion, representing almost 45% of total assets. Under the *Term Auction Facility (TAF)*, the Fed provides fixed quantities of term credit to depository institutions through an auction mechanism. Further support is provided to the market through the *Primary Dealer Credit Facility (PDCF)* and the *Term Securities Lending Facility* (TSLF), as well as two programs for funds investing in short-term debt instruments. Dollar liquidity on foreign markets is secured through currency swap lines with other central banks, currently amounting to USD 310 billion.

Another group of programs reflected in the increase in Fed assets consists of *direct lending to borrowers and investors*. In order to improve the functioning of key credit markets, the *Commercial Paper Funding Facility (CPFF)* is available to non-financial corporations and the *Term Asset-Backed Securities Loan Facility (TALF)* is provided to investors. Their total volume is currently USD 255 billion.

Mr Bernanke listed *purchases of high-quality assets* as another important activity affecting the Fed's balance sheet. Their volume is now USD 780 billion, of which Treasury securities make up USD 490 billion. The holdings of high-quality securities are set to grow considerably as the Fed intends to purchase up to USD 1.25 trillion of agency mortgage-backed securities, up to USD 200 billion of agency debt and up to USD 300 billion of longer-term Treasury securities.

The Fed also provided support to specific institutions. For example, Mr Bernanke cited the prevention of default of AIG or the acquisition of Bear Stearns by JPMorgan Chase & Co. These activities account for around 5% of the balance sheet.

On the liability side, the largest component is Federal Reserve notes issued. By some estimates, more than one-half of U.S. currency is held outside the country. Other key liabilities include the deposit accounts of the government and depository institutions. In addition to the Treasury general account, a special account has recently been established as part of the *Supplementary Financing Program*. Under this program, the Treasury issues special bills and places the proceeds in this special account.

At the close of his speech, Mr Bernanke expressed the belief that the Fed will be able to help build a foundation for economic recovery by making responsible use of the aforementioned tools to

stabilise financial markets and institutions. Over the longer term, the Fed will work with other institutions to address structural issues relating to supervision and regulation so as to minimise the risk of facing such a situation again.

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