VII. Risks and opportunities: towards a fail-safe financial system

In the fourth quarter of 2008, despite more than a year of bold efforts by policymakers, the financial crisis intensified to the point where it overwhelmed the real economy. Central banks had been supplying short-term funding to smooth needed adjustments in the banking system, but that alone cannot stem bank losses. And what had been addressed as a liquidity crisis was confirmed to be a solvency crisis. The bankruptcy of Lehman Brothers on 15 September triggered a run in the interbank lending market, a dramatic spike in corporate bond rates and a global loss of consumer and business confidence. The resulting collapse of consumer durables spending in the industrial economies was quickly felt in the emerging world through both a sharp drop in trade volumes and a reversal of capital flows. The global spread of the recession fed back into financial markets, driving down both equity and bond prices, sparing only the highest-quality sovereign debt.

The dramatic developments of the last three and a half months of 2008 forced monetary, fiscal and regulatory authorities to open a second front in their battle – countering the threats to the real economy – and expand their fight to restore the health of the financial system. In much of the industrial world, central banks cut policy interest rates to record lows and then moved to ease financial conditions even further by using their balance sheets in unconventional ways. Meanwhile, fiscal authorities worked to implement unprecedented stimulus programmes while, together with regulators and supervisors, they provided resources to repair financial institutions' balance sheets.

The result has been an inevitably messy mixture of urgent treatment designed to stem the decline combined with an emerging agenda for comprehensive reform to set the foundations for sustainable growth. But two enormous risks to long-term recovery lurk amid the massive short-term efforts. First, policy actions taken so far may be insufficient to restore the health of the banking system. Second, a lack of well articulated exit strategies for the monetary, fiscal and financial repair programmes threatens to hinder rather than support necessary macroeconomic adjustments.

A healthy financial system is not only essential for stable long-run real growth, but is also a precondition for the effectiveness of the expansionary policies intended to return the economy to that path. Until the intermediation system is working again – smoothly channelling resources from savers to investors and transferring risk to those willing and able to bear it – large-scale fiscal stimulus could easily come to naught, as it did in Japan a decade ago. The result would be a massive build-up of public debt without a return to robust growth. It is, therefore, of paramount importance that governments persevere in repairing the financial system. Stopping prematurely will be tempting. At some point, possibly soon, the real economy will show signs of

returning to normal. This will create the hope that renewed economic growth will finish the job of repairing bank balance sheets. But as long as the financial intermediaries remain weak, any improvement in the real economy is destined to be temporary.

To address the threat to growth posed by the constellation of fiscal, monetary and regulatory interventions, officials must find convincing ways to unwind the policies they have put in place, including reducing the now vast involvement of the government in the financial system. Where central banks have stepped in for private sector intermediaries, they need to exit. And the increased government spending that may have been necessary to limit the decline in employment and production in the short term will, if overdone, do more harm than good. It is essential that fiscal policymakers demonstrate now that the paths of their budgets are consistent with long-term sustainability.[1]

Beyond the near-term challenges – nursing financial institutions and markets back to health, ending the recession and restoring balance to the government's role in the economy – lies the daunting task of modifying both the broader policy framework and the architecture of the financial system. Addressing the multitude of causes of the crisis described in Chapter I clearly requires a comprehensive set of solutions. Macroeconomic policies that led to sustained current account imbalances and low interest rates will need to adjust. And asset prices and credit growth must be more directly integrated into monetary policy frameworks. Addressing the wide-ranging microeconomic factors that contributed to the crisis – poorly structured incentives and inadequate corporate governance, flawed risk management and weaknesses in regulatory systems – requires correspondingly broad changes to the set of rules within which markets operate.

For all their enduring virtues, markets have failed in some very important ways. It is now apparent that as the financial system has grown and become more complex, it has come to need a more comprehensive set of rules to ensure that it functions smoothly.[2] Ensuring that the decentralised financial system operates safely and efficiently does not simply mean *more* regulation or *more* centralisation; rather, it means *better* regulation and *better* supervision that induce the private sector to improve incentives, risk management and governance. Moreover, the crisis revealed system-wide, or systemic, risks associated with the principal components of the financial system – instruments, markets and institutions. By identifying, measuring and mitigating the systemic risks inherent in all three components of the financial system, we will be able to establish a robust regulatory perimeter with multiple layers of protection against future crises.

[1] See H Hannoun, "Long-term sustainability versus short-term stimulus: is there a trade-off?", speech at the 44th SEACEN Governors' Conference, Kuala Lumpur, 7 February 2009.

[2] As John McMillan notes, individual incentives and self-regulation go only so far. The existence of an underground economy proves that markets can self-organise but only when transactions remain small and simple. Moving beyond the black market requires rules and a rule-maker. That is where the government steps in to protect property rights and ensure that people live up to their promises. See J McMillan, *Reinventing the bazaar: a natural history of markets*, W W Norton, 2002.

Near-term risks and exit strategies: financial repair, fiscal policy and monetary policy

The fiscal and monetary policies put in place to address the crisis worldwide are unprecedented in both scale and scope. Fiscal stimulus is expanding at high speed as the G20 countries implement new spending of 2% of GDP on average this year, adding to the effects of automatic stabilisers already in place. In the lead is the United States, whose federal deficit is expected to widen by more than 8% of GDP from 2008 to 2009.

Meanwhile, monetary authorities in the euro area, Japan, the United Kingdom and the United States are employing both conventional and unconventional policy tools, lowering policy interest rates to zero (or close to it) while rapidly expanding their balance sheets. As described in Chapter VI, the Eurosystem's consolidated balance sheet has increased from €1.2 trillion to €1.8 trillion over the past two years; the Bank of England has more than doubled its balance sheet, to more than £200 billion, with further large increases planned over the coming months; and the Federal Reserve, whose balance sheet stood at $900 billion in mid-2008, may expand it to more than $3 trillion during 2009.

Fiscal authorities, regulators and central banks have joined forces in the difficult task of repairing the financial system. While there has been some progress, as discussed in Chapter VI, the job is not finished. Further delay in repairing the financial sector runs the risk of weakening the efforts on other policy fronts. Fiscal and monetary policies are surely less effective when financial intermediation is impaired. And as long as global financial institutions are hesitant to finance economic activity in emerging market economies, the prospects for growth and development in what has been the primary engine of worldwide expansion over the past decade is at risk.

The unprecedented rescue efforts carry substantial risks. Enumerating them will serve as a reminder of the pitfalls that policymakers face in the coming months and years as they work to restore stability to the global economic and financial system.

The risks of financial repair: rescues

The financial rescue programmes – the guarantees, transfers of assets, recapitalisations and outright government ownership – present challenges for both effectiveness and exit.

Past banking crises have taught us that early recognition of losses combined with quick, comprehensive intervention and restructuring is the key to a speedy recovery (see Box VI.B). Before normal lending can resume, bad assets must be disposed of and banks recapitalised, all in a transparent fashion. In contrast, during this crisis, resolution has proceeded slowly, with the result that market participants have been unsure about the size and distribution of losses as well as about the timing of loss recognition. This uncertainty has served only to prolong doubts and frustrate government efforts to restore confidence in the financial system.

Besides the need for more forceful government efforts to clean up insolvent banks, intermediaries themselves will need to adjust their funding models as

off-balance sheet entities are consolidated onto bank balance sheets, securitisation becomes more difficult, and wholesale funding becomes more costly. In the end, institutions are likely to be smaller, with less leverage, and their owners will almost certainly have to learn to live with lower rates of return.

In failing to come to grips with the basic process of cleaning up the banks, government subsidies and control of banks have placed a burden on the public treasury at the same time that they have created an uneven playing field both within and across countries. The distortions have caused previously well managed, healthy banks and other creditworthy borrowers to be penalised because they now look risky relative to institutions that are government-subsidised or controlled. Ultimately, the reluctance of officials to quickly clean up the banks, many of which are now owned in large part by governments, may well delay recovery.

The banks must resume lending, but they must also adjust by becoming smaller, simpler and safer. Again, even where they have been essential, the government rescue packages implemented so far appear to be hindering rather than aiding this needed adjustment. By helping banks obtain debt financing and capital, rescue packages allow managers to avoid the hard choices needed to reduce both the size of their balance sheets (lowering leverage) and the amount of risk that they take (shifting the composition of the assets they hold). And by aiding the sale of distressed banks to other banks, as has been typical of many past crisis responses, government actions are creating financial institutions so big and complex that even their own management may not understand their risk exposures. Despite the nearly universal concern over the mere existence of institutions that are too big to fail, short-run government actions are increasing financial sector concentration and adding to systemic risk.

Appropriate exit from the various national rescue programmes clearly depends on the form of support offered in the first place. Sunset clauses on increased deposit insurance and bond guarantees can ensure that they eventually disappear; and since the terms of government capital injections are often punitive, banks have an incentive to repay quickly. The most difficult case involves nationalised or quasi-nationalised banks. Even if such institutions are cleaned up and sold quickly, governments may be left holding bad assets for some time.

Summing up, it is essential that authorities act quickly and decisively to repair the financial system. The determination to finish the job, as well as the conditions and timing for exit, must be clear. In the same way that central banks must allow financial markets to recover their role, government officials need to take decisive steps to restore institutions to private ownership and control. And all of this has to be done with an eye towards returning to a system with healthy competition.

But while government exit is essential, there is the risk that officials will fail to finish their repair task. Even in the face of what might appear to be the first signs of recovery in the real economy, officials must persevere until the job is done. In reviving the financial system, the risk is not one of doing too much but of stopping too soon.

The risks of financial repair: bank regulation

In pursuing the medium-term goals of reforming the regulation of banks, officials are seeking to enhance the management of regulatory capital and liquidity, introduce simpler measures of leverage, and improve the assessments of more complex risk. Beyond all of that, they are confronting a crisis-born threat to cross-border banking.

Investors have become extremely risk-averse in their assessments of financial institutions and are demanding more capital and higher levels of common equity (in relation to both total assets and risk-weighted assets) than the regulatory minimum.

As discussed in Chapter VI, the pursuit of short-term stability has raised some difficult questions about moral hazard. By limiting the losses of large banks' equity and liability holders as well as the rewards of managers and traders, rescue packages are reducing the incentive for both insiders and outsiders to monitor risk-taking in the future.

In the area of risk assessment, officials might be adding to the problem at the same time that they are trying to solve it. That is, as just noted, rescue packages are building up financial sector concentration and systemic risk even as reforms in regulatory policy seek to make those risks more manageable. Fortunately, officials in many countries understand all of this and are looking for solutions. The truth is that as financial institutions grow more complex, the demands on risk management grow much more quickly. A large, integrated financial institution today has hundreds of subsidiaries, all operating quasi-independently; it is impossible for any individual to understand what all the parts of such an organisation are doing, much less how they will interact in response to a major event. Enterprise-wide risk management would seem to be an impossibility in such cases. Moreover, some banks are not only too big to fail but, in having important relationships with a large number of other institutions, are also too interconnected to fail. Officials must insist that institutions be comprehensible both to those who run them and to those who regulate and supervise them. And, in the future, a financial firm that is too big or too interconnected to fail must be too big to exist.

Related to complexity is nationality. Global banks have operations in dozens of countries – on its website, Citigroup lists locations in exactly 100. The existence of global intermediaries enhances the efficiency of the financial system. By reducing the need to have lenders located physically near borrowers, international banks facilitate trade in goods and services as well as the cross-border movement of capital. But after seeing foreign-owned banks pare back activity during the crisis, host country governments may become less sanguine about allowing outsiders to operate on their soil. The result could very well be a greater role for host country supervisors in protecting their financial systems from the possibility of hasty exits by foreign banks. And, by reducing the ease with which capital moves across borders, financial protectionism would shrink trade in goods and services and thus moderate growth and development.

In summary, as officials look forward they need to balance stability with efficiency. Reducing moral hazard, keeping institutions simple and small, and

reducing their international reach will all come at the expense of economies of scale and scope. In the end, a safer and more stable financial system may very well be a less efficient one. Hence it is critical that policymakers work to build a system that is as efficient as possible for the maximum tolerable level of risk they choose.

Fiscal policy risks

Turning to fiscal policy, the short-term efficacy of stimulus plans is hampered, not only because of the impaired financial system, but also because the need for expansionary programmes and the capacity for them vary by country. Moreover, longer-term risks associated with exit and sustainability arise from the sheer size of the spending packages.

A country's need for fiscal expansion is conditioned, in part, by how much actual stimulus can be derived from a given level of expansion. Effectiveness – the growth and employment effects from a fiscal expansion of, say, 1% of a country's GDP – differs across countries for at least two reasons: variations in economic structures and variations in the composition of packages' taxes, expenditures and subsidies.

A country's capacity for fiscal expansion can be measured by its pre-existing level of debt relative to GDP. In most large industrial economies, the ratio going into the crisis stood at 60 to 70% (France, Germany, the United Kingdom and the United States). In others, such as Italy and Japan, debt exceeded GDP, so such countries would seem to have much less room for fiscal manoeuvre. As discussed in Chapter VI, for most countries these differences do not appear to have affected the ability to borrow so far. But, as they proceed, the fiscal expansions could quickly start to increase borrowing costs.

Fiscal policy is at serious risk of overshooting even in the economies with the most room for debt expansion. A fundamental reason is that, while the programmes most likely to be highly effective and low-risk are *timely*, *targeted* and *temporary*, those attributes of fiscal action are notoriously rare in representative democracies. The legislative process and the logistical challenge of disbursing enormous sums of money work against timeliness. Targeted programmes are the most likely to increase aggregate spending but are politically less attractive than those that simply benefit the most people. And it is much easier to lower taxes and increase spending than to do the reverse, so fiscal expansion tends towards permanency and a rise in long-term deficits.

The large stimulus packages also pose a variety of medium-term risks that policymakers must worry about now. On the one hand, there is the danger that fiscal policymakers will exhaust their debt capacity before finishing the costly job of repairing the financial system. On the other hand, there is the definite possibility that stimulus programmes will drive up real interest rates and inflation expectations. Those risks may appear small today – the crisis is boosting private saving and suppressing private investment, and there is substantial excess productive capacity – but once conditions normalise, they will intensify. The consequences could be sudden increases in interest rates combined with large moves in exchange rates.

Fiscal deficits can drive up real interest rates in a manner related to the classic process of crowding-out, whereby higher government purchases of goods and services result in lower private investment. The experience of the past few decades suggests that a permanent 10 percentage point increase in the worldwide ratio of government debt to GDP would raise the real interest rate nearly 0.4 percentage points in the long run.[3]

Fiscal deficits can drive up inflation expectations as well. Although governments rarely refuse to pay their debts,[4] they can lower the burden by altering repayment terms or, as occurred in the aftermath of the Second World War, by engineering previously unexpected inflation.[5] Since bondholders know all of this, even a hint of improvement in the real economy could cause nominal interest rates to increase, steepening the yield curve dramatically and smothering the nascent recovery. And adjustments of international investment portfolios that increase exchange rate volatility could accompany the sudden rise in long-term nominal interest rates.

There is another route through which fiscal stimulus programmes could raise long-term nominal interest rates. As noted in Chapter VI, extended real stagnation could undermine the credibility of fiscal policies to facilitate recovery. Persistent low growth could lead to a consensus that government deficits will remain large for years to come. If that were to happen, investors and institutions could sour on the prospects of holding long-term sovereign debt. Interest rates would then rise, driving up funding costs. Returning policy to a sustainable long-run path would require swift reductions in spending and increases in taxes. The rise in sovereign spreads seen already and the recent threats of credit rating downgrades for industrial economies are signs that a rapid increase in long-term nominal interest rates is a significant risk.

So, although expansionary fiscal programmes are essential to cushion the impact of the global recession and provide a bridge to recovery, it is vital that governments design stimulus in a manner consistent with long-run sustainability. That means that, as officials try to revive real activity and credit flows, they must (1) build in credible provisions for self-liquidation of the programmes and (2) engineer an economic adjustment to more saving and less overall debt.

Regarding self-liquidation, it is straightforward to design a programme that winds down automatically as employment returns to trend. But credibility is a problem – what are inherently political promises that are made now can easily be broken later. Nevertheless, where possible, programmes put into place need to be sustainable, and, if they are not, the commitments to liquidate them need to be structured so that they are difficult to escape.

As for adjustment, recall that the accumulation of debt on household and financial institution balance sheets played a central role in the crisis. For the economy to return to a stable growth path, the amount of borrowing must fall,

[3] See C Freedman, M Kumhof, D Laxton and J Lee, "The case for global fiscal stimulus", *IMF Staff Position Note*, no SPN/09/03, March 2009, www.imf.org/external/pubs/ft/spn/2009/spn0903.pdf.

[4] See C Reinhart and K Rogoff, "This time is different: a panoramic view of eight centuries of financial crises", *NBER Working Papers*, no 13882, March 2008, www.nber.org/papers/w13882.

[5] For further detail, see C Reinhart and K Rogoff, "The forgotten history of domestic debt", *NBER Working Papers*, no 13946, April 2008, www.nber.org/papers/w13946.

which means higher household saving and less leverage in the financial sector. Fiscal policies designed to encourage consumption and borrowing clearly risk hindering this necessary, but difficult, adjustment.

Monetary policy risks

It is fair to say that central bankers are operating well outside their comfort zone. Their unprecedented rate cutting and balance sheet expansion (see Chapter VI for details) pose a myriad of economic risks. On the one hand, their actions may be insufficient to put the economy on the path to recovery; and on the other, central banks may find it difficult to unwind their actions in time to prevent inflation from rising as growth and employment recover.

The consensus view is that, with banks and markets seriously damaged, central banks have had no choice but to take over much of wholesale financial intermediation in the short run. But their balance sheets, which technically could expand without bound, may reach practical and desirable limits before the needs of the economy are met.

And once the recovery materialises, how can central banks begin to tighten policy interest rates and unwind their vast monetary interventions? The technical issues are much less challenging than the political ones. As an operational matter, central banks' now swollen balance sheets need not get in the way of the transition to growth. When the time comes, central banks can tighten financial conditions by raising the policy interest rate or by issuing their own bonds in order to drain excess reserves while retaining assets that cannot be easily sold.[6] So, while holdings of some illiquid assets could easily cause balance sheets to remain large for some time, financial conditions can be tightened in a manner that allows monetary policymakers to retreat gracefully from unconventional policy easing.

But the timing and politics of unwinding are likely to be difficult. History shows that in moving to steady an expansion, monetary policymakers – always under close political scrutiny – have a tendency to be late, tightening financial conditions slowly for fear of doing it prematurely or too severely. Because their current expansionary actions were prompted by a nearly catastrophic crisis, central bankers' fears of reversing too quickly are likely to be particularly intense, increasing the risk that they will tighten too late. The big and justifiable worry is that, before it can be reversed, the dramatic easing in monetary policy will translate into growth in the broader monetary and credit aggregates. That growth will, in turn, lead to inflation that feeds inflation expectations or it may fuel yet another asset price bubble, sowing the seeds of the next financial boom-bust cycle.

Finally, it is essential that central banks end their role as intermediary of last resort. By taking over large swathes of intermediation from moribund markets and institutions, central banks created the risk that the private sector

[6] Regarding the first option, the existence of standing facilities in which commercial banks receive interest on excess reserves facilitates a quick increase in rates. Regarding the second option, an equivalent approach is for the finance ministry or treasury to agree to issue sovereign debt and deposit the proceeds in the central bank. Coordination between the two authorities is essential to accomplish that move because it forces recognition of the link between the central bank's balance sheet policies and fiscal debt management.

will be unable to return to these activities either quickly or smoothly, or to restart them in a new form. Not only must commercial paper and simple forms of securitisation return, but market-makers and arbitrageurs must as well. Any actions officials take to temporarily replace private sector agents must always have the return of those agents as the ultimate objective.

On the political front, central banks perceived the need to quickly move far outside their traditional sphere of influence and so were unable to thoroughly work out the governance implications of their actions. As a consequence, their moves carry important long-term political risks.

One such risk comes from the fact that monetary policymakers have supported selected industries and borrowers at the expense of others, creating an uneven playing field in some areas. Traditionally, central banks have operated in deep markets in an effort to remain impartial and avoid creating price distortions. But in the current environment, what is commonly known as "asset neutrality" is simply not possible.

Another long-term risk is that the extraordinary loan and asset purchase facilities created by central banks have blurred the traditional distinction between monetary and fiscal policy and thus between the actions of central banks and those of governments. Some of the riskier unconventional monetary policy actions may, in the end, generate large losses that will have to be borne by the public. Such losses could unleash a dangerous reaction against the structure of central banking in which appointed officials operate at arm's length from the elected government.

The bottom line: perseverance and sustainability

In summary, financial regulators, fiscal authorities and central bankers face enormous risks. To avoid deepening and prolonging the crisis, they need to act quickly and guard against policies that hinder adjustment or create additional distortions in financial flows. Governments will be tempted to subsidise industries that need to contract – but losers need to be allowed to lose. They will be tempted to encourage banks to lend to those who should borrow less – but it is not possible to deleverage by borrowing. And they will be tempted to turn a blind eye to insolvent institutions, allowing them to continue operating – but as hard experience teaches, zombie banks must be closed or returned to health as quickly as possible. In all of these cases, governments must realise that, by insisting on speedy resolutions despite political controversy, they are acting in the best interests of the public.

Building a more stable financial system

While emergency room doctors focus on saving the patient's life, others work on the patient's longer-term health. The same is true for the financial system now under emergency care: as officials are working to resolve the crisis, they are also striving to build a more stable financial system that will make the next crisis both less likely and less damaging.

Building a perfect, fail-safe financial system – one capable of maintaining its normal state of operation in the event of a failure – is impossible. Standing

in the way are both innovation, necessary for progress, and the limits of human understanding, especially regarding the complexity of the decentralised financial world. Even so, better macroeconomic policies, regulation and enforcement, combined with improved private sector governance and risk management, should be able to produce a more resilient structure. A sound framework for financial stability incorporates both macroeconomic policies designed to lean against asset price booms and credit cycles, and macroprudential policies in which regulators and supervisors adopt a system-wide perspective.

The key to building a framework that makes the financial system more stable and less prone to collapse is to identify its sources of systemic weakness – the aspects that, if damaged, will bring the entire system down. If the reform process can identify and mitigate these systemic risks while giving private agents the incentive to behave responsibly, the system overall will be less prone to failure and more resilient even if major problems occur.

A framework for addressing systemic risk in the financial system

The starting point for building a comprehensive framework that safeguards financial stability is to identify the sources of systemic risk in each of the financial system's three essential elements: *instruments*, including loans, bonds, equities and derivative instruments; *markets*, ranging from bilateral over-the-counter (OTC) trading to organised exchanges; and *institutions*, comprising banks, securities dealers, insurance companies and pension funds among others. All three elements – instruments, markets and institutions – can generate systemic risks that require mitigation if the financial system is to be safe from collapse. And, importantly, addressing risk in only one area will not ensure the safety of the others. Furthermore, making all three parts of the financial system more stable and more resilient to systemic events diminishes the problem of a porous regulatory perimeter. No part of the financial system should be allowed to escape appropriate regulation.

Ensuring financial stability means addressing externalities – costs that, through its actions, an institution imposes on others but does not bear itself. Two externalities are central to systemic risk: the first is joint failures of institutions resulting from their *common exposures* at a single point in time – common exposures because of shocks that come from outside the financial system or because of linkages among intermediaries. The shocks may take a variety of forms, including both credit and liquidity shocks and their interaction, while the linkages arise from the complex web of daily transactions. The second externality is what has come to be known as *procyclicality*, the fact that, over time, the dynamics of the financial system and of the real economy reinforce each other, increasing the amplitude of booms and busts and undermining stability in both the financial sector and the real economy. Properly designed, each component of the framework – focusing on instruments, markets and institutions – can mitigate these sources of instability.

Having identified the sources of systemic risk, the next step is to create institutional mechanisms that enhance safety. These policy interventions must combine outright bans, which should be rare, with regulations that increase the

cost of activities based on the systemic risks they create. The discussion that follows suggests various actions aimed at moderating the systemic risks arising from instruments, markets and institutions, but these three basic elements of the financial system are inextricably linked together (see Chapter III). For example, there is no clear dichotomy between bank-based and market-based intermediation systems; and financial instruments appear in markets as well as on (and off) institutions' balance sheets. So the actions suggested here should be thought of as interrelated.

Improving the safety of financial instruments

The opacity, complexity and sheer quantity of some instruments can lead to systemic problems. The most recent examples of such instruments were the various structured products, including securitised subprime mortgages that were difficult to comprehend, value and sell. The existence of complex and opaque instruments clearly creates systemic risks. First, they present the obvious problem that evaluations of their riskiness are not likely to be reliable. And when valuation is imprecise, it not only complicates risk management inside individual institutions, but also makes the already difficult task of evaluating common exposures even harder. How can officials (or anyone else) know if a concentrated position or a series of counterparty relationships poses the systemic risk of joint failures if they can't even understand the financial instruments themselves?

The second systemic risk posed by such instruments is their capacity to exacerbate procyclicality. Typically, booms are periods of financial innovation. When things are going well, firms and individuals feel confident in experimenting. They create new, untested instruments that are difficult to understand and value. But buyers of these newly minted financial products can be fooled into thinking that innovation and originality imply safety. And sellers have little incentive to convince them otherwise. The result is that, during a boom, flourishing financial innovation will tend to create hidden, underpriced risks. But as strains develop and the boom begins to wane, the previously unseen risks materialise, deepening the retrenchment that is already under way. Financial innovation, although an undeniable source of progress, in this way itself becomes a source of procyclicality and systemic risk.

Balancing innovation and safety in financial instruments requires providing scope for progress while limiting the capacity of any new instrument to weaken the system as a whole. Balance can be achieved by requiring some form of product registration that limits investor access to instruments according to their degree of safety. In a scheme analogous to the hierarchy controlling the availability of pharmaceuticals, the safest securities would, like non-prescription medicines, be available for purchase by everyone; next would be financial instruments available only to those with an authorisation, like prescription drugs; another level down would be securities available in only limited amounts to pre-screened individuals and institutions, like drugs in experimental trials; and, finally, at the lowest level would be securities that are deemed illegal. A new instrument would be rated or an existing one moved to a higher category of safety only after successful tests – the analogue of clinical trials. These

would combine issuance in limited quantities in the real world with simulations of how the instrument would behave under severe stress.

Such a registration and certification system creates transparency and enhances safety. But, as in the case of pharmaceutical manufacturers, there must be a mechanism for holding securities issuers accountable for the quality of what they sell. This will mean that issuers bear increased responsibility for the risk assessment of their products.

Improving the safety of financial markets

The crisis has shown that markets can fail to self-correct, putting the entire financial system at risk. The principal systemic hazard of a financial market is illiquidity – the collapse of a market that comes with the sudden appearance of a large number of sellers and the disappearance of buyers. Beyond having generated illiquidity, the crisis demonstrated once again the lessons of the 1998 experience with Long-Term Capital Management: (1) the ability to buy and sell risk is surely efficiency-enhancing, but when one institution holds a sufficiently large position, it can create common exposures that put the system at risk; and (2) when transactions occur bilaterally, as they do in OTC markets, the failure of one individual or institution can, through linkages across firms and markets, generate joint failures.

Financial markets can also contribute to the procyclicality of the system as a whole. Parties to OTC derivatives transactions generally require collateral to mitigate the counterparty risks they face. But a lack of transparency about exposures can magnify general concerns and amplify cyclical activity in two ways. First, during periods of stress, collateral requirements are likely to make it more difficult to fund existing positions since increases in risk naturally lead to increases in margin requirements. And second, crisis-induced increases in uncertainty will put pressure on markets for the securities used as collateral in OTC transactions, creating the potential for contagion to those markets. The result is procyclicality in which downturns lead to higher margin requirements and reduced market liquidity, forcing a general financial retrenchment with obvious implications for real economic activity.

One way to address at least some of the systemic risks created by OTC financial markets is to replace bilateral arrangements with central counterparties (CCPs). A CCP is an entity that interposes itself between the two sides of a transaction, becoming the buyer to every seller and the seller to every buyer. While the CCP appears to be perfectly hedged – has bought exactly what it has sold – it still faces the risk that someone will default when a payment is due. The CCP addresses that risk by requiring each participant to hold a margin account in which the balance is determined by the value of the participant's outstanding contracts; the more volatile the market, the larger the required margin balance and the more expensive it becomes to hold large positions. And by forcing all transactions to occur on the same platform or set of platforms, it will be straightforward to collect and disseminate information that market participants and authorities can use to monitor the concentration of individual exposures and the linkages that they create. In these ways, the CCP can both reduce risks of common exposures and dampen market volatility.

Furthermore, CCPs are in a position to mitigate the procyclicality that arises from the tendency of individual counterparties to demand increased margin during times of financial stress. As the financial crisis revealed, increased price volatility, combined with uncertainty about counterparty creditworthiness, leads to demands for higher margin. Meeting the request means raising funds, which can prompt forced selling at the worst possible time. With a CCP, margin requirements would be set centrally, not by the counterparties themselves, so margin need not rise during periods of market stress. This feature creates at least the possibility of moderating the increases in margin in a way designed to reduce procyclicality.[7]

For an instrument to be accepted by a CCP, it must have a certain degree of standardisation and documentation, and reliable prices must be available to allow regular marking to market of participants' margin accounts. Because many of the derivatives currently traded over the counter meet these criteria, or could meet them with only slight changes, these requirements do not seem much of an impediment.

The next step in market organisation is to combine the CCP with an organised central exchange as the trading platform. The primary advantage of taking this step is that it ensures price transparency with less reliance on market-makers. As such, the market will be more stable – something suggested by the fact that exchanges are among the markets most likely to continue operating in a crisis. But they do have their limitations. Price transparency reduces the incentives for individuals or institutions to devote capital to making markets, which potentially increases the difficulty of transacting in large quantities. That problem has led the market to create securities exchanges or trading platforms for large transactions with a reduced level of transparency.

In summary, reducing both the common exposures and the procyclicality that put financial stability at risk requires that the trading of financial instruments move significantly away from OTC arrangements, which have dominated some markets for a number of years. Determining where any individual security should land in the spectrum of alternative arrangements will depend on the systemic risks that it poses, and in the end it will be up to individuals to decide how to transact. But by suggesting that certain institutional structures are safer than others, officials will be providing a set of warnings; and by raising the costs of operating in markets that have shown themselves to foster the build-up systemic risk, they will be helping to enhance financial stability.

Improving the safety of financial institutions: a macroprudential framework

By construction, microprudential supervision focuses on the risks within individual institutions and so it does not address the externalities of common exposures and procyclicality. For a number of years, work at the BIS has

[7] It is important to note that a CCP is like an insurance company and that it can fail. As a result, it is ultimately going to rely on public authorities should there be a systemic event. Therefore, prudence means that the CCP must be subject to some form of supervision that might place limits on its size as well as on the concentration of individual exposures within it. And, as discussed below, it means that institutions with derivative exposures be required to hold capital to support those exposures.

emphasised the need for regulators and supervisors to adopt macroprudential policies, which are attuned to the control of system-wide risks. This means calibrating prudential tools – capital requirements, provisioning, leverage ratios and the like – to address common exposures and joint failures on the one hand, and procyclicality on the other.[8]

Common exposures

The current crisis has shown how common exposures create the potential for a broad cross section of institutions to fail simultaneously. The interdependence of financial institutions can come either from similar portfolios or from interconnecting counterparty exposures (for example, because institutions trade with each other). As a result, the risk of the financial system as a whole is based not only on the sum of the risks arising inside individual institutions but also on the degree of correlation among the institutions' balance sheets: the higher the correlation, the higher one would expect systemic risk to be. Put another way, a financial sector with only a few large institutions may be no more risky than one comprising many small institutions whose balance sheets all look the same. The problem in either case is that, because it will reflect only the risks to themselves and not the risks they impose on the system as a whole, the level of capital held by individual institutions will probably be too low.[9] Proposals to mitigate the risks arising from common exposures focus on implementing a *systemic capital charge* (SCC). An SCC would be designed to create a distribution of capital in the system that better reflects the systemic risk posed by individual failures.[10]

Implementing such a scheme requires a measure of systemic risk and an understanding of the marginal contribution of each institution to the total. With those in hand, an individual institution's baseline capital requirement can be set to reflect its systemic importance. The statistical tools needed to calculate the size of an SCC are in their infancy. Work at the BIS has developed a process for assessing marginal, institution-specific contributions to systemic risk essential for implementation of an SCC. One unsurprising conclusion of this work is that large banks contribute more than proportionally to systemic risks, as do banks that are more exposed to system-wide shocks. That result suggests that one may want to require bigger or more interconnected players to hold more capital and have lower leverage, in effect taxing size to create a level playing field from a system-wide perspective (see Box VII.A).[11]

[8] The discussion here largely blurs the distinction between provisions and capital, as both are designed to absorb losses. Provisions are held against *expected* losses, capital is held against *unexpected* losses.

[9] See, for example, S Morris and H Shin, "Financial regulation in a system context", *Brookings Papers on Economic Activity*, no 2, 2008, pp 229–61, for a detailed recent discussion of this point.

[10] A systemic capital charge would complement a minimum leverage ratio – that is, a minimum value for the ratio of capital to assets. The latter can be viewed both as creating a floor below which conventional risk-based capital cannot fall and as a way of containing the systemic risks created by the expansion of an individual institution's balance sheet.

[11] The forthcoming issue of the *Geneva Reports on the World Economy* makes the very sensible suggestion that every financial institution have a bankruptcy contingency plan analogous to its business continuity plan. See M Brunnermeier, A Crockett, C Goodhart, A Persaud and H Shin, *The fundamental principles of financial regulation*, International Center for Monetary and Banking Studies, University of Geneva, 2009, www.cimb.ch.

Box VII.A: Measuring systemic risk and allocating it across individual institutions

Ensuring financial stability calls for an assessment of risk in the financial system as a whole. Achieving that means, first, measuring the likelihood of a systemic event, defined as a failure of one or more institutions that puts the entire system at risk. That measure would then be used in calibrating regulatory and supervisory tools such as insurance premiums or capital requirements. Implementing this calibration involves estimating the marginal contribution of each institution to overall systemic risk – a process discussed here with illustrative examples.

The likelihood of systemic events is determined by the likelihood of failure at individual institutions and by the extent to which institutions are likely to fail simultaneously. In turn, the likelihood of the latter outcome, ie joint failure, rises with the degree of institutions' exposure to common risks. Those risks could originate outside the financial system, or they could arise from counterparty relationships or other linkages inside the financial system.

One way to measure the likelihood of a systemic event is to treat the financial system as a portfolio of institutions and employ numerical techniques that have previously been applied to portfolios of securities. The inputs required for such a calculation are the size of each institution, its probability of default, the loss-given-default in each case, and an estimate of the correlation of defaults across institutions. That information can be collected from supervisory assessments, from prices of bank equity and debt, or from a combination of the two.

The properties of the resulting measure of systemic risk closely parallel those of risk measures for portfolios of securities. In particular, the *overall* level of systemic risk increases with institutions' exposure to common risk factors (Graph III.1); and with the total size of the system held constant, the level of systemic risk increases with the disparity in the relative size of institutions.

Calculations of systemic risk for groups of institutions have been made for some time. But allocating that risk to individual institutions in a way that reflects their contribution to it has proved difficult. Recent work at the BIS has developed just such an allocation procedure. The technique relies on game theory and can be applied quite generally to any measure of systemic risk that adopts a portfolio approach.[1] The final result is an intuitive measure that is transparent and delivers additive allotments of systemic risk.

Performing the allocation exercise for a hypothetical banking system yields a number of important insights. For example, keeping the riskiness of each institution and the size of the system constant, an individual institution's *contribution* to systemic risk increases with its exposure to common risk factors. Importantly, the increase is greater for riskier or larger institutions. In addition, an institution's relative contribution to risk in the system as a whole increases more than in proportion to its relative size (Table VII.A), a result reflecting the fact that larger institutions play a disproportionate role in systemic events.

Allocation of systemic risk to individual institutions

Per unit of overall system size

	Strongly capitalised system (probability of default = 0.1%)	**Weakly capitalised system** (probability of default = 0.3%)
Two small banks, each with 20% market share	3.1%	3.9%
Two large banks, each with 30% market share	5.8%	7.1%
Total systemic risk (four banks)	17.8%	22.0%

Total systemic risk equals the expected loss in the 0.2% right-hand tail of the distribution of portfolio losses. The first two rows of the table report bank-level contributions to total systemic risk. Loss-given-default is set to 55%. All banks are assumed to have the same sensitivity to common risk factors, implying a common asset return correlation of 42%.

Source: BIS calculations. Table VII.A

The system-wide perspective shown here provides guidance on the construction of macroprudential tools. If such tools are to incorporate institutions' contribution to systemic risk, they will need to reflect factors that go well beyond the likelihood of individual failures. This means that an institution's deposit insurance premium, capital requirement and the like will have to reflect both the likelihood of its own failure and its exposure (and contribution) to system-wide risk.

Likewise, insurance and capital charges faced by large institutions will need to reflect the disproportionate impact of their size on the likelihood of a systemic event. And although portfolio diversification might reduce the risk of an individual failure, it could make institutions more similar to one another and, as a result, increase the likelihood of joint failure. Nonetheless, it seems clear that policymakers need to collect the appropriate data and build the appropriate analytical models to allow them to incorporate system-wide considerations into their evaluations of individual institutions.

[11] For a technical description of the procedure, see C Borio, N Tarashev and K Tsatsaronis, "Allocating system-wide tail risk to individual institutions", *BIS Working Papers*, forthcoming.

Institutions that are too big to fail – those that create intolerable systemic risk by themselves because many others are exposed to them – pose a significant challenge in this context. And the mergers and acquisitions that have formed a part of the crisis response in the past two years may have increased the number of such institutions; although this is understandable as a transitional phenomenon, officials realise that it creates an unsustainable structure. Addressing the problem has become a high priority for many national authorities, which are working to set up resolution procedures for every financial institution in their respective jurisdictions.

Procyclicality

The second externality highlighted by the current crisis is the procyclicality created by the tendency of institutions to become less prudent during cyclical upturns and more prudent during downturns. At a conceptual level, proposals to reduce, neutralise or even reverse the procyclicality of the financial system must either provide insurance against systemic downturns when they come, or introduce countercyclical mechanisms to forestall or mitigate them. The following discussion addresses the potential for the latter.

Policymakers have shown a clear desire to create new policy instruments to ensure that financial institutions adjust their capital (and other safeguards, such as loan provisioning and liquidity standards) countercyclically. Such a *countercyclical capital charge* (CCC) would require institutions to build up defensive buffers in good times that could be drawn down in bad times.[12] One possibility for implementing a CCC is a purely rule-based approach that builds automatic stabilisers into the regulatory framework. While they may be difficult to implement in a robust way, rules would commit policymakers to act, creating an important degree of predictability for financial institutions.

An alternative to a purely rule-based approach would be to administer adjustments to capital buffers in a manner that is analogous to adjusting the policy interest rate, albeit at a much lower frequency and in a much more predictable, and therefore mechanical, way. Many years of experience have led monetary authorities to their current practice, basing their conventional interest rate decisions on the outlook for inflation and economic activity, often with substantial input from quantitative models. Is it possible to formulate a similarly

[12] See, for example, Financial Stability Forum, *Report of the Financial Stability Forum on enhancing market and institutional resilience*, 7 April 2008, www.financialstabilityboard.org/publications/r_0804.pdf, and *Report of the Financial Stability Forum on addressing procyclicality in the financial system*, 2 April 2009, www.financialstabilityboard.org/publications/r_0904a.pdf.

simple procedure that could guide the authorities in setting a CCC? Success requires overcoming a series of obstacles similar to those that were overcome through decades of experience in the monetary policy arena.

One obstacle to calculating a countercyclical capital charge is knowing when buffers have to be built up (increasing the CCC) to make lending more costly in a boom, and when they can be reduced or released (lowering the CCC) to promote lending during a bust. In essence, it would be necessary to quantify the risks to stability (risks that would play a role similar to that played by inflation and output gaps in monetary policy decisions). Work done at the BIS suggests that, while it may be possible to identify macroeconomic indicators that correctly signal when the buffers should be built up, identifying when they should be released is more difficult. As a result, the management of countercyclical capital buffers is likely to require some degree of discretion combined with a rule to create predictability (see Box VII.B).

Yet another problem with implementing a CCC is that it is not "one size fits all". Instead, capital buffers (or countercyclical provisioning) will need to vary with the nature of individual institutions' businesses. For example, because cycles differ across countries, a CCC must be adjusted separately for each geographical portfolio held by an institution operating across national boundaries.

While the countercyclical capital charge tells us the amount by which capital buffers are to be built up and drawn down through the credit cycle, it is largely silent about the average level of capital that needs to be held in the system. The current baseline level of capital held by financial institutions is by broad agreement too low, but by how much?[13] Answering the question involves ascertaining the long-run equilibrium level of capital (the analogue to the long-term equilibrium interest rate that serves as the benchmark in the case of traditional monetary policy). This, in turn, influences the distribution of risks between the private owners and the public sector. The higher the level of capital that financial institutions are required to hold, the lower the risk borne by the public. But higher capital levels raise the costs of doing business and thus raise the price of loans.

It is important to note that one of the most pressing tasks for everyone is the proper consolidation of financial institutions' balance sheets. The crisis very clearly exposed the risks created by a shadow banking system that had been spun off by regulated institutions. Therefore, the first order of business in improving the management of capital is to bring all of these entities, including structured investment vehicles and the like, within the regulatory perimeter to ensure that appropriate capital is held against all financial institution obligations. This will give managers, investors and supervisors a more accurate picture of an institution's exposures at the same time that it raises the total amount of capital in the financial system.[14]

[13] See, for example, Financial Services Authority, *The Turner Review: a regulatory response to the global banking crisis*, March 2009, www.fsa.gov.uk/pubs/other/turner_review.pdf.

[14] Regulatory capital in the financial system is likely to increase as a consequence of several developments: the broadening of the regulatory perimeter to include all systemically important institutions and markets; a significant amount of off-balance sheet assets coming back onto the balance sheet of financial institutions; provisioning that better reflects the build-up of risk; changes in the composition of capital that will promote high-quality capital; and better risk capture in minimum capital requirements.

Box VII.B: Alternative rules for countercyclical capital buffers – an illustration

The crisis has focused attention on mechanisms for ensuring that banks adjust their capital (or loan provisioning) countercyclically, building it up in good times and then drawing it down as stress materialises. Researchers are examining a number of approaches, many of them still in the early stages of development. Here we examine the feasibility of devising a rule that induces countercyclical adjustments in minimum capital requirements.

Any rule for minimum capital must be designed in three steps: (1) choosing the indicator that signals the time to build up and release the capital buffer; (2) choosing a formula that determines how the indicator will modify the minimum capital requirement; and (3) choosing the minimum capital requirement, which itself might vary cyclically. We illustrate the first two steps here.

For the first step, the following discussion covers three macroeconomic indicators on which preliminary research has been reported in the literature (Graph VII.B.1): credit spreads (left-hand panel), the change in real credit (centre panel) and a composite indicator that combines the credit/GDP ratio and real asset prices (right-hand panel).[①,②] The ideal macroeconomic indicator would reliably identify both the expansion and stress phases of the banking cycle. With that in mind, we present the variables as deviations from their respective neutral levels, measured here by a trend or long-term average; and the phases of the banking cycle are measured by deviations of the charge-off rate from its long-term average.

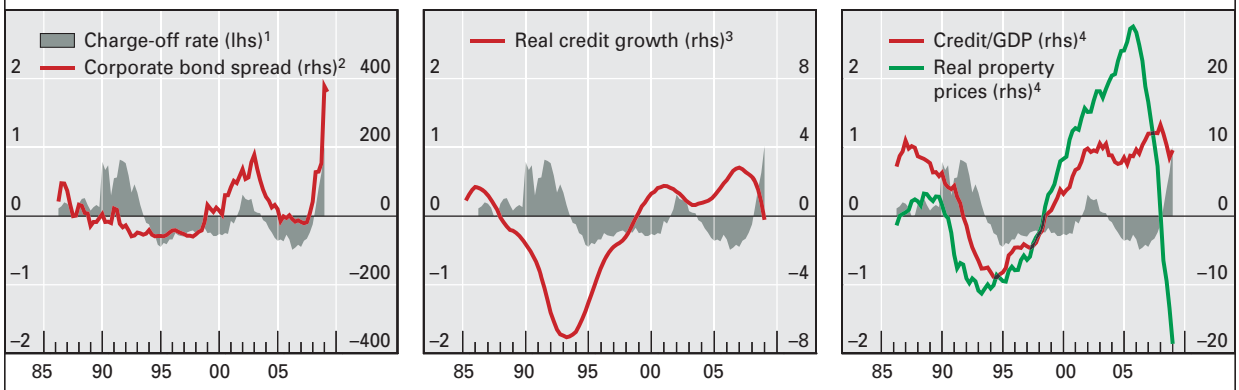
Narrowed credit spreads could be a signal of good times, and a significant widening may indicate the onset of a deterioration. However, the credit spread, measured here with BBB corporate bond spreads, is not a reliable indicator of banking system stress. For example, in contrast to the historical realities of banking stress, this indicator points to more serious financial strains after the collapse of the dotcom bubble than in the early 1990s.

The second candidate indicator is the change in credit, a choice based on the idea that banks tend to overextend credit before crises emerge and deleverage once strains materialise. However, credit growth exhibits considerable inertia, and it remains well above the neutral level even as banking strains begin to emerge. Hence, an indicator based on credit alone is likely to be late in signalling a release of the buffer.

The third potential indicator draws on previous BIS research, which has found that when the credit/GDP ratio and real asset prices simultaneously deviate by large amounts from their respective trends, they provide a fairly reliable signal of impending banking crises with a considerable lead time.[③] Because the composite indicator requires that a real asset price and the ratio of credit to GDP exceed thresholds at the same time, it avoids the late release of the buffer induced by the credit variable, but it may trigger it too early.

In the second step – choosing the formula that determines how the indicator will modify the minimum capital requirement – we examine the case in which the adjustment factor simply scales the

Alternative indicators and charge-off rate in the United States



[1] Loans and leases removed from the books and charged against loss reserves, as a percentage of average total loans. [2] Deviation of long-term BBB-rated corporate bond spreads from their long-term average, in basis points. [3] Exponentially weighted five-year average real credit growth minus its 15-year rolling average, in percentage points. [4] Deviation of each variable from its one-sided long-term trend (that is, a trend determined only from information available at the time assessments are made); credit/GDP ratio in percentage points, property prices in per cent.

Sources: Moody's; national data; BIS calculations. Graph VII.B.1

minimum capital requirement multiplicatively.[4] When the indicator is at its neutral level, the multiple is set to 1 so that the formula will make no adjustment to the buffer at that point. For illustrative purposes, we consider three formulas that differ in how they treat the uncertainty that inevitably surrounds the neutral level of the indicator and in their degree of symmetry with respect to adjustments to the minimum requirement.

In its treatment of uncertainty around the neutral level, formula 1, unlike the other two formulas, produces changes in the buffer that are steepest precisely around that level (Graph VII.B.2, left-hand panel). In that way, formula 1 actually magnifies any errors in measuring the neutral level. Only formula 3 takes the uncertainty fully into account by not triggering an adjustment within a range around the neutral value.

Regarding symmetry, formula 2 is unique in never being smaller than 1. Hence, regardless of the state of the financial system, the buffer determined by formula 2 can never fall below the requirement associated with the neutral level of the indicator. Whether that is desirable will depend on how the minimum capital requirement is defined and how it is allowed to vary (step 3 of the procedure for creating a rule). For example, if the minimum is highly procyclical and thus rises strongly in bad times, this characteristic would effectively prevent any release of actual capital.

Finally, to illustrate how the formulas adjust the minimum requirement under actual historical circumstances, an indicator is chosen for each formula: for formula 1, credit spreads (called here adjustment 1); for formula 2, the change in real credit (adjustment 2); and for formula 3, the composite indicator (adjustment 3). The results (Graph VII.B.2, centre and right-hand panels) support, on balance, the tentative conclusions that came from the performance of the indicators.

Adjustment 1 performs well in the current crisis, for both the build-up and the release phases. However, such a rule would have called for a large release of capital during and after the dotcom bust, but nearly no release in the early 1990s when the banking system experienced strains in the United States.

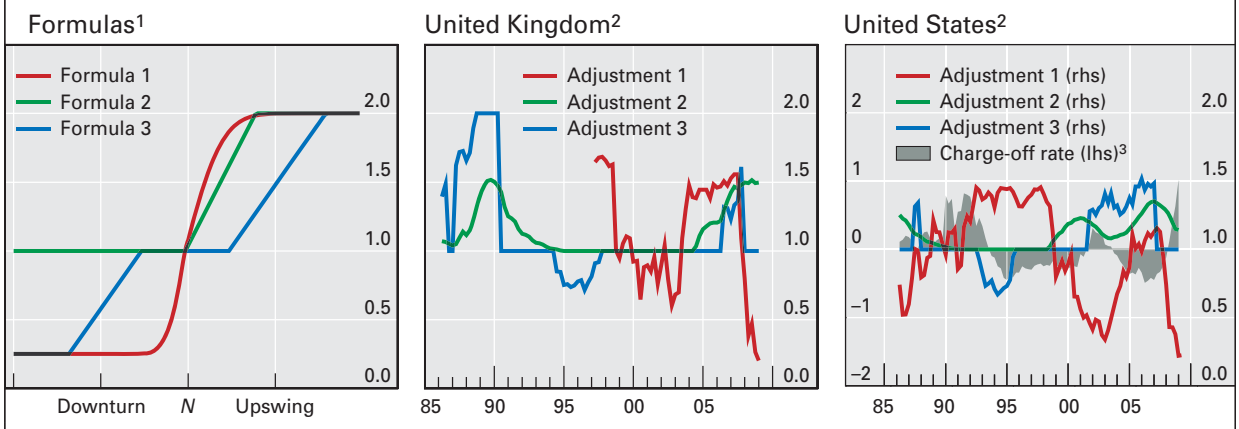
Adjustment 2 presents an accurate signal for the build-up phase but is late in calling for the release, both for the current crisis and for the previous period of stress in the early 1990s. The adjustment thus reflects the lag with which credit growth falls after stress emerges.

Adjustment 3 provides a good signal for the build-up of the capital buffer but in some instances implies premature release. In particular, for the current crisis, the signal would have called for release starting at the end of 2006 for the United States, ahead of the first obvious signs of strain, owing to property prices falling below the time-varying trend. Adjustments below 1, however, tend to occur too late, indicating that combining formula 2 with this indicator would be more desirable.

This analysis, though merely illustrative, points to difficulties in developing robust rules to govern countercyclical capital buffers. Finding macroeconomic variables that would reliably signal the appropriate time for a release of the buffers appears to be especially challenging. Ultimately, the use of some form of discretion to manage countercyclical buffers may prove to be inevitable.

Candidate rules for countercyclical capital buffers and illustrations

Multiplicative adjustments



[1] All formulas assume a neutral level, *N*, of the indicator variable. Values to the right of *N* indicate an upswing; values to the left, a downturn. [2] Adjustment 1 applies credit spreads to formula 1. Adjustment 2 applies the exponentially weighted five-year average real credit growth to formula 2. Adjustment 3 applies the composite indicator to formula 3. [3] Loans and leases removed from the books and charged against loss reserves, as a percentage of average total loans.

Sources: Merrill Lynch; Moody's; national data; BIS calculations. Graph VII.B.2

[1] Credit spreads taken from CDS have been suggested by M Gordy, and formula 1 has been constructed in the spirit of his work: M Gordy, "First, do no harm – a hippocratic approach to procyclicality in Basel II", paper presented at the conference *Procyclicality in the financial system*, jointly organised by the Netherlands Bank and the Bretton Woods Committee, 9–10 February 2009. Credit growth and a formula similar to formula 2 have been suggested by C Goodhart and A Persaud, "A party pooper's guide to financial stability", *Financial Times*, 4 June 2008. The composite indicator builds on C Borio and M Drehmann, "Assessing the risk of banking crises – revisited", *BIS Quarterly Review*, March 2009, pp 29–46. [2] While not shown, indicators based on GDP alone were also assessed and were found to have a lower correlation with the measure of financial strain than any of the variables considered here. [3] Borio and Drehmann also use equity price gaps for the asset price portion of the composite indicator; equity prices have not played a crucial role in the current crisis and are therefore not shown in Graph VII.B.1. However, both equity and property price gaps are included in adjustment 3, shown in Graph VII.B.2. [4] If the formula is applied to Basel II rather than to some other minimum that is complementary to Basel II (such as a leverage ratio), the multiplicative approach would have the desirable property of cross-sectional risk sensitivity – that is, it would preserve risk differentiation across borrowers at any given time.

To conclude, determining the level and cyclical sensitivities of capital requirements is a difficult task. But, then, so is setting the stance of either monetary or fiscal policy. And as with conventional macroeconomic stabilisation policy at the turn of the 20th century, it has become all too apparent today that establishing a macroprudential orientation cannot be avoided and that countercyclical capital charges are one of a number of tools that will be needed for success.

Macroeconomic policies to enhance financial stability

The crisis has confirmed that the monetary and fiscal policy framework that delivered the Great Moderation cannot be relied upon to stabilise prices and real growth forever. The consensus today is that policymakers must be given an explicit financial stability mandate and that they will need additional tools to carry it out. The macroprudential approach to regulation and supervision will form a part of that, but it is not likely to be enough. Macroeconomic policies can and should have a role in meeting the goal of financial stability; at the very least, they should not hinder it.

Fiscal and monetary policy already help short-circuit the reinforcing feedback between the real economy and the financial system. Through automatic stabilisers and discretionary stimulus, countercyclical fiscal policy sustains income and employment, lowering the probability that borrowers will default (as well as increasing the value of what is recovered if they do) and raising the value of assets on financial institutions' balance sheets. Monetary policy, too, acts countercyclically. Seeking to head off a cyclical downturn, policymakers lower policy rates and, in so doing, improve the state of financial institutions' balance sheets. Similarly, central bankers increase policy rates to moderate an upturn, slowing credit growth and leaning against asset price booms. And ultimately, central banks provide emergency lending facilities to prevent runs on individual institutions from turning into system-wide panics – thus moderating a significant source of systemic risk. Put another way, by reducing cyclical fluctuations in the real economy, countercyclical fiscal and monetary policies naturally (and intentionally) reduce the procyclicality of financial institutions' capital.[15]

[15] The ability of fiscal authorities to recapitalise banks during bad times can also be viewed as a tool for addressing systemic risk. To institutionalise that ability to counter the procyclicality of the financial system, however, government officials would have to create a fiscal reserve. Like the countercyclical capital buffers for institutions, this reserve would rise during booms so that it can be drawn down during busts.

But monetary policy must go further. Stabilising the financial system requires that central banks adopt a more activist stance, responding to booms in both credit and asset prices. Past critiques of this approach remain valid. It will be no easier in the future to identify bubbles and calibrate policies to neutralise them than it was in the past. But the financial crisis has shown that it is ultimately too costly for central bankers to focus narrowly on inflation over relatively short horizons, with a view towards cleaning up the mess caused by bursting bubbles and collapsing credit after the fact. The debate has moved on. The issue is how monetary policymakers should expand their frameworks to make room for property prices, equity prices and amounts of debt outstanding. When they do make those adjustments, they will be in a position to implement policies that lean against the wind, tightening interest rates when they see bubbles and balance sheet overextensions that raise systemic, macroeconomic risks.

The expansion of the policy framework does not mean forsaking central banks' price stability objectives, as it is not aimed at changing long-term targets or goals. Instead, it is aimed at adjusting the horizon over which policymakers achieve their goals. When asset price and credit booms start to develop, they are unlikely to threaten the short-run stability of prices or real growth. In fact, they may go hand in hand with a combination of low consumer price inflation (especially if the measure does not include house prices) and high growth. That is, a boom in asset prices or credit can easily be mistaken for an increase in the growth rate of productivity. It is important for policymakers to understand that higher growth and lower inflation today can create instability tomorrow, and policy frameworks must take this into account. When they see a boom in an asset price or in credit, policymakers need to lengthen their policy horizon. Such an approach would help to better achieve the goals of fiscal and monetary policy: after all, macroeconomic stability is built on the foundations of a stable financial system.

Summing up

We have no choice but to take up the challenge of first repairing and then reforming the international financial system, all the while cushioning the impact of the crisis on individuals' ability to live productive lives. Efforts so far have fully engaged fiscal, monetary and prudential and regulatory authorities for nearly two years. The public resources devoted to economic stimulus and financial rescue have been staggering, approaching 5% of world GDP – more than anyone would have imagined even a year ago.

Recovery will come at some point, but there are major risks. First and foremost, policies must aid adjustment, not hinder it. That means moving away from leverage-led growth in industrial economies and export-led growth in emerging market economies. It means repairing the financial system quickly, persevering until the job of restructuring is complete. It means putting policy on a sustainable path by reducing spending and raising taxes as soon as stable growth returns. And it means the exit of central banks from the intermediation business as soon as financial institutions settle on their new business models and financial markets resume normal operations.

In the long term, addressing the broad failures revealed by the crisis and building a more resilient financial system require that we identify and mitigate systemic risk in all its guises. That, in turn, means organising financial instruments, markets and institutions into a robust system that will be closer to fail-safe than the one we have now: for instruments, a system that rates their safety, limits their availability and provides warnings about their suitability and risks; for markets, encouraging trading through central counterparties (CCPs) and exchanges, making clear the dangers of transacting elsewhere; and for institutions, the comprehensive application of enhanced prudential standards combined with a system-wide perspective, beginning with the application of something like a systemic capital charge (SCC) and a countercyclical capital charge (CCC).

Successfully promoting financial stability requires that everyone contribute. Monetary policymakers must take better account of asset price and credit booms. Fiscal policymakers must ensure that their own actions are consistent with medium-term fiscal discipline and long-term sustainability. And regulators and supervisors must adopt a macroprudential perspective, worrying at least as much about the stability of the system as a whole as they do about the viability of an individual institution. An encompassing policy framework with observable objectives and implementable tools is at an unfortunately early stage of development. But the suggestions made here and elsewhere are a start. The work will have to be coordinated internationally. In particular, institutions with expertise in the field – including the Basel-based standard-setting committees and the Financial Stability Board – will need to play a leading role in making such a framework operational. This is going to be a long and complex task, but we have no choice. It has to be done.