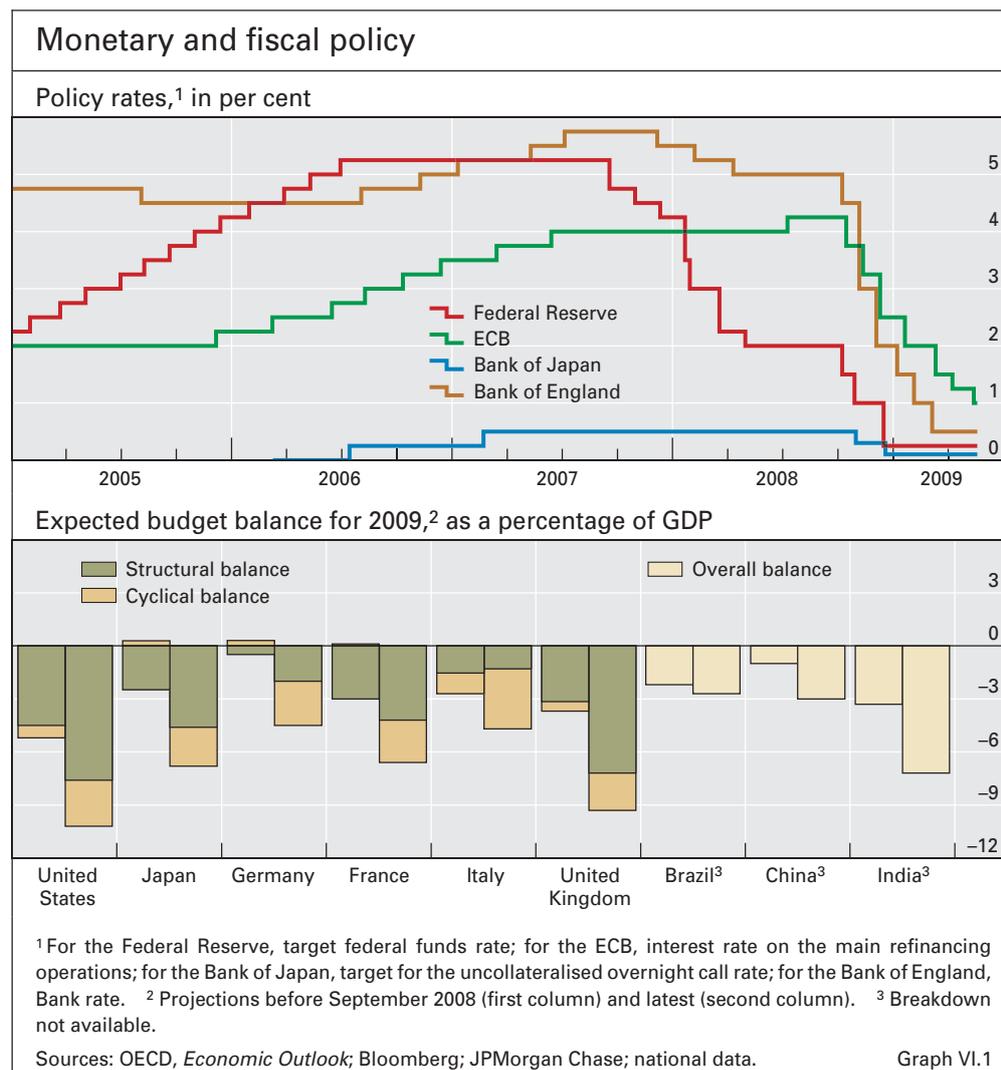


VI. Policy responses to the crisis

The intensification of the global financial crisis during the third stage in September–October 2008 and the subsequent sharp downturn of the world economy in the fourth stage (see Table I.1 for an overview of the stages of the crisis) led to an unprecedented response by policymakers. Central banks around the world cut policy rates aggressively, in many cases to levels near zero (Graph VI.1, top panel). Normally, this would have provided a massive stimulus to economic activity, but the dysfunctional state of the financial system severely blunted the impact of lower interest rates. Major central banks therefore took additional measures. At the same time, a first wave of bank rescue packages unveiled in the last quarter of 2008 turned out to be insufficient to stabilise the financial system. Governments were thus



subsequently forced to modify their terms and expand their scope. Towards the end of 2008, it became increasingly clear that neither monetary policy nor rescue packages were sufficient to prevent a sharp contraction of the real economy. Governments responded by introducing sizeable fiscal stimulus to support aggregate demand (Graph VI.1, bottom panel).

The exceptional deterioration in the outlook for the economy in late 2008 and early 2009 clearly called for extraordinary policy actions, which are discussed in some detail in the next three sections of this chapter. At this writing, the ability of those plans to generate a sustained recovery is an open question. The major reasons for doubt, discussed in the final section, are limited progress in addressing the underlying problems of the financial sector and the risks associated with the expansionary fiscal and monetary policies put into place during the period under review.

Monetary policy

In the middle of 2008, amidst the financial turmoil, central banks faced the twin problems of slowing output growth and persistently high inflation. The extent and timing of the slowdown differed across countries. Economic growth in the major advanced economies had been relatively strong in early 2008, but turned negative towards mid-year (see Chapter IV). Emerging market economies continued to experience solid growth, but the export-oriented economies of East Asia and central Europe showed signs of slowing before the crisis of confidence in September and October (see Chapter V). Inflation rates were well above (implicit or explicit) targets almost everywhere, owing to sharp rises in food and energy prices during the first half of 2008.

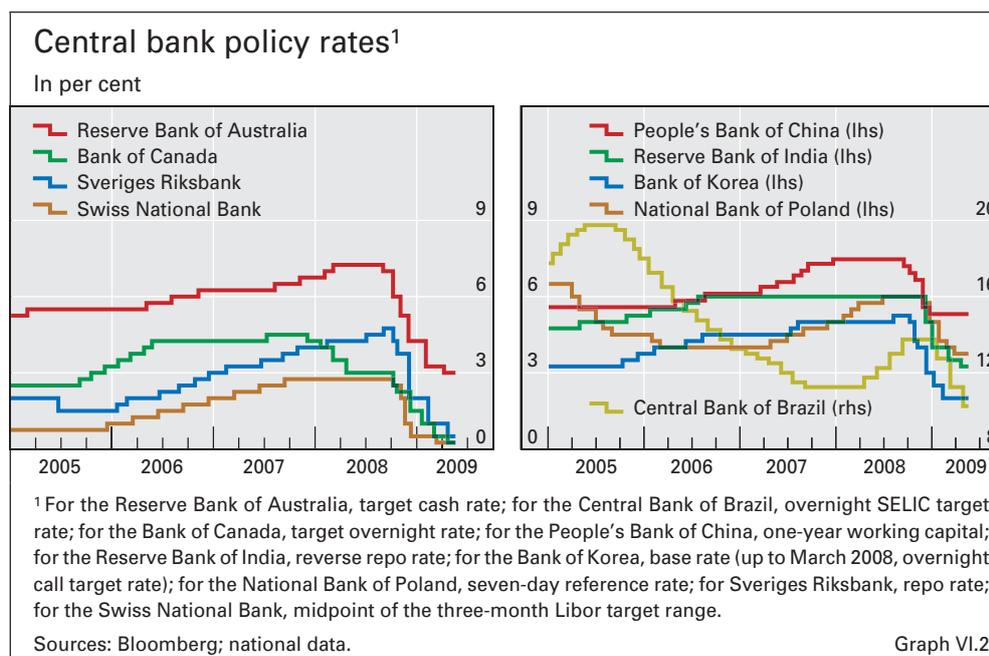
Finding the appropriate monetary policy response in this environment proved challenging. With the benefit of hindsight, one can see that policymakers underappreciated the extent of the slowdown in mid-2008 and the strength of the associated disinflationary forces. Although slowing growth would at some point create the slack necessary to stabilise prices, few central banks expected inflation to fall before late 2009. In the meantime, there was a real danger that persistently high inflation might feed into permanently higher inflation expectations, which in turn could result in a higher pass-through from commodity prices to other prices and wages. As a consequence, central banks in both advanced and emerging market economies either held rates constant or raised them.

The 15 September bankruptcy of Lehman Brothers, followed by weeks of extreme pressure in the credit markets, escalating threats to the stability of major financial institutions and an accelerating pullback in economic activity, marked a turning point for the world economy and for monetary policy. On 8 October, when they simultaneously announced cuts in their policy rates, six major central banks undertook the first ever round of coordinated rate action. Other central banks around the world also began rapidly cutting rates (Graph VI.1, top panel, and Graph VI.2). The worldwide declines in output and inflation in the fourth quarter of 2008 and early 2009 far exceeded those implied by the downside risks to growth identified only a few months before.

Slowing growth and high inflation in mid-2008 ...

... complicated policy choices

Sharp reductions in policy rates after the Lehman failure



By the end of May 2009, the Federal Reserve, the Bank of Japan, the Bank of England, the Bank of Canada, Sveriges Riksbank and the Swiss National Bank had brought policy rates close to zero. The European Central Bank lowered its main policy rate by 3¼ percentage points between September 2008 and May 2009, but stopped well before it reached the zero lower bound. However, the ample supply of central bank balances from late 2008 onwards pushed overnight rates close to the rate on the ECB's deposit facility, and thus almost to zero. Central banks in many emerging market economies also reduced interest rates, albeit from a much higher level.

Not all central banks had room to lower policy rates. A run on the currency forced the central banks of Hungary, Iceland and Russia to tighten policy in late 2008 despite declining inflation and slowing real activity, although they started to reduce policy rates gradually over the course of the following months.

Notwithstanding the rapid and sizeable easing in policy rates after the bankruptcy of Lehman Brothers, the limitations of interest rate policy became more apparent in many countries. Financial market tensions and the rise in credit and liquidity risk premia (see Chapter II) impaired the transmission mechanism. For example, yields on corporate bonds increased despite sharp declines in policy rates. Banks generally passed reductions in their funding costs on to their customers, but they tightened credit standards significantly, offsetting the impact of cuts in the policy rate on overall financial conditions (see Chapter IV).

As policy rates in many countries reached historically low levels, the zero lower bound became a binding constraint, making it impossible to follow policy rules that called for negative nominal interest rates in many advanced economies in view of widening output gaps and falling inflation rates. Moreover, a number of considerations led central banks to stop easing once

A run on the currency limited room for manoeuvre in some economies

A dysfunctional financial system ...

... and the zero lower bound limited the effectiveness of interest rate policy

policy rates reached a level slightly above zero. Given that bank deposit rates are generally below money market rates, the former may reach zero even if the latter are still positive. When that happens, any further reduction in market rates may not be passed on to households and firms, as banks need to maintain a margin between deposit and lending rates to remain profitable. Similarly, money market mutual funds may become unprofitable once rates fall to a certain level.

Broadening the scope of policy

In this context, many central banks took additional steps to improve the functioning of credit markets and to ease financial conditions. Given the unprecedented breadth of actions in many countries, it is useful to outline a framework for reviewing the various facets of central banks' responses.

A general framework for assessing policy responses

Nowadays, central banks generally conduct monetary policy through targets on very short-term interest rates. This approach comprises two core elements: signalling the desired policy stance through the announcement of a key interest rate (the policy rate);¹ and liquidity management operations, defined broadly to encompass various aspects of the operating framework – including the maturity, pricing and collateral requirements for central bank liquidity – that supports the desired stance by keeping the relevant market rate consistent with the policy rate. Typically, liquidity management operations are designed and implemented carefully to ensure that they influence only the specific market rate targeted by policy. As such, they play a supportive role, neither impinging upon nor containing any information relevant to the stance of policy.

Liquidity operations in normal times ...

Liquidity management operations, however, can also be used deliberately to influence specific elements of the monetary transmission mechanism, such as certain asset prices, yields and funding conditions *over and above* the impact of the policy rate. In this case, liquidity operations no longer simply play a passive role but become an integral part of the overall monetary policy stance. Such operations generally result in substantial changes in central banks' balance sheets – in terms of size, composition and risk profile. They will henceforth be referred to as *balance sheet policy*.

... and in periods of stress

The various forms of balance sheet policy can be distinguished by the particular market that is targeted. The most common, familiar form is sterilised foreign exchange intervention. Here, purchases or sales of foreign currency seek to influence the level of the exchange rate separately from the policy rate that defines the official policy stance. In the current crisis, balance sheet policy has also been employed to target term money market rates, long-term government bond yields and various risk spreads. While the justification, underlying mechanics, channels of influence and balance sheet implications are analogous to the case of foreign exchange intervention, the *choice of market* is atypical and in some cases unprecedented. It is the choice of market that renders recent central bank actions "unconventional", not the overall

Balance sheet policy varies in the choice of market targeted ...

¹ The policy rate can take the form of a rate actually set by the central bank in its operations, such as the ECB's minimum bid rate, or may be simply an announced target for a market rate, such as the Federal Reserve's target federal funds rate.

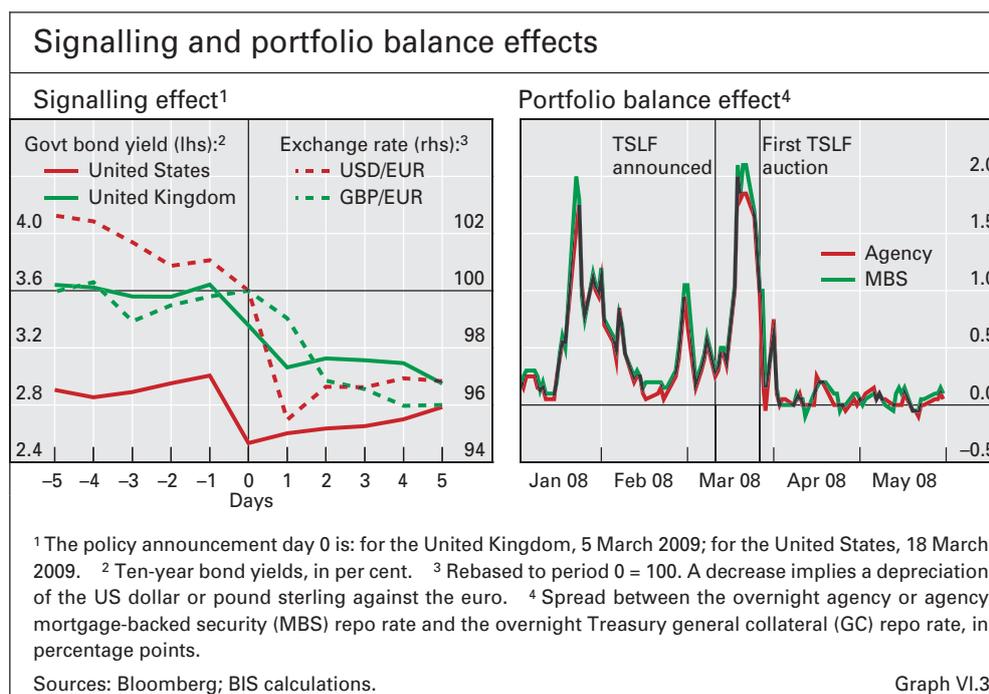
approach of seeking to influence specific elements of the transmission mechanism over and above the policy rate.

An important feature of balance sheet policy is that it can be implemented *regardless* of the prevailing interest rate level. Foreign exchange interventions, for example, are routinely carried out in this manner. As long as central banks possess the capacity to carry out offsetting operations on reserve balances, neither expanding asset holdings nor altering their composition will necessarily impinge on central banks' ability to maintain their policy rates close to target. Indeed, many Asian central banks that intervened actively in foreign exchange markets in recent years have been able to attain their official interest rate targets despite sizeable expansions of their balance sheets.

In principle, the effects of balance sheet policy may be transmitted through two main channels. The first is a signalling effect, analogous to that used to attain short-term interest rate targets. In this case, operations undertaken by the central bank, or their communication, influence public expectations about key factors that underpin an asset's market valuation. Those factors include expectations regarding the future course of policy, inflation, relative scarcities of different assets or their risk and liquidity profiles. For example, the announcement that the central bank is prepared to engage in operations involving illiquid assets may in itself boost investor confidence in those assets, thereby reducing liquidity premia and stimulating trading activity. The signalling effect can be quite powerful, as illustrated by the sharp drop in long-term government bond yields and exchange rates in the United States and the United Kingdom following announcements by the Federal Reserve and the Bank of England of plans for outright purchases of the respective government bonds (Graph VI.3, left-hand panel; see Chapter II for further examples).

... and can be implemented regardless of the interest rate level

Balance sheet policy operates via signalling ...



The second channel – a broader version of the standard portfolio balance effect – works through the impact of central bank operations on the composition of private sector portfolios. When assets are imperfect substitutes for one another, changes in relative asset supplies brought about through central bank operations materially alter the composition of portfolios. To compensate, relative asset yields typically need to change, and such changes may in turn influence the real economy. To the extent that this process leads to stronger balance sheets, greater collateral values and higher net worth, it may help loosen credit constraints, lower external finance premia and hence revive private sector intermediation. For example, when risky private securities are purchased from banks in exchange for risk-free claims on the public sector, the resultant improvement in the overall risk profile of bank balance sheets may enhance both the willingness and the ability of banks to lend.

... and portfolio balance effects

A clear illustration of the portfolio balance effect in the current episode is the impact of the Federal Reserve's Term Securities Lending Facility (TSLF) on repo financing spreads between Treasury and non-Treasury collateral – a gauge of the relative scarcity of the two types of collateral. The effectiveness of such securities lending operations comes directly from their impact on the relative supplies of collateral in the market. As such, the observation that repo financing spreads declined only after the TSLF was implemented – and not when it was announced – demonstrates the influence of the portfolio balance effect that is clearly distinct from the signalling effect (Graph VI.3, right-hand panel).

There is ongoing debate as to whether the particular structure of central bank liabilities matters for the effectiveness of balance sheet policy. For example, the focal point of quantitative easing – as used to describe operations by the Bank of Japan during 2001–06 – is the expansion of bank reserves, which are on the liabilities side. Credit easing operations by the Federal Reserve in the current episode, on the other hand, concentrate squarely on the asset composition of the central bank's balance sheet and the influence that this has on private sector credit conditions. From the perspective of quantitative easing, bank reserves are special either in their ability to act as a catalyst for bank lending or because they contribute to market stability and confidence. Credit easing, on the other hand, does not attach particular significance to bank reserves, implicitly treating the various forms of central bank liabilities as very close substitutes, not only for one another but also for certain kinds of government debt. From this perspective, the manner in which balance sheet policy is funded – be it by issuing central bank bills, issuing short-term treasury bills and depositing the proceeds at the central bank, or simply increasing bank reserves (which may be interest bearing) – is of secondary importance as far as effectiveness is concerned. Clearly, policy communication also differs significantly between the two approaches.

Quantitative easing and credit easing

An overview of central bank responses

The conceptual framework just described can be usefully employed to assess central bank responses to the crisis so far. In particular, the responses can be divided into three broad categories according to how the associated operations

Central banks adopted three types of measures:

Central bank responses to the crisis								
Objective	Measures adopted	Fed	ECB	BoE	BoJ	BoC	RBA	SNB
Achieve the official stance of monetary policy	Exceptional fine-tuning operations	✓	✓ ¹	✓	✓	✓	✓	✓
	Change in reserve requirements			✓ ²				
	Narrower corridor on overnight rate	✓ ³	✓	✓				
	Payment of interest on reserves	✓			✓ ⁴			
	Increased treasury deposit	✓				✓		
	Short-term deposit or central bank bill		✓	✓	✓		✓	✓
Influence wholesale interbank market conditions	Modification of discount window facility	✓ ⁵		✓				
	Exceptional long-term operations	✓	✓ ⁶	✓	✓	✓	✓	✓
	Broadening of eligible collateral	✓	✓	✓	✓	✓	✓	✓
	Broadening of counterparties	✓		✓	✓	✓	✓	
	Inter-central bank FX swap lines	✓	✓	✓	✓	✓	✓	✓
	Introduction or easing of conditions for securities lending	✓		✓	✓	✓		
Influence credit market and broader financial conditions	CP funding/purchase/collateral eligibility	✓ ⁷		✓ ⁸	✓ ⁹	✓ ¹⁰	✓ ¹¹	
	ABS funding/purchase/collateral eligibility	✓ ¹²	✓ ¹³	✓ ⁸			✓ ¹¹	
	Corporate bond funding/purchase/collateral eligibility			✓ ⁸	✓ ¹⁴	✓ ¹⁰		✓
	Purchase of public sector securities	✓ ¹⁵		✓ ⁸	✓ ¹⁶			
	Purchase of other non-public sector securities				✓ ¹⁷			✓ ¹⁸

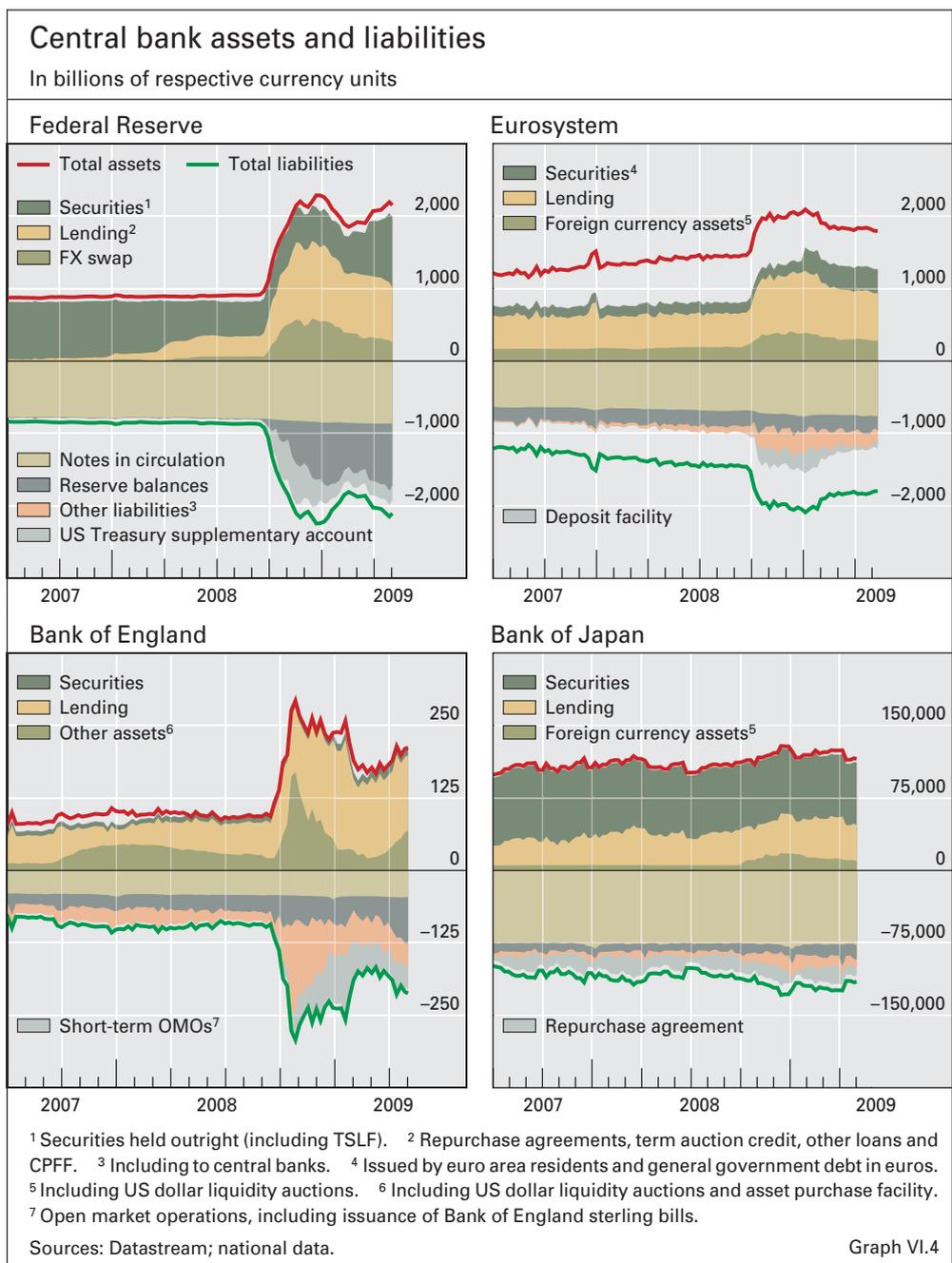
Fed = Federal Reserve; ECB = European Central Bank; BoE = Bank of England; BoJ = Bank of Japan; BoC = Bank of Canada; RBA = Reserve Bank of Australia; SNB = Swiss National Bank. ✓ = yes; blank space = no.

¹ Including front-loading of reserves in maintenance period. ² Expand range over which reserves are remunerated. ³ Lower the discount rate relative to the target federal funds rate. ⁴ Pay interest on excess reserve balances (Complementary Deposit Facility). ⁵ Reduce rate and expand term on discount facility; allow participation of primary dealers (Primary Dealer Credit Facility). ⁶ Including fixed rate full-allotment operations. ⁷ Finance purchase of short-term certificates of deposit, commercial paper (CP) and asset-backed CP (ABCP) (Money Market Investor Funding Facility, Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility and Commercial Paper Funding Facility (CPFF)). ⁸ Asset Purchase Facility. ⁹ Increase frequency and size of CP repo operations and introduce outright CP purchases. ¹⁰ Term Purchase and Resale Agreement Facility for Private Sector Instruments. ¹¹ Acceptance of residential mortgage-backed securities and ABCP as collateral in repo operations. ¹² Finance purchase of asset-backed securities (ABS) collateralised by student, auto, credit card and other guaranteed loans (Term Asset-Backed Securities Loan Facility). ¹³ Purchase of covered bonds. ¹⁴ Expand range of corporate debt as eligible collateral and introduce loan facility against corporate debt collateral. ¹⁵ Purchase Treasury debt as well as direct obligations of and MBS backed by housing-related government-sponsored enterprises. ¹⁶ Purchase Japanese government bonds to facilitate smooth money market operations; not intended to influence bond prices. ¹⁷ Purchase equity held by financial institutions. ¹⁸ Purchase foreign currency securities.

Source: National data.

Table VI.1

are related to their proximate objectives (Table VI.1). The first category consists of measures to ensure that the market rate is consistent with the policy rate. The second involves initiatives to alleviate strains in wholesale interbank markets. The third consists of responses aimed at supporting specific credit markets – particularly the non-bank segments – and easing financial conditions more broadly. The last two categories, insofar as they involve operations directed at particular segments of the transmission mechanism over and above the traditional interest rate target, fall under the umbrella of balance sheet policy.



With respect to the first category, the implementation of interest rate targets largely involved accommodating the greater instability in the demand for reserves through a more flexible supply, in terms of both size and frequency. To help anchor short-term rates to the policy target, the Bank of England and the Federal Reserve also reduced the width of the effective corridor on overnight rates by changing the rates applied on end-of-day standing facilities. At the same time, central banks had to expand their capacity to reabsorb excess reserves to neutralise the impact on overnight interest rates of the much expanded operations. As reflected in the composition of central bank liabilities, this was implemented in a number of ways (Graph VI.4). The Bank of England and the Swiss National Bank began

operations to ensure the attainment of the interest rate target;

Box VI.A: Policy coordination by central banks during the crisis

Information sharing with other monetary authorities is part of the daily routine of central bankers. They share many aspects of their policy frameworks and economic thinking with each other and thus are likely to adopt similar measures when facing common challenges, but explicit coordination among central banks is unusual. And while coordinated intervention to limit exchange rate movements was not infrequent in the past, it has become rare – at least among central banks in industrial economies.

During the current financial crisis, however, central banks have coordinated actions to an unprecedented extent. This box investigates some of the reasons why coordination was a preferred policy option.

Coordinated actions during the crisis: liquidity and interest rates

The closest coordination has been seen in efforts to address foreign currency funding shortages in interbank markets, especially for US dollars.⁹ The strains in the US dollar money markets during the crisis rendered it very difficult for non-US banks to obtain US dollar funding, as reflected in dislocations in the foreign exchange swap markets and increased Libor-OIS spreads (see Chapters II and III). In response, the Federal Reserve established swap lines with central banks in Europe to alleviate the US dollar shortage there. After the Lehman failure, it became clear that the growing shortage in US dollar funding needed to be addressed in all major markets simultaneously; the swap lines were subsequently expanded in both scale and geographical scope (Table VI.A). Similar arrangements were later put in place to address the euro and Swiss franc shortage in Europe; existing swap lines were also drawn upon to address the yen shortage in Asia.

Interest rate policies are usually not coordinated, but on 8 October 2008 a number of central banks in the industrial economies took the unprecedented step of jointly announcing interest rate cuts.

Coordinated policy actions by central banks during the crisis

	Dec 07	Mar 08	Sep 08	Oct 08	Nov 08	Jan 09	Feb 09
Central banks providing liquidity (currency)	Liquidity policy: Swap lines announced with the central banks of:						
Federal Reserve (USD)	CH, XM		JP, GB, AU, CA, DK, NO, SE	BR, KR, MX, NZ, SG			
Swiss National Bank (CHF)				XM	PL	HU	
ECB (EUR)				DK, HU ¹	PL ¹		
Nordic central banks ² (EUR)		IS					
Riksbank (SEK)							EE
	Interest rate policy: Joint interest rate cut by the central banks of:						
				CA, XM, CH, SE, GB, US			

AU = Australia; BR = Brazil; CA = Canada; CH = Switzerland; DK = Denmark; EE = Estonia; GB = United Kingdom; HU = Hungary; IS = Iceland; JP = Japan; KR = Korea; MX = Mexico; NO = Norway; NZ = New Zealand; PL = Poland; SE = Sweden; SG = Singapore; US = United States; XM = euro area.

In December 2008, the Bank of Japan expanded an existing bilateral JPY/KRW swap line with the Bank of Korea. In April 2009, the Bank of England, the ECB, the Bank of Japan and the Swiss National Bank announced swap lines for the purpose of providing their local currencies to the Federal Reserve, if required.

¹ Based on repo agreements. ² In Denmark, Norway and Sweden.

Source: National data.

Table VI.A

Why did coordination take place?

The provision of foreign exchange through swap lines had advantages on both sides. For instance, addressing the US dollar shortage of foreign banks helped the Federal Reserve to enhance its control over the rates paid for US dollar funding in money markets and reduced the risk of “fire sales” of dollar-denominated assets by foreign institutions. Admittedly, in its domestic operations the Federal Reserve was already providing US dollar liquidity to US affiliates of non-US banks through various programmes. However, extending direct liquidity distribution to foreign banks across more time zones and institutions would have involved the challenges of setting up additional lending arrangements, including modifying requirements for collateral or assessing the credit risk of these counterparties. By contrast, through swap lines with other central banks, the Federal Reserve could use the existing infrastructure of lending by the foreign central bank to its domestic financial institutions, including settlement arrangements and monitoring of counterparties and eligible collateral. Lending via the foreign central bank also helped to align liquidity support operations with the foreign central banks’ supervisory responsibilities.

For the foreign central bank, the shortages of foreign currency funding for its domestic counterparties posed a potential threat to the stability of the economy’s financial system. The central bank could have mobilised existing foreign exchange reserves or used foreign exchange borrowed from the market. But those strategies are unattractive in a crisis if foreign exchange reserves are limited or foreign exchange markets are impaired – hence the attraction of accessing a swap line with another central bank.

Finally, policymakers may want to be seen to be cooperating during a global crisis, thereby increasing confidence. Indeed, this is the most compelling explanation for the coordinated interest rate cuts in October 2008.

Did it work?

Many market participants reported that the extended swap facilities improved term funding conditions.[Ⓢ] Indeed, actual usage peaked in late October and gradually declined thereafter, with some central banks never actually having drawn on the swap lines. Foreign exchange swap market deviations declined in particular in EUR/USD and CHF/USD, and overall Libor-OIS spreads narrowed. While many other policy actions were taken at the same time, it seems fair to say that some of this improvement was due to the introduction of central bank swap lines.

[Ⓢ] The details of central bank swap lines during the crisis are discussed in C Ho and F-L Michaud, “Central bank measures to alleviate foreign currency funding shortages”, *BIS Quarterly Review*, December 2008, pp 14–15. [Ⓣ] See N Baba and F Packer, “From turmoil to crisis: dislocations in the FX swap market before and after the failure of Lehman Brothers”, paper presented at the conference *The global financial crisis: causes, threats and opportunities*, Warwick, 6 April 2009.

to issue central bank bills; the ECB and the Reserve Bank of Australia relied increasingly on accepting interest bearing deposits; and the Federal Reserve took in greater amounts of deposits from the Treasury and started to pay interest on reserves.

The second group of measures, prominent during the first two crisis stages, centred on reducing term interbank market spreads, seen as an indicator of tensions in that key market segment. This was tackled both directly, by providing more term funding so as to offset some of the shortfall in market supply, and indirectly, by addressing impediments to the smooth distribution of reserves in the system and ensuring access to funding from the central bank. To this end, conditions for the provision of reserves were eased by relaxing eligible collateral and counterparty coverage, lengthening the maturity of refinancing operations, and establishing inter-central bank swap lines to alleviate mostly dollar funding pressures in offshore markets (as well as offshore funding pressures in a few other currencies; see Box VI.A and Chapter II). The use of the swap lines was a significant driver of balance sheet expansions for

to alleviate strains in wholesale interbank markets;

major central banks during this period (Graph VI.4).² In addition, many central banks introduced or eased conditions for lending out highly liquid securities – typically sovereign bonds – against less liquid market securities in order to improve funding conditions in the money market.

and to influence credit markets and broader financial conditions

The third category of policy responses, which received more emphasis as the turmoil in financial markets deepened (stages three to five of the crisis), focused on directly alleviating tightening credit conditions in the non-bank sector and easing broader financial conditions. Prominent measures included the provision of funds to non-banks to improve liquidity and reduce risk spreads in specific markets – such as commercial paper, asset-backed securities and corporate bonds – as well as the direct purchase of public sector securities to influence benchmark yields more generally. In a notable step, the Swiss National Bank intervened in the foreign exchange market to contain upward pressure on the Swiss franc as part of its efforts to reduce deflationary risks and loosen monetary conditions more generally.

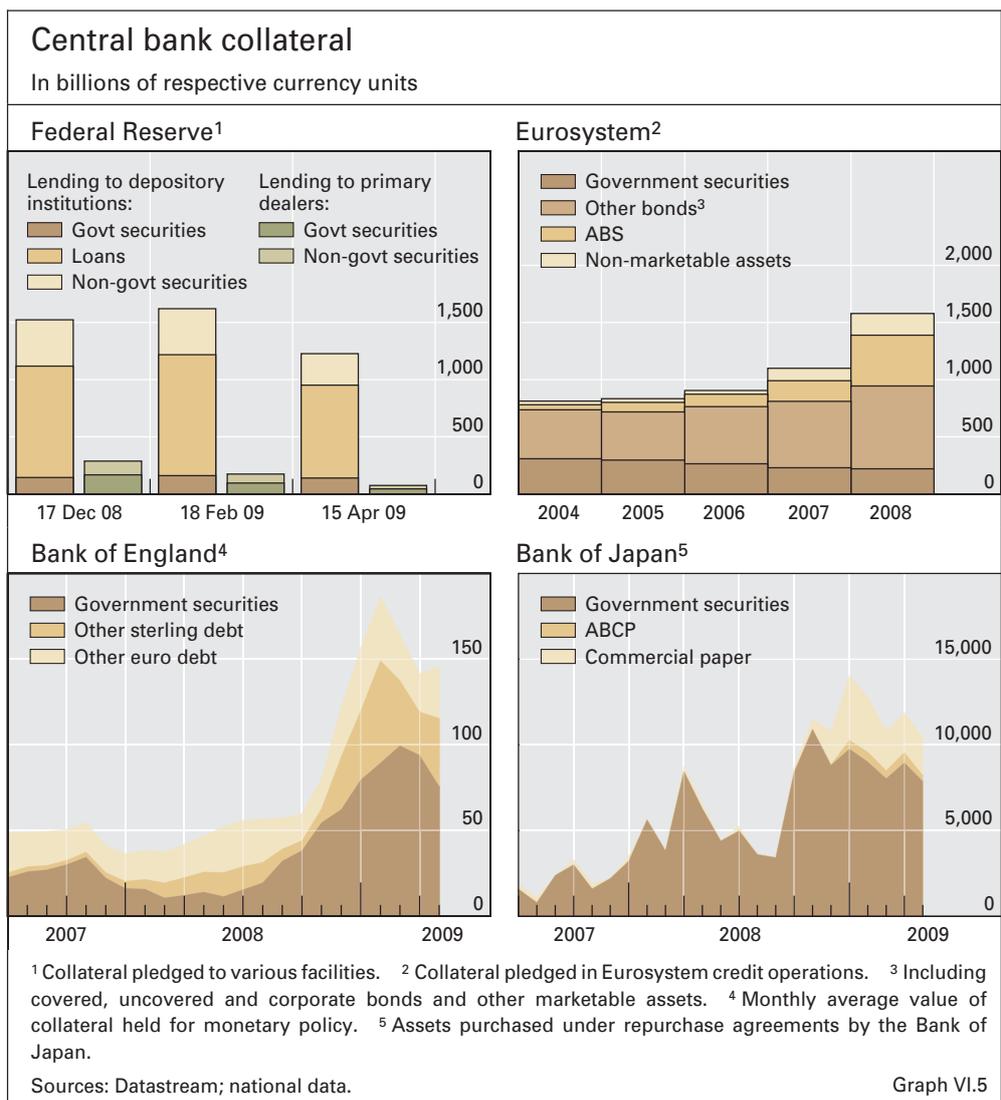
The emphasis of operations varied across countries

As a by-product of these actions, central bank balance sheets expanded substantially and their composition changed significantly (Graph VI.4). An important difference across countries is the relative emphasis given to private versus public sector securities and bank versus non-bank markets. The Federal Reserve focused heavily on non-bank credit markets as well as on operations involving private sector securities, as exemplified by measures such as the Commercial Paper Funding Facility and the Term Asset-Backed Securities Loan Facility (part of “Lending” in Graph VI.4, top left-hand panel). The Bank of England, on the other hand, initially concentrated its Asset Purchase Facility primarily on purchases of government bonds (part of “Other assets” in Graph VI.4, bottom left-hand panel), while the ECB emphasised banking system liquidity by conducting fixed rate full-allotment refinancing operations with maturities of up to 12 months (part of “Lending” in Graph VI.4, top right-hand panel) and by purchasing covered bonds. In the case of the Bank of Japan, substantial efforts were directed at improving funding conditions for firms through various measures pertaining to commercial paper and corporate bonds. The varying emphasis reflects, in part, differences in financial structures. More direct intervention in non-bank credit markets in the United States, for example, is consistent with that country’s predominantly market-based system, while the greater focus accorded in the euro area to supporting banks reflects a larger reliance on bank-based intermediation in the region.

Close cooperation with the fiscal authority is needed

Greater reliance on balance sheet policy has entailed an increasingly pervasive role for central banks in the intermediation process and a more significant influence on the relative supplies of claims on the public sector. This heightens the need for close cooperation with the fiscal authority for two key reasons. First, large purchases of government securities and the accompanying rapid expansion of central bank liabilities affect the overall profile of public sector debt. Their effect could potentially be undermined by debt management operations, not least given their typically larger size, unless

² Amounts drawn under the swap lines appear on the assets side of the central banks’ balance sheets, and on the liabilities side as domestic currency liabilities to foreign central banks (as long as the foreign central bank does not make use of the foreign currency obtained through the swap).



the objectives of the two types of operations are consistent. Second, central banks are taking on greater credit and market risk, as evidenced by the higher proportion of private sector securities in the collateral accepted in monetary operations (Graph VI.5). As a result, close coordination between the central bank and the government is necessary to put in place mechanisms to ensure that potential losses do not impair the operational independence of central banks.

Repairing the financial system

Central bank actions addressed banks' immediate funding needs through the first two stages of the crisis, but the severe market dislocation following the bankruptcy of Lehman Brothers in September called into question the solvency of a number of systemically important financial institutions (see Chapters II and III for details). Given their importance to the functioning of the real economy, governments took action to prevent their collapse and to restore confidence in the financial system. Government support was ultimately

Governments intervened to rescue key financial institutions ...

designed to restart the flow of credit to households and businesses and to maintain growth in the real economy.

... but failed to address impaired assets convincingly

The policy response did succeed in averting the collapse of the financial system and in calming the markets. It was less successful, however, in convincingly addressing the impaired assets on banks' balance sheets. That problem could delay the adjustments required to ensure that the financial system can operate efficiently on a sustainable basis and may have exposed taxpayers to potentially larger losses. By May 2009, doubts about the long-term health of major global banks remained, with uncertainty about the potential losses from loan books and other credit exposures making it difficult for banks to raise private capital.

This section describes the main characteristics of the government rescue packages and the market reaction to them. It then assesses the government response in the light of the lessons from the 1990s Nordic crises (see Box VI.B) and concludes with some longer-term concerns raised by the policy interventions.

Characteristics of government rescue packages

Governments guaranteed deposits, facilitated debt refinancing and recapitalised banks

Ad hoc actions in late September to rescue specific banks were followed in October by announcements of comprehensive rescue packages by governments of most leading economies. The announcements were accompanied by statements that no systemically important institution would be allowed to fail. Rescue packages consisted of actions targeting the liquidity and solvency of specific institutions and the functioning of financial markets (Table VI.2). Whereas central banks had provided short-term funding to eligible institutions during the earlier stages of the crisis, governments facilitated access to more permanent sources of funding from stage three onwards by providing deposit and debt guarantees. Governments addressed solvency concerns by recapitalising the banks. In an effort to address impaired assets, governments either purchased assets or provided insurance against unusually large losses on specified portfolios of key institutions. As a last resort, governments

Special measures to stabilise the financial system ¹													
	AU	BR	CA	CH	DE	FR	GB	HK	IT	JP	KR	NL	US
Deposit insurance	✓			✓	✓		✓	✓	✓		✓		✓
Restriction on short selling	✓		✓		✓	✓	✓		✓	✓		✓	✓
Capital injections		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Debt guarantees	✓		✓		✓	✓ ²	✓		✓	✓	✓	✓	✓
Asset insurance							✓					✓	✓
Asset purchases	✓		✓	✓	✓		✓			✓			✓
Nationalisation					✓		✓					✓	✓

AU = Australia; BR = Brazil; CA = Canada; CH = Switzerland; DE = Germany; FR = France; GB = United Kingdom; HK = Hong Kong SAR; IT = Italy; JP = Japan; KR = Korea; NL = Netherlands; US = United States. ✓ = yes; blank space = no.

¹ Reflects information up to end-April 2009. ² Via the Société de financement de l'économie française.

Source: National data. Table VI.2

Box VI.B: Resolving the financial crisis: a message from the Nordic countries

The way that Finland, Norway and Sweden dealt with their banking crises in the late 1980s and early 1990s is widely regarded as “best practice”.[Ⓞ] A comparison of that episode with the current crisis suggests that while the underlying nature of the problems is quite similar, differences in their manifestation have deeply influenced the timing and shape of policy interventions. This box highlights two basic principles for the resolution of banking crises that emerged from the Nordic events and considers how differences in circumstances have influenced to what extent they have been followed.

The main objective of crisis management and resolution is to minimise the costs of financial distress in terms of lost output. There is now a broad consensus around two basic principles that are seen as best practice for crisis resolution. First, the nature and size of the banking problems should be recognised early and intervention should follow quickly. The aim is to avoid a hidden deterioration in underlying asset quality, which could magnify the costs of the resolution. Second, intervention should be in-depth and broad-ranging – that is, after taking the measures needed to stabilise the situation, the authorities should ensure that losses are booked, bad assets are disposed of, the system is recapitalised and any excess capacity is removed. By cleaning up the balance sheets and encouraging adjustment, these policies should restore the ability of the financial system to operate effectively and underpin its long-term profitability, thereby setting the basis for a self-sustained economic recovery.

The specific measures will vary depending on circumstances. Inevitably, they will require the political will to commit public money and the means to exert sufficient control over financial intermediaries through either strict conditionality or public ownership. Those conditions hold management and shareholders responsible, avoid giving supported institutions an unfair competitive advantage, limit the risk of “gambling for resurrection” and contain the costs to the taxpayers. The incentives of incumbent management and shareholders will be to delay recognition and to hold out for the most advantageous terms.

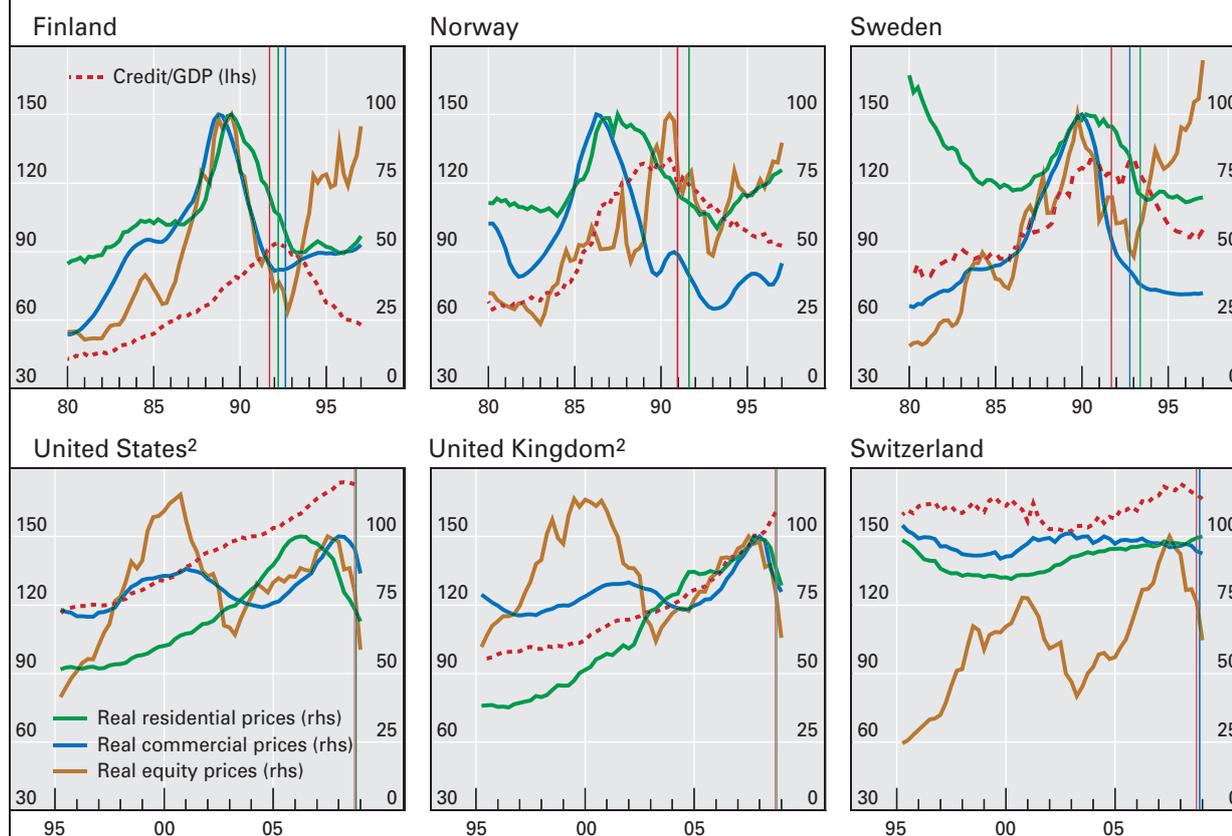
The Nordic crises and today’s crisis resemble one another in a fundamental respect: they can be regarded as the result of the reversal of an outsize credit and asset price (“financial”) cycle (Graph VI.B). The crises were preceded by an unusually rapid and prolonged increase in the ratio of private sector credit to GDP alongside equally sharp increases in asset prices, especially real estate prices. Indeed, recent work has found that real-time leading indicators based on credit and asset price booms help predict these banking crises well ahead of time.[Ⓞ]

Although their underlying conditions are similar, the two episodes differ strikingly in the timing of the first systemic events and policy interventions within the financial cycle (Graph VI.B). In the Nordic crises, comprehensive interventions came well after property prices had begun falling. In the current episode, in contrast, the crisis erupted earlier in the down leg of the financial cycle, as illustrated by the experience of the United States and the United Kingdom. Similarly, Nordic banks were closer to book insolvency; in fact, the authorities’ intervention was designed partly to raise capital above Basel I minima. In the current crisis, most institutions had capital well above those minima. As a result, in terms of the timeliness of the intervention – the first principle above – the management of the current crisis compares favourably with the Nordic experience.

Arguably, a key reason for the difference in timing reflects accounting practices. The current crisis started as a mark to market crisis: losses were first incurred on securitised claims recorded on a fair value accounting basis; indeed, a large proportion of the losses have been of that kind (Table III.2). The losses in the Nordic crises were recorded on a historical (accrual) accounting basis, following the impairment of loans. Mark to market accounting recognises losses much earlier than accrual accounting: it does not require a clear credit event to trigger recognition. As soon as market participants anticipate a future default, the price of the security falls. Moreover, its decline is typically amplified by rising risk aversion and may be compounded by distressed sales.

Paradoxically, the earlier recognition of losses and timelier intervention have actually complicated crisis management with respect to the second principle of best practice: they have made it harder for policymakers to exert the degree of control necessary to clean up balance sheets. For the most part, marked to market losses have wounded institutions but have not made them objectively insolvent (see Chapters III and VI). This has narrowed the options available to the authorities. For example, it is more difficult to apply strict conditions or enforce writedowns in such circumstances, and the risk of infringing the property rights of shareholders is higher. More importantly, the funding disruptions caused by marked

The financial cycle and banking crises¹



¹ The asset price series are normalised to 100 by their respective peaks within a window around each banking crisis (for the Nordic countries, 1985–92; for the other countries, 2004–09). The vertical lines denote the following events: red = first systemic event (major failure or rescue); blue = introduction of a debt guarantee scheme; green = generalised bank recapitalisation programme.

² Introduction of debt guarantee scheme and generalised bank recapitalisation programme on the same date.

Sources: National data; BIS calculations.

Graph VI.B

to market losses may have clouded the interpretation of the underlying problems. For a considerable time, what was fundamentally a looming solvency crisis tended to be regarded as a pure liquidity crisis (see Chapter II). It was widely believed that the sharp asset price declines would be temporary and that market functioning and effective intermediation could be restored through central bank liquidity support. However, if the credit cycle follows a pattern similar to previous ones associated with severe banking distress, an overt deterioration in loan books will follow the marked to market losses.

In the interim, there is a risk that the authorities' efforts could focus too much on sustaining credit, asset prices and aggregate demand rather than on encouraging the necessary adjustment in bank balance sheets. The Nordic resolutions required full recognition of losses, the writedown of equity, and a contraction in the balance sheets and branch networks of those banks receiving targeted support. Strict conditionality and public ownership were used to that end. The only exception was a general capital injection in Finland, which was designed partly to restore fair competitive conditions between the resolved institutions and others as well as to support lending capacity. By contrast, the conditions attached to recent packages have generally not sought to encourage adjustment and have even involved increased lending targets to support domestic credit. The risk is that the basis for a self-sustained recovery could be delayed.

^① For a comparative discussion of the resolution of the Nordic banking crises, see the BIS's *63rd Annual Report*, June 1993, Chapters VII and VIII. ^② The main exceptions to predictability are the banking systems that in the current crisis have suffered problems only as a result of their cross-border exposures, such as those of Germany and Switzerland. See C Borio and M Drehmann, "Assessing the risk of banking crises – revisited", *BIS Quarterly Review*, March 2009.

nationalised insolvent financial institutions to protect depositors and avoid contagion, or they acquired majority equity stakes.

By offering greater protection to depositors and bank creditors through guarantees, governments protected key sources of bank financing and facilitated the refinancing of maturing debt (Table VI.2). More than 20 countries introduced or increased guarantees on retail and commercial deposits, reducing the likelihood of bank runs. Government debt guarantees allowed eligible banks to issue new bonds backed by explicit government support in return for an annual fee paid by the issuer. Issuance under these schemes was the primary source of bank bond issuance in the last quarter of 2008 and the first quarter of 2009.

Deposit and debt guarantees protected key sources of financing

The take-up under government debt guarantee programmes was slower than expected as issuers were deterred by the terms and the costs. The maturities available varied by country, typically from three to five years, with most banks issuing at the longest maturity available. European banks faced higher costs for debt guarantees than did US banks. While the United States charged a flat rate to all borrowers regardless of rating, the cost of European guarantees was linked to past credit default swap (CDS) spreads, making them more expensive for riskier borrowers. In some cases, the cost made guarantees less attractive than shorter-term funding through central bank facilities.

The take-up of government debt guarantees was slower than expected ...

The complexity of these guarantee programmes and the varying treatment across jurisdictions deterred some investors. The risk weighting on government-guaranteed bonds varies across countries, with some regulators treating them as riskless from a capital perspective and others assigning a 20% capital charge. Not all markets accepted guaranteed debt as collateral. Some investors also faced legal or operational restrictions that prevented them from buying this new asset class.

... due to the complexity of these programmes and operational issues

Governments recapitalised the banks to reduce their financial leverage and increase their solvency. While the UK Treasury used common shares, most governments bought hybrid securities – such as preferred shares or mandatory convertible notes – that combine the stable income stream of bonds with the potential appreciation of common shares.³ Hybrid securities may qualify as equity when a bank's regulatory capital ratio is being calculated, but they are not viewed with much confidence by market participants due to their limited ability to absorb losses.

Government capital injections increased bank solvency

Governments bought mostly preferred shares, as these limit the risk of loss to the taxpayer while providing a more attractive dividend stream than common shares. These benefits come at a cost because preferred shareholders typically cannot vote at shareholder meetings, which constrains their ability to influence management. The preferred shares purchased by the United States had the potential for capital appreciation: they included 10-year warrants that provided the government with the option to purchase common stock at a specified price. Comparing the costs and terms of capital injections across countries was difficult, as no two plans looked alike.

Governments bought mostly preferred shares with lower risk but no votes

³ Preferred shares are typically non-voting, have a prior claim on dividends over common shares, and take priority over common shares in case of bankruptcy. Convertible notes are a form of bond that can be exchanged for a specified number of common shares in the future at the option of the investor.

Conditions attached to capital injections proved difficult to enforce

Government capital injections came with strings attached. Many countries followed France's example and required banks receiving government support to extend new domestic loans with an associated reporting requirement. While initial US and German capital injections mentioned limits on the payment of common dividends, only the United Kingdom explicitly prohibited common dividends as long as the government's preferred shares remained outstanding. Some conditions proved difficult to enforce due to a lack of precision and an unwillingness or inability to interfere in the management of the banks. For example, many rescue packages outlined general restrictions on executive pay, but governments lacked the votes, the support of the banks' boards and the legal basis to block payments.

Only the Swiss government purchased bank assets ...

A few governments supported key financial institutions by purchasing impaired assets or providing insurance against losses on designated portfolios. The Swiss National Bank (SNB) bought mortgage-related assets from UBS and placed them in a special investment vehicle. The sale reduced UBS's risk-weighted assets, lowering the amount of regulatory capital it must hold against potential losses. While the SNB bears the risk of losses, it also shares in the profits if the assets recover. The United States and Germany announced asset purchase plans, but by May they had not taken any action.

... while the Dutch, UK and US governments provided insurance against losses to selected banks

The Dutch, UK and US governments offered asset insurance to a handful of banks: ING, RBS, Lloyds TSB, Bank of America and Citigroup. Under this scheme, the government assumes a share of the potential losses on a specified portfolio (typically 80–90%) after a first loss amount (or deductible) is absorbed by the bank. In return, the bank pays the government an insurance premium based on the riskiness of the portfolio. By limiting the bank's potential losses, asset insurance reduces the capital it must hold. The government, however, is left with a large potential liability if the assets fall substantially in value.

Insolvent banks were taken under government control

Ultimately, governments in Iceland, Ireland, the United Kingdom and the United States took control of a number of insolvent financial institutions to protect depositors and to prevent contagion to other financial institutions (see Chapter II). This transfer of control was accomplished directly by regulators (in the case of the US government-sponsored enterprises and Icelandic banks) or through a court injunction (in the case of Bradford & Bingley in the United Kingdom and the Belgo-Dutch firm Fortis). In some cases, it was accomplished indirectly by acquiring the majority or entirety of the voting shares (eg AIG and RBS). The legal basis for regulatory takeovers existed in the United States, but new laws had to be passed in Germany and the United Kingdom to facilitate these actions, which otherwise might have been blocked by shareholders. Uncertain solvency and the risk of consequent nationalisation made it virtually impossible for some financial institutions to raise capital because equity investors and creditors feared that their capital might be written down.

Market reaction to rescue packages

Policy interventions did not restore longer-term confidence ...

Government interventions in late September and October 2008 averted bankruptcies at key banks and protected depositors but did not entirely dispel concerns about the health of major global banks. Even though creditors took

comfort from the government support, as seen in a narrowing of credit spreads over government bonds and spreads on CDS contracts, most banks still found it difficult or impossible to raise new capital from private investors (see also Chapter II). As a result, some governments provided multiple capital injections to selected banks between November 2008 and May 2009.

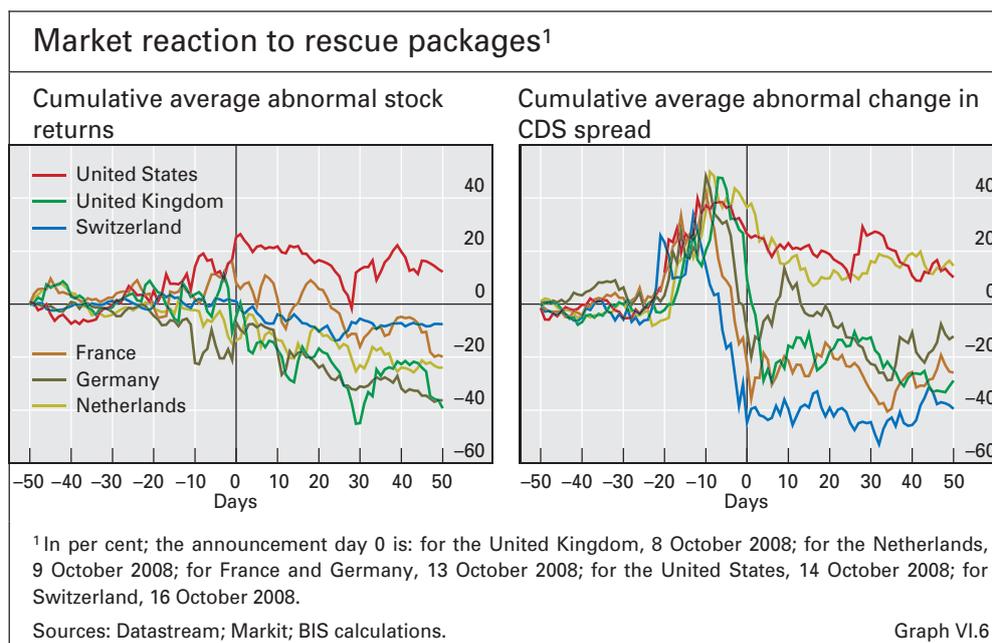
The initial positive reaction in October to the announcement of rescue packages manifested itself in a rise in the price of bank stocks – followed by a drop over subsequent months, suggesting that common shareholders expected more losses. By design, the rescue packages did not protect equity holders, with a moderate decline in bank stock prices expected due to the dilution of existing shareholdings (Graph VI.6, left-hand panel). In all of the six countries covered, bank stock prices underperformed the market following capital injections. The drop in bank stock prices was larger in the United Kingdom than elsewhere due to the prohibition on paying common dividends. Banks receiving government capital injections also underperformed banks that did not receive government support.

... as seen in falling stock prices

Creditors viewed the government actions more positively, as seen in the narrowing of CDS spreads across banks headquartered in different countries (Graph VI.6, right-hand panel). By increasing a bank's capital ratio and providing a means to refinance existing debt, government rescue packages reduced the probability of default, pushing down CDS premia on average. Credit spreads on senior and subordinated bank debt also narrowed relative to underlying government benchmarks. Despite these positive signs, some banks continued to show signs of distress and credit spreads remained elevated. The relatively high credit spreads on bank bonds issued under different government guarantees suggest that creditors harboured doubts about the financial condition of banks and the credibility of public statements that no systemically important institutions would be allowed to fail.

Creditors viewed government support more positively ...

... but credit spreads remained elevated



Assessment of policy response

Governments are struggling to deal with impaired bank assets

Overall, governments may not have acted quickly enough to remove problem assets from the balance sheets of key banks. The 1990s experience of the Nordic countries indicates that addressing problem assets is necessary to reduce uncertainties, re-establish confidence in a lasting way and lay the basis for an efficient financial system (see Box VI.B). Despite acknowledging these lessons, the steps taken so far have focused largely on providing guarantees and subsidised capital. At the same time, government guarantees and asset insurance have exposed taxpayers to potentially large losses. Progress on problem assets has been slowed by the complexity of the securities affected, legal constraints and, above all, the limited political will to commit public funds to the clean-up effort. The lack of progress threatens to prolong the crisis and delay the recovery because a dysfunctional financial system reduces the ability of monetary and fiscal actions to stimulate the economy.

The lack of progress on removing troubled assets from the banks' balance sheets and recognising the associated losses is illustrated by the US experience. Rather than buy impaired assets directly, the US Treasury outlined a plan in March, the Public-Private Investment Program (PPIP), to value these assets and to remove them through an auction mechanism. Under the PPIP, eligible private sector investors are invited to bid on troubled real estate assets held by banks. Winning bids receive matching government capital and non-recourse funding on attractive terms, with the US government assuming any losses beyond the equity invested. The generous terms were designed partly to boost the value of the underlying securities, to provide sufficient incentives for private capital inflows and to attract expertise to value and manage these assets. Despite the favourable terms, as of May 2009 the outlook for the PPIP was uncertain.

US regulators conducted stress tests on the 19 largest banks

To increase confidence in the banks, US regulators conducted stress tests on 19 bank holding companies in April 2009 to ensure that they were sufficiently capitalised given a set of assumptions about losses on various bank assets over the next two years. Following the release of the results in early May, US regulators directed 10 of the banks examined to increase their level of capital or to improve the quality by including more common shares. Several banks took advantage of the reduced uncertainty and the increased risk appetite of investors that accompanied the publication of the stress test results to raise equity and issue debt. While the United Kingdom conducted a similar exercise, other European countries were still debating the merits of an EU-wide stress test.

As the crisis continues, loan losses and credit defaults are rising

What seems clear is that the deterioration in credit quality will generate more losses on banks' loan books and other credit exposures (see Chapter III). Banks may therefore have an incentive to delay recognising losses, aided by accounting rules that provide management more discretion over when to write down assets. Taxpayers will not want to be exposed to greater potential losses, but key financial institutions are likely to require more government support in order to facilitate the required adjustments, to restore confidence in the financial system and to restart lending on a sustainable basis.

Longer-term considerations

Government actions to support banks raise a number of longer-term concerns.

First, policymakers need to consider the trade-off between short- and medium-term objectives. Short-term actions that delay adjustment and prop up aggregate demand may not be compatible with the medium-term need for banks to deleverage their balance sheets so as to lay the basis for a healthy financial system and a self-sustaining recovery.

Short-term responses may conflict with medium-term objectives

Second, rescue packages for banks deemed too big or too interconnected to fail raise questions of moral hazard. Given the perceived need to avoid the bankruptcy of major financial institutions post-Lehman, moral hazard concerns were viewed as a necessary risk. But by protecting creditors and limiting the losses of equity holders, government interventions risk reducing the incentive for capital providers to monitor banks in the future. At the same time, senior bank executives and traders who reaped the rewards from risk-taking may not be held sufficiently accountable for the losses.

Moral hazard is a longer-term concern

Third, rescue packages and government-assisted sales of failed banks may unwittingly increase systemic risk by creating larger financial institutions. In the United States, for example, the Federal Reserve's loan to JPMorgan Chase facilitated the takeover of Bear Stearns in March 2008. Then, in September 2008, the FDIC arranged for the sale of Washington Mutual's banking subsidiaries to JPMorgan Chase. In the United Kingdom, the government sold the retail operations of Bradford & Bingley to Banco Santander, one of the largest euro area banks in terms of assets. More examples of such actions can be seen in other countries. As discussed in Chapter VII, large financial institutions pose disproportionate systemic risks.

Bank bailouts may increase systemic risk in the future

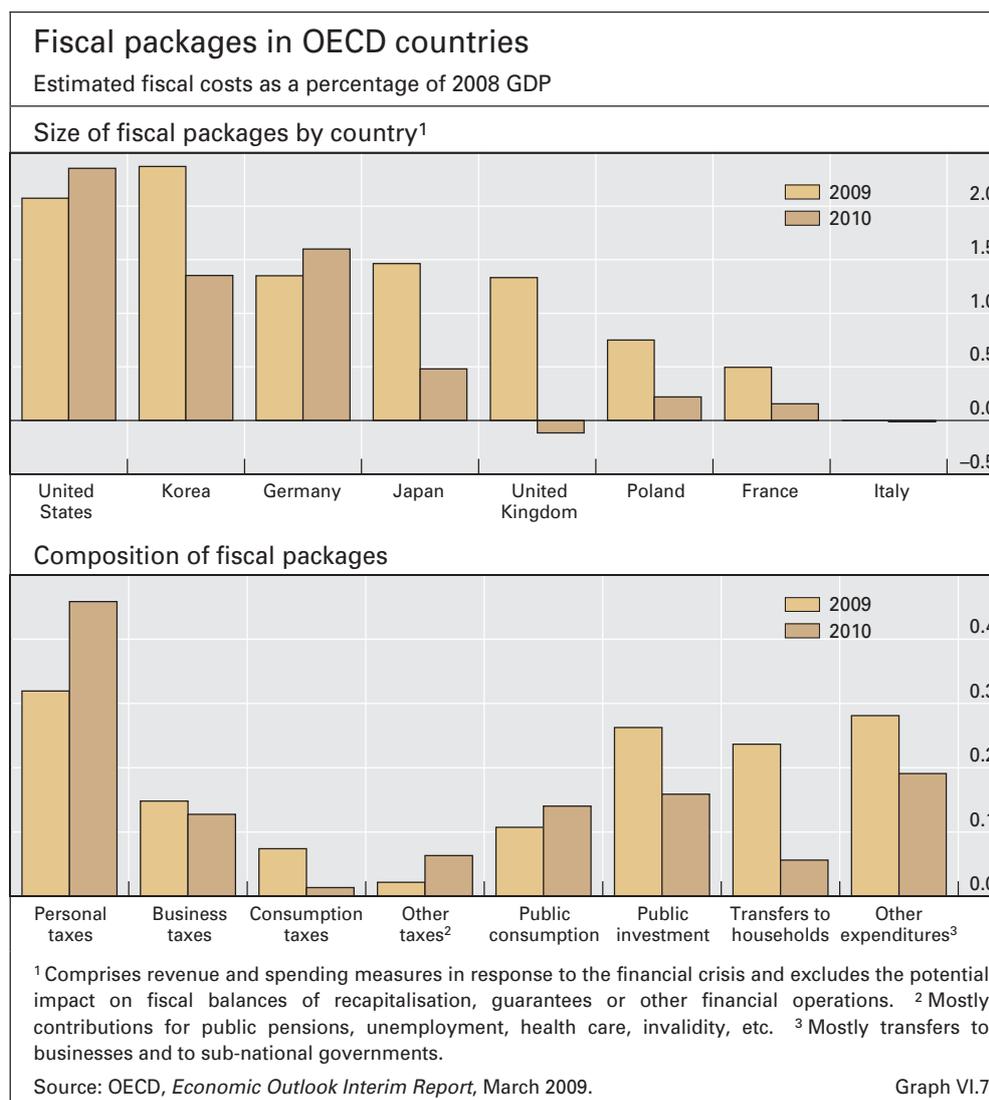
Finally, the uncoordinated response across countries has raised concerns about distortions to competition. In particular, national rescue packages have featured different conditions, coverage and cost, with some banks receiving support on more attractive terms than their competitors. The European Commission reviewed the rescue measures of EU member states to avoid undue distortions of competition, but other national plans did not undergo the same scrutiny. This lack of global coordination risks creating an uneven playing field for global banks. In addition, government support that has been explicitly tied to domestic lending may inadvertently contribute to the retreat of global banks from foreign markets (see Chapters III and V).

Uncoordinated responses across countries distort competition

Fiscal policy plans to stimulate aggregate demand

By late 2008, with the crisis moving into its fourth stage, concerns were arising that monetary policy might not be sufficient to avert a sharp contraction in output. Similarly, while bank recapitalisation packages and government guarantees arguably prevented the collapse of the financial system, they were seen as insufficient to lift economic activity in the short term. Against this backdrop, authorities in all major economies turned to fiscal measures to stimulate aggregate demand and thus soften the downturn. By May 2009, almost all OECD economies, and many non-OECD emerging market economies, had announced fiscal stimulus packages.

Fiscal policy measures as the last resort



Package sizes reflect the prevalence of automatic stabilisers

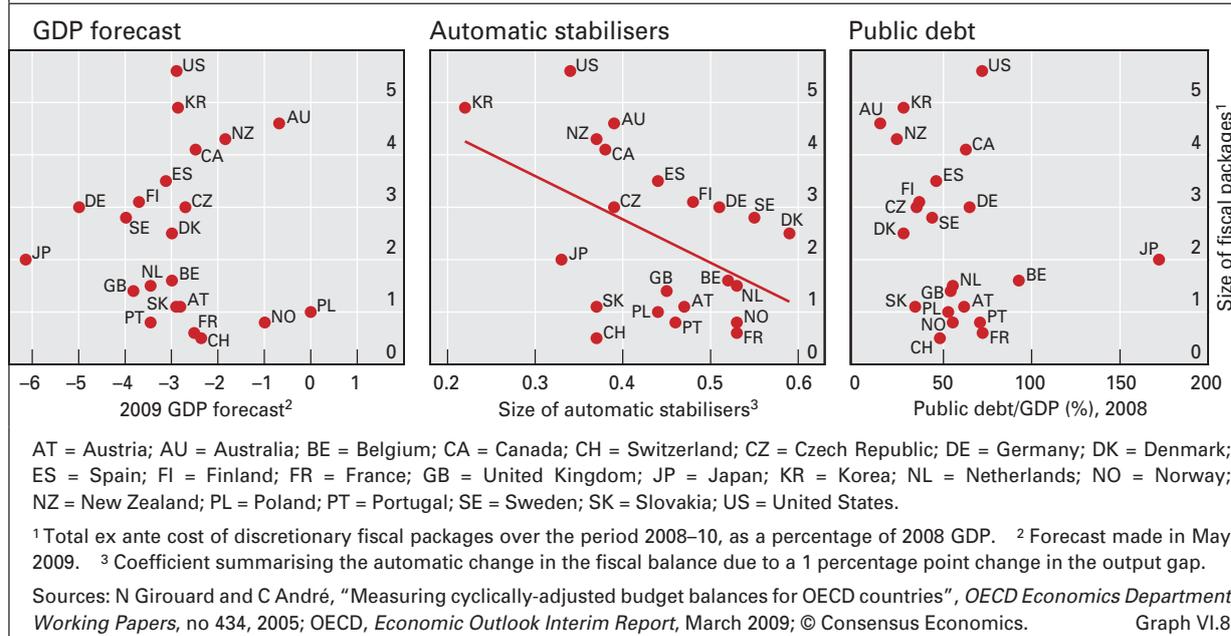
The size of announced fiscal packages varied greatly across countries. Among OECD economies, the United States announced the largest package, with estimated fiscal costs of well over 2% of GDP in both 2009 and 2010 (Graph VI.7, top panel).⁴ The relative size of the packages is not positively correlated with differences in the severity of the downturn across countries (Graph VI.8, left-hand panel). A much bigger role is played by the relative importance of automatic stabilisers, which explains about one fifth of the variation in the size of fiscal packages across OECD members (Graph VI.8, centre panel).

Change in the deficit as a measure of fiscal stimulus

The importance of automatic stabilisers in many economies suggests that discretionary packages should not be viewed in isolation. A better measure of the overall stimulus is the change in the government's expected near-term budget balance in response to the crisis, which also captures

⁴ Some of the fiscal stimulus packages announced in non-OECD economies were even larger relative to GDP than that in the United States. However, the actual "new" stimulus is often substantially smaller than the headline figures suggest, as these may include expenditure that has already been committed or contingent liabilities. Such items are excluded from the OECD figures.

Need and scope for discretionary fiscal stimulus



expenditures (and revenues) related to the financial rescue packages as well as the revenue deterioration resulting from the drop in asset prices. The fiscal impulse is determined by the sum of the various components, not by a single component.

Budget deficits are expected to reach levels far beyond those anticipated prior to the intensification of the crisis in September. Both the structural and the cyclical balance are forecast to widen markedly (Graph VI.1, bottom panel). In its March 2009 projection, the OECD predicted a US deficit in 2009 of 10% of GDP compared with about 5% in its mid-2008 projection. Fiscal policy in France, Germany, Japan and the United Kingdom also expanded strongly. In Italy, the structural balance remained more or less unchanged in the absence of a sizeable discretionary package, while the automatic stabilisers increased the cyclical deficit.

The capacity for fiscal stimulus varies considerably across countries. Countries with a high degree of public indebtedness, sizeable budget deficits even in the absence of discretionary stimulus, or a high level of unfunded liabilities have less room for manoeuvre than those with healthier public finances. So far, however, such constraints do not appear to have affected the decision of the major economies to provide fiscal stimulus: there is no significant relationship between the size of the packages and the level of outstanding government debt among OECD countries (Graph VI.8, right-hand panel). Moreover, financing costs have generally declined despite the sharp widening in budget deficits (Graph VI.9, bottom panel). The exceptions include some smaller economies with very large budget deficits or crisis-related expenditure, such as Hungary, Iceland and Ireland, that experienced significant problems in placing public debt and were forced to tighten fiscal policy in stages three and four of the crisis.

Sharp widening in deficits

Limited room for manoeuvre ...

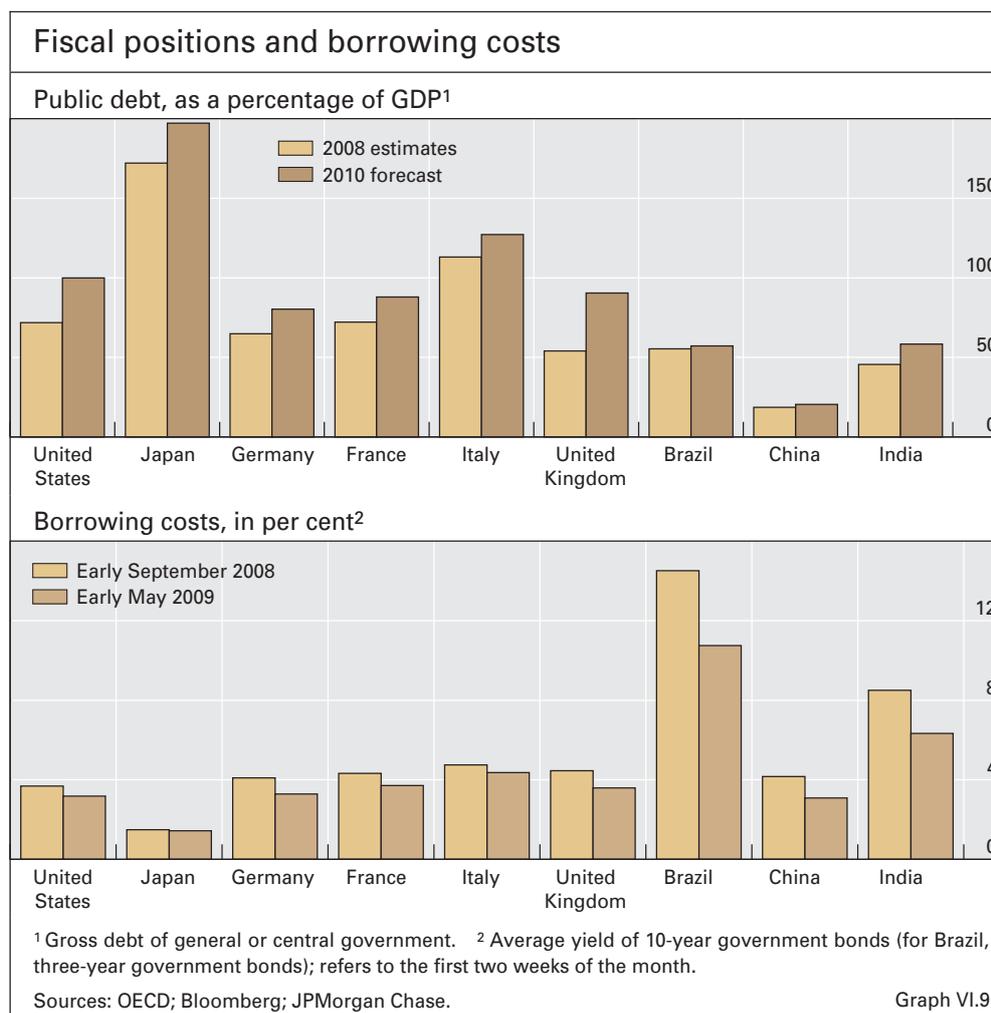
... only in smaller economies with less favourable fiscal positions

The composition of stimulus packages raises questions about effectiveness

Approaches to fiscal stimulus differ, although most packages include tax cuts as well as increases in government spending (Graph VI.7, bottom panel). Tax cuts tend to have a lower impact on output than measures targeted at low-income (and thus presumably low-saving) households. Nonetheless, several factors led fiscal authorities to include such instruments in their recent stimulus packages. Some were political: it is easier to mobilise large amounts of funds if spending benefits a broad range of taxpayers. Others were economic: tax cuts can be enacted relatively quickly, whereas increasing government spending often involves significant delays. In addition, cuts in personal taxes may support the deleveraging of the household sector, and thus speed up the recovery further down the road, even if the short-term impact on GDP is small.

Uncertainty about fiscal multipliers

While fiscal packages have undoubtedly been large by historical standards, will they also be effective? Estimates vary. For example, based on previous average experiences, the US Congressional Budget Office (CBO) expects the American Recovery and Reinvestment Act (ARRA) – the bill carrying most of the fiscal stimulus measures – to lift GDP growth by 1.4 to 3.8 percentage points in 2009 and by a somewhat lower amount in 2010. The lack of precision in these estimates reflects the wide range of fiscal multipliers



in the literature.⁵ However, it is unclear whether econometric estimates based on samples with functioning financial systems provide any useful information at the current juncture on the impact of fiscal stimulus. On the one hand, financial stress is likely to increase the proportion of households and firms without access to credit, and as a result they may spend a higher proportion of the additional income. On the other hand, high uncertainty might induce households and firms to reduce their debts or save more, thus depressing the multiplier.

Risks

An open question as of this writing is whether the expansionary set of policies enacted in response to the sharp contraction in economic activity in late 2008 and early 2009 will succeed in stabilising the economy. A major cause for concern is the limited progress in addressing the underlying problems in the financial sector. The experience of the Nordic countries in the 1990s (see Box VI.B) and other historical episodes suggest that a precondition for a sustainable recovery is to force the banking system to take losses, dispose of non-performing assets, eliminate excess capacity and rebuild its capital base. These conditions are not being met. A significant risk is therefore that the current stimulus will lead only to a temporary pickup in growth, followed by protracted stagnation. Moreover, a temporary respite may make it more difficult for authorities to take the actions that are necessary, if unpopular, to restore the health of the financial system, and may thus ultimately prolong the period of slow growth.

Perhaps the largest short-term risk associated with the expansionary policies is the possibility of a forced exit. Monetary and fiscal authorities of the major economies have so far been relatively unconstrained in their ability to follow expansionary policies. This need not last. An extended period of stagnating economic activity could undermine the credibility of the policies in place. Governments may find it hard to place debt if market participants expect the underlying balance to remain negative for years to come. Under such circumstances, funding costs could rise suddenly, forcing them to cut spending or raise taxes significantly. External constraints could also bind for some countries. Particularly in smaller and more open economies, pressure on the currency could force central banks to follow a tighter policy than would be warranted by domestic economic conditions.

Another set of risks concerns the medium term. While the immediate objective of policymakers was to cushion the steep downturn in the economy, the expansionary policies undertaken in late 2008 and early 2009 will also affect the transition towards a more sustainable economic structure with less leverage and thus a smaller financial sector. Some smoothing of this adjustment is clearly welcome, but correction of the imbalances identified in Chapter I

The effectiveness of expansionary policies ...

... may be undermined by a weak financial system

Risk of a forced exit

The transition to a new economic structure

⁵ Structural macroeconomic models with backward-looking expectations generally give multipliers larger than 1, which means that one dollar of fiscal outlays leads to an increase in GDP of more than one dollar. By contrast, more forward-looking models and event studies suggest multipliers that are generally smaller than 1, as higher fiscal outlays are offset by lower spending elsewhere in the economy.

cannot be delayed indefinitely. To be credible, policymakers must recognise this fact.

Tightening should not pose technical problems ...

At some point the economy will recover and monetary and fiscal easing will have to be reversed. From a technical point of view, this is straightforward. Selling the large asset holdings accumulated by central banks since the Lehman bankruptcy will take time, but this does not compromise central banks' ability to reduce monetary stimulus. Even if central banks are not able to shrink their balance sheets, they can withdraw liquidity through repurchase operations or the issuance of central bank bills or by making it more attractive for banks to hold reserves. As discussed above, several of these measures have already been used during the crisis to offset at least some part of the expansion in central bank balance sheets. Reversing the fiscal stimulus should also be relatively straightforward. Some of the measures have been designed to be temporary and will expire eventually unless extended. Other measures do not have set expiry dates but could be reversed in the course of the normal budgeting process.

... but timing the exit is difficult

The absence of major technical problems in withdrawing monetary and fiscal stimulus does not mean that tightening policy will be easy. First, there is a timing problem. Tightening too early could thwart the recovery, whereas tightening too late may result in inflationary pressures from the stimulus in place or contribute to yet another cycle of increasing leverage and bubbling asset prices. Identifying when to tighten is difficult even at the best of times, but even more so at the current stage. Standard measures of the output gap are probably of limited use in this regard, since it is not clear to what extent the problems in the financial sector will reduce future potential output. The second major problem is political. Both central banks and treasuries are likely to face strong political pressures to delay any tightening.

Risk of fiscal overextension

While their effectiveness remains in doubt, the expansionary policies put in place in 2008 and 2009 will nonetheless have long-term consequences, the most important stemming from the large amount of public debt they will generate. Even if stimulus measures are reversed quickly, the commitments from financial rescue packages could affect the public purse for years to come, while lower asset prices are likely to depress revenues. Higher public debt in turn may push up real interest rates and thus crowd out private investment. To return to the case of the US stimulus package, the CBO estimates that the package will lower future growth by 0.2% of GDP per year in the long term. Getting public finances in order will therefore be the main task of policymakers for years to come.