IV. Monetary policy in the advanced industrial economies

Highlights

Monetary policy in the advanced industrial economies faced two conflicting challenges during the period under review. On the one hand, tensions in financial markets threatened to spill over into the real economy by way of tighter credit conditions and a loss in confidence. Everything else equal, this would call for lower interest rates in order to offset the drag on aggregate demand. On the other hand, inflationary pressures that stemmed from rising commodity prices, together with high capacity utilisation and tight labour markets in many economies, threatened to feed into longer-term inflation expectations, thus calling for tighter monetary policy.

The manifestation of these challenges varied across countries and regions, which explains, at least in part, why central banks dealt with them in different ways (Table IV.1). In the United States, weakness in the housing sector and related financial turmoil clouded the outlook for growth substantially. The Federal Reserve reacted forcefully and cut the target federal funds rate in several steps from 5.25% in September 2007 to 2% in April 2008. In other regions, where the impact of the financial turmoil was less pronounced, monetary policy was driven to a greater extent by inflation developments. The central banks of Australia, New Zealand, Norway and Sweden continued to tighten policy. A middle course was followed by another set of central banks. The ECB held its policy rate constant at 4% throughout the period, even though inflation rose to the highest level since the introduction of the euro in 1999. The Bank of Japan also kept its policy rate unchanged at 0.5%. The Bank of Canada and the Bank of England increased rates in July 2007 but reduced them later in the year and in the early part of 2008.

Changes in interest rates were only one measure through which central banks responded to the dislocation in financial markets. Even before the turbulence led to any changes in policy targets, central banks in several countries adjusted their operations to keep reference rates near targets and to provide financing in markets where liquidity had evaporated. The various types of operations and the reasoning behind them are discussed in the last section of this chapter. The first section provides an overview of the monetary policy actions of the various central banks and puts them into context, and the second turns to issues related to central bank communication.

Developments in monetary policy

The situation in mid-2007

Monetary policy on a tightening path

In mid-2007, central banks were in the process of withdrawing the sizeable monetary accommodation put in place earlier in the decade and were moving

Policy rates, GDP growth and inflation projections

Policy rates[1]	Actual			Expected[2] for June 2008 as of:		
	29 Jun 07	16 May 08	Change	29 Jun 07	16 May 08	Change
European Central Bank	4.00	4.00	0.00	4.50	4.00	–0.50
Bank of Japan	0.50	0.50	0.00	1.00	0.50	–0.50
Federal Reserve	5.25	2.00	–3.25	6.00	2.00	–4.00
Reserve Bank of Australia	6.25	7.25	1.00	6.75	7.25	0.50
Bank of Canada	4.25	3.00	–1.25	5.25	2.75	–2.50
Reserve Bank of New Zealand	8.00	8.25	0.25	8.00	8.25	0.25
Central Bank of Norway	4.50	5.50	1.00	5.75	5.50	–0.25
Sveriges Riksbank	3.50	4.25	0.75	4.25	4.25	0.00
Swiss National Bank	2.50	2.75	0.25	3.00	2.75	–0.25
Bank of England	5.50	5.00	–0.50	6.00	5.00	–1.00
Growth and inflation projections[3]	**Real GDP for 2008 as of:**			**Inflation for 2008 as of:**		
	Mid-2007	May 2008[4]	Change	Mid-2007	May 2008[4]	Change
European Central Bank	1.8–2.8	1.3–2.1	–0.60	1.4–2.6	2.6–3.2	0.90
Bank of Japan	2.0–2.3	1.4–1.6	–0.65	0.8–1.0	2.4–2.8	1.70
Federal Reserve	2.5–3.0	0.0–1.5	–2.00	1.75–2.0	1.9–2.5	0.33
Reserve Bank of Australia	4.25	2.25	–2.00	2.5–3.0	4.50	1.75
Bank of Canada	2.50	1.40	–1.10	2.10	1.80	–0.30
Reserve Bank of New Zealand	3.10	3.00	–0.10	2.20	3.40	1.20
Central Bank of Norway	3.75	3.50	–0.25	3.50	3.00	–0.50
Sveriges Riksbank	3.00	2.60	–0.40	2.30	3.50	1.20
Swiss National Bank	…	1.5–2.0	…	1.50	2.00	0.50
Bank of England[5]	2.54	1.29	–1.25	2.06	3.77	1.71

[1] For the ECB, minimum bid rate on the main refinancing operations; for the Bank of Japan, uncollateralised target rate; for the Federal Reserve, target federal funds rate; for the Reserve Bank of Australia, target cash rate; for the Bank of Canada, target overnight rate; for the Reserve Bank of New Zealand, official cash rate; for the Central Bank of Norway, sight deposit rate; for Sveriges Riksbank, repo rate; for the Swiss National Bank, midpoint of the three-month Libor target range; for the Bank of England, Bank rate. [2] As published by JPMorgan Chase. [3] As published by central banks. [4] Or latest available. [5] Midpoint of forecast range.

Sources: Central banks; JPMorgan Chase. Table IV.1

to a posture of restraint. The timing of policy moves varied, however, depending on respective cyclical positions.

Above potential growth and inflationary pressures …

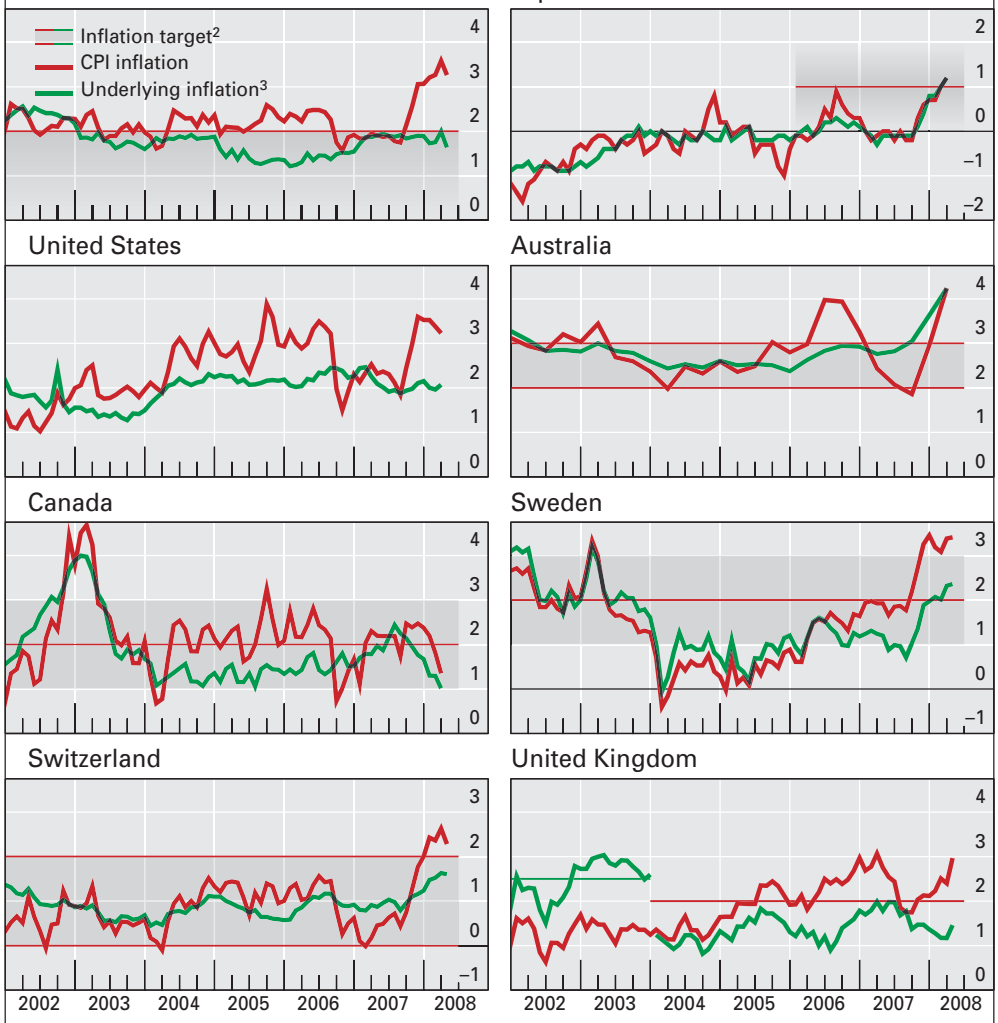
Output growth in most countries was seen to be above its long-run potential, although it was expected to moderate in some cases (see Chapter II). Inflation rates had mostly declined from the peaks recorded earlier in the year (Graph IV.1) but were expected to pick up again in the second half. Generally high levels of capacity utilisation and tight labour markets, following a prolonged period of above potential growth in several countries, contributed to worries about inflationary pressures.

… along with rapid money and credit growth …

Possible inflation risks were also signalled by high rates of growth of both money and credit in many economies. In the euro area, the broad monetary aggregate M3 had expanded at an annualised rate of 12% in the first half of 2007, and growth continued to accelerate. Rising short-term interest rates had, however, led to a decline in the growth of M1 and probably contributed to the stabilisation of the growth of lending to the private sector, albeit at a double digit rate. From the perspective of the ECB's strategy, which assigns a

Inflation rates[1]

In per cent



[1] Inflation rates measured as annual changes, in per cent. [2] CPI inflation is targeted by Australia, Canada, Sweden and, since December 2003, the United Kingdom. For the euro area and Switzerland, upper band of price stability range. For Japan, medium- to long-term price stability range. [3] For Australia, average of weighted median CPI and trimmed mean CPI; for Canada, CPI excluding eight volatile components and the effect of changes in indirect taxes and subsidies on the remaining components; for the euro area, HICP excluding unprocessed food and energy; for Japan, CPI excluding fresh food; for Sweden, CPI excluding household mortgage interest expenditure and the effects of changes in indirect taxes and subsidies; for Switzerland, core CPI (trimmed mean method); for the United Kingdom, CPI excluding energy, food and tobacco (prior to 2004, retail price index excluding mortgage interest payments); for the United States, PCE excluding food and energy deflator.

Source: National data. Graph IV.1

prominent role to monetary aggregates, the surge in M3 pointed to upside risks to inflation over the medium term, since portfolio shifts and other special factors could explain only part of this monetary expansion. High rates of growth in money and credit were also recorded in other economies. In Australia, for example, business credit grew at an annual rate of 22% in the first half of 2007, the fastest rate since the late 1980s.

... led to tighter policy in most economies

In response to strong growth and inflationary pressures, policy rates were raised in all the economies under review between June and early August 2007

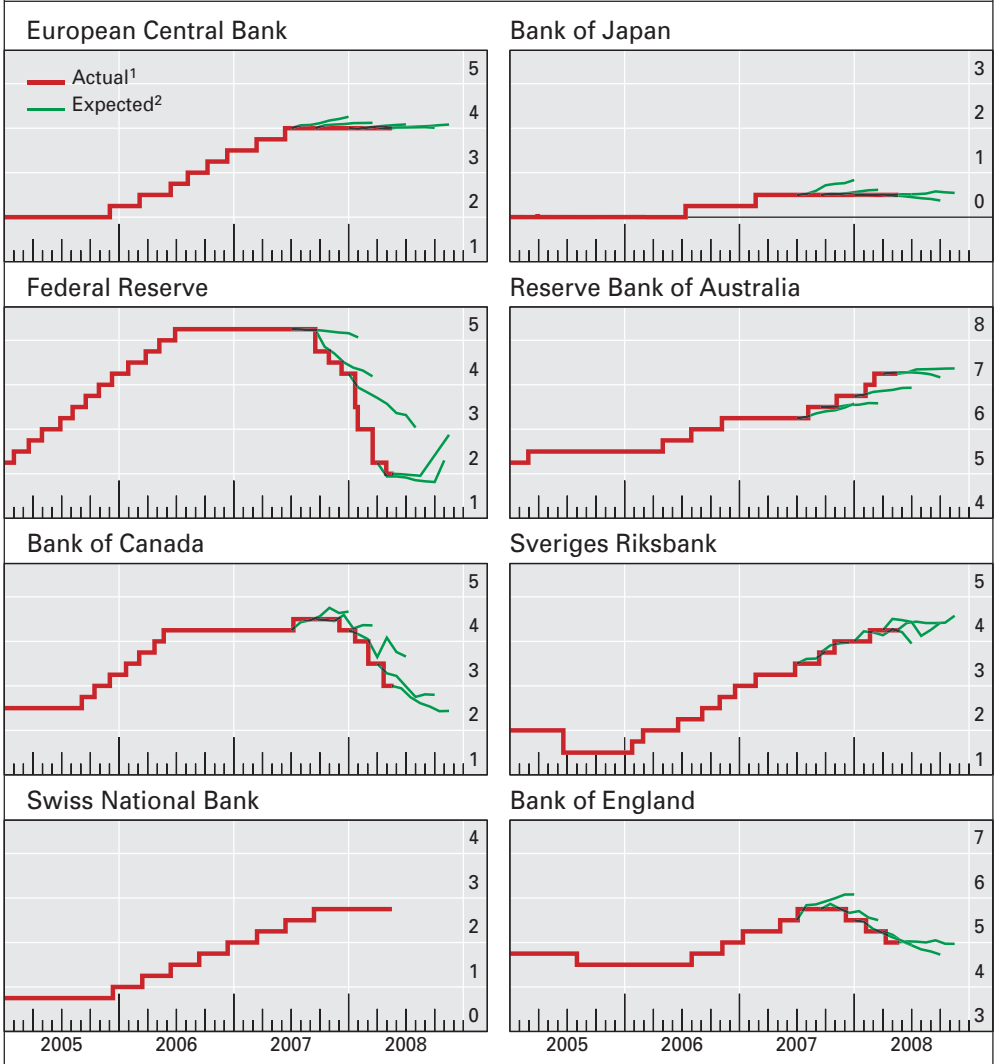
(Graph IV.2), except in the United States and Japan, where the economic environment was different. Even after these increases, monetary policy was judged to be on the accommodative side in most economies. Indeed, several central banks, including the Bank of Canada, Sveriges Riksbank and the Swiss National Bank, indicated that rates might have to rise further if inflationary pressures persisted.

Stable policy rates in the United States ...

In the United States, the Federal Reserve had increased the target federal funds rate from 1% to 5.25% between June 2004 and June 2006, but had kept rates constant thereafter despite a weakening outlook for economic growth. A decline in housing construction led to growth below the Federal Reserve's estimate of potential in the first half of 2007. Core inflation had edged higher

Policy rates

In per cent



[1] See footnote 1 to Table IV.1. [2] On 2 July 2007, 17 September 2007, 3 January 2008, 2 April 2008 and 15 May 2008; for the United States, inferred from federal funds and three-month eurodollar futures; for the euro area, calculated using EONIA swap rates adjusted for the average premia over the policy rate; for other countries (except Switzerland), calculated using overnight index swap rates.

Sources: Central banks; Bloomberg; BIS calculations. Graph IV.2

during most of 2006 and early 2007, but eased somewhat towards the middle of 2007. The Federal Reserve expected core inflation to moderate further over the coming quarters as the economy weakened and the full effect of past interest rate increases worked its way through the system. Growth was expected to recover to its long-term average in 2008 as the housing market stabilised.

... and Japan

The Japanese economy had been growing at a pace considered to be somewhat above potential in the first half of 2007, but this had yet to translate into a lasting shift to positive inflation. Consumer prices remained essentially unchanged in the first half of the year, but producer prices did increase a little. The Bank of Japan thus left its policy rate at the still very low nominal level of 0.5%, although it indicated that rates would have to rise eventually once economic growth fed into increasing prices.

Monetary policy during the turbulence

Financial market turbulence and sharp rises in commodity prices ...

Monetary policymaking became more complicated in the second half of 2007. Conditions in financial markets worsened substantially in the middle of August (see Chapter VI), when problems spilled over from asset-backed securities markets to the interbank money market. Towards the end of the year, larger than anticipated increases in commodity prices pushed up inflation rates sharply in most countries, with possible consequences for longer-term inflation expectations.

... led to a difficult trade-off

Central banks thus faced a difficult trade-off. Cutting rates quickly and substantially could support confidence in financial markets and the economy at large and thus prevent the problems in the financial sector from spilling over into the wider economy. However, loosening policy too much in an environment of high inflation could lower public confidence in the strength of the central bank's commitment to price stability, which could result in longer-term inflation expectations becoming unanchored. This, in turn, would require renewed tightening further down the road, with potentially even larger costs to the economy. Alternatively, holding rates steady or even raising them could allow a slowing of the economy to offset the impact on inflation and inflation expectations of rising commodity prices. Of course, this approach would run the risk of aggravating already fragile financial conditions and provoking a sharper slowdown of the economy than would be necessary to bring inflation back into the preferred range. The trade-off between the two alternatives was rendered even more complicated by the fact that the likely duration of the financial turmoil and its potential impact on the real economy were difficult to assess in real time.

An initial wait-and-see attitude ...

Initially, it was not clear whether the turbulence would persist and to what extent economic activity might be affected either by tighter financing conditions for the non-financial sector or by a loss of confidence. Central banks therefore chose to wait until more information became available before changing their policy stance. For example, the Reserve Bank of Australia left the cash rate unchanged at 6.5% following its Board meeting in early September, even though members believed that further tightening might be required to prevent the continued strength in the economy from leading to inflation rising above

target. On balance, the Board felt that the tighter financial conditions might control inflation independently of movements in the cash rate, thus making any policy action unnecessary. Similarly, the Governing Council of the ECB left policy rates unchanged at its meeting on 6 September. While noting the risks to price stability, the ECB argued that it was necessary to gather more information before drawing further conclusions for monetary policy. And, in the announcement following its August meeting, the Bank of Japan pointed to the large swings in the financial markets as a reason for delaying any further policy tightening.

Subsequently, it became clear that the turmoil in financial markets would not quickly abate and would have significant consequences that monetary policymakers would have to take into account. At the same time, large increases in food and energy prices led to considerably higher than anticipated rates of inflation towards the end of the year. On the face of it, central banks in the advanced industrial economies appear to have dealt with the two issues rather differently.

... gave way to easing in some countries ...

Some central banks, most notably the Federal Reserve, cut policy rates sharply in order to dampen the fallout on the economy from the turbulence. The Federal Open Market Committee (FOMC) reduced the target federal funds rate by 1 percentage point in the second half of 2007 and by an additional 2¼ percentage points in early 2008 after it became apparent that economic activity was slowing by more than had been anticipated. The Bank of England initially held rates constant but lowered them by a total of 75 basis points starting in December 2007 as the outlook for the economy weakened. Slower growth was also recorded in Canada, where the stimulative impact of higher commodity prices was largely offset by the sharp appreciation of the exchange rate. The Bank of Canada consequently reduced the target for the overnight rate by a cumulative 1½ percentage points between December 2007 and April 2008.

... but higher policy rates in others

Other central banks increased interest rates in the light of persistent inflationary pressures. For example, the Reserve Bank of Australia, the Central Bank of Norway and the Riksbank raised policy rates by 75 basis points between September 2007 and April 2008. A long period of growth had led to high rates of capacity utilisation and tight labour markets in all three countries. This resulted in domestic price pressures in addition to those arising from higher food and energy prices.

Switzerland a special case

Strong growth and rising inflation were also recorded in Switzerland. In contrast to other central banks, the Swiss National Bank does not express its policy stance in terms of overnight rates but instead attempts to steer three-month Libor in a predetermined corridor. The surge in term spreads in the money market in the middle of August and subsequent months introduced a large wedge between the rates paid on the central bank's weekly repurchase operations and its policy rate. As a consequence, three-month Libor rose to levels well above the 2.5% midpoint of the corridor in late August and early September. At its meeting on 13 September, the Swiss National Bank's Board decided to lift the target corridor by 25 basis points to 2.25–3.25%, thus bringing it in line with the rates already observed in the market. To achieve

this target, given higher term premia, the central bank reduced the rates on its repo operations substantially.

Unchanged policy rates in the euro area and Japan

In other economies, in particular the euro area and Japan, policy rates remained unchanged. The ECB chose to put further interest rate increases on hold despite inflationary pressures in view of the weakening in the economy and the appreciation of the euro. However, it repeatedly stressed that second-round effects from the spike in inflation would not be tolerated. Similarly, the Bank of Japan refrained from raising interest rates in late 2007 because of increased downside risks to growth. At the same time, the Policy Board confirmed its intention to lift rates once deflation was clearly overcome and the economy was following a path of sustainable growth.

Different economic conditions or different approaches to policy?

Different policy paths across countries ...

These differences in the path of policy rates across countries and currency areas during the second half of 2007 and early 2008 reflect, to varying degrees, differences in the economic situation, differences in the extent of financial stress and differences in central banks' strategies for dealing with high-cost/low-probability scenarios.

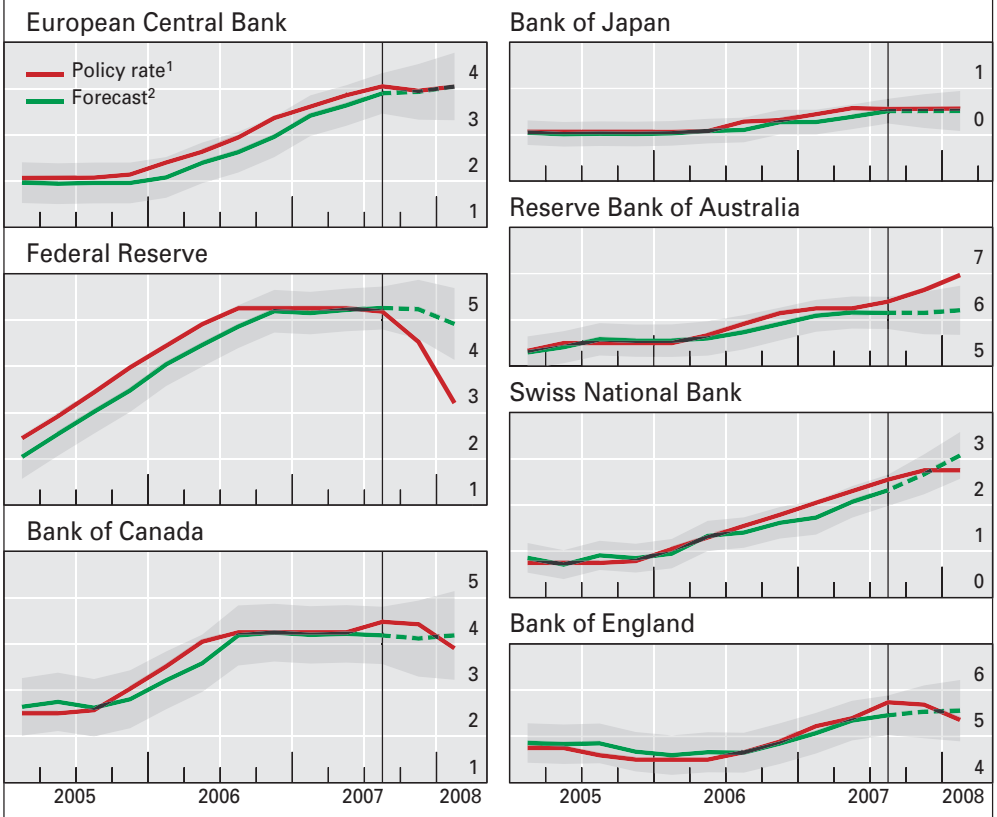
Although the weakening in worldwide demand and the rise in commodity prices were felt in every economy, their precise impact differed markedly across countries. For example, rising commodity prices stimulated economic activity in commodity-producing economies such as Australia, Canada, New Zealand and Norway, but dampened it elsewhere. Similarly, their effect on inflation depended on exchange rate movements and on the degree of capacity utilisation, among other factors.

Estimates of central bank reaction functions indicate that, with some exceptions, central banks responded to changes in economic conditions during the second half of 2007 and early 2008 in roughly the same way as in previous years. Dynamic forecasts based on simple equations linking policy rates to output gaps and inflation as well as lagged policy rates (to account for interest rate smoothing) are able to explain the path of policy rates relatively well in Canada, the euro area, Japan, Switzerland and the United Kingdom (Graph IV.3). The estimates thus suggest that the behaviour of those central banks was broadly in line with that observed in the past. By contrast, the Reserve Bank of Australia increased and the Federal Reserve decreased policy rates by more than predicted on the basis of their past responses to changes in the output gap and inflation. For these central banks, it appears that something not present in the equations, perhaps a shift in the economic outlook not reflected in contemporaneous output gaps and rates of inflation, must have influenced policy in a decisive way.

... reflecting differences in economic conditions ...

Changes in relative economic conditions appear to have some explanatory power for differences across central banks (Graph IV.4). Most of the central banks that raised policy rates or held them constant also lifted their inflation forecasts by a greater amount than the central banks that lowered rates. Similarly, larger downward revisions in growth forecasts were generally associated with relatively larger degrees of policy easing. However, the fit is not perfect. In particular, the Reserve Bank of Australia sharply reduced its

Central bank reaction functions



[1] See footnote 1 to Table IV.1. [2] Predicted values from the regression: $i_t = \alpha + \beta\, i_{t-1} + \gamma\, \pi_t + \delta\, gap_t + \varepsilon_t$, where i = policy rate, period average; π = inflation; *gap* = output gap. Quarterly data, sample period 1990–2007; the dashed line represents the dynamic forecast, the shaded area represents ±1 standard error. The tight fit of the equation during the period up to mid-2007 is due in large part to the inclusion of lagged interest rates as explanatory variables. The influence of lagged rates diminishes steadily in the dynamic forecast for the period after the third quarter of 2007, when values predicted by the model are used.

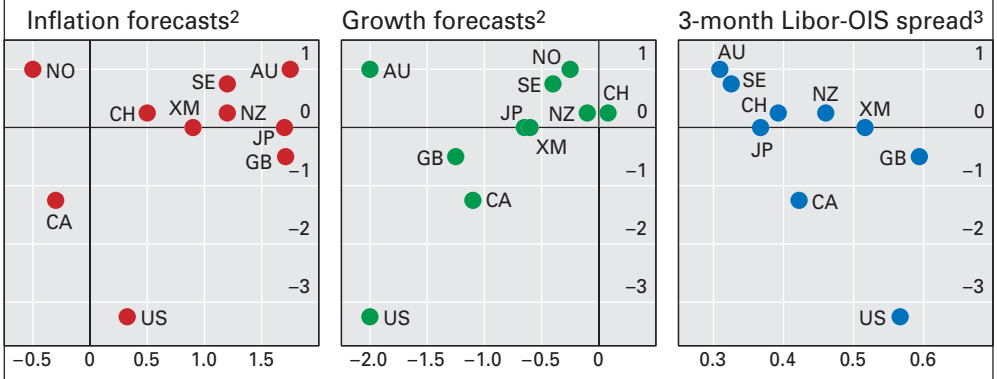
Sources: Central banks; IMF; OECD; Bloomberg; BIS estimates. Graph IV.3

growth forecast and the Central Bank of Norway cut its inflation forecast, yet both central banks increased policy rates. In part, this might reflect some endogeneity, with revisions to forecasts reflecting the slowing induced by higher policy rates.

... differences in the extent of financial dislocations ...

Another reason for the different policy responses was that not all countries were hit equally hard by the turbulence in financial markets. Taking the average spread between three-month Libor and overnight index swaps (OIS) of the same maturity in a particular currency as a measure of the severity of the turmoil, there appears to be a close relationship between changes in policy rates and the extent of dislocation in money markets. For example, the Australian and Swedish money markets were less affected by the turbulence than the corresponding US dollar and sterling markets. This is consistent with the fact that the Reserve Bank of Australia and the Riksbank increased policy rates whereas the Federal Reserve and the Bank of England cut them. The correlation between the extent of the dislocation and the relative easing of policy remains even after controlling for the revisions in the forecasts for output and inflation (not shown).

Changes in policy rates and economic conditions[1]



AU = Australia; CA = Canada; CH = Switzerland; GB = United Kingdom; JP = Japan; NO = Norway; NZ = New Zealand; SE = Sweden; US = United States; XM = euro area.

[1] Between end-June 2007 and mid-May 2008; in percentage points. Vertical scale: change in policy rates; horizontal scale: as indicated in the panel headings. [2] Change in central bank forecasts (where not available, consensus forecasts) for 2008. [3] Average level.

Sources: Central banks; Bloomberg; © Consensus Economics. Graph IV.4

... and differences in the assessment of risks

The finding that a measure for tensions in the money market has some explanatory power for changes in interest rates, even when forecast revisions are controlled for, could indicate that central banks also responded to the perceived risks to these forecasts. All central banks pay attention to risks to their outlook to some degree when taking monetary policy decisions, although the precise nature of the risks considered during the period under review, and the effect they had on policy, varied greatly across institutions. Some central banks focused primarily on avoiding the risk of a serious downturn in the immediate future, whereas others were more concerned about the implications of easier policy for future macroeconomic outcomes.

The Federal Reserve as a macroeconomic risk manager

Among the central banks of the major advanced industrial economies, the Federal Reserve perhaps falls most clearly into the category of those putting particular emphasis on wanting to prevent the possibility of a serious downturn. This risk management approach to monetary policy was an important factor behind the interest rate reductions by the Federal Reserve seen over the period, as was repeatedly pointed out in the minutes of FOMC meetings and the statements by FOMC members.

The Bank of Japan's "two perspectives" put emphasis on longer-term risks

Policymakers at the Bank of Japan have arguably been the most explicit in emphasising the possible longer-term implications of their monetary policy choices. The second perspective of their "two-perspective" framework for determining policy focuses on risks to the outlook beyond the two-year horizon. In late 2007, the Policy Board had concluded that the second perspective, by itself, pointed to tighter policy given the potential for overborrowing and excessive fixed investment if market participants believed that interest rates would remain low for an extended period of time. However, by March 2008, at least one member of the Policy Board reasoned that the second perspective highlighted downside risks to growth and inflation and hence the advisability of easier policy to avoid the re-emergence of deflation.

Most other central banks seemed to place less emphasis on the risks of possible extreme outcomes. Nevertheless, they still had to balance concerns about a larger than expected rise in inflation, which might lead to inflation expectations becoming unanchored, with the risk of a sharper than anticipated slowdown in economic growth.

Differences in mandates

Current and projected economic conditions as well as the risks surrounding forecasts are clearly important factors shaping policy decisions, but differences in beliefs about how the economy operates and differences in mandates also appear to play a role. For example, the dual mandate of the Federal Reserve, with its equal emphasis on output and inflation, would seem to call for a sharper easing in response to the turmoil than a mandate with no explicit obligation to support output. Conversely, the ECB's policy of holding rates steady despite the deceleration in economic activity is in line with the priority given in its mandate to achieving price stability.

Developments in central bank communication

Challenges for communication

The uncertainty associated with the financial turbulence and its impact on the world economy posed substantial challenges for central banks' communication strategies. In particular, they had to ensure that an easier path for monetary policy would not be taken as implying a weakened determination to control inflation or as a decision to "bail out" banks. In addition, central banks had to be aware that their communication could itself affect the trajectory of the financial turbulence, which depended critically on market participants' confidence. The first part of this section reviews some general changes in the communication policy of several central banks during the past year; the second part focuses on communication concerning the provision of liquidity during the turbulence.

Changes in monetary policy communication

Several central banks modified their communication strategies during the year under review in order to increase the public's understanding of the reasoning behind their monetary policy decisions. This continued the decade-long trend towards greater central bank transparency.

Revised communication policy at the Riksbank ...

In May 2007, well before tensions emerged in the money market, Sveriges Riksbank announced that it would provide more information about the reasoning behind its policy decisions. It would hold a press conference after every monetary policy meeting – not only after changes in interest rates or the publication of a Monetary Policy Report, as in the past – and in the minutes would attribute remarks made during the meeting to individual members of the Executive Board. Only a few months before, in February, the Riksbank had decided to publish the Board's projections on the future path of policy rates (see the *77th Annual Report*). As part of its new communication strategy, the Riksbank also decided to cease giving guidance on future interest rate moves in speeches and press releases between meetings, as the newly provided information was seen as making such communications unnecessary. However, this last change was partly revised in May 2008 in the light of feedback from

market participants. While stopping short of preannouncing future policy moves, the Riksbank decided that it would be useful to comment on new economic developments and data releases in terms of how they affect its outlook.

... the Federal Reserve ...

Two other major modifications to communication frameworks – at the Federal Reserve and the Reserve Bank of Australia – were also in train well before the financial tensions flared up. Central to the new communication strategy of the Federal Reserve, announced in mid-November 2007, was the release of the economic projections prepared independently by each FOMC participant four times a year, rather than just twice. As in the past, the projections would be prepared under the assumption of "appropriate" monetary policy. The Federal Reserve would publish the range and central tendency of these forecasts as well as some explanation of the underlying reasoning. The forecast horizon of the projections was also extended to three calendar years in order to convey to the public the FOMC participants' evaluation of the long-term behaviour of the US economy. Notably, this extension could give a clearer idea of the level of inflation that FOMC participants thought consistent with the dual objective of maximum employment and price stability. In the event, the range of 1.6–1.9% for PCE inflation in 2010, indicated by the central tendency of the October forecasts, was largely in line with market participants' prior beliefs about the FOMC's inflation objective.

... and the Reserve Bank of Australia

The new communication strategy of the Reserve Bank of Australia, unveiled in December 2007, involved the publication of an explanation of interest rate decisions, even when rates remained unchanged, as well as the release of minutes of the Board meetings on monetary policy. Until then, the Reserve Bank had refrained from explaining no-change decisions since such decisions often (but not always) meant that the Bank had no new information to impart. In the light of the experiences in other countries, however, it decided that the benefits of publishing no-change statements would outweigh the associated risks.

Less signalling of imminent policy decisions

The increased uncertainty about the outlook for inflation and economic growth during the period under review also led to some changes in communication tactics at some major central banks. As uncertainty about the outlook increased, central banks found it more difficult or less desirable to provide guidance on likely future interest rate decisions. For example, the ECB Governing Council left rates unchanged at its September 2007 meeting even though the President had used the term "strong vigilance" in his press conference after the meeting the previous month. The use of this term had infallibly foreshadowed each of the increases in policy rates since 2005. In the United States, the Federal Reserve ceased giving an explicit assessment of the balance of risks in the statement released after the December 2007 meeting of the FOMC in view of the high degree of uncertainty associated with the economic outlook and also provided no such assessment in statements following subsequent meetings.

Communication in financial crises

Reassuring the public ...

As in a number of past crises, the first action taken by several central banks during the recent turmoil was to convey to the public that they were monitoring

the situation closely and would take appropriate steps. Statements along these lines were issued by the ECB and the Bank of Canada on 9 August, for example. Such communications can be more beneficial than actually providing funds if they serve to increase market participants' confidence that the situation is under control.

... through joint communiqués

The joint communiqués issued by a number of central banks in December 2007 and in March and May 2008 elicited positive, albeit short-lived, market responses. As well as specifying the measures that individual central banks would take, they demonstrated the central banks' willingness and ability to take coordinated action in response to the turmoil. One challenge for central bank communication in response to a financial crisis is the possibility that extraordinary actions will be interpreted by the public as an indication that the situation in a particular country is worse than had been feared. By issuing joint communiqués, central banks may have reduced this "negative signalling" risk, since joint actions do not highlight conditions in any specific currency area.

Explaining central bank operations

Central bank communication was also motivated, in part, by a need to explain central bank operating procedures, in particular when innovative facilities were put in place. Another challenge was to convince the public that, taken by themselves, extraordinary liquidity operations did not represent a change in the stance of monetary policy. On the contrary, all central banks involved were very careful to distinguish between setting interest rates on the one hand, and policies designed to redistribute reserves and improve market liquidity – the subject of the next section – on the other.

Central bank operations in response to the financial turmoil

The turmoil necessitated adjustments to operations

Central banks adjusted their monetary policy operations in a number of extraordinary and unprecedented ways in response to the financial turmoil that flared up in August 2007 (Table IV.2). When the tensions spilled over into the interbank money market in the middle of the month, the demand for central bank reserves in the economies affected became more volatile and less predictable. This made it appreciably harder for central banks to implement a given monetary policy stance through standard open market operations and standing facilities, the main instruments for day-to-day policy implementation. Moreover, term interbank markets, which play a key role in the financial system and the monetary transmission mechanism, came under pressure as investors became hesitant to place funds in unsecured money markets at anything other than the shortest horizons. Finally, liquidity deteriorated in many secured funding markets, including, in March 2008, dollar-denominated short-term repurchase agreements. This made it difficult for institutions to finance their holdings of what had become highly illiquid assets. All of these developments called for, and were to some extent amenable to, central bank intervention. This section discusses, in turn, how central banks adjusted their reserve management operations in order to maintain control of overnight interest rates, the steps they took to replace impaired sources of funding, and some issues raised by central banks' responses to the turmoil.

Steps taken during the financial turmoil

	ECB	BoJ	Fed	RBA	BoC	SNB	BoE
Exceptional fine-tuning (frequency, conditions)	✓	✓	✓	✓	✓	✓	✓
Exceptional long-term open market operations	✓	✓	✓	✓	✓	✓	✓
Front-loading of reserves in maintenance period	✓			•	•	✓	
Change in the standing lending facility			✓				
Broadening of eligible collateral			✓	✓	✓	✓[1]	✓
Change in banks' reserve requirements/target balances				•	•		✓
Broadening of counterparties			✓				✓[2]
Increasing or initiating securities lending			✓				✓

ECB = European Central Bank; BoJ = Bank of Japan; Fed = Federal Reserve; RBA = Reserve Bank of Australia; BoC = Bank of Canada; SNB = Swiss National Bank; BoE = Bank of England; ✓ = yes; blank space = no; • = not applicable.

[1] Entered into effect on 1 October, but not linked with the turmoil. [2] Only for four auctions of term funding announced in September 2007, for which, however, there were no bids.

Source: Central banks. Table IV.2

Reserve management

As discussed in Chapter VII, the financial turmoil made banks both highly uncertain of their future funding needs and far less confident of their ability to meet potential needs quickly because of illiquidity in money markets. Banks thus became much more cautious in their liquidity management. As a result, the demand for central bank reserves became more volatile and less predictable.

Unstable demand for reserves ...

Central banks implement monetary policy through regular short-term market transactions designed to keep the supply of reserves (deposits of banks at the central bank) near the level demanded by banks, thereby keeping reference market rates near policy targets. As the unstable demand for reserves made it more difficult to accurately project the necessary supply, central banks made compensating adjustments to their reserve-providing operations. The Reserve Bank of Australia, the Bank of Canada, the ECB, the Bank of Japan, the Swiss National Bank, the Federal Reserve and, from September, the Bank of England conducted market operations that were either outside their regular schedule or in larger than usual amounts, and took other steps to equilibrate demand and supply for central bank reserves at the policy rate. For example, as the turmoil began, the ECB and the Federal Reserve modified their operations in response to sharp upward pressure on overnight rates amidst profound uncertainty about the demand for reserves. In its first operation in response to the turmoil, on 9 August, the ECB took the unusual step of meeting all demand at its policy rate of 4%. On 10 August, the Federal Reserve held three separate auctions of overnight repurchase agreements,

... addressed by more frequent and larger operations

with the final auction occurring in the early afternoon, well after its usual operating time.

Role of reserve remuneration

In most cases, central banks did not inject more reserves than were needed to maintain reference rates near policy rates. In all regions significantly affected by the turmoil, banks' demand for overall precautionary holdings of *liquid instruments* went up, but the extent to which that resulted in increased demand for *central bank balances* specifically depended on the opportunity cost of such balances. In the United States, where no interest is paid on reserve balances, and in the euro area, where deposits beyond minimum requirements are remunerated at 100 basis points below the policy rate, the demand for central bank reserves did not rise appreciably and net injections were in nearly every case fairly quickly reversed. The main exception was the early August maintenance period in the United States, where for a few days reserves were not drained and the federal funds rate averaged well below the target rate. By contrast, at the Bank of England, where target reserve balances are set by the individual banks in advance and are remunerated at the policy rate, balances went up substantially starting with the September maintenance period. At the Reserve Bank of Australia and the Bank of Canada, where deposit rates are only 25 basis points below the policy rate, deposits rose, but only by modest amounts.

Standing facilities as liquidity backstops ...

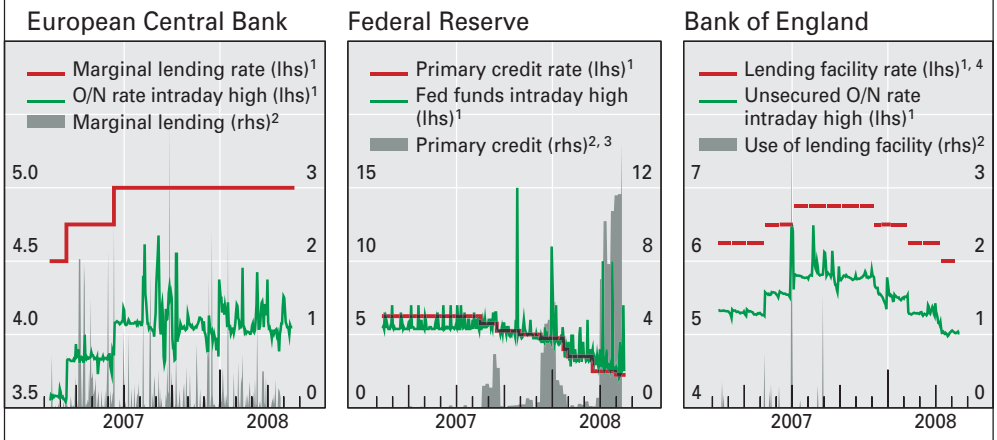
Almost all central banks have standing loan facilities that extend collateralised loans to banks at a rate above the policy rate. These facilities can serve multiple purposes. One is to act as a backstop to open market operations in the implementation of monetary policy. Borrowing at the facility injects additional reserves on demand and so the lending rate tends to be a cap on the overnight interbank rate. Another role is to provide funds to institutions that are experiencing idiosyncratic account management problems. Yet another is to supply liquidity to institutions temporarily unable to raise funds but otherwise sound. A final role, typically fulfilled by a separate facility, is to provide funds necessary to work out the resolution of a troubled institution.

In the event, only the Federal Reserve eased the terms on its standing loan facility (the primary credit facility) in response to the turmoil. It narrowed the spread between the interest rate on the facility – the "discount rate" – and its policy rate from 100 to 50 basis points in August, and then to 25 basis points in March 2008. It also extended the allowable maturity on the loans from overnight to 30 and then to 90 days. The changes were designed to give banks greater assurance about the cost and availability of funding. The narrower spread was intended to reduce the degree to which any transitory tightness in the interbank market would drive up the federal funds rate, while the longer allowable maturity made these loans a closer substitute for term money market credit, which had become increasingly scarce.

... hampered by stigma

However, the effectiveness of the Federal Reserve's standing loan facility, both for putting a cap on overnight rates and for relieving term money market pressures, was greatly reduced by banks' unwillingness to borrow from it. Even though information on individual discount window borrowing is not released to the public, banks appear to have been concerned that their borrowing could have become known and then taken as an indication of financial difficulties.

Measures of stigma



[1] In per cent. [2] In billions of units of domestic currency. [3] Weekly averages. [4] The spread between the lending facility rate and the Bank rate is lowered from 100 to 25 basis points on the last day of the one-month maintenance period (observations omitted).

Sources: Central banks; Bloomberg; Datastream. Graph IV.5

Banks at times bid for overnight interbank loans and 30-day eurodollar deposits at rates many percentage points above the discount rate (Graph IV.5). In the United Kingdom, too, there were anecdotal reports that bilateral trades took place at elevated rates, particularly after the provision of emergency liquidity assistance to a distressed mortgage lender, Northern Rock, in September (see Chapter VII). In contrast, "stigma" was less of an issue in the euro area, perhaps because borrowing under the ECB's marginal lending facility has historically been seen as unexceptional. Thus, in the euro area there were no reported interbank trades at higher rates.

Replacing impaired sources of funding

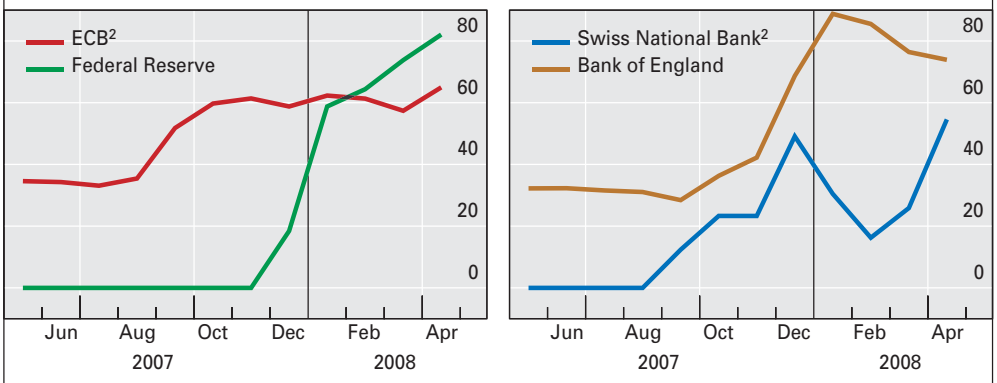
Pressure in term money markets ...

In part, the steps taken to keep overnight rates near policy targets were intended not only to implement the monetary policy stance, but also to address the relative supply shortfall in term money markets. Specifically, financial institutions might be more inclined to lend term funds if they were confident of financing the term loans at reasonable rates in the overnight market. Moreover, they would bid less aggressively for term funds if they considered overnight funds to be a reliable substitute.

... induced a shift to longer-maturity operations ...

As the turmoil unfolded, however, the focus of central banks' efforts to alleviate the pressures in term money markets shifted towards providing term funding directly. For instance, the ECB and the Swiss National Bank conducted supplementary three-month financing operations beginning in August and September, respectively, and the ECB added six-month tenders beginning in April. Starting in December, the Bank of England offered three-month tenders in larger amounts than normal and the Federal Reserve extended one-month loans to sound institutions under its new Term Auction Facility (TAF). These operations significantly increased longer-term reverse (loan or repo) operations as a proportion of all reverse operations at these central banks (Graph IV.6).

Share of longer-term reverse operations at selected central banks[1]



[1] Longer-term reverse operations (one-month or greater) as a percentage of total outstanding reverse operations; monthly averages. [2] Includes operations denominated in US dollars.

Sources: Central banks; BIS calculations. Graph IV.6

Central bank operations re-established control over reference rates and helped ease pressures in term money markets in large part by addressing the poor distribution of reserves resulting from the reduced functioning of the interbank market. In several cases, central banks widened the range of eligible collateral, and in some cases extended the list of counterparties with whom they transact, making it possible for market participants to finance instruments whose markets faced severe dislocation. The Bank of Canada decided in August to accept temporarily as collateral for its market operations all securities that were already eligible for its standing liquidity facility. In September and October, the Reserve Bank of Australia extended the list of collateral eligible for its regular operations and its overnight repo facility to include a broader range of bank paper, as well as residential mortgage-backed securities and asset-backed commercial paper. Starting in September, the Bank of England offered the first of four special three-month tenders against a wider range of collateral than normal and to a broader set of counterparties. In December, it also expanded the range of collateral it accepted in its regular three-month operations. Also in December, the Federal Reserve's TAF provided market-priced funding to depository institutions against discount window collateral, thus effecting a significant widening of the eligible counterparties and collateral relative to the Federal Reserve's other open market operations.

... and changes in eligible collateral

International joint initiatives in December 2007 ...

The TAF was one of many central bank actions undertaken by the central banks from five currency areas (the Bank of Canada, ECB, Swiss National Bank, Federal Reserve and Bank of England) following a joint announcement on 12 December. Another was the establishment of currency swap lines between the Federal Reserve, on the one hand, and the ECB and the Swiss National Bank, on the other. The latter two central banks used the lines to finance regular auctions of term dollar funding in their own jurisdictions. The proceeds helped banks in the euro area and Switzerland meet their dollar funding needs, which they had found more difficult because of a dislocation in the forex swap market (see Chapter V). European banks' desire to secure

dollar funding early in the US trading session had resulted in considerable upward pressure on overnight rates in the morning, complicating the Federal Reserve's efforts to implement its policy stance. After the initiation of the dollar auctions, those pressures dissipated for a while. The auctions by the European central banks of term dollar funds continued through January, but were suspended in February when market conditions seemed to improve.

... and again in March 2008

The respite was short-lived, however. In mid-March, financial market conditions deteriorated further, and central banks took a number of additional steps to fund illiquid assets held by financial institutions. The Federal Reserve raised the amount of TAF financing substantially and extended the maximum maturity of its repos from two weeks to one month. Furthermore, the same central banks that had taken coordinated measures in December made a joint announcement of additional initiatives. The transatlantic swap lines were increased in size, and the ECB and Swiss National Bank renewed their auctions of dollar loans. Moreover, the Federal Reserve initiated a new Term Securities Lending Facility (TSLF), which allowed primary dealers (the 20 or so large securities dealers that participate in open market operations) to borrow Treasury securities from the Federal Reserve Bank of New York in exchange for certain less liquid securities, including some highly rated private mortgage-backed securities that were not eligible for open market operations.

Fed lending to non-depository institutions

Over the following days, the Federal Reserve used its authority to lend to non-depository institutions for the first time since the 1930s. First, on 14 March, it provided financing to facilitate the acquisition of investment bank Bear Stearns, which was on the brink of bankruptcy, by JPMorgan Chase. Then, on Sunday 16 March, it established the Primary Dealer Credit Facility (PDCF), which provides overnight loans at the discount rate to primary dealers against a list of highly rated private and public securities. The facility was designed to make it easier for primary dealers to supply financing (via repos) to participants in markets for securitised products. While the TAF had extended a type of open market operation to the institutions with access to the discount window, the PDCF extended a standing loan facility to those institutions that participate in open market operations. In consequence, the two new facilities moved the Federal Reserve's operational framework in the direction of offering both market operations and standing facilities to the same, broad set of institutions and against a more uniform set of collateral.

Bank of England introduced securities swap arrangement

In mid-April, the Bank of England also introduced a securities swap arrangement in an effort to help improve the liquidity position of banks burdened with an overhang of now illiquid assets. Specifically, the Bank introduced a Special Liquidity Scheme – a facility through which banks could swap high-quality but temporarily illiquid assets for UK Treasury bills. The swaps were made available for any period within a six-month window and with maturities extending up to three years. And in early May, there was another joint announcement by the major central banks. The transatlantic swap lines and associated dollar auctions were again increased in size, and the Federal Reserve widened the list of securities it accepts in the TSLF to include other types of highly rated asset-backed securities.

At present, it is difficult to gauge the effectiveness of central bank operations in response to the financial turmoil. Central banks were able to contain the pickup in volatility in targeted market interest rates despite the less predictable demand for reserves and the reduced effectiveness of some standing loan facilities for putting a cap on rates. But term money market spreads remain very high by historical standards, even after allowing for some upward adjustment from what may have been unjustifiably low levels prior to the turmoil. Some of the elevation in spreads no doubt reflects counterparty credit concerns, which cannot be allayed on a broad scale by central bank interventions. However, term spreads have stayed elevated even while credit spreads for financial institutions have narrowed. This suggests that concerns about liquidity have not been wholly overcome, even by the unprecedented central bank actions to date.

Issues raised by central banks' response to the financial market turmoil

There are costs to intervention ...

When deciding whether or not to intervene to address a financial crisis, central banks must confront a trade-off, since interventions carry costs as well as benefits. Some of these costs may be direct financial costs, such as those incurred when providing an ex post guarantee to institutions or investors. Others, which are arguably more important in the longer term, are related to the moral hazard associated with intervention: the possibility that market participants will take on more risk, increasing the likelihood and possible costs of future interventions, once they know that central banks will intervene to support them.

Different types of central bank actions entail different degrees of moral hazard and financial costs. Among the steps taken during the recent turmoil, more active reserve management within existing frameworks, designed to keep reference market rates near policy targets, most likely entailed the least moral hazard. Expanding collateral and counterparty lists probably involved a relatively greater degree of moral hazard and some financial risks, although the former should in principle have been contained to some extent by conducting the related operations for the most part as market transactions with prices determined in auctions. With respect to financial risk, the pool of collateral pledged to central banks did become somewhat riskier and less liquid, but any increase in risk to the central banks is likely to have been modest, in part because of the larger haircuts applied to riskier or less liquid assets when determining the amount of credit the central bank is willing to provide against them. The moral hazard consequences were probably the greatest in the case of the loans provided to help resolve troubled institutions. Typically, in such circumstances, central banks seek to impose costs on shareholders, creditors and management that are as high as possible while allowing the institution to stay open. Inevitably, though, the costs to shareholders and creditors are lower than they would have been if there had been a disorderly failure.

... and also benefits ...

The principal benefit of intervening is that it can prevent or mitigate a developing financial crisis. Financial crises can result in a significant curtailment of credit availability and deterioration in business and household confidence. The ensuing declines in economic activity, employment and

wealth substantially reduce social welfare. Calculating this benefit requires an assessment not only of the possible costs avoided, but also of the odds that potential intervention strategies will be effective.

... including avoiding more costly intervention later on

Another benefit of certain types of central bank action to stem a financial crisis is that it may help reduce the eventual need for other kinds of actions that entail even greater moral hazard or financial costs. For example, early and aggressive steps to inject liquidity using market transactions may make emergency assistance in the form of loans later on unnecessary.

Difficult to weigh costs and benefits in real time ...

It may not be possible to calculate very precisely in real time the likely costs and benefits of particular actions in response to what is often a rapidly evolving situation. In the end, decisions will call for a substantial amount of judgment. Even so, defining objectives in advance and delineating the prospective costs and benefits of acting are important preparatory steps that can help to structure and facilitate even the most expeditious decision-making.

... but clarity about objectives may limit mission creep

Recent interventions to promote the smooth functioning of term money markets and repo markets could also engender the view that central banks will intervene to support other markets or institutions in similar situations of financial distress in the future. This view could further increase moral hazard. Public clarity from central banks about their objectives and principles for dealing with financial market disruptions could help limit such "mission creep". Preplanning exit strategies from extraordinary operations might also be helpful.

Response will always require innovation

It is certain that the next financial crisis will have characteristics that are unexpected and will require some central bank responses that cannot be prepared in advance. Hence, it will probably not be possible to design operational frameworks that include a complete set of contingency arrangements. To some extent, successful management of financial crises will depend on central banks preserving their capacity to innovate. In this regard, maintaining strong contacts with market participants, good channels of communication with other financial agencies and central banks and a well informed staff will be important in ensuring that information on new situations can be rapidly collected, shared and understood.