# Overview

#### A second wave of wide-ranging financial support from governments was needed early in 2009 to deal with renewed concerns about the stability of financial systems, as global macroeconomic and market conditions deteriorated sharply. In recent months, market conditions have improved and there are signs that the pace of decline in GDP is easing, improving the outlook for banking systems. But, given their leverage and funding positions, banks in the United Kingdom and internationally will remain sensitive to further shocks for some time. And if economic recovery were to stall as a result of weak bank lending, losses on assets could rise, further affecting confidence in the banking sector.

Authorities internationally are working to strengthen financial system resilience over the medium term. Policies on market discipline, bank regulation, market infrastructure and bank structure and size should be based on their impact on overall financial system stability, not just on individual firms. This systemic perspective has not always shaped policy around the world sufficiently in the past.

Chart 1 Financial market liquidity(a)

Liquidity index

1.0



0.5

+

0.0

–

0.5

1.0

1.5

2.0

2.5

3.0

3.5

4.0

4.5

#### Global financial instability and the policy response

The financial system came close to collapse in the autumn of 2008, following the failure of Lehman Brothers and the ‘breaking the buck’ of a large US money market mutual fund (MMMF). The subsequent panic across global markets prompted unprecedented action by national authorities. In the latter part of 2008 and early in 2009, UK and other authorities announced a second wave of measures to underpin the system.

*An abrupt fall in global demand and asset prices renews*

1992 94 96 98 2000 02 04 06 08

Sources: Bank of England, Bloomberg, Chicago Board Options Exchange, Debt Management Office, London Stock Exchange, Merrill Lynch, Thomson Datastream and Bank calculations.

(a) The liquidity index shows the number of standard deviations from the mean. It is a simple unweighted average of nine liquidity measures, normalised on the period 1999–2004. The series shown is an exponentially weighted moving average. The indicator is more reliable after 1997, as it is based on a greater number of underlying measures.

*concerns about financial institutions…*

As Section 1 discusses, the backdrop to those further measures was a sudden, internationally synchronised collapse in confidence and demand in late 2008. Global recession heightened uncertainty about the condition of the financial system. Asset prices fell sharply and liquidity in some markets dried up (Chart 1).

In the United Kingdom, implied mark-to-market losses on major banks’ loan portfolios roughly doubled between October and end-January (Chart 2), exceeding fresh capital raising over that period. That partly reflected increases in expected losses, though rising uncertainty and falling market liquidity also significantly affected these valuations.

Internationally, efforts by financial institutions to reduce risks compounded strains in markets. By mid-March, estimated

Chart 2 Loss of market value of major UK banks’ banking book assets and their capital raising(a)

£ billions

Change in market value Cumulative capital raised

(b) (c)

June Sep. Dec. Mar. June Sep. Dec. Mar. June 2007 08 09

150

100

50

+ – 0

50

100

150

200

250

300

350

400

450

total financial losses on debt securities and equities since the start of the crisis had reached around US(25 trillion (Table A).

*…contributing to a collapse in lending, especially across borders…*

Banks internationally sought to conserve capital by further tightening credit conditions. In many industrialised countries, including the United Kingdom, lending growth to households and corporates fell sharply (Chart 3). That partly reflected a withdrawal of foreign lending as cross-border capital flows reversed (Chart 4), prompted by rising uncertainty about credit risk, strains on banks’ liquidity, and policy pressures to prioritise local lending.

Tighter credit conditions and the sharp global economic slowdown exposed weak spots in borrowers’ balance sheets.

Sources: Bank of England, Bloomberg, JPMorgan Chase & Co., Merrill Lynch, UBS Delta,

published accounts and Bank calculations.

1. Based on weekly moving average prices of traded instruments as proxies for market value of similar banking book exposures. Group comprises Banco Santander, Barclays, HSBC,

Lloyds Banking Group, Nationwide, Northern Rock and RBS.

1. First UK support package announced (8 October 2008).
2. Second UK package of measures announced (19 January 2009).

Some companies faced difficulties in refinancing existing borrowing, insolvencies picked up and concerns about future corporate distress rose sharply. Pressures on the household sector increased as unemployment rose and property prices fell. Deteriorating capital market conditions resulted in

financing pressures on countries with large external

Table A Mark-to-market losses on selected financial assets(a)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| US) trillions | Outstanding  amounts(b) | Oct. 2008  *Report*(c) | Mid-March  2009 | June 2009  *Report* |
| Equities | 30.7 | 14.4 | 20.2 | 12.3 |
| Corporate bonds | 15.2 | 2.2 | 2.0 | 0.7 |
| RMBS(d) | 4.2 | 1.0 | 1.8 | 1.3 |
| CLOs and CDOs(e) | 1.0 | 0.4 | 0.5 | 0.4 |
| CMBS | 0.8 | 0.1 | 0.3 | 0.2 |
| Memo: Debt securities | 21.2 | 3.7 | 4.6 | 2.7 |
| Total losses | – | 18.1 | 24.7 | 15.0 |

Source: Bank calculations.

1. Estimated loss of market value since January 2007, except for US CLOs, which are losses since May 2007. Assets cover the United Kingdom, the United States and the euro area, except for equities, which are global.
2. Outstanding face values, except for equities, which are market values.
3. Updated to reflect new availability of outstanding amounts at time of October 2008 *Report*.
4. Includes prime, non-conforming and buy-to-let RMBS for the United Kingdom, prime and Alt-A RMBS and home equity loan ABS for the United States, as well as RMBS for the euro area.
5. Includes high-grade and mezzanine home equity loan ABS CDOs for the United States.

Chart 3 Contributions to annual growth in lending to UK non-financial companies

Percentage points

25

Other monetary and financial institutions Foreign lenders

Major UK-owned banks(a)

Total (per cent)(b)

20

15

10

5

+

0

–

5

2003 04 05 06 07 08 09

Source: Bank of England.

1. Includes consolidated banking groups of Barclays, Lloyds Banking Group, HSBC, Nationwide and RBS.
2. Twelve-month growth rate in the stock of lending.

imbalances.

*…prompting an unprecedented policy stimulus.*

Against that backdrop, authorities internationally took

wide-ranging measures in the latter part of 2008 and early in 2009. Interest rates globally were cut, in some cases to historic lows. And central bank lending to the financial

system and beyond expanded, leading to a more than doubling in central bank balance sheets to around 15% of GDP in the United States and United Kingdom. Almost half the world’s largest 20 banks received direct government investment. In the United Kingdom bank support measures included further liquidity insurance, additional capital investment and asset protection. Overall, the total value of actual and contingent support in North America and Europe rose to over

US(14 trillion, equivalent to about 50% of annual GDP in those economies, although that does not equate to losses as in some cases these obligations were offset by holdings of assets.

#### The current state of the financial system

*Market sentiment has improved recently…*

As Section 2 sets out, market sentiment has improved in recent months. Equity markets have risen by 25%–35% from low points in March, recouping around US(8 trillion of

mark-to-market losses. And an improvement in credit markets has recovered around US(2 trillion of estimated mark-to-market losses on debt securities.

Perceptions of banks’ resilience have improved, supported by conversions of preferred shares to common equity, private sector capital raising and government support. Market contacts report somewhat better conditions in funding

Chart 4 Net purchases of domestic financial assets by foreigners in G20 countries,(a) 1990 Q1–2008 Q4

250 US( billions US( billions 2,500

G20 advanced economies (right-hand scale)

G20 EMEs(b) (left-hand scale)

markets, with signs that creditors are willing to provide finance without government guarantees, though term funding in unsecured money markets remains constrained.

200

150

100

50

+

0

–

50

100

150

1990 92 94 96 98 2000 02 04 06 08

2,000

1,500

1,000

500

+

0

–

500

1,000

1,500

*…but banks remain vulnerable.*

Notwithstanding these positive developments, balance sheets of banks internationally remain weak. UK and global banks’ assets have risen markedly since the start of the decade. Bank leverage remains high (Chart 5), so net worth is sensitive to changes in sentiment about asset values. Funding fragilities persist, with banks needing to refund substantial support provided by the official sector in coming years (Chart 6). They also face pressures in cross-border funding markets and intense competition for retail deposits.

Sources: Bank of England, IMF *International Financial Statistics*, ONS, Thomson Datastream and Bank calculations.

1. Excluding financial derivatives.
2. Excludes China, India and Saudi Arabia due to lack of consistent quarterly data.

Chart 5 Major UK banks’ and LCFIs’ leverage ratios(a)

Maximum-minimum range Median

As long as these balance sheet vulnerabilities persist, there is a risk to the banking system from further adverse economic or financial sector developments, which could in turn affect lending and economic recovery. For example, further disruption to funding markets could arise from rising sovereign

Median (including 2009 capital issuance/announcements)

US commercial US securities European Major banks houses LCFIs UK banks(b)

2007 08 2007 08 2007 08 2007 08

Sources: Published accounts and Bank calculations.

Ratio

120

100

80

60

40

20

0

and cross-border risks, or banks’ asset values might deteriorate due to higher losses, perhaps on emerging market and commercial property exposures. In that event, the authorities could provide further public sector support of the sort seen to date in the United Kingdom. But at some point public support could become less effective, as it may eventually lead to rising fiscal concerns, which could feed back to higher funding costs for banks. Recent conversions of subordinated debt into equity are helpful in sharing the costs with the private sector. In adverse circumstances, other options might also need to be considered, such as public-private asset purchases or restructuring of bank balance sheets to create good and bad banks.

1. Assets adjusted for cash and cash items in the course of collection from banks, goodwill and intangibles and deferred tax assets. Assets adjusted on a best-efforts basis to ensure comparability between institutions reporting under US GAAP and IFRS. Derivatives are netted in line with US GAAP rules. Off balance sheet vehicles are included in line with IFRS rules (excluding mortgages sold to US government-sponsored entities). Capital excludes Tier 2 instruments, preference shares and hybrids and goodwill and intangibles.
2. Excludes Northern Rock.

Chart 6 Major UK banks’ maturing funding: selected wholesale liabilities

#### Building a more resilient financial system

In the future, the financial system needs to be much more resilient without the expectation of large-scale official support. Section 3 of this *Report* highlights some areas where

 Long-term repo

Credit Guarantee Scheme(a)  Special Liquidity Scheme

 Residential mortgage-backed securities(b) Bonds

£ billions

400

350

300

250

200

150

100

50

0

fundamental changes need to be implemented or at least debated.

##### Stronger market discipline

Market discipline needs to be strengthened, including through richer and more frequent public disclosures by banks.

Improvements should be made to disclosures on asset valuations and liquidity profiles. Provision of data on period averages, highs and lows, as well as end-period data, would provide a fuller picture of banks’ true risk profiles. Banks should also offer insights into uncertainties about balance sheet positions, including the results of economically plausible stress tests.

2009 10 11 12 13 14

Sources: Bank of England, Bloomberg, Deutsche Bank and Bank calculations.

1. Shows the full limit for the Credit Guarantee Scheme allocated across three years in equal shares.
2. Excludes Britannia, Co-operative Bank and HSBC. Shows the date at which markets expect the residential mortgage-backed securities to be called.

To control risk-taking, financial institutions need to face a credible threat of closure. The establishment of the UK Special Resolution Regime has increased the prospect of orderly

Chart 7 Long-run capital levels for UK and US banks(a)

Per cent

55

(b)

(c) (d)

(e)

United States

United Kingdom

(f)

(g)

50

45

40

35

30

25

20

15

10

5

0

1840 60 80 1900 20 40 60 80 2000

Sources: Berger, A, Herring, R and Szegö, G (1995), ‘The role of capital in financial institutions’, *Journal of Banking and Finance*, pages 393–430; United Kingdom: Billings, M and Capie, F (2007), ‘Capital in British banking 1920–1970’, *Business History*, Vol. 49(2), pages 139–62;

British Bankers’ Association; and published accounts.

1. US data show equity as a percentage of assets (ratio of aggregate dollar value of bank book equity to aggregate dollar value of bank book assets). UK data show risk-weighted Tier 1 capital ratios for a sample of the largest banks.
2. National Banking Act 1863.
3. Creation of Federal Reserve 1914.
4. Creation of Federal Deposit Insurance Corporation 1933.
5. Implementation of Basel risk-based capital requirements 1990.
6. From Billings and Capie (2007).
7. BBA and Bank calculations. This series is not on exactly the same basis as 1920–70, so comparison of levels is merely indicative.

failures of deposit-taking institutions. Greater challenges exist in dealing with failures of international financial groups. It is important that principles on cross-border crisis management, which were recently agreed by the Financial Stability Board and endorsed by G20 Heads of Government, are implemented swiftly. The case for special resolution arrangements for other types of institutions in systemically threatening circumstances and for infrastructures needs to be assessed.

To encourage more effective market discipline on deposit-takers, the Bank also supports charging banks

Greater self-insurance

Financial institutions’ own resources should be the first line of defence against financial pressures:

* higher levels of bank capital, consisting of common equity;
* reduced reliance on rating agencies;
* bank reserves should be built up in periods of strong earnings to absorb losses in times of economic and financial stress;
* larger liquidity buffers, comprising government bonds;
* contingent plans for accessing capital in times of stress;
* contingent funding plans, including testing use of the Discount Window Facility;
* contingent plans for restructuring or wind-down in the event of failure; and
* constant net asset value MMMFs should be regulated as banks or forced to convert to variable net asset funds.

Stronger market discipline

Market discipline should be strengthened significantly through:

* richer, more consistent and more timely disclosures by banks;
* making the threat of closure/wind-down credible for all financial firms via resolution regimes;
* improved cross-border crisis management arrangements; and
* a risk-based, pre-funded deposit insurance system.

risk-adjusted deposit insurance premia. By collecting these premia in advance a deposit insurance fund can be built up, reducing the need to raise levies in times of stress and providing a fund to support effective resolution.

##### Greater self-insurance

Financial institutions’ own resources should be the first line of defence against financial pressures. The prospect of public support reduces financial institutions’ incentives to buy adequate insurance against their own failure. Regulation is needed to ensure appropriate standards are met.

Historically, banks’ liquidity and capital levels have been in secular decline (Chart 7 and Chart 8). In the future, the level of capital and liquidity held by banks should rise materially to ensure that banks can maintain critical economic functions in times of stress. In determining required buffers, banks and regulators should not rely on third-party opinions, for example from ratings agencies, as permitted at present under the

Basel II standard approach. Regulators should require banks to build up buffers during periods of strong earnings to absorb losses in times of stress. These requirements should be additional to banks’ minimum capital requirements, so that banks do not ‘gear up’ on the additional capital that they accumulate in good times.

The quality of banks’ capital buffers has fallen over time. In the future, capital buffers should comprise only common equity to increase banks’ capacity to absorb losses while remaining operational. And banks’ liquidity buffers must only include assets, such as high-quality government bonds, whose liquidity is assured in all but the most severe conditions.

Banks need effective contingency plans in the event of stress. They should consider ways of obtaining contingent capital — for example, through agreed lines from investors or instruments that can be converted into equity if required.

Banks should also have effective, tested contingency funding plans. UK institutions should sign up to direct access to the Bank’s Discount Window Facility, which needs to be used periodically to reduce the risk that access at a time of market or idiosyncratic stress is seen as a sign of weakness. And financial institutions should be required to produce plans

for their restructuring, or wind-down, in the event of severe stress.

Chart 8 Sterling liquid assets relative to total asset holdings of UK banking sector

Percentages of total assets (all currencies)

35

Competition and credit control 1971

Broad ratio(a) Reserve ratio(b) Narrow ratio(c)

Cash ratio deposits 1981

Sterling stock liquidity regime 1996

30

25

20

15

10

5

0

1968 73 78 83 88 93 98 2003 08

Sources: Bank of England and Bank calculations.

1. Cash + Bank of England balances + money at call + eligible bills + UK gilts.
2. Proxied by: Bank of England balances + money at call + eligible bills.
3. Cash + Bank of England balances + eligible bills.

Measures to strengthen resilience will inevitably increase avoidance incentives. Higher standards should apply to all institutions that are judged by the authorities to be important for financial stability. Institutions providing banking services should be regulated as banks. For example, constant net asset value MMMFs should be regulated as banks or forced to convert to variable net asset funds.

Improved management of risks arising from interactions among financial institutions and with the real economy The authorities need better information on connections between financial institutions to understand and manage spillovers in the system. Collecting flow of funds data on linkages between balance sheets at both a domestic and an international level could be one mechanism. Enhanced information provision by hedge funds and other financial institutions is a minimum baseline for comprehending their contribution to risks to the system. Tapping central repositories of information such as exchanges, clearing corporations and registries for information on key financial markets would be another. Common stress tests would also help improve understanding of interdependencies within the system.

Improved management of risks arising from interactions

The authorities need better information and means of managing interconnections between financial institutions and between the financial system and the real economy:

* improved information on connections between financial institutions, including flow of funds data, and improved information on the activities of key market participants;
* common stress tests that factor in feedback effects from financial institutions’ response to shocks;
* capital and liquidity buffers gauged to firms’ systemic importance;
* countercyclical prudential policy in order to limit the growth of financial imbalances;
* an international monetary system that limits the build-up of international imbalances;
* expanded use of central counterparties for clearing financial contracts; and
* more trading of key financial instruments on exchanges or other well-designed and open trading platforms.

Regulation should ensure that banks’ resilience is commensurate with the costs that failure could impose on the financial system as a whole. That would mark a step change from the current approach, which has been largely orientated towards protecting depositors at individual banks. It would mean larger and more interconnected banks holding higher capital and liquidity buffers, which has tended not to be the case in the past. Over time, that may help deter them from growing or staying too large or interconnected.

Higher levels of resilience should help banks maintain their capacity to lend in a downturn. But it will not necessarily prevent the build-up of financial imbalances, which have tended to emerge at regular intervals in the past (Chart 9). An important question is whether a macroprudential toolkit could embrace an aim of preventing imbalances becoming too great, while otherwise minimising distortions to the economy.

Ideally, mechanisms would be found for imposing symmetric obligations on countries that run persistent current account surpluses and deficits — a problem identified but not solved at the Bretton Woods conference in 1944.

Financial system infrastructure should also be improved. Risks arising from connections between firms can be reduced through more widespread use of central counterparty (CCP) clearing for over-the-counter cash and derivative instruments. The Bank supports a significant extension of the scope of CCPs. For more bespoke instruments, further improvements should be made to bilateral clearing arrangements, including through better collateralisation of exposures.

Chart 9 Asset prices and credit in the United Kingdom(a)(b)

The functioning of key financial markets, such as those for asset-backed securities, should be improved through greater

PNFC credit

Household credit

Asset price Per cent

60

50

40

30

20

10

+

0

–

10

20

30

transparency about their structure and the underlying portfolio of instruments. More trading of key financial instruments on exchanges or in well-designed, open trading platforms would help to preserve liquidity at times of stress.

##### Banks should not be too big or complex

The current size and structure of financial systems may be incompatible with maintaining financial stability and containing calls on public resources. Financial systems have grown rapidly in recent years and have become more complex, more interconnected and more global in their activities. The UK financial system is no exception, with a relatively

1971 75 79 83 87 91 95 99 2003 07

Sources: Bank of England, Global Financial Data Inc., Halifax, Nationwide, ONS, Thomson Datastream and Bank calculations.

1. The chart shows ratios of real asset prices, household credit and private non-financial corporate (PNFC) credit to GDP, relative to their ten-year moving averages. A positive level thus indicates above-trend growth.
2. The dashed lines show start dates for banking crises. The chart shows the secondary banking crisis, small banks crisis and the current crisis.

Banks should not be too big or complex

The size and structure of financial systems need to be compatible with maintaining financial stability:

* simpler, more transparent, legal structures that are capable of being supervised and resolved; and
* potential changes to the structure or size of banks to ensure they can be effectively supervised and wound up.

Chart 10 Consolidated banking group assets relative to GDP by nationality of ownership(a)

Percentage of annual GDP

1,000

800

600

400

200

0

Switzerland

United Kingdom

Ireland

France

Germany

Spain

Japan

Australia

Canada

Italy

United States

Sources: *The Banker*, Bankscope published by Bureau van Dijk Electronic Publishing, International Monetary Fund and Bank calculations.

1. End-2007, except for the United Kingdom, which is at end-2008. Data for all countries except the United Kingdom are from *The Banker’s* ranking of the world’s largest 1,000 banks. This measure will underestimate the size of banking systems that have a large proportion of banking sector assets outside of the list. UK data are from Bankscope.

Clear principles for public safety nets

Where self-protection fails, a safety net is needed that encourages prudent behaviour and contains risks to the public finances:

* clear principles guiding market maker of last resort interventions; and
* principles for public sector provision of capital support.

concentrated banking system whose assets are equivalent to more than four times annual GDP (Chart 10).

Authorities, domestically and internationally, should consider whether they need more actively to influence or constrain the future size and structure of the system to support stability. It has to be possible to supervise effectively institutions that pose greater risks to the economy or taxpayer in the event of failure and to resolve them in the event of severe distress.

Possible measures could include limiting the scope of banks’ businesses to a narrower range of relatively low-risk activities or, as noted above, imposing higher capital and liquidity charges that are sensitive to the risk profile of the institution. Such measures ought to go hand in hand with improved resolution powers to wind down large and complex financial institutions in an orderly manner. Determining the optimal policy mix poses major challenges, including how to determine any boundaries between functions and how to prevent activities beyond any perimeter themselves becoming a threat to stability, but this area merits further debate internationally.

##### Clear principles for public safety nets

These initiatives cannot, and should not, prevent all failures. Public authorities may sometimes need to step in as a backstop to the financial system — for example, by acting as market maker or capital provider of last resort, as they have during the financial crisis. These interventions should be guided by explicit principles to ensure that they do not encourage imprudent behaviour by financial institutions and that they minimise risks to the public finances. Work is needed to gain acceptance for such principles.

##### A systemic perspective

The common denominator in all these initiatives is that they should improve the resilience of the financial system as a whole, not just that of individual financial institutions. This systemic perspective has perhaps not always shaped policy around the world sufficiently in the past.

Chart 1.1 World GDP growth(a)

Per cent

8

October 2008 forecast(b)

January 2009 forecast(b)

April 2009 forecast(b)

Average since 1952

7

6

5

4

3

2

1

+

0

–

1

2

### Global financial instability and the policy response

The previous *Report* described developments leading up to a period of exceptional instability in the global financial system last autumn. Against that backdrop, authorities internationally announced a range of measures aimed at restoring confidence in banks so that they could support the wider economy.

This *Report* assesses developments since last autumn against that objective. This section highlights the marked deterioration in global economic and financial prospects towards the end of 2008 and in early 2009, which led to a

1970 74 78 82 86 90 94 98 2002 06 10

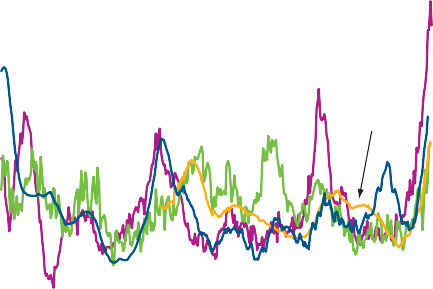
Sources: IMF *World Economic Outlook* (*WEO*), World Trade Organization (WTO) *International Trade Statistics* and Bank calculations.

1. *WEO* data are used from 1981 onwards. Data from the WTO are used before that. Data are annual real GDP growth.
2. *WEO* growth forecasts for 2009 and 2010.

Chart 1.2 Unemployment(a)

Percentage changes on a year earlier

100



United States

United Kingdom

Euro area

Japan

80

60

40

20

+

0

–

20

40

1980 85 90 95 2000 05

Source: OECD *Labour Force Statistics (Main Economic Indicators)*.

1. Survey-based measures of numbers of people unemployed. Data for the United Kingdom are to February 2009; data for the euro area and Japan are to April 2009; data for the United States are to May 2009.

Chart 1.3 UK property price falls in recent recessions(a)

Cumulative decline from peak (per cent) 0

Commercial — from Oct. 1989 peak Commercial — from June 2007 peak Residential — from 1989 Q3 peak Residential — from Oct. 2007 peak

–

10

20

30

40

50

60

70

0 6 12 18 24 30 36 42

Months from peak

Sources: Halifax, IPD, Nationwide, Thomson Datastream and Bank calculations.

1. All data are nominal. Residential property prices are seasonally adjusted and based on the average of the Halifax and Nationwide house price indices. Commercial property prices are non seasonally adjusted.

renewed threat of financial instability and prompted further policy interventions. Market conditions have since improved. But, as Section 2 explains, structural vulnerabilities in banks’ and other sectors’ balance sheets remain. Looking beyond the current crisis, fundamental changes are required to improve the resilience of the financial system, as Section 3 sets out.

*Growth collapsed…*

In late 2008, the global economy abruptly fell into a severe downturn. All the major developed economies entered recession, with the International Monetary Fund (IMF) estimating that world GDP fell at an annualised rate of around 6% in the fourth quarter of 2008. Although a downturn had been anticipated, its severity was much greater than had previously been expected: in October 2008 the IMF expected world GDP to grow by 3% in 2009, but by its April 2009 *Report* it forecast a decline of 1.3% (Chart 1.1). The severe contraction of output was associated with sharp rises in unemployment (Chart 1.2). In the United States, unemployment increased almost twice as quickly as its previous peak growth rate. And in the United Kingdom, unemployment rose at its fastest rate since 1981, putting pressure on banks’ household-loan portfolios.

*…and property prices fell sharply...*

Against a backdrop of sharply contracting activity, both commercial and residential property prices continued to fall sharply in a number of countries. By March 2009, residential property prices in the United States had fallen by around 30% from their peak according to the Case-Shiller 10-City index, the largest nominal fall on record. In the United Kingdom, property prices had fallen further than in the early 1990s recession, with residential and commercial property prices down 20% and 41% respectively from their 2007 peaks

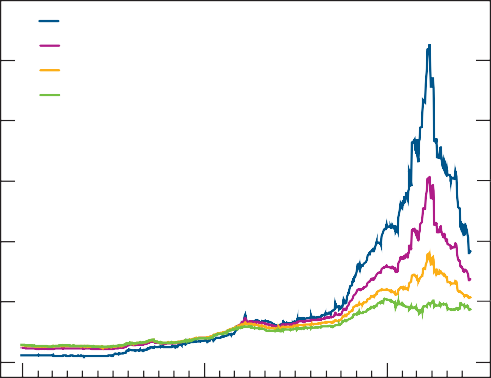
(Chart 1.3).

*…causing a sharp pickup in household loan arrears…*

As unemployment increased, debt servicing became more of a concern for some households. UK personal insolvencies and bankruptcies rose to historic highs. In the United States, the personal insolvency rate rose to 0.5% in 2009 Q1, around 50% higher than in mid-2007.

Chart 1.4 Sterling corporate bond spreads(a)

Basis points



Current

Two-year ahead forward Four-year ahead forward Six-year ahead forward

Jan. Apr. July Oct. Jan. Apr. July Oct. Jan. Apr. 2007 08 09

Sources: Merrill Lynch and Bank calculations.

3,000

2,500

2,000

1,500

1,000

500

0

Sharp falls in residential property prices reduced the value of many mortgagors’ collateral. The estimated incidence of negative equity had increased to between 7% and 11% of UK mortgagors by 2009 Q1, restricting their access to credit,

including via mortgage equity withdrawal, and contributing to increases in mortgage arrears.(1) UK mortgage arrears more than doubled in the year to 2009 Q1, but remained well below their peak levels in the early 1990s.(2) The marked deterioration in the economy led to expectations of a further rise in mortgage arrears, as discussed in Box 1.

*…and in corporate sector financial pressure.*

As growth fell, corporate default rates picked up sharply. Globally, default rates were forecast by Moody’s to rise significantly for speculative-grade firms. In the

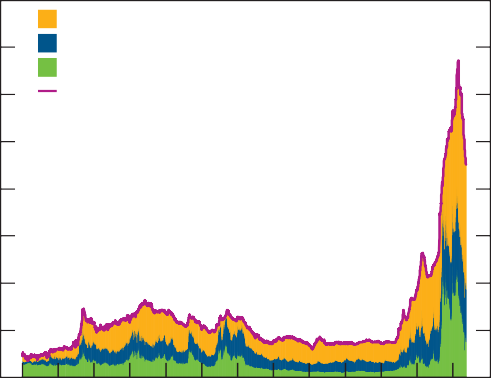
United Kingdom, total corporate insolvencies increased by

1. BBB-rated corporate bond spreads over government bond yields; one-year maturity. Forward spreads implied by bonds of different maturities.

Chart 1.5 Decomposition of sterling investment-grade corporate bond spreads(a)

Basis points

800



Residual (including compensation for illiquidity) Compensation for uncertainty about default losses

Compensation for expected default losses Total spread

700

600

500

400

300

200

100

0

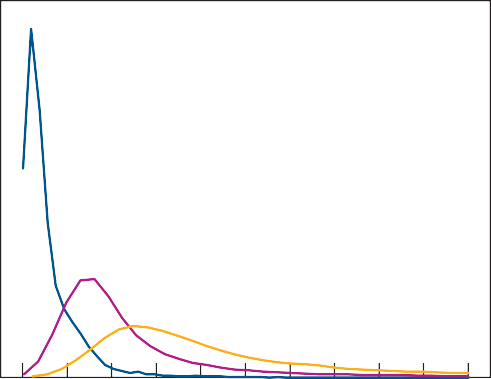
1997 98 99 2000 01 02 03 04 05 06 07 08 09

Sources: Bloomberg, Merrill Lynch, Thomson Datastream and Bank calculations.

1. Webber, L and Churm, R (2007), ‘Decomposing corporate bond spreads’, *Bank of England Quarterly Bulletin*, Vol. 47, No. 4, pages 533–41. Option-adjusted spreads over government bond yields.

Chart 1.6 Expected loss rates on European investment-grade corporate bonds(a)

Probability density



June 2007

October 2008

March 2009

over 50% in 2009 Q1 compared with a year earlier. Refinancing became more difficult; contacts of the Bank’s regional Agents reported sharp increases in fees and spreads on the renewal or extension of existing facilities. Consistent with that, measures of default risk — such as corporate bond spreads — increased by much more in the near term than further ahead (Chart 1.4).

Corporate bond spreads rose more sharply than Moody’s forecasts of default rates over matching horizons, suggesting that financial markets were also affected by rising uncertainty and illiquidity risk. Indeed, one possible decomposition of longer-maturity corporate bond spreads suggests that a rise in investors’ required compensation for uncertainty about default losses and illiquidity risk was a key driver of the increase in spreads in late 2008 and early 2009 (Chart 1.5).

Distributions of possible losses on corporate bonds implied by credit default swap (CDS) indices pointed to a sharp rise in upside risks (Chart 1.6).

*Asset prices also fell sharply…*

The rapid deterioration in the global economy was associated with widespread and sharp falls in equity prices. The decline in global equity prices outpaced that seen in previous financial crises (Chart 1.7). All sectors were affected, with factors common across firms becoming stronger drivers of movements in equity returns than in past equity market collapses, such as in 1987 (Chart 1.8). Equity prices also fell sharply in countries that appeared to have suffered relatively small financial losses during the early stages of the crisis, including Japan and a number of emerging market economies.

0 2 4 6 8 10 12 14 16 18 20

Expected loss (per cent of principal)

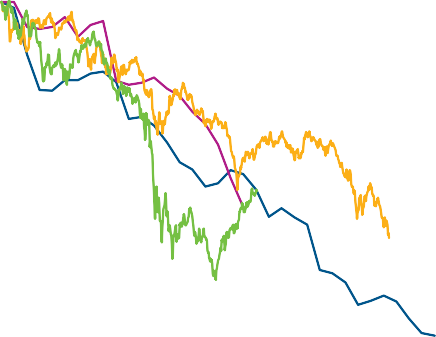
Sources: JPMorgan Chase & Co. and Bank calculations.

1. The chart shows estimates of market-implied loss rates inferred from five-year on-the-run iTraxx Europe Main CDS indices. These are ‘risk-neutral’ loss rates. In the likely case that investors are averse to risk, the perceived probability of high loss rates would be lower than under the risk-neutral measure.
   1. The 2009 Q2 *Bank of England Quarterly Bulletin* article, ‘The economics and estimation of negative equity’, discusses the link between house prices and default in more detail, as well as providing details on a variety of estimates of the incidence of negative equity.
   2. Some of this increase is due to the mechanical impact of recent falls in interest rates on the calculated arrears rate (the number of months in arrears — the numerator of the arrears rate — is calculated by dividing the total value of outstanding arrears by the current monthly payment).

Chart 1.7 FTSE world equity index during crises(a)

Cumulative decline from peak (per cent)

0



1973 oil crisis

2000 dotcom crash

Current crisis

1929 crash

–

10

20

30

40

50

60

70

80

0 5 10 15 20 25 30 35

Months from peak

Sources: Global Financial Data Inc. and Bank calculations.

(a) Previous peaks were: 1929 crash = 31 October 1929; 1973 oil crisis = 28 February 1973;

2000 dotcom crash = 27 March 2000 and current crisis = 11 October 2007.

Chart 1.8 Contributions to FTSE 100 equity returns(a)

Average variance of returns

1.2

Idiosyncratic drivers Common drivers

1.0

0.8

0.6

0.4

0.2

0.0

1984 88 92 96 2000 04 08

Sources: Thomson Datastream and Bank calculations.

1. Derived using the methodology of Campbell *et al* (2001), ‘Have individual stocks become more volatile? An empirical exploration of idiosyncratic risk’, *Journal of Finance*, Vol. 56, No. 1. The chart shows the average monthly variance of daily percentage returns across constituents of the FTSE 100 index.

Chart 1.9 A possible arbitrage opportunity(a)

Basis points 70



Unexploited arbitrage opportunity Cost of trading

Difference in CDS premia

60

50

40

30

20

*…with falling risk appetite and impaired market functioning…*

In this environment, investors’ willingness and ability to hold risky assets were severely affected. The vast majority of global fund managers reported in the early part of the year that they preferred to hold less risk than in their benchmark portfolios. Many hedge funds were forced sellers of risky assets as prime brokers called for higher margins and as investors redeemed investments following a number of months of poor returns.

Partly as a result of tighter credit conditions, average hedge fund leverage fell to roughly half of its pre-crisis peak level.(1)

As losses mounted, dealers in financial instruments were unable or unwilling to support as much risk on their balance sheets. Many responded by widening bid-ask spreads. Market contacts reported that ‘market makers’ would execute trades only when they had offsetting buy and sell orders from clients, effectively acting like agency brokers. Trading volumes consequently declined and the liquidity of many financial markets became severely impaired.

Poor market liquidity and limited risk appetite appeared to cause investors to leave unexploited trading opportunities that would plausibly have been profitable in the longer run. For example, between October and April, a sizable gap emerged between the cost of buying protection against default losses on an index of corporate bonds and the cost of buying this protection for all of the bonds in the index separately

(Chart 1.9).(2)

*…resulting in a significant loss of financial wealth.* Widespread declines in asset prices led to a further marked reduction in financial wealth. By the middle of March, total financial losses on debt securities since the start of the crisis had reached an estimated US(4.6 trillion (Table 1.A). Over the same period, the market capitalisation of global equity markets had fallen by US(20.2 trillion. So total losses in financial wealth toward the end of 2009 Q1 were equivalent to around 50% of world GDP. This further loss of wealth compounded strains in financial markets, adding to falls in banks’ asset valuations and constraining their ability to fund themselves.

*This placed further pressure on banks’ solvency…*

Against this backdrop, major UK banks(3) and LCFIs(4) reported substantial write-downs across a range of trading book

10

+

0

–

10

Jan. Apr. July Oct. Jan. Apr.

2008 09

Sources: JPMorgan Chase & Co., Thomson Datastream and Bank calculations.

1. The difference in CDS premia is the gap between the average premium for credit protection on the 125 constituents of the iTraxx Europe Main CDS index and the premium for credit protection on this index. The cost of trading is half of the bid-ask spread on the index plus half of the average bid-ask spread on its constituents.
   1. Leverage defined as ratio of gross assets to capital.
   2. Other pricing anomalies are described in ‘Pricing anomalies in financial markets’,

*Bank of England Quarterly Bulletin*, 2009 Q1, pages 16–17.

* 1. Membership of the major UK banks group is based on the provision of customer services in the United Kingdom, regardless of the country of ownership. The following financial groups, in alphabetical order, are currently members: Banco Santander, Bank of Ireland, Barclays, Britannia, Co-operative Bank, HSBC, Lloyds Banking Group, National Australia Bank, Nationwide, Northern Rock and RBS.
  2. LCFIs include the world’s largest banks, securities houses and other financial intermediaries that carry out a diverse and complex range of activities in major financial centres. The group of LCFIs is identified currently as: Bank of America, Barclays, BNP Paribas, Citi, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, JPMorgan Chase & Co., Morgan Stanley, RBS, Société Générale and UBS.

#### Box 1

Mortgage defaults

Chart A Mortgage arrears, unemployment and income gearing(a)

The sharp deterioration in the economic outlook has already led to an increase in household distress. Going forward, that is likely to lead to a further increase in defaults, placing additional pressure on the banking system. This box examines

Per cent

4

3

Arrears rate(b) (left-hand scale)

Per cent

20

15

the key drivers of mortgage defaults and discusses why and by

how much they might rise over the next few years. 2

##### Drivers of mortgage defaults

There is a rich theoretical and empirical literature on modelling 1

credit risk, particularly mortgage default rates.(1) Although no

single model can be relied upon, a number of variables have 0

Unemployment rate (right-hand scale)

Income gearing(c) (right-hand scale)

10

5

0

been identified as being key in driving mortgage arrears and defaults.

The theoretical literature suggests that the likelihood of a household defaulting on its mortgage depends on both its willingness to keep up with loan repayments and its ability to do so. For instance, mortgagors may be willing to continue making mortgage payments so long as the value of the property does not fall too far below the outstanding loan balance. But sudden drops in income or rises in mortgage payments could limit their ability to do so. This is particularly the case when the mortgagor also has unsecured debts or low savings.

Empirical studies on UK data have found that a combination of measures of willingness and ability to pay is required to explain households’ mortgage default rates. For willingness to pay, the level of undrawn housing equity has been found to be an important factor.(2) In terms of ability to pay, indicators of borrowers’ financial position, such as the unemployment rate and measures of debt-servicing requirements, have been found to be significant drivers of defaults for UK households.(3) As Chart A shows, UK mortgage arrears rates (a commonly

used proxy for default rates) have been positively correlated with unemployment and with (lagged) income gearing in recent decades.

##### Prospects for mortgage defaults

In the current recession, a number of factors are affecting both willingness and ability to pay, and so shaping prospects for mortgage defaults. Some households will experience sudden falls in income as a result of unemployment and may find it difficult to keep up with their mortgage payments. In addition, the large fall in house prices since their peak in October 2007 is likely to mean that some households find themselves with less unused housing equity to draw from to supplement shortfalls in labour income. Some households will find themselves in negative equity which might reduce their willingness to keep up with their payments.(4) The reduced credit availability associated with the current crisis is also likely

1988 90 92 94 96 98 2000 02 04 06 08

Sources: Council of Mortgage Lenders (CML), Labour Force Survey, ONS and Bank calculations.

1. Arrears rate and unemployment rate data are to 2009 Q1. Income gearing data are to 2008 Q4.
2. Percentage of mortgagors more than six months in arrears. Series consists of semi-annual data before 2008 and quarterly data from 2008 onwards. Note that some of the recent increase in this series is due to the mechanical impact that falls in interest rates have on the calculated arrears rate (see footnote 5). The 2009 Q1 figure is also distorted by the exclusion of ‘legacy loans’ from the CML’s data set. See the CML’s 2009 Q1 arrears and repossessions release for more details.
3. Gross interest payments as percentage of post-tax income. Interest payments exclude the impact of Mortgage Interest Relief at Source, which has been gradually abolished since the late 1980s.

to lead to payment difficulties, by affecting the ability of some households to smooth consumption in the face of income shocks.

But these upside pressures are likely to be partly offset by the current low level of interest rates. As markets expect interest rates to remain low over the near future, the offsetting influence of interest rates on default rates should also be expected to persist for some time. This is a major difference between the current and the early 1990s recession. In the early 1990s, very high interest rates added to the pressures on households.

How far might mortgage arrears rise given these influences? A tentative answer is given by projections based on a simple econometric model of the macroeconomy and the mapping from macroeconomic outcomes to mortgage arrears. In the model, the key drivers of mortgage arrears are unemployment, income gearing, house prices and debt. Clearly, there is considerable uncertainty inherent both in prospects for the macroeconomy and in how macroeconomic developments might affect mortgage arrears. This includes possible variation in the behaviour of both households and lenders compared with the past.

Mortgage arrears have already risen from 0.5% in 2008 Q1 to 1.3% in 2009 Q1.(5) The projections suggest that they may rise further as increases in unemployment and falls in house prices outweigh the impact of low interest rates. The central projection suggests that mortgage arrears will rise to just under 3% by mid-2011, somewhat below their peak in the early 1990s recession (3.5%). But there is great uncertainty around

the outlook for arrears. At the 90% confidence interval, the range of mortgage arrears lies between 2% and 4%.

Mortgage arrears may generate further losses for the major UK banks, as domestic mortgage lending represents over

Unemployment, housing equity, levels of debt and interest rates are all likely to influence the path of arrears. Given the severe economic downturn, it seems likely that mortgage arrears will rise going forward, though there is uncertainty about by how much and the consequences for banks’ losses.

five times their core Tier 1 capital. But it is not clear that

arrears of even 3% or 4% would necessarily generate substantial losses for banks. Not all cases of arrears will translate into defaults (repossessions). Indeed, the Government has put in place a range of measures to give more protection to households at risk of repossession,(6) which will tend to reduce the transition from arrears into default. And even in the 1990s, when arrears reached 3.5%, banks’ write-off rates on mortgage lending only rose to around 0.3%.

##### Summary

Economic theory suggests that a number of macroeconomic variables are important drivers of mortgage arrears.

1. See for example, Whitley, J, Windram, R and Cox, P (2004), ‘An empirical model of household arrears’, *Bank of England Working Paper no. 214*.
2. Undrawn housing equity is defined as gross housing wealth less mortgage debt, as a proportion of housing wealth.
3. The decision to default is likely to depend also on household-specific characteristics. Some studies have indeed found that factors such as age or number of dependents are important in explaining defaults.
4. See ‘The economics and estimation of negative equity’, *Bank of England Quarterly Bulletin*, 2009 Q2, pages 110–21, for a discussion of how the level of housing equity can affect a household’s likelihood of default.
5. Some of this increase is due to the mechanical impact of recent falls in interest rates on the calculated arrears rate (the number of months in arrears — the numerator of the arrears rate is calculated by dividing the total value of outstanding arrears by the current monthly payment).
6. A range of measures have been introduced since October 2008, including: a new pre-court action protocol for all the main high street lenders; quicker and more extensive support to homeowners who have lost their job; a scheme to enable the most vulnerable homeowners to stay in their homes; and a major extension of free debt and legal advice.

Table 1.A Mark-to-market losses on selected financial assets(a)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| US) trillions | Outstanding  amounts(b) | Oct. 2008  *Report*(c) | Mid-March  2009 | June 2009  *Report* |
| Equities | 30.7 | 14.4 | 20.2 | 12.3 |
| Corporate bonds | 15.2 | 2.2 | 2.0 | 0.7 |
| RMBS(d) | 4.2 | 1.0 | 1.8 | 1.3 |
| CLOs and CDOs(e) | 1.0 | 0.4 | 0.5 | 0.4 |
| CMBS | 0.8 | 0.1 | 0.3 | 0.2 |
| Memo: Debt securities | 21.2 | 3.7 | 4.6 | 2.7 |
| Total losses | – | 18.1 | 24.7 | 15.0 |

Source: Bank calculations.

* 1. Estimated loss of market value since January 2007, except for US CLOs, which are losses since May 2007. Assets cover the United Kingdom, the United States and the euro area, except for equities, which are global.
  2. Outstanding face values, except for equities, which are market values.
  3. Updated to reflect new availability of outstanding amounts at time of October 2008 *Report*.
  4. Includes prime, non-conforming and buy-to-let RMBS for the United Kingdom, prime and Alt-A RMBS and home equity loan ABS for the United States, as well as RMBS for the euro area.
  5. Includes high-grade and mezzanine home equity loan ABS CDOs for the United States.

Chart 1.10 Major UK banks’ and LCFIs’ write-downs(a)

exposures (Chart 1.10). While write-downs on sub-prime mortgages declined, delinquencies spread across a broader range of residential and commercial mortgages and to leveraged loans. And the continuing deterioration in prospects for the monoline insurers led to further credit valuation adjustments. Banks also had to absorb further write-downs on structured investment vehicles (SIVs) and losses related to Auction Rate Securities.(1)

With rising defaults and falling property prices, there was a parallel reappraisal of losses on banking book exposures. This was reflected in an increase in provisions and a rise in

risk-weighted assets (RWAs) for several major global banks, including the major UK banks. As a result, the impact of banks’ capital raising during the second half of 2008 on their core Tier 1 capital ratios was largely neutralised (Chart 1.11). For

 Credit valuation adjustments(b)  Residential mortgage-backed securities

 Leveraged loans  Other(c)

example, in 2008 the major UK banks raised around

£60 billion of new capital, but faced trading book write-downs

Commercial mortgage-backed securities

US( billions

45

40

35

30

25

20

15

10

5

0

H2 07

H1 08

H2 08

and credit impairments of around £80 billion.

The deterioration in the macroeconomic outlook also led to concerns about prospective future banking losses. The market-implied discount to face value of UK banks’ banking books roughly doubled between the October banking support package and end-January, to reach over £350 billion

(Chart 1.12). That compared with core Tier 1 capital of around

£200 billion for the same banks. The rise in the

market-implied discount partly reflected increases in expected losses, but changes in uncertainty and illiquidity risk premia also significantly affected these valuations.(2)

Major UK banks

H2 07

H1 08

H2 08

H2 07

H1 08

H2 08

H2 07

H1 08

H2 08

European LCFIs

US securities houses

US commercial banks

* + 1. Auction Rate Securities are long-term debt instruments for which the interest rate paid is regularly reset through an auction.

Sources: Published accounts and Bank calculations.

1. Includes mark-to-market adjustments on trading book positions where details disclosed.
2. On exposures to monolines and others.
3. Other includes SIVs, other ABS, Auction Rate Securities and Mortgage Servicing Rights.
   * 1. Since the end of January, the market-implied discount has increased slightly, as a price index of UK RMBS that is used as a proxy for the value of secured household loans (which are the largest category of exposures in UK banks’ banking books) has continued to fall, while many other asset prices have recovered.

Chart 1.11 Changes in core Tier 1 capital ratios in 2008(a)

*…and renewed pressure on bank funding…*

Core Tier 1

Core revenues(b)

 Capital raised

Policy measures introduced in October 2008 avoided seizure

Change in RWA Impairments and write-downs(c)

Percentage points

12

Major UK banks(d)

Non-UK LCFIs(e)

10

8

6

4

2

0

Additions

End-2008

in the financial system, and helped to improve conditions in bank funding markets. But bank funding remained expensive and difficult to obtain from public markets without a government guarantee. Between October and March, the vast majority of senior debt issued by major UK banks was guaranteed by the UK Government. Most issues of residential mortgage-backed securities (RMBS) or covered bonds were retained by the banks, possibly for use in central bank facilities, rather than placed in public markets. In money markets, spreads declined but remained at elevated levels comparable to those that prevailed shortly before the failure of

Lehman Brothers. As a result, banks continued to fund mainly at very short maturities, with substantial rollover risk.

Sources: Published accounts and Bank calculations.

End-2007

Deductions

Additions

End-2008

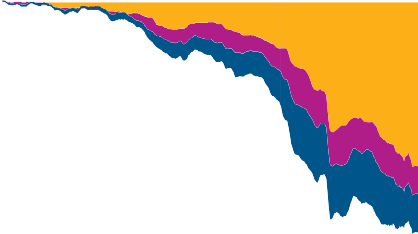
End-2007

Deductions

1. Asset-weighted average core Tier 1 capital, defined as common shareholders’ equity.
2. Based on pre-provision profit before trading book write-downs.
3. Includes banking book impairments, trading book write-downs and other adjustments.
4. Excludes Northern Rock.
5. Includes US commercial banks and European LCFIs.

Chart 1.12 Market value of UK banks’ banking books(a)

Relative to face value (£ billions) 150



(b) (c)

Contribution of UK household exposures

Contribution of UK corporate exposures

Contribution of international exposures(d)

Memo: cumulative capital raised (£ billions)

100

50

+

0

–

50

100

150

200

250

300

350

400

450

June Sep. Dec. Mar. June Sep. Dec. Mar. June

2007 08 09

Sources: Bank of England, Bloomberg, JPMorgan Chase & Co., Merrill Lynch, UBS Delta, published accounts and Bank calculations.

1. Based on weekly moving average prices of traded instruments used as proxies for the market value of similar banking book exposures. Group comprises Banco Santander, Barclays, HSBC, Lloyds Banking Group, Nationwide, Northern Rock and RBS.
2. First UK support package announced (8 October 2008).
3. Second UK package of measures announced (19 January 2009).
4. International exposures include the United States and Europe only.

Chart 1.13 Spreads on new fixed-rate mortgage lending by the major UK banks(a)

Basis points

400

Maximum-minimum range Interquartile range

Median

300

200

100

+

*…leading to tighter credit conditions…*

As banks’ capital and funding positions came under renewed strain from rising realised and prospective losses, banks further tightened credit conditions to corporates and households.

Non-price terms tightened and there was also a pronounced increase in the spread between mortgage lending rates and swap rates (Chart 1.13).

*…a marked slowing in domestic and cross-border lending…* Tightening credit availability contributed to a marked slowdown in lending growth in the major economies. In the United States lending began to fall. Lending also slowed sharply in the euro area, Japan and in the United Kingdom.

Growth in mortgage lending by major UK banks fell to its lowest rate over the past decade. The stock of unsecured lending shrank for the first time. And lending to UK companies also slowed sharply (Chart 1.14), partly reflecting a withdrawal of foreign lending as cross-border capital flows reversed (see Box 2). To plug the lending shortfall, firms became more reliant on bond markets. But while investment-grade bond issuance increased, speculative-grade issuance remained weak.

*…and a worsening adverse feedback loop.*

Tighter credit conditions compounded the impact of the macroeconomic slowdown on indebted households and corporates. This reinforced and broadened an adverse feedback cycle between the real economy and financial system during the latter part of 2008 and the early months of 2009. Measures of uncertainty in financial markets and in the real economy rose sharply in tandem, mirroring this feedback loop (Chart 1.15).

0 *Wide-ranging policy measures aimed to break this cycle…*

– In light of these developments, authorities internationally took

Jan. Apr. July Oct. Jan. Apr. July Oct. Jan. Apr.

2007 08 09

Source: Bank of England.

100

200

wide-ranging measures aimed at breaking the adverse cycle. Official interest rates were cut, reaching historic lows in some countries. Central banks also introduced a range of asset purchase schemes, in some cases funded by issuance of central

(a) Weighted average of fixed-rate spreads on new mortgages over swap rates at maturities of two, three and five years (lagged by one month).

bank money (Table 1.B). While these varied across countries

Chart 1.14 Contributions to annual growth in lending to UK non-financial companies

Percentage points

25

Other monetary and financial institutions Foreign lenders

Major UK-owned banks(a)

Total (per cent)(b)

20

15

10

5

+

0

–

5

2003 04 05 06 07 08 09

Source: Bank of England.

1. Includes consolidated banking groups of Barclays, Lloyds Banking Group, HSBC, Nationwide and RBS.
2. Twelve-month growth rate in the stock of lending.

Chart 1.15 Indicators of UK economic and financial uncertainty

in terms of the instruments involved, the schemes shared similar aims of stimulating demand and improving the liquidity of economically important private markets.

Measures were also taken internationally to improve conditions in funding markets and to bolster banks’ capital buffers, as summarised in Table 1.B. The breadth of these interventions was substantial: almost half of the world’s largest 20 banks received direct government support. These measures were also put in place very rapidly by comparison with past crises (Chart 1.16). Box 3 considers the development and management of a selection of past crises.

Varying approaches were taken to deal with uncertainty about banks’ asset values. For example, the UK authorities introduced an Asset Protection Scheme (APS) to insure against losses on a selection of assets held on the balance sheets of participating banks. In the United States, the authorities announced a Public-Private Investment Program (PPIP) to remove legacy loans and securities from banks’ balance sheets, with risks and returns shared between public and private

Per cent

45



External forecasters’ uncertainty(a) (right-hand scale)

Equity volatility(b) (left-hand scale)

40

35

30

25

20

15

10

5

0

Percentage points

1.5

1.4

1.3

1.2

1.1

1.0

0.9

0.8

0.7

0.6

sector investors. The Financial Services Authority (FSA) provided information on the stress-test scenarios underpinning the APS; and the US authorities published the results of their stress tests on the major US banks.

*…resulting in substantial overall support.*

The interventions by the major central banks have resulted in a significant increase in the size of their balance sheets

(Table 1.C). In some cases these interventions have been fully, or partially, guaranteed by governments.

The upfront fiscal outlays from various of the measures —

1992 94 96 98 2000 02 04 06 08

Sources: Bank of England, Euronext.liffe and Bank calculations.

1. Standard deviation of distribution of external forecasters’ predictions of GDP growth two years ahead. Based on averages of individual forecasters’ probability distributions as sampled by the Bank and reported in the *Inflation Report* each quarter.
2. Market-implied volatility of future FTSE 100 equity returns (monthly average).

mainly government capital injections, direct government lending and asset purchases — have been large. For advanced countries in aggregate, these initial outlays to date are equivalent to 6% of annual GDP, comparable to the average

Table 1.B Financial system support schemes since October 2008

United Kingdom United States Euro area

Central bank liquidity Extension of Discount Window Facility maturity. Longer-term refinancing operations

insurance Long-term repo operations and closure of Special with a maturity of twelve months.

Liquidity Scheme with £185 billion utilisation.

Central bank swap lines. Central bank swap lines. Central bank swap lines.

Market liquidity Asset Purchase Facility purchases of commercial Purchases of commercial paper (US(138 billion). Planned purchases of covered bonds paper (£2.1 billion) and corporate bonds (£0.7 billion). (€60 billion).

Banks’ funding Extension of HMT Credit Guarantee Scheme and Extension of wholesale funding guarantees by six months. Wholesale funding guarantees. introduction of Asset-Backed Securities Guarantee Extension to end 2013 of US(250,000 limit for deposit

Scheme. insurance.

Lending against Asset-Backed Securities including Term Many countries have either announced Asset-Backed Lending Facility (US(45 billion). blanket protection for retail deposits or

increased limits.

Capital and assets Introduction of Asset Protection Scheme. Capital injections into eligible banks (US(198 billion) A number of banks have received Protection of £457 billion on risky assets for RBS funded under the Troubled Assets Relief Progam. capital injections.

and Lloyds Banking Group agreed in principle.(a) Introduction of PPIP to purchase legacy loans and securities.

Provision of £13 billion capital for RBS.

Source: Bank of England.

1. Although the APS covers £552 billion of assets post provisions, RBS and Lloyds Banking Group would have to absorb the first £19.5 billion and £25 billion, respectively, of any losses plus one tenth of any further losses.

#### Box 2

Recent cross-border flows

Chart B BIS banks’ cross-border lending(a)

Quarterly changes, US( trillions

2.5

Lending to non-banks

Cross-border capital flows fell sharply in 2008, especially following the failure of Lehman Brothers, after several years of rapid growth. This box examines why and how this could affect the stability of the UK financial system.

##### The rise and fall of cross-border flows

The large global current account imbalances witnessed in the run-up to the current crisis had their counterpart in large net capital flows from surplus to deficit countries. However, these net flows understate the increase in financial linkages among economies in recent years due to the huge build-up of gross external asset and liability positions. Banking flows accounted for more than half of these gross flows (Chart A).

Lending to banks

1988 90 92 94 96 98 2000 02 04 06 08

Source: Bank for International Settlements.

1. Claims on non-residents adjusted for exchange rate changes.

2.0

1.5

1.0

0.5

+

0.0

–

0.5

1.0

1.5

2.0

Chart A Global current account imbalances and financial globalisation, 1980–2007

Percentage of world GDP 20

reduction in demand for international finance as the world economy has contracted. Relatedly, it could reflect a widespread increase in the perceived default probability of borrowers, making banks less willing to lend. Another driver

Total current account surpluses(a) Total current account deficits(b) Gross capital outflows(c)

Gross capital inflows(d)

BIS bank gross outflows

BIS bank gross inflows 15

10

5

+

0

–

5

10

15

20

could be banks’ need to improve their liquidity and capital positions, forcing them to shrink their balance sheets both domestically and abroad.

But the fall in cross-border lending has been much sharper than that in domestic lending in BIS countries (Chart C), consistent with some ‘home bias’ in bank lending. This may be due to banks’ preference to reduce exposures faster in markets where they have less knowledge of their customers or where lending has grown most rapidly in the past. It could also, in part, be the unintended consequence of banks satisfying

1980 82 84 86 88 90 92 94 96 98 2000 02 04 06

Sources: Bank for International Settlements, IMF *World Economic Outlook* and Bank calculations.

1. Sum of global current account surpluses.
2. Sum of global current account deficits.
3. Sum of global net purchases of foreign assets by residents.
4. Sum of global net purchases of domestic assets by foreigners.

criteria for receiving government support.

Chart C BIS banks’ cross-border and domestic lending to non-banks(a)

But during 2008, gross capital flows reversed dramatically. Indeed, in 2008 Q4 and 2009 Q1, the US current account deficit was financed by a repatriation of assets from abroad, rather than from gross inflows of foreign capital. The widespread reversal of capital flows was concentrated in bank lending (Chart B). For example, UK-resident banks reduced their foreign lending sharply, repatriating US(590 billion from abroad during 2008 Q4 and a further US(70 billion in

2009 Q1. There has also been a more modest reversal in portfolio debt and equity flows. As in previous episodes of abrupt capital reversals, foreign direct investment has held up

Cross-border lending

Domestic lending

Percentage changes on a year earlier

25

20

15

10

5

+

0

–

5

so far.

2003

10

04 05 06 07 08

##### Causes of the collapse in cross-border flows

There are a number of possible reasons for the recent sharp reversal in cross-border bank lending. It could be due to a

Sources: Bank for International Settlements, IMF *International Financial Statistics* and Bank calculations.

1. The data are weighted averages of fifteen banking systems, where the weights are based on the relative size of each system’s cross-border claims on non-banks.

Market intelligence is consistent with this ‘home bias’ explanation. Some banks appear to be moving towards a model of funding domestic credit through locally sourced deposits. A number of international banks have also noted that capital constraints mean they have increasingly focused on their ‘core’ business. Cross-border activities that were not seen as central to their business models have been scaled back.

Cross-border lending has not fallen sharply to all regions, though. Perhaps surprisingly, recent data suggest that bank lending to Central and Eastern Europe excluding Russia (CEE), where a number of economies look particularly vulnerable, has fallen by less than to other regions (Chart D). Given the dominant role played by foreign-owned banks in the region, this may indicate that, so far, parent banks have been willing to roll over loans to their local subsidiaries.

these down to alleviate pressures on their currencies. While selling foreign assets helps to offset the impact on the domestic economy of foreign bank capital outflows, it can exacerbate funding pressures in other countries and propagate liquidity shocks through the international banking network.

For example, UK-resident banks faced large outflows of foreign deposits in 2008 Q4, including almost US(100 billion from Russia.

UK banks could also be affected by problems in countries where they have substantial direct exposures, or indirectly through the international banking network. For example,

UK-owned banks have significant exposures to euro-area banks (Chart E), some of which have lent significantly to CEE countries. They also have material exposures to the non-bank private sectors of some euro-area countries that entered this crisis with large current account deficits.

Chart D BIS banks’ cross-border lending to EMEs and

foreign ownership of banking system by region

Percentage change in BIS banks’ claims during 2008 Q4(a)

5

+

0

–

5

10

15

Central and Eastern Europe

Emerging Asia and NICs 20

Latin America

Middle East, Africa and CIS 25

Line of best fit

30

0 10 20 30 40 50 60 70 80 90 100

Share of foreign ownership of banking system (per cent)

Chart E Major UK banks’ exposures to euro-area countries, end-2008(a)

£ billions

Public sector Banks

Non-bank private sector

180

160

140

120

100

80

60

40

20

0

Sources: Bank for International Settlements, Federal Reserve Bank of New York and Bank calculations.



1. Adjusted for exchange rate changes.

Implications of the collapse in cross-border flows Looking ahead, a further reduction in cross-border capital flows could affect a number of financial systems internationally. The impact of a withdrawal of cross-border flows will depend on a country’s initial financial condition. Countries most at risk are those reliant on short-term external debt, particularly if this is in foreign currency, with limited liquid foreign assets for possible repatriation, and with large current account deficits. In CEE, for example, a number of countries entered this crisis with large current account deficits and limited foreign assets. Some of these countries have already resorted to IMF funding to avoid, or at least limit, financial distress.

In contrast, countries with a large stock of government or central bank foreign assets, such as oil exporters, have run

Sources: Bank of England and Bank calculations.

France Ireland Germany Netherlands

Spain Italy Luxembourg

Belgium Portugal Greece Austria Finland Malta

Cyprus Slovakia

Slovenia

1. The chart shows consolidated data on an ultimate risk basis. It only includes the UK-owned institutions in the major UK bank peer group, which report the relevant data to the Bank of England. The bars show total exposures for the banks included in the chart. Exposures to the public sector in Cyprus, Luxembourg and Malta are not shown due to confidentiality issues.

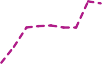
The UK non-bank private sector is also a large borrower and depositor with some euro-area owned banks operating in the United Kingdom, particularly Irish and Spanish-owned banks.

In total, around 35% of the stock of lending to domestic non-financial companies is accounted for by foreign-owned

banks resident in the United Kingdom. Growth in lending from foreign-owned banks has fallen more quickly than credit from UK-owned banks in the past few quarters. That suggests that UK non-financial companies could be at risk from a further withdrawal of cross-border activity.

Chart 1.16 Speed and scale of interventions in different crises(a)

Measures as percentages of GDP 120



UK total intervention(b) UK investment(c)

US total intervention(b) US investment(c)

Swedish total intervention(d) Swedish investment(c)

100

80

60

40

20

0

0 3 6 9 12 15 18 21 24 27 30 33

Months after crisis began

Sources: Bank of England, Board of Governors of the Federal Reserve System, Bureau of Economic Analysis, Federal Deposit Insurance Corporation, HM Treasury, OECD, ONS, Swedish Ministry of Finance, Sveriges Riksbank and US Department of the Treasury.

1. Start date of current crisis is taken as August 2007 for both the United Kingdom and United States; start date for Sweden’s crisis as September 1990. GDP is based on these dates.
2. Total intervention includes insurance, investments, and lending by central banks and governments to financial institutions under measures introduced after the crisis began.
3. Investment is composed of capital injections to banks and SPVs, guarantees of first loss tranches and direct holdings of assets.
4. Size of Sweden’s guarantee of all banks’ liabilities is based on interpolation of year-end balance sheets of banks.

gross fiscal cost in previous system-wide banking crises in developed countries over the past 30 years. These costs, in combination with discretionary fiscal stimulus and the impact of automatic stabilisers, mean that in many countries the ratio of government debt-to-GDP is set to rise sharply in the near term. But the final fiscal costs may be much less. In previous developed-country banking crises, on average more than half of the government outlays were eventually recovered.

Governments have also taken on very sizable contingent claims, for example through debt guarantees. The cost or utilisation of these contingent claims will not be known for some time. In the highly unlikely event that all the facilities offered by central banks and governments were fully called upon, the scale of support to banking systems in the

United Kingdom, the United States and euro area would exceed US(14 trillion (Table 1.C). This is equivalent to around 50% of these countries’ annual GDP, although in some cases these obligations were offset by holdings of assets.

Table 1.C Size of financial system support measures

Trillions (local currencies)

United Kingdom United States Euro area

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Jan. 2007 | | Latest |  | Jan. 2007 | Latest |  | Jan. 2007 | Latest |
| Available central bank support |  | |  |  |  |  |  |  |  |
| Current direct lending to |  | |  |  |  |  |  |  |  |
| financial institutions(a) | 0.05 | | 0.10 |  | 0.04 | 0.44 |  | 0.46 | 0.63 |
| Asset purchases and other |  | |  |  |  |  |  |  |  |
| loans(b) | – | | 0.15 |  | – | 3.32 |  | – | 0.06 |
| Collateral swaps(c) | – | | 0.19 |  | – | 0.20 |  | – | – |
| Central bank currency |  | |  |  |  |  |  |  |  |
| swap lines – No limit – No limit – No limit | | | | | | | | | |
| Available government support | |  |  |  | |  |  | |  |
| Guarantees of financial | |  |  |  | |  |  | |  |
| institutions’ liabilities(d) | | – | 0.37 | – | | 2.08 | – | | >1.19 |
| Insurance of financial assets(e) | | – | 0.46 | – | | 3.74 | – | | – |
| Capital injections to banks and | |  |  |  | |  |  | |  |
| special purpose vehicles | | – | 0.06 | – | | 0.70 | – | | 0.22 |
| Increase in public sector support | | – | 1.26 | – | | 10.44 | – | | 1.64 |
| Memo: US dollar amount(f) | | – | 2.06 | – | | 10.44 | – | | 2.31 |
| Percentage of GDP | | – | 88 | – | | 73 | – | | 18 |
| Memo: Actual size of central | |  |  |  | |  |  | |  |
| bank’s balance sheet | | 0.09 | 0.22 | 0.91 | | 2.09 | 1.16 | | 1.73 |
| Percentage of GDP | | 6 | 15 | 7 | | 15 | 14 | | 19 |
| Source: Bank calculations. | |  |  |  | |  |  | |  |

1. Includes repurchase agreements and other claims on credit institutions. For the United States also includes loans provided under the term auction and ABCP MMMF liquidity facilities and credit extended to AIG.
2. For the United Kingdom includes gilts and private sector assets authorised to be purchased under the APF.

For the United States includes Treasury securities, Agency MBS and debt to be purchased under

non-standard open market operations, potential loans to be made under TALF and PPIF, commercial paper holdings and loans made to Maiden Lane I, II and III with accrued interest payable. For the euro area, includes covered bonds to be purchased.

1. For the United Kingdom includes Treasury bills lent under the SLS at close of drawdown period. For the United States includes maximum amount made available under the TSLF.
2. Includes wholesale liabilities and for the United States retail deposits under the transaction account guarantee program. Unlimited guarantees have not been included for the euro area.
3. Sum of bank assets insured under government asset protection schemes, net of impairment provisions and write-downs, first loss pieces and 10% of remaining potential losses borne by the banks. For the

United States includes money market funds guarantee program.

1. Based on euro/US dollar exchange rate of 0.710 and sterling/US dollar exchange rate of 0.613.

#### Box 3

Insights from past financial crises

No two financial crises are the same. But analysis of key influences on the depth and nature of past crises may provide insights into the dynamics and management of the present crisis. This box reviews insights from financial crises in Japan (1992–2002), Sweden (1990–93), Norway (1988–93) and

Finland (1990–93).(1)

##### Development of past crises

Each crisis in our sample had a significant impact on economic

##### An extended credit boom

The four crises had similar origins. Liberalisation of banking sectors led to greater and riskier lending by credit institutions, increasing leverage in the non-financial sectors and among many banks, and asset price bubbles. Table 1 compares balance sheets in the year prior to the start of each crisis. It shows that the pressures in the economies built up in different sectors. In Japan, the corporate sector had a high borrowing ratio, but all sectors were highly indebted. Compared with Japan, each of the Nordics saw a large rise in house prices. In addition, household indebtedness was high in Norway and Sweden.

performance, although the intensity and duration varied

significantly across countries (Chart A). The key distinguishing feature of the Japanese crisis was its duration: it lasted a decade and spanned a number of periods of recession and recovery. By contrast, the Nordic crises were relatively short

Table 1 Balance sheets at onset of financial crisis

Japan Sweden Norway Finland United (1991) (1989) (1987) (1989) Kingdom

(2006)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| and involved a single, sharp period of recession followed by | Household indebtedness(a) | 129.7 | 124.8 | 148.6(b) | 88.0 | 168.5 |
| recovery. Estimates of the output losses in each crisis vary, as | Bank leverage(c) | 51.1(d) | 64.0 | 21.4(e) | 23.0 | 24.6 |

there are different methods to calculate the duration of a crisis and to estimate GDP growth in the absence of the crisis.

One study estimates that output losses as a percentage of annual GDP were between 24.1%–71.7% for Japan, 2.5%–11.8% for Sweden, 9.8%–27.1% for Norway and 22.4%–44.9% for Finland.(2)

Chart A Real GDP levels before and after a financial crisis(a)

House prices build up

(per cent)(f) 47.8(g) 72.4 84.9 84.3 88.3

Corporate borrowing ratio(h) 4.2 1.0 n.a. n.a. 0.5

Year-end bank assets to GDP

(per cent) 162.8 111.7 96.0 134.4 342.8(i)

Sources: Bank of England, central bank publications, National Statistics offices, OECD, ONS, Thomson Datastream and Bank calculations.

1. Household liabilities as a percentage of nominal disposable income.
2. Credit to household as a percentage of nominal disposable income. Figure is for 1988.
3. Total assets/equity capital.
4. Commercial banks only.
5. Total assets/(share capital + reserves).
6. Percentage change in house price index compared with five years before the start of the crisis.
7. Residential land price index.
8. Debt/capital.

Japan (1992 = 0)

Norway (1988 = 0)

Sweden (1990 = 0)

Finland (1990 = 0)

United Kingdom (2007 = 0)

GDP index

50

40

30

20

10

1. Major banks only.

##### A systemic financial crisis

In each crisis a shock exposed balance sheet vulnerabilities and asset prices fell sharply (Table 2). The fall in equity prices was typically larger but less prolonged than the fall in house prices, as has been the case in many other systemic financial crises.(3)

+

0

–

10

20

30

– + 40

Table 2 Percentage peak to trough falls in asset prices during crises

United Japan Sweden Norway Finland Kingdom(a)

|  |  |  |  |
| --- | --- | --- | --- |
| House prices | 36 | 19 | 30 41 21 |
| Equity prices | 75 | 48 | 52 68 34 |

32 24 16 8 0 8 16 24 32 40

Quarters from start of crisis

Source: OECD *Economic Outlook*.

(a) GDP index centred at zero at the start of the crisis.

Sources: Norges Bank, Statistics Sweden, Thomson Datastream and Bank calculations.

(a) From peak to end-May 2009.

Each crisis followed a similar overall pattern: a credit boom drove up asset prices which later collapsed, creating systemic problems for the financial system. In response, the authorities adopted measures to shore up the financial system and to stimulate the economy.

The speed and the spread of financial sector problems differed between crises. In Norway, problems were initially confined mainly to savings banks, but had become system wide after two years. In Sweden, problems first arose in the non-bank sector in 1990, when finance companies faced funding difficulties. Problems spread to the banking sector, affecting

first the largest savings bank and the third largest commercial bank, and then almost the entire system within one year. In Finland, banking problems first arose in a commercial bank with close links to the savings bank sector. Although all banks were affected to some extent, failures were largely contained to the savings bank sector. In Japan, problems initially crystallised in non-bank corporations and credit banks, before spreading system wide after around six years.

Several of the troubled banks faced significant external financing challenges. In Sweden and Finland, a currency crisis made it more difficult to obtain liquidity in foreign currencies. In Japan, concern about the solvency of banks led to them facing a ‘Japan premium’ for obtaining foreign funding.

##### Authorities’ response to the crises

The Nordic authorities acted quickly to stabilise their banking sectors once systemic problems developed. Sweden and Finland provided a blanket creditor guarantee to keep funding channels open. Similarly, the Norwegian Ministry of Finance committed that the government would take any actions necessary to secure confidence in the banks. The Nordic authorities nationalised troubled banks once the crisis approached systemic proportions. Sweden and Norway were quick to use detailed bottom-up stress tests to assess the size of banks’ problems and introduced new legislation to wipe out shareholders of rescued banks.(4) The Nordics were also relatively quick to establish new crisis management authorities.

The Japanese authorities, like the Nordics, acted to stabilise the banking sector once systemic problems crystallised.

Japanese banks wrote off around ¥90 trillion of bad loans between 1992 and 2001 (over 18% of GDP at year-end 1992). A systemic approach to tackle the banks’ bad loan problems was implemented in 2002, after introduction of the Takenaka plan. Legislation introduced in 1996 to reform deposit insurance and prompt corrective action rules was supplemented by reforms in 1998 to establish two new crisis management entities.

Table 3 summarises the key measures used to remove bad assets from banks’ balance sheets. The approaches varied across authorities and over time. At first, all relied on capital injections to recapitalise banks that faced large losses.

Towards the end of the crisis, Sweden and Finland used a good bank/bad bank approach to remove bad assets from the nationalised banks. The Norwegian authorities preferred the nationalised banks to manage the bad assets themselves.(5) Early in the crisis, Japan established an asset management company (partly funded by the private sector) to administer the bad assets of failed and solvent banks. Banks were required to write down bad loans and state capital was provided as required. Later, Japan also nationalised some failed banks.

Table 3 Summary of measures used to deal with bad assets and burden sharing

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Japan | Sweden | Norway | Finland |
| Nationalisation or capital injection | Mixed | Mixed | Mixed | Mixed |
| Shareholders wiped out or diluted | Yes (but not in every case) | Yes (but not in every case) | Yes | Yes (but not in every case) |
| Good bank/ bad bank | Yes (but not in every case) | Yes | No | Yes |
| Ownership of |  |  |  |  |

bad bank Public and private Public n.a. Public

Sources: BIS and Norges Bank.

Monetary and fiscal policies also differed substantially. The Nordic countries increased policy rates to maintain currency pegs to the ECU, following the reunification of Germany.

Economic recovery began to gain momentum once they floated their currencies and were able to lower interest rates. In Norway, fiscal policy became expansionary when the systemic banking crisis began. Procyclical fiscal policies in Finland and Sweden may have exacerbated the contraction in aggregate demand during the crisis. In Japan, the adoption of the zero interest rate policy in 1999 appears to have aided economic recovery that year, though its suspension in 2000 may have contributed to the subsequent slowdown. In addition, government spending was a major contributor to a short recovery in growth in the late 1990s, but some observers suggest a tightening of fiscal policy in 1997 contributed to the recession in 1998.

##### Further shocks to the economy

The dynamics of the crises were also influenced by shocks that hit the economies or banking sectors as the crisis developed. In Norway, a sharp increase in oil prices in 1990

helped boost the value of exports, allowing the government to loosen fiscal policy when the banking crisis was reaching systemic proportions. By contrast, in Finland the scale of the crisis was exacerbated by the collapse of its major export partner, the Soviet Union, in 1991. After its banking crisis began, the Japanese economy was buffeted by a sequence of adverse shocks — including the 1997 Asian crisis and the dotcom crash — which dampened international demand for Japanese exports at times when the economy was beginning to recover.

##### Economic recovery

Two different transition paths are evident in these crises. The Nordic transition was characterised by a deep but short-lived contraction in GDP and credit (Charts A and B). Positive growth in real credit returned about six years after the start of the systemic banking problems. Households, corporates and banks adjusted their balance sheets in the aftermath of the crisis and it took some time for their leverage to return to

pre-crisis levels. In Sweden and Norway corporate

indebtedness fell during the crises and took around a decade to return to pre-crisis levels. Banks began to record losses during the crises and took around three to seven years to return to profitability. Net exports as a share of GDP increased structurally in the aftermath of the crises, prompted in Norway by an increase in oil prices and in Sweden and

Finland by currency devaluation.

Chart B Real lending growth rates(a)

sterling devaluation. Against that, the response of international authorities has been unprecedented in speed and size. All major economies have responded robustly to stabilise banks, to ease market conditions and to mitigate the severity of the global downturn, including through aggressive loosening of monetary and fiscal policy.

Past crises appear to indicate that the authorities’ management of systemic banking problems is key to returning the banking sector to health. It is difficult to unwind the two

Japan (1992 = 0)

Norway (1988 = 0)

Sweden (1990 = 0)

Finland (1990 = 0)

United Kingdom (2007 = 0)

Percentage changes on year earlier

30

25

20

15

10

5

+

0

–

5

main factors influencing credit growth in a crisis — household and corporate deleveraging reducing demand and the vulnerability of banks’ balance sheets reducing supply. But it is clear that, to facilitate a recovery in credit, it is important to remove impediments to bank lending.

The UK authorities have aimed to act relatively quickly. They switched from idiosyncratic bank resolutions to system-wide measures within two years. Measures to stabilise the banking sector and support the flow of credit have included bank recapitalisation, the Credit Guarantee Scheme and the Special Liquidity Scheme. The United Kingdom has also begun work to tackle legacy problems on banks’ balance sheets. The Asset

3 2 1 – 0 + 1 2 3 4 5 6 7 8 9 10 10

Years from start of crisis

Sources: Bank of England, central bank financial stability reports, Thomson Datastream and Bank calculations.

(a) Finland and Japan series represent bank lending, all other series represent lending by financial institutions.

Protection Scheme, announced on 19 January 2009, is designed to insure the risk of bad assets on two UK banks’ balance sheets.

The Japanese crisis, by contrast, saw a prolonged period of weak economic performance. Households did not reduce their level of debt significantly during the crisis and banks started to shrink their balance sheets only late in the crisis. On the other hand, the corporate sector was overstretched going into the crisis, particularly those sectors exposed to real estate. In consequence, corporate bankruptcies rose and capital gearing fell during the crisis. Net exports as a share of GDP remained fairly stable. Bank profitability remained poor throughout the crisis, due to the disposal of large volumes of non-performing loans. There was little or no growth in the supply of credit throughout the crisis.



##### Applying the insights to the present crisis

The current crisis shares some similarities with this sample of past crises. In the United Kingdom, the crisis has been partly driven by cheap credit, which created vulnerabilities in the economy and an unsustainable rise in asset prices. The scale of the imbalances within sectors of the economy appears similar to those exhibited in the selection of past crises (Table 1).

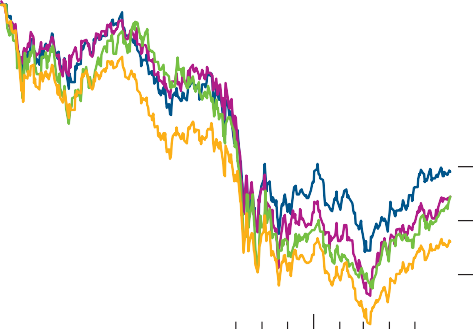
But there are also substantial differences. Interlinkages in the world economic and financial system have helped make this a global financial crisis. This lowers the potential contribution of export growth to economic recovery, despite the recent

1. The start dates are when the first signs of systemic financial crisis were seen to emerge in financial institutions. The end dates are when resilience of the banking sector was restored.
2. Hoggarth, G, Reis, R and Saporta, V (2002), ‘Costs of banking system instability: some empirical evidence’, *Journal of Banking and Finance*, Vol. 26, pages 825–55.
3. Reinhart, C and Rogoff, K (2009), ‘The aftermath of financial crises’, *American Economic Review*, Vol. 99 No. 2, pages 466–72. The study analyses a large sample of systemic financial crises to find that, on average, house prices fall 35.5% over 6 years, while equity prices fall 55.9% over 3.4 years.
4. Norway and Sweden adopted different approaches to stress testing but both involved a detailed assessment of potential losses on banks’ loan portfolios.
5. Moe, T G, Solheim, J A and Vale, B (2004), ‘The Norwegian banking crisis’, *Norges Bank Occasional Papers*, gives five reasons for this decision: (i) it was thought that the task of managing the bad loans would not distract the management of the overall bank;

(ii) a bad bank would need to be capitalised by the state, potentially adding to the gross cost of resolution; (iii) it was thought better for banks to retain expertise in handling bad loans; (iv) it would be difficult to discover a fair price for the loans transferred to the bad bank; and (v) it was considered preferable for banks to retain responsibility for handling bad loans as they have the largest incentive to succeed.

Chart 2.1 Global equity prices(a)

Indices: 1 Jan. 2008 = 100



FTSE All-Share S&P 500

Topix

DJ Euro Stoxx

110

100

90

80

70

60

50

40

### Assessing the UK financial system

*Risk appetite appears to have returned…*

The policy measures described in Section 1 appear to have contributed to a noticeable improvement in sentiment in financial markets. Since mid-March, global equity prices have recovered significantly, increasing by 25%–35% (Chart 2.1). Around US(2 trillion of the financial losses on debt securities recorded in Table 1.A in Section 1 have been recouped.

According to market contacts, this reflects a return of risk appetite to some markets.

Global issuance in corporate bond markets recovered to

Jan. Apr. July Oct. Jan. Apr.

2008 09

Sources: Thomson Datastream and Bank calculations.

(a) Denominated in units of local currency.

Chart 2.2 Global issuance of corporate bonds(a)

US( billions 1,000

900

800

700

600

500

400

300

200

100

0

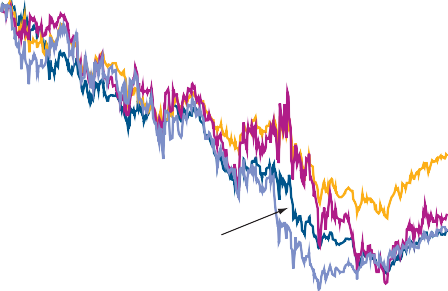
1980 84 88 92 96 2000 04 08

Source: Dealogic.

(a) Issuance by quarter; 2009 Q2 reflects data to 12 June.

Chart 2.3 Major UK banks’ and LCFIs’ equity prices

Indices: 2 July 2007 = 100 120



US commercial banks

European LCFIs

Major UK banks

US securities houses

100

80

60

US(1.6 trillion in the year to date, US(250 billion higher than issuance in 2007 H1 (Chart 2.2). In the euro area, firms rated below investment grade were able to issue bonds in January 2009 for the first time since July 2007. And in the

United Kingdom, issuance of sterling investment-grade bonds has been greater in the first half of 2009 than in any six-month period observed previously.

*…amid signs activity is slowing less sharply.*

The improvement in market conditions has coincided with signs of some turnaround in the outlook for global growth. While global GDP is still expected to fall further in 2009, the rate of decline may have eased. The macroeconomic stimulus provided by governments and central banks should provide support to global activity in the period ahead.

Taken together, these developments constitute positive news for the global banking sector. That is mirrored in rising equity prices of global banks including the major UK banks(1) and large complex financial institutions(2) (LCFIs), which have recovered strongly from their mid-March lows (Chart 2.3). Credit default swap (CDS) premia have halved for many institutions over the same period (Chart 2.4). This suggests some stabilisation and recovery in global banking prospects.

*But the banking sector outlook remains uncertain…*

Given their size, leverage and liquidity mismatches, however, banks’ balance sheets remain sensitive to any setbacks in recovery in financial markets or real activity. The economic downturn is still perceived by market participants as the highest risk to financial stability — for example, as reflected in a new Bank survey of risk attitudes (Box 5).

40

20

0

July Oct. Jan. Apr. July Oct. Jan. Apr.

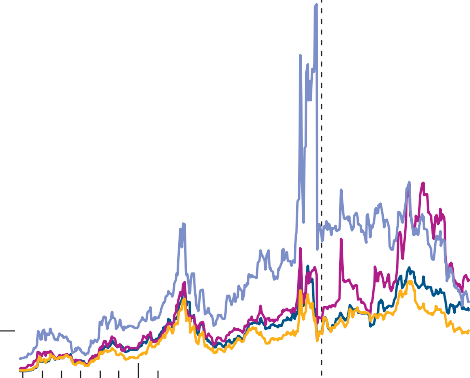
2007 08 09

Sources: Bloomberg and Bank calculations.

1. Membership of the major UK banks group is based on the provision of customer services in the United Kingdom, regardless of the country of ownership. The following financial groups, in alphabetical order, are currently members: Banco Santander, Bank of Ireland, Barclays, Britannia, Co-operative Bank, HSBC, Lloyds Banking Group, National Australia Bank, Nationwide, Northern Rock and RBS.
2. LCFIs include the world’s largest banks, securities houses and other financial intermediaries that carry out a diverse and complex range of activities in major financial centres. The group of LCFIs is identified currently as: Bank of America, Barclays, BNP Paribas, Citi, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, JPMorgan Chase & Co., Morgan Stanley, RBS, Société Générale and UBS.

Chart 2.4 Major UK banks’ and LCFIs’ credit default swap premia(a)

Basis points 800



Major UK banks(b) US commercial banks US securities houses European LCFIs

(c)

700

600

500

400

300

200

100

July Oct. Jan. Apr. July Oct. Jan. Apr. 0

2007 08 09

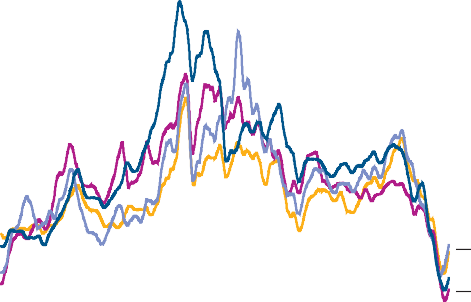
Sources: Markit Group Limited, Thomson Datastream, published accounts and Bank calculations.

1. Asset-weighted average five-year premia.
2. Data exclude Co-operative Bank as no data are available.
3. October 2008 *Report*.

Chart 2.5 Major UK banks’ and LCFIs’ price to book ratios(a)

Per cent

4.5



Major UK banks(b)

US securities houses

US commercial banks

European LCFIs

4.0

3.5

3.0

2.5

2.0

1.5

1.0

0.5

Continued uncertainty around banking sectors in major economies is evident in financial markets. The cost of insurance against major UK banks’ and LCFIs’ debt remains elevated (Chart 2.4). Equity prices also remain weak, at around 30%–55% of pre-crisis levels (Chart 2.3). Price to book ratios for most banks remain historically low (Chart 2.5). For some institutions these ratios are currently below one, implying further falls in the book value of equity are expected.

*…as banks globally remain highly leveraged…* Underpinning this outlook is concern over the size of banks’ balance sheets, which have grown substantially over the past decade (Chart 2.6). While total assets of the world’s largest banks fell in 2008, this fall was concentrated among the US securities houses and European LCFIs. In both cases, there

were significant falls in trading assets. In contrast, a number of acquisitions completed in 2008 resulted in a rise in total assets for the largest US commercial banks. Among the major

UK banks, there was a significant shift in the composition of total assets as secured lending to other financial institutions fell while loans and cash holdings rose.

Chart 2.7 maps the change in banks’ assets in 2008 onto one possible measure of leverage. On this measure, leverage of the major UK banks remained broadly unchanged during 2008, with the median level at just over 30 times capital. The US commercial banks experienced the largest changes in leverage, with the median ratio rising significantly to around 60 times capital. This rise reflected both acquisitions completed during 2008 and significant erosion of capital associated with losses incurred over the same period.

1991 93 95 97 99 2001 03 05 07 09

Sources: Bloomberg, Thomson Datastream and Bank calculations.

0.0

*…and seek to strengthen capital buffers…*

A number of banks internationally have sought to improve

1. Chart shows the ratio of share price to book value per share. Simple averages of the ratios in each peer group are used. The data are a three-month rolling average.
2. Excludes Nationwide and Britannia, which do not have traded equity.

Chart 2.6 Major UK banks’ and LCFIs’ total assets(a)

their capital positions, including through conversions of preferred shares and convertible notes to equity, private sector capital raising and participation in government support schemes (Table 2.A). The most significant capital raising has

Derivatives, netted by counterparty(b)

Trading assets and investments

Customer loans

 Cash items

been completed or announced by US commercial banks.

Secured lending

 Other(c)

US( trillions

30

Break for IFRS

25

20

15

10

5

0

Following the US stress-testing exercise, these institutions have announced capital-raising plans generating a

2.5 percentage point increase in their core Tier 1 capital ratio. In the United Kingdom, capital injections — including through the Asset Protection Scheme (APS) — are projected to add a percentage point to the major UK banks’ core Tier 1 ratio. UK banks are also actively seeking opportunities to generate capital internally through debt buybacks and exchanges

(Box 4) and the disposal of assets.

Nevertheless, leverage remains elevated across the global banking system. Capital raising completed or announced by

2001 02 03 04 05 06 07 08

Sources: Bankscope published by Bureau van Dijk Electronic Publishing, published accounts and Bank calculations.

1. Assets converted at average exchange rate 2001–08.
2. US GAAP banks report on a net basis; IFRS banks’ derivative exposures netted from 2007.
3. ‘Other’ includes other receivables, other assets, goodwill and property and insurance.

banks since end-2008 will restore the median leverage ratio to end-2007 levels, at around 35 times capital, with the greatest impact on the US commercial banks (Chart 2.7). But at these levels, capital buffers would still be eroded significantly if

#### Box 4

The changing composition of the major UK banks’ regulatory capital

In the recent past, there was a marked shift in the composition of the major UK banks’ Tier 1 capital, away from core equity capital to innovative and non-innovative instruments

(Chart A). Banks issued Tier 1 capital instruments that contained more of the characteristics of debt in order to widen the pool of potential investors and to reduce capital costs (see Table 1 for an overview of banks’ regulatory capital). Banks have been reluctant to suspend coupon payments on these instruments, which weakens their ability to absorb losses.

Recently, investor appetite for innovative capital has evaporated and banks have looked to increase their core Tier 1 capital in response to increased investor and regulatory focus on this measure of capital. This box examines these developments and their implications for financial stability.

Chart A Composition of the major UK banks’ Tier 1 capital(a)

 Core Tier 1

 Other non-innovative Tier 1

Table 1 Key components of Tier 1 and Tier 2 capital and relevant regulatory limits under Pillar 1(a)



|  |
| --- |
| Ordinary shares Reserves(b) |
| Non-cumulative preference shares (with call option) |
| Tier 1 instruments with step-up clauses or issued via a special purpose vehicle |
| Perpetual cumulative preference shares Perpetual subordinated debt  Collective provisions(c)  Surplus of IRB provisions(d) |
| Non-perpetual subordinated debt  (with a minimum maturity of five years)  Fixed-term preference shares |

Core Tier 1 (≥50%

of Tier 1)

Other non-innovative

Tier 1

Innovative Tier 1 (≤15% of Tier 1)

Upper Tier 2

≤ Tier 1

Lower Tier 2 (≤50%

of Tier 1)

Source: General Prudential Sourcebook for Banks, Building Societies, Insurers and Investment Firms, FSA.

1. Limits are expressed in terms of Tier 1, which excludes Tier 1 innovative instruments and also deducts investments in own shares, intangible assets and other specific Tier 1 deductions.
2. Includes non-repayable capital contributions and externally verified interim net profits after prudential filters (eg losses arising from valuation adjustments).
3. Provisions that cannot be identified to specific transactions and correspond to portfolios under the standardised approach.
4. The positive difference between the level of provisions and the level of expected losses associated with portfolios under the internal ratings based (IRB) approach.

##### The response of the major UK banks

With investors and regulators more focused on core Tier 1

 Innovative Tier 1

Per cent

100

90

80

70

60

50

40

30

20

10

0

capital ratios, a number of major UK banks have recently completed buybacks and exchanges of Tier 1 and Tier 2 instruments to increase their core Tier 1 capital (Table 2). Because Tier 1 and Tier 2 instruments are trading well below par, banks can offer investors a premium to current market prices while still acquiring the debt below par. In doing so, banks can realise fair value gains through their reserves, increasing core Tier 1 capital. Meanwhile, some investors receive a mark-to-market benefit by participating in the buyback because the instruments are bought back at a premium to their market value.

2000 01 02 03 04 05 06 07 08

Sources: Dealogic, published accounts and Bank calculations.

1. Includes Abbey, Alliance and Leicester and Bradford and Bingley instead of Banco Santander. Excludes Northern Rock.

##### The impact of the financial market turmoil

Market contacts suggest that one reason for the recent breakdown in the market for innovative capital is variation in the treatment of non-equity capital holders in recent bank resolutions, including in the United Kingdom. There is also uncertainty over the likelihood of coupon maintenance on

Tier 1 and Tier 2 capital instruments, particularly for banks with substantial government support.(1) Investors are uncertain whether banks will continue to follow market convention by calling capital instruments at the step-up date.(2) In response, ratings agencies have downgraded a number of issues of hybrid and subordinated debt. Secondary market spreads for Tier 1 and Tier 2 capital instruments have increased significantly since end-October.

The increase in core Tier 1 capital is a positive development for the stability of the UK banking sector (Section 3). Existing equity holders also benefit, as there is a greater capital cushion to absorb going concern losses without diluting

their shareholding in the bank. The development is not unambiguously positive for all stakeholders in the bank. By engaging in an exchange for senior debt or a buyback, the bank reduces its overall capital levels.(3) As a consequence, existing senior creditors have less of a cushion against credit losses in the event that the bank is put into administration and wound down. This has to be weighed up against the lower probability of the bank being wound down in the first place given its larger core Tier 1 buffer.

West Bromwich Building Society recently exchanged the full outstanding principal value of its subordinated debt for a new instrument, Profit Participating Deferred Shares, which qualifies for inclusion in core Tier 1 capital. This transaction

Table 2 Major UK banks’ buyback and exchange offers(a)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Bank | Date of offer | Transaction Nominal value of  securities offered  (£ billions) | Take-up (per cent) | Take-up price (percentage of nominal value) |
| Lloyds Banking Group | Jan. 2009 | Exchange of Upper Tier 2 for Tier 1 securities 8.5 | 30 | 78 |
| Lloyds Banking Group | Mar. 2009 | Exchange of Upper Tier 2 securities for senior debt 7.5 | 58 | 61 |
| RBS(b) | Mar. 2009 | Exchange of Upper Tier 2 and Tier 1 securities for senior debt 5.8 | 61 | 51 |
| RBS(b) | Mar. 2009 | Buyback of Upper Tier 2 and Tier 1 securities 9.1 | 56 | 43 |
| Barclays | Apr. 2009 | Exchange of Upper Tier 2 for Lower Tier 2 securities 3.4 | 74 | 76 |
| Bank of Ireland(c) | May 2009 | Buyback of Tier 1 securities 3.0 | 49 | 41 |

Sources: Published statements and Bank calculations.

1. Data include offers made and completed up to 18 June 2009.
2. RBS pricing assumes all buybacks and exchanges qualified for the early tender payment.
3. Bank of Ireland is part of the major UK banks peer group as defined in Section 1.

differs from exchanges completed by the major UK banks because it does not reduce total capital.

The proliferation of buyback and exchange offers may weaken the market convention of calling capital instruments at the step-up date. In an environment where debt can be bought back below par, there is a strong incentive for banks to do so rather than calling the debt at par. This may constrain future issuance of these capital instruments. It may also be more expensive to issue these instruments if investors price in higher extension risk than prior to the financial turmoil. These developments may lead to a capital structure that has a greater proportion of core Tier 1 capital. This would improve the ability of banks to absorb unexpected losses (Section 3).

Chart B Illustration of the impact of capital buybacks on major UK banks’ capital composition(a)(b)(c)

£ billions

500

(b)

Core Tier 1

Other Tier 1

Tier 2

400

300

200

100

0

Chart B illustrates the impact on the capital composition of the major UK banks in a scenario in which maturing capital instruments are not replaced and banks buy back, or exchange for senior debt, innovative Tier 1 and Tier 2 instruments as their call dates fall due. Buybacks and exchanges already completed in 2009 (Table 2) are not included and the banks are assumed not to offer proactively to exchange or buy back capital instruments prior to these instruments’ call dates falling due. This leads to a gradual increase in core Tier 1 capital and a reduction in other forms of capital instrument.

2000 01 02 03 04 05 06 07 08 09 10 11 12 13

Sources: Dealogic, published accounts and Bank calculations.

1. Includes Abbey, Alliance and Leicester and Bradford and Bingley instead of Banco Santander. Excludes Northern Rock.
2. Figures post-2008 are for illustrative purposes and do not constitute a capital projection. They are calculated using end-2008 figures, which are not adjusted for capital raising in 2009, and do not take into account future earnings. End-2008 figures are also not adjusted for buybacks and exchanges made in 2009.
3. Assumes post-2008 that maturing debt is not replaced and that Tier 2 and innovative Tier 1 instruments are bought back as their call dates fall due with 100% take-up at a 20% and 30% discount to par respectively. Callable non-innovative Tier 1 capital instruments are replaced as their call dates fall due.
   1. Bradford and Bingley is the only major UK bank currently to have announced that it will defer coupon payments on its Lower Tier 2 capital instruments.
   2. A step-up clause allows an increase in the coupon beyond a specified date.
   3. For example, if a bank exchanges £100 million of Upper Tier 2 instruments at 80 pence in the pound for senior debt, abstracting from tax issues, its core Tier 1 capital will increase by £20 million. But the bank’s Upper Tier 2 capital falls by

£100 million, resulting in a fall in total capital of £80 million. It is possible, however, that the bank’s total regulatory capital ratio will not fall if it is constrained by its Tier 1 capital (under Pillar 1, innovative Tier 1 and Tier 2 capital can only be counted for regulatory purposes up to the total value of non-innovative Tier 1 capital).

Chart 2.7 Major UK banks’ and LCFIs’ leverage ratios(a)

 Maximum-minimum range Median

Median (including 2009 capital issuance/announcements) Ratio

assets not protected by schemes such as the APS experience relatively modest further falls in value.

*…with concerns over future banking book losses…*

US commercial banks

US securities houses

European LCFIs

Major UK banks(b)

120

100

80

60

40

20

Perceptions of balance sheet risk have extended to the banking book, in particular at UK, US and European institutions with large commercial banking units. While net interest income for many of these institutions rose in 2008, they also reported large increases in provisions (Chart 2.8). Rising household and corporate distress, and continuing falls in property prices, raise the possibility of further asset impairment. Buffers of loan loss reserves over non-performing loans have already begun falling for some of the world’s largest commercial banks.

*…raising questions over future profitability.*

0

2007 08 2007 08 2007 08 2007 08

Sources: Published accounts and Bank calculations.

1. Assets adjusted for cash and cash items in the course of collection from banks, goodwill and intangibles and deferred tax assets. Assets adjusted on a best-efforts basis to ensure comparability between institutions reporting under US GAAP and IFRS. Derivatives are netted in line with US GAAP rules. Off balance sheet vehicles are included in line with IFRS rules (excluding mortgages sold to US government-sponsored entities). Capital excludes Tier 2 instruments, preference shares and hybrids and goodwill and intangibles.
2. Excludes Northern Rock.

Table 2.A Impact of equity issuances and conversions in 2009 on capital ratios(a)

Per cent

Global banks’ profitability has come under pressure as revenues fell in 2008, particularly among the US securities houses and European LCFIs (Chart 2.9). This has largely been driven by a significant decline in non-interest income, reflecting impaired market liquidity and significant losses on proprietary trading and investment positions. Results for the US LCFIs in the first quarter of 2009 have generally been better than anticipated. But the need to constrain balance sheet growth, given high levels of leverage and the potential for future losses, raises a question about revenue generation for banks globally over the medium term.

End-2008 capital

Major European US securities US UK banks LCFIs houses commercial

banks

Chart 2.10 decomposes the major UK banks’ past return on equity into gearing — a measure of leverage(1) — and the return on total assets. During 2008, the return on total assets

Core Tier 1(b) 6.6 6.9 10.5 4.3

Tier 1 8.8 9.5 16.6 10.5

Impact of issuances and conversions on core Tier 1 capital

Common share issuances 0.8 0.0 1.7 0.5

Conversions to core Tier 1(c) 0.3 0.0 0.0 1.9

Impact of issuances and conversions on Tier 1 capital

Total share issuances(d) 1.0 0.4 1.7 0.5

Conversions from Tier 2 to Tier 1 0.1 0.0 0.0 0.0

Capital post issuances and conversions

Core Tier 1 7.7 6.9 12.2 6.8

Tier 1 9.9 9.9 18.3 11.1

Sources: Bloomberg, press releases, published accounts and Bank calculations.

1. Includes Mandatory Convertible Notes (MCNs) and new equity issuances and conversions of preferred equity completed or announced between end-2008 and 12 June 2009. Capital impact based on end-2008 risk-weighted assets.
2. Common shareholders’ equity only.
3. Includes conversion of preferred equity and Tier 2 MCNs to common equity.
4. Includes common and preferred equity.

turned negative and the impact of this on return on equity was amplified by banks’ high level of gearing. Prior to 2008, the major UK banks used increased levels of gearing to generate higher returns on equity, while the underlying return on assets fell below 2002 levels.

The major UK banks and building societies have already acted to raise lending rates, as reflected in higher net interest margins (Chart 2.11). Over the past decade, net interest margins declined due to intense competition. This had a particularly negative impact on the profitability of building societies. Higher margins should help alleviate this stress over time. But as shown in Chart 2.12, mortgage lending is now focused almost entirely on the prime residential sector.

Competition in this sector may limit the extent to which margins can be rebuilt. And experience from past crises suggests that bank profitability can take more than three years to recover once losses have been recorded (Box 3).

*Funding conditions appear to be improving…*

Funding conditions for banks appear to be improving somewhat. Some markets that had been effectively closed to

(1) This measure treats derivatives on a gross basis, where the value of the major UK banks’ derivatives positions rose significantly during 2008.

Chart 2.8 Provisions versus net interest income

US( billions

100

80

60

40

20

+

all but the strongest institutions appear to be reopening. In the euro covered bond market, issuance in May was around twice the average of the previous six months, boosted by the European Central Bank’s announcement that it intends to buy covered bonds. In the United Kingdom, a few banks have been able to issue unguaranteed senior debt (Chart 2.13) at longer maturities than are available under the Credit Guarantee Scheme (CGS).

0 The majority of banks’ wholesale funding continues to take

Net interest income Provisions

Net interest income less provisions

–

20

40

60

H1 H2 H1 H2 H1 H2 H1 H2 H1 H2 H1 H2 H1 H2 H1 H2 2007 08 2007 08 2007 08 2007 08

place at very short maturities. Market contacts report some modest recovery in term money market funding. Since around the middle of March, the three-month Libor spread over expected policy rates has fallen steadily in the sterling, dollar and euro markets (Chart 2.14). But term money market

US commercial banks

US securities houses(a)

European LCFIs

Major UK banks

funding is unlikely to return to pre-crisis levels in the near term. And as shown in Chart 2.14, the three-month sterling

Sources: Bloomberg and published accounts.

(a) Lehman Brothers excluded due to lack of data in 2008 H2.

Chart 2.9 Underlying pre-tax and pre-provision profit

US( billions

120

100

80

60

40

20

+

0

Libor spread over expected policy rates is expected to remain elevated.

*…but UK banks maintain a large funding gap…*

The UK banks entered the financial crisis with a significant customer funding gap — the difference between customer loans and deposits — which continued to rise in 2008, reaching around £800 billion (Chart 2.15). The rising gap was largely accounted for by a 30% increase in the value of lending to other customers, which includes non-bank financial companies, overseas borrowers and the public sector. In part, this reflected exchange rate movements during 2008, which increased the sterling value of foreign-currency denominated loans.

H1 H2 H1 H2

–

20

H1 H2 H1 H2 H1 H2 H1 H2 H1 H2 H1 H2

The major UK banks’ large and rising funding gap implies a

2007 08

US commercial banks

2007 08

US securities houses(a)

2007 08

European LCFIs

2007 08

Major UK banks

continued heavy reliance on wholesale funding markets. Around half of the funding gap — £400 billion — is accounted

for by lending to UK households and companies that is backed

Sources: Bloomberg and published accounts.

(a) Lehman Brothers excluded due to lack of data in 2008 H2.

Chart 2.10 Major UK banks’ pre-tax return on equity(a)

Indices: Dec. 2002 = 100

200

Gearing

Return on equity

Pre-tax pre-provision return on assets

Return on assets

150

100

50

+

0

–

50

100

H2 H2 H1 H2 H1 H2 H1 H2 H1 H2 H1 H2 2002 03 04 05 06 07 08

Sources: Published accounts and Bank calculations.

1. Based on twelve-month trailing pre-tax revenues and average shareholders’ equity.

by securitisations. Some of these are securitisations retained on banks’ balance sheets for use in central bank operations, including the Special Liquidity Scheme (SLS). But more than half is accounted for by securitisations sold to end-investors. If these were to be redeemed prior to the maturity of the underlying mortgages, it would place significant additional pressure on UK banks’ funding needs — at a time when market contacts report continued nervousness on the part of

non-bank financial institutions in wholesale funding markets, and when cross-border flows are falling (Box 2).

Banks currently meet some of the funding gap through issuance of debt under the CGS. But this is subject to a cap on both the amounts that can be issued and the maturity of the debt. As with securitisation, the banks will need to find alternative funding sources when these liabilities mature, the majority of which occurs in 2011 and 2012. The expiry of the SLS in less than three years’ time and the eventual reduction in central bank lending around the world will add further to the

Chart 2.11 Major UK banks’ and building societies’ net interest margin(a)

Per cent

need for alternative sources of funding. Assuming CGS issuance reaches the cap of £250 billion, the major UK banks might conceivably need to shrink their balance sheets or find

6 alternative sources of funding of around £500 billion over the period to 2013, as various forms of public sector financing are

Range Interquartile range

Building societies(b) Median

5 progressively withdrawn (Chart 2.16).

4

3

2

1

1998 99 2000 01 02 03 04 05 06 07 08 0

Sources: KPMG Building Societies Database, published accounts and Bank calculations.

1. Prior to mergers and acquisitions, data have not been consolidated on the basis of the current merged entities.
2. Excludes Britannia and Nationwide.

Chart 2.12 Number of mortgage products advertised in Moneyfacts

Thousands

18

Credit impaired buy-to-let Prime buy-to-let Credit impaired residential Prime residential

16

14

12

10

8

6

4

2

0

Feb. May Aug. Nov. Feb. May Aug. Nov. Feb. May

2007 08 09

Source: Moneyfacts Group.

Chart 2.13 UK banks’ senior debt issuance(a)

US( billions

30

Guaranteed

Unguaranteed

25

20

15

10

5

Jan. Mar. May July Sep. Nov. Jan. Mar. May 0

2008 09

Sources: Dealogic and Bank calculations.

1. Issuance with a value greater than US(500 million and term to maturity greater than 18 months.

*…and funding is sensitive to sovereign risk…*

The substantial support provided by governments to banking sectors internationally has increased the links between these two sectors. In the period since the October 2008 *Report*, sovereign CDS premia rose for those countries where banking sector risks increased most (Chart 2.17). This suggests a further rise in government financing costs could have a

knock-on impact on bank funding costs. Respondents to the Bank’s *Systemic Risk Survey* also identified sovereign risk as a financial stability concern for the first time (Box 5).

Measures to support banking systems around the world have the potential to lead to a material rise in government debt in some countries. These pressures are reflected in the rise in sovereign CDS premia, which remain at elevated levels across a range of countries (Chart 2.18). Credit rating agencies have also downgraded some countries recently and have placed several sovereign ratings on negative watch. A downgrade might increase sovereign debt financing costs. For example, yields on AA-rated government bonds have averaged around 40 basis points more than similar securities with a AAA rating since 2006.

*...placing further pressure on profitability.*

The cost to the major UK banks of funding in wholesale debt markets has risen significantly over the past year. The

overall cost of financing is substantially lower because banks remunerate retail deposits below Bank Rate. But one consequence of the low interest rate environment has been to reduce this retail deposit margin significantly, eroding profitability. This effect is particularly marked for institutions that rely mainly on retail funding — for example, traditional building societies.

Since 2008 Q3, a greater proportion of household deposits has flowed to National Savings and Investments, which has intensified competition among UK banks for retail balances.

The impact on deposit rates has been striking (Chart 2.19). This represents a significant source of pressure on banks’ and building societies’ net interest margins and overall profitability.

*Banks’ structural weaknesses are affecting lending…*

Higher spreads on lending and reduced leverage are necessary characteristics of a stronger banking system over the medium term. The transition will also require banks to rebalance their funding profiles and focus on activities that exploit their comparative advantage. In doing so, the banks may face a trade-off between deleveraging and revenue generation. Many

#### Box 5

*Systemic Risk Survey* results

In May 2009, the Bank conducted a survey of market participants’ views about risks and the prospects for financial stability.(1) The survey was sent to a range of market participants at UK banks, large complex financial institutions (LCFIs), hedge funds, asset managers and insurance companies.(2)

This box summarises the key findings. The survey is designed to complement other sources of information on risks to the system, including regular dialogue with market participants. The Bank intends to conduct the survey regularly and report the results in future *Reports*.

##### Key risks

Participants were asked to list the five risks that they believed would have the greatest impact on the UK financial system, if they materialised in a plausible worst-case scenario. The top risks identified, as shown in Table 1 (impact column), were:

* an economic downturn;
* borrower defaults;
* pressures in funding markets;
* regulatory and accounting changes;
* credit conditions; and
* sovereign risk.

Most of these top risks were cited by a greater proportion of respondents than in a pilot survey conducted in July 2008. This is consistent with the sharp deterioration in the current economic environment, discussed in Section 1. Sovereign risk was also mentioned for the first time. Far fewer respondents were concerned about the potential failure of a financial institution than a year ago (Table 1).

Participants were also asked to identify the three risks they would find most difficult to manage. Some of the top risks identified above were also generally seen as the most difficult for firms to manage (Table 1).

##### Probability of a high-impact event in the UK financial system

Survey participants were asked to report their view of the likelihood of a high-impact event affecting the UK financial system over the short and medium term. As in the July 2008 pilot survey, more than half judged this to be of medium likelihood over both horizons (Chart A) and more than a third thought the likelihood was high or very high in the medium term.

Table 1 Key risks to the UK financial system(a)

Impact Manageability May 2009 May 2009

(July 2008) (July 2008) (per cent)(b)(c) (per cent)(c)(d)

Economic downturn 82 (61) 35 (42)

Borrower defaults 47 (12) 24 (6)

Pressures in funding markets 32 (33) 12 (21)

Regulatory and accounting changes 26 (27) 26 (12)

Credit conditions 26 (15) 3 (6)

Sovereign risk 26 (0) 6 (0)

Failure of financial institutions 24 (88) 15 (42)

Financial market dislocation 24 (30) 12 (9)

Operational risk 24 (30) 3 (15)

Lack of confidence in pricing, disclosure and ratings 21 (18) 12 (9)

Loss of confidence in authorities 21 (15) 9 (3)

Property prices 18 (45) 3 (21)

Derivatives/insurance markets 15 (18) 3 (18)

Infrastructure disruption 12 (12) 6 (9)

Sources: Bank of England *Systemic Risk Survey*, July 2008 and May 2009, and Bank calculations.

1. Risks ranked highest to lowest on impact from May 2009 survey.
2. Answers to question — Please list the risks that you believe would have the greatest impact on the

UK financial system if they were to materialise in a plausible worst-case scenario. Please list the risks in order of potential impact.

1. Per cent of respondents citing risk within top five.
2. Answers to the question — Which of these risks would you find most challenging to manage as a firm?

Chart A Probability of a high-impact event in the UK financial system(a)

Per cent

60

Short term

Medium term

50

40

30

20

10

0

Low Medium High Very high

Sources: Bank of England *Systemic Risk Survey*, May 2009 and Bank calculations.

1. Answer to the question — In your view what is the probability of a high-impact event in the UK financial system in the short term and in the medium term? Five possible answers: very high; high; medium; low; very low. No response for very low.

##### Confidence in financial system

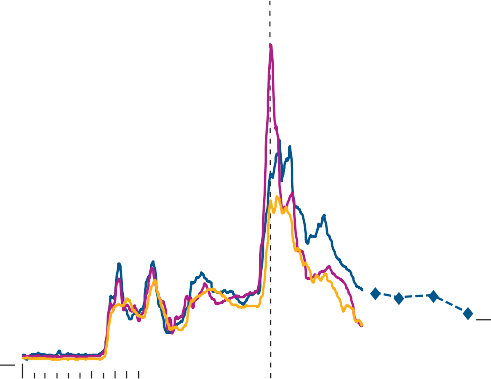
Finally, survey participants were asked to report their overall confidence in the stability of the UK financial system over the next three years. Confidence was significantly lower than last summer, with a sharp decrease in those stating they were very confident (from 36% to 15% of respondents), and an increase in those who were not very confident (from 3% to 18%).

1. This followed a successful pilot during last summer.
2. The survey took place between 27 April 2009 and 15 May 2009. Thirty four market participants provided the Bank with their views. The survey was carried out by BMRB on behalf of the Bank.

Chart 2.14 Three-month interbank rates relative to expected policy rates(a)(b)

Basis points

400



(c)

Sterling US dollar Euro

350

300

250

200

150

100

50

0

UK banks have already announced that they will seek to sell parts of their business in order to refocus on their core activities. While improving balance sheets in the short run, this may raise questions about the future franchise value of some entities.

These balance sheet pressures — on both the assets and liabilities side — may be weighing on banks’ ability to lend to households and companies at present. Their willingness to lend may be further affected by uncertainty about the economic outlook, as well as concerns about any future changes to liquidity and capital regulation.

As discussed in Section 1, growth in lending to UK businesses

Jan. July Jan. July Jan. July Jan.

2007 08

Sources: Bloomberg and Bank calculations.

09 10

and households has fallen significantly in recent quarters. The ability of some sectors to lend, such as building societies,

1. Spread of three-month Libor to three-month overnight index swap (OIS) rates. Five-day moving average.
2. Dashed line shows sterling implied forward spreads derived from forward rate agreements and OIS from a range of maturities.
3. October 2008 *Report*.

Chart 2.15 Major UK banks’ customer funding gap(a)

£ billions

1,000

All other non-bank customers Securitised household loans Securitised corporate loans UK households

UK private non-financial Total

corporates

800

600

400

appears to have been particularly impaired (Chart 2.20). While there is significant dispersion across the major UK banks, annual growth in lending to UK households is at its lowest rate for more than a decade.

Overall corporate credit conditions remain tight, but recent reports by UK banks suggest that the availability of lending to companies may have marginally improved. This is consistent with the results of the Bank’s 2009 Q1 *Credit Conditions Survey*.(1) A small balance of survey respondents also expected greater mortgage availability in the second quarter of this year.

2001 02 03 04 05 06 07 08

Sources: Dealogic, published accounts and Bank calculations.

1. Data exclude Britannia and Nationwide.

200

+

0

–

200

*…though the demand for credit has also fallen…*

At the same time, the demand for credit may be subdued in the near term. A key counterpart to increased growth in banks’ leverage has been a steady build-up of debt in the household and corporate sectors over the past ten years. In the United Kingdom, this reached over 200% of GDP in 2008. Respondents to the Bank’s *Credit Conditions Survey* suggest

Chart 2.16 Major UK banks’ maturing funding: selected wholesale liabilities

that households and companies have generally demanded less credit since the financial crisis began. The *Survey* also

 Long-term repo

Credit Guarantee Scheme(a)  Special Liquidity Scheme

 Residential mortgage-backed securities(b) Bonds

£ billions

400

350

suggested that large non-financial companies may have demanded more credit in 2009 Q2. But this was partly the result of companies refinancing or restructuring existing facilities.

2009 10 11 12 13 14

Sources: Bank of England, Bloomberg, Deutsche Bank and Bank calculations.

300

250

200

150

100

50

0

*…and some companies are funding from capital markets.* Market contacts suggest that some of this restructuring may have taken place through capital market issuance.

In aggregate, UK non-financial companies have increased their use of bonds and equities to meet their financing needs in recent quarters (Chart 2.21). But capital markets are unlikely to provide significant funds to small and medium-sized companies, which remain reliant on bank lending for their funding.

1. Shows the full limit for the Credit Guarantee Scheme allocated across three years in equal

shares.

1. Excludes Britannia, Co-operative Bank and HSBC. Shows the date at which markets expect the residential mortgage-backed securities to be called.

(1) See the Bank’s *Credit Conditions Survey*, available at [www.bankofengland.co.uk/publications/other/monetary/creditconditions.htm.](http://www.bankofengland.co.uk/publications/other/monetary/creditconditions.htm)

Chart 2.17 Sovereign and bank CDS premia(a)

Percentage changes in sovereign CDS premia

250

Sovereign credit rating AAA AA

AA+ A+

Eire

Austria

United States

United Kingdom

Netherlands

Japan

Belgium

Spain Italy

Australia

Germany

France

200

150

100

50

0

100 50 – 0 + 50 100 150 200

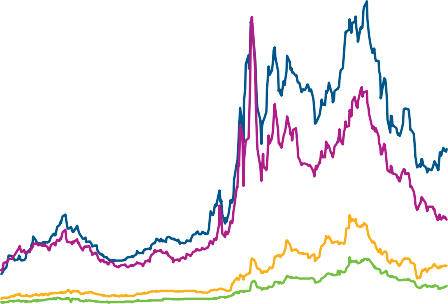
Percentage changes in bank CDS premia

Sources: Bloomberg, Fitch Ratings Ltd, Moody’s Investors Service, Standard & Poor’s, Thomson Datastream and Bank calculations.

1. Senior five-year CDS premia. Changes are since the October 2008 *Report*. Chart shows median premia for selected banks in each country.

Chart 2.18 Sovereign CDS premia(a)

Basis points 800



Central and Eastern Europe(b) G20 excluding G7 and Europe Euro area excluding G7

G7

700

600

500

400

300

200

*Further measures could be required.*

In summary, while pressures on the major global banks have stabilised over the past few months, their balance sheets remain impaired. Banks’ leverage remains high, with the possibility of further impairment of assets placing continued pressure on profitability and capital ratios. Future revenue generation will need to balance the desire to deleverage with the need to generate new business at profitable spreads.

At the same time, the major UK banks maintain a high and rising customer funding gap. The withdrawal of overseas funding and competition for domestic deposits has added to these funding pressures.

The experience of past financial crises is that lending levels have typically fallen (Chart 2.22). Against this backdrop, there is a risk that — in the event of further adverse macroeconomic or financial sector developments — banks may not supply sufficient credit to support growth in the economy. The commercial property market remains vulnerable and concerns persist over credit exposures of the international banking system to countries with large current account deficits (Box 2). On the funding side, further falls in cross-border lending and any increase in sovereign risk could cause banks to tighten credit conditions. This would flow back to the banks themselves and could conceivably prove a renewed threat to stability. In this event, there are a number of options that the authorities could pursue. These options vary according to the amount of burden sharing that takes place between the public and private sectors.

Jan. Apr. July Oct. Jan. Apr.

100

0

The public sector could extend the measures announced earlier in the year. But in countries where public sector

2008 09

Sources: Thomson Datastream and Bank calculations.

1. Senior five-year sovereign CDS premia. Chart shows the median premia for the countries in each group, for which data are available.
2. As defined for IMF *World Economic Outlook*.

Chart 2.19 Retail deposit spreads(a)

Basis points

300

Notice account

Sight

Cash ISA

Fixed-rate bond

200

100

+

0

–

100

200

300

indebtedness is already high, and where banking systems are large relative to the economy, markets may at some stage come to question the scale of any additional official sector support. At some point there would be a risk of fiscal injections raising sovereign risk and thereby amplifying, rather than dampening, pressures on the banking sector, for example in funding markets. While most countries are not yet at this point, it is a factor to weigh when assessing options.

Alternative options could share costs between the public and private sectors more evenly. The US authorities, for example, have proposed a Public-Private Investment Program, with joint contributions from private investors and the government to purchase loans and securities from banks. This option would allow banks to sell legacy assets, thereby helping to restore confidence in and reduce funding pressures on their balance sheets. The success of this scheme will depend, however, on whether a market price for assets can be found and on the

End-2005 End-2007 2009(b)

Sources: Bank of England and Bank calculations.

400

ability and willingness of banks to recognise losses up front.

1. Spread over Bank Rate, except for fixed-rate bonds where spread is over UK one-year swap rate.
2. As at end-May 2009.

A third approach would be for banks to restructure their liabilities — for example, through the conversion of

Chart 2.20 Annual growth in major UK banks’ and building societies’ lending to UK households(a)

 Interquartile range of major UK banks  Median of major UK banks

 Building societies(b) Per cent

25

20

15

10

5

+

0

–

5

2000 01 02 03 04 05 06 07 08 09

subordinated debt to equity — or their whole balance sheets — for example, into a ‘good bank’ and a ‘bad bank’. This has

been a common way of dealing with banking sector problems in past financial crises (Box 3). Under one option, a

well-capitalised ‘good bank’ could be created using the clean assets from the distressed bank. The ‘good bank’ should then be able to provide credit to the economy. In the scheme discussed in Box 6, shareholders and non-deposit creditors hold equity claims on the good bank. So the allocation of costs falls more heavily on private stakeholders, whose claims nevertheless have considerable potential upside.

In the medium term, policy measures need to be taken to improve the resilience of the financial system, so that it can sustain its critical economic functions without support.

Section 3 discusses the key ways in which this can be achieved.

Sources: Bank of England and Bank calculations.

1. Last data point is April 2009.
2. Excludes Britannia and Nationwide.

Chart 2.21 Finance raised by UK non-financial companies(a)(b)

£ billions

35

Equity

Bonds Loans

Other

Total

30

25

20

15

10

5

+

0

–

5

10

15

Jan. Apr. July Oct. Jan. Apr.

2008 09

Sources: Bank of England and Bank calculations.

1. The chart shows three-month changes in the level of financing.
2. The total and loans series are seasonally adjusted, but the capital issuance data (equity, bonds and other) are not seasonally adjusted, hence the components may not sum to the total.

Chart 2.22 Lending in past UK financial crises(a)

Percentage changes on year earlier

20

Secondary banks (1974 Q1) Small banks (1991 Q2) Current (2007 Q3)

15

10

5

+

0

–

5

10

12 8 4

– 0 +

4 8 12 15

Quarters from start of crisis

Sources: Bank of England, Global Financial Data, ONS and Bank calculations.

1. Chart shows growth in real domestic lending to households and non-financial companies. The date used for the start of each crises is shown in parentheses.

#### Box 6

Distributing the costs of financial crisis resolution

Outside of financial crises most banks are profitable. This protects depositors and allows banks to provide a stable flow of services to the real economy.

Banks’ creditors receive interest compensating them for the risk in lending to banks, and banks’ shareholders receive dividends and potential capital gains as compensation for providing risk capital. But in severe financial crises, the value of banks’ future profits and legacy assets falls, while the nominal value of their debt liabilities is fixed.

The first line of defence should be profits and private capital. But if these options are not available, the cost of filling the ‘hole’ can be split in a number of ways, including among shareholders, creditors and governments. The distribution of these costs will need to balance a number of objectives, such as containing systemic risk, minimising the use of taxpayers’ funds and promoting market discipline.

##### Balance sheet restructuring proposal

A proposal that has received recent attention is to restructure a distressed bank’s balance sheet into a ‘good bank’ and a ‘bad bank’. Similar schemes have been used in previous financial crises to deal with problem assets (see Box 3). They have also been announced during the current crisis by the authorities in Ireland and Germany. An in-principle good bank/bad bank proposal has been advocated recently by academics including Bulow and Klemperer,(1) and Hall and Woodward.(2) There are several variations on this scheme, including debt-for-equity swaps and debt write-downs.

Table 1 illustrates this type of scheme using a stylised balance sheet. The good bank takes the ‘clean’ assets from the integrated bank as its assets and only the deposits from the integrated bank as its liabilities.

The bad bank has the ‘toxic’ assets of the integrated bank and all of the equity in the good bank. The liabilities are non-deposit liabilities and equity from the integrated bank. The key innovation in the design of this scheme is giving the bad bank all of the equity in the good bank. In effect,

non-deposit creditors in the integrated bank could ultimately become equity investors in the good bank, in the event of the bad bank’s insolvency. This may increase the expected value of debt holders’ claims because the cleansed good bank offers much greater potential upside than the integrated bank.

Following this restructuring, the good bank will be better

Table 1 Illustration of bank restructuring proposal

Integrated bank

|  |  |  |  |
| --- | --- | --- | --- |
| Assets |  | Liabilities |  |
| Clean assets | 80 | Deposits | 50 |
| Toxic assets | 20 | Non-deposit creditors | 30 |
|  |  | Subordinated debt | 15 |
|  |  | Equity | 5 |
| *Equity/assets: 5%* | 100 |  | 100 |
| Good bank |  |  |  |
| Assets |  | Liabilities |  |
| Clean assets | 80 | Deposits | 50 |
|  |  | Equity | 30 |
| *Equity/assets: 37.5%* | 80 |  | 80 |
| Bad bank |  |  |  |
| Assets |  | Liabilities |  |
| Toxic assets | 20 | Non-deposit creditors | 30 |
| Equity in good bank | 30 | Subordinated debt | 15 |
|  |  | Equity | 5 |
| *Equity/assets: 10%* | 50 |  | 50 |

capitalised relative to the integrated bank, potentially supporting lending to the real economy, and its deposits are also better protected. The bad bank is likely in practice to be a fund manager of the bad assets.

Under this scheme, the distribution of costs of resolving a financial crisis falls more heavily on private stakeholders, reducing the government’s fiscal burden. Those who benefit from providing capital and funding outside of financial crises contribute significantly to the costs of resolution. This helps to reinforce market discipline on providers of capital and funding to banks. The possibility of distributing the cost of government support back to the banking system, rather than the general taxpayer, is discussed further in Section 3.5.

##### Feasibility

While these schemes might have a number of attractions in principle, their appropriateness will depend on the resolution arrangements in different jurisdictions and on insolvency rules. For example, Hall and Woodward illustrate their scheme using a US bank, and the United States has a form of depositor preference.(3) This could make such a restructuring easier in the United States than in the United Kingdom because the ranking of creditors is maintained. The benefits should also be weighed against the risks, which include the impact on banks’ funding of a debt restructuring, the operational complexity of the exercise, and whether confidence can be maintained.

1. Bulow, J and Klemperer, P (2009), ‘Reorganising the banks: focus on the liabilities, not the assets’, [www.voxeu.org/index.php?q=node/3320.](http://www.voxeu.org/index.php?q=node/3320)
2. Hall, R and Woodward, S (2009), ‘The right way to create a good bank and a bad bank’, <http://woodwardhall.wordpress.com/2009/02/23/the-right-way-to-create-a-> good-bank-and-a-bad-bank/.
3. Under depositor preference, depositors’ claims on the assets of a failed bank rank higher than general creditors.

### Building a more resilient financial system

Changes needed to increase the resilience of the financial system

* *Stronger market discipline*: Market discipline should be strengthened significantly.
* *Greater self-insurance*: Financial institutions’ own resources should be the first line of defence against financial pressures and need strengthening.
* *Improved management of risks arising from interactions among firms and with the real economy*: The authorities need better information and means of managing interconnections between financial institutions and between the financial system and the real economy.
* *Banks should not be too big or complex*: The size and structure of the financial system needs to be compatible with maintaining financial stability.
* *Clear principles for public safety nets*: Where self-protection fails, a safety net is needed that encourages prudent behaviour and contains risks to the public finances.

The financial system should be capable of absorbing shocks from the economy and from financial markets rather than generating them. It also needs to be much better able to support economic activity on a sustainable basis, without relying on large-scale publicly funded support to weather shocks. This will require fundamental changes to the way the financial sector is regulated, supervised and manages its own affairs.

This section sets out five areas where the Bank believes change is needed, though it is by no means an exhaustive list of all reforms that are required. The Bank will continue to develop this thinking in future *Reports* and in speeches.

*Stronger market discipline (Section 3.1) through:*

* richer, more consistent and more timely disclosure, including intra-period data and more granular information on balance sheet risks;
* creating a credible threat of closure/wind-down for all financial firms; and
* risk-based, pre-funded deposit insurance.

*Greater self-insurance: Financial institutions’ own resources should be the first line of defence against financial pressures and need strengthening (Section 3.2) through:*

* larger, higher-quality capital buffers consisting of common equity;
* larger liquidity buffers comprising high-quality government bonds;
* realistic and tested contingent funding and capital plans;
* firms developing wind-down plans; and
* more effective cross-border co-operation on crisis management.

*Improved management of risks arising from interactions among firms and with the real economy (Section 3.3) through:*

* better information on connections between firms in the financial network;
* capital and liquidity buffers gauged to firms’ systemic importance;
* more realistic stress testing that factors in feedback effects from firms’ responses to shocks;
* expansion of the use of central counterparties for the clearing of vanilla over-the-counter (OTC) instruments;
* strengthening the structure of critical markets, including through more trading on exchange or on similar platforms;
* use of countercyclical prudential policy in order to limit the growth of financial imbalances; and
* developing an international monetary system that limits the build-up of international imbalances.

*Banks should not be too big or complex: The size and structure of the financial system needs to be compatible with maintaining financial stability (Section 3.4) through:*

* simpler, more transparent legal structures that are capable of being supervised and resolved; and
* potential changes to the structure or size of the banking system.

*Clear principles for public safety nets: Where self-protection fails, a safety net is needed that encourages prudent behaviour and contains risks to the public finances (Section 3.5) through:*

* clear principles guiding the authorities’ interventions in financial markets; and
* principles for public sector provision of capital support.

All of these initiatives are designed to improve the resilience of the financial system as a whole, not just individual firms. This systemic perspective has perhaps not always shaped policy around the world sufficiently in the past. It needs appropriate weight and influence in decision-making going forward.

Taken together, these initiatives will mean additional costs for the financial system. But these must be weighed against the costs of financial instability, in terms of its adverse impact on public finances, on wealth and on economic growth. These measures are for the medium term and must not compromise economic recovery.

#### Stronger market discipline

Stronger market discipline

Market discipline should be strengthened significantly through:

* richer, more consistent and more timely disclosures by banks;
* making the threat of closure/wind-down credible for all financial firms via resolution regimes; and
* a risk-based, pre-funded deposit insurance system.

*Market discipline should be strengthened through improved disclosure…*

In the Bank’s view, there is scope to strengthen market discipline on financial firms, thereby helping constrain their excessive risk-taking activities. Effective market discipline requires adequate disclosure by financial institutions. There is clear room for improvement in this area by financial institutions in the United Kingdom and internationally.

According to World Bank analysis,(1) prior to the crisis the United Kingdom was only middle-ranked among countries in terms of the quality of banks’ public disclosures. The lack of consistent and timely information on banks’ exposures has been a key factor undermining confidence during the crisis. Both the Committee of European Banking Supervisors and the International Monetary Fund (IMF) have highlighted this problem.

(1) See Huang, R (2006), *Bank disclosure index: global assessment of bank disclosure practices*, World Bank, September.

Table 3.A Liquidity risk disclosures for the ten largest global banks in 2008(a)(b)(c)

|  |  |  |  |
| --- | --- | --- | --- |
|  | Disclosed  every quarter | Disclosed in the middle of the year | Disclosed at the end of the year |
| Qualitative information about liquidity risk management | 2.5 | 6.5 | 10 |
| Qualitative information about liquidity risk stress testing | 0.5 | 1 | 5.5 |
| Quantitative information about liquid asset holdings | 2 | 5 | 8.5 |
| Quantitative information about maturity breakdown of liabilities | 0.5 | 1.5 | 8.5 |
| Quantitative information about counterparty breakdown of liabilities | 0 | 0 | 3 |
| Total number of banks reporting for each time period | 3 | 10 | 10 |

Sources: Bankscope published by Bureau van Dijk Electronic Publishing, published accounts and publicly available regulatory filings.

1. Based on total assets for end-2008.
2. According to the banks’ accounting years.
3. The table shows the number of banks disclosing in each category at each frequency level. A score of 0 is assigned for each category where no information was disclosed. A score of 0.5 is assigned for each category that was somewhat disclosed, defined as either partial quantitative information provided (eg maturity breakdown of some liabilities), or a somewhat developed qualitative description (eg mention that liquidity risk stress tests are conducted). A score of 1 is assigned for each category that is disclosed and well developed (eg specific description of liquidity risk stress tests conducted).

Chart 3.1 SONIA-Bank Rate spread(a) prior to UK banks’ reporting dates(b)

Basis points

30

25

20

15

10

5

+

0

–

5

10

14 12 10 8 6 4 2 0

Days to reporting date

Source: Wholesale Market Brokers’ Association.

1. Average spread on individual days prior to reporting dates between 2006 and 2008.
2. UK banks report semi-annually in June and December.

Table 3.B Enhancements to Pillar 3 supervisory review process

The Basel Committee has recently proposed revisions to existing Pillar 3 requirements to focus on the following six areas:

* + securitisation exposures in the trading book;
  + sponsorship of off balance sheet vehicles;
  + the Internal Assessment Approach for securitisations and other asset-backed commercial paper liquidity facilities;
  + resecuritisation exposures;
  + valuation with regard to securitisation exposures; and
  + pipeline and warehousing risks with regard to securitisation exposures.

Source: Basel Committee on Banking Supervision (2009).

Disclosures have been both more frequent and granular since the crisis began. The Bank believes that these higher standards should be maintained and augmented in the period ahead.

Balance sheet disclosures by UK financial institutions might usefully be more frequent — say, quarterly rather than

six-monthly. Disclosures should become more standardised, to allow for greater comparability across firms and to allow the construction of consistent system-wide aggregates. And balance sheet disclosures themselves should be both more granular and more forward looking. Particular areas for improvements would include:

* + greater disclosure on approaches to valuation of fair-value assets and the marks used;
  + more information on liquidity risk profiles (Table 3.A);
  + better disclosure of stress tests and sensitivity analyses;
  + improved disclosures on the legal structure of major financial groups and the activities and risk positions of key group affiliates; and
  + better information on exposures between financial institutions, on and off balance sheet.

The authorities should also consider requiring banks to publish period averages and highs and lows, as well as end-period data.(1) It would reduce the significance to banks of the end of the reporting period and it might reduce the adverse impact on money markets due to window dressing strategies around that time (Chart 3.1).

Longer term, the Bank encourages a debate on whether regulatory data should be disclosed to the markets. This is already standard practice in the United States and some other countries.(2) The full implementation of Pillar 3 of Basel II will provide a much richer array of data on banks’ risk exposures (Table 3.B).(3) Disclosures of such data could improve the quality of financial markets’ risk-pricing and thus the degree of discipline on banks’ risk-taking activities.

*…through creation of a credible threat of closure or wind-down…*

A second means of enhancing market discipline is by ensuring that there is a credible threat of closure or wind-down for all financial firms. If banks, shareholders or creditors are protected from losses, banks are more likely to take excessive risks and their incentives to monitor and discipline management are weakened.

1. Some high/low and period average trading book VaR data are reported quarterly. In the United States, the leverage ratio for banks is based on a quarterly average of total assets.
2. Examples of quarterly reports based on regulatory data include: by the Federal Deposit Insurance Corporation banks’ and thrifts’ balance sheets and earnings; by the Office of the Comptroller of the Currency US commercial banks’ and bank holding companies’ derivatives activities; and by the Office of Thrift Supervision thrifts’ interest rate risk.
3. The Financial Stability Board (FSB) has also recommended that firms should strengthen risk disclosures and that supervisors should improve risk disclosure requirements under Pillar 3 of Basel II.

Table 3.C Dunfermline Building Society

The Bank of England used the Special Resolution Regime (SRR) provisions of the Banking Act 2009 for the first time in the resolution of Dunfermline Building Society.

Over the weekend of 28–29 March, the Bank of England led an auction process for certain of Dunfermline’s assets and liabilities. This process saw Nationwide, as the successful bidder, acquire Dunfermline’s retail and wholesale deposits, branches, head office and originated residential mortgages (other than social housing loans and related deposits).

Dunfermline’s social housing portfolio (together with related deposits) was temporarily transferred to DBS Bridge Bank Ltd, a ‘bridge bank’ owned and controlled by the Bank of England, to provide time to reach a permanent solution. On 17 June, it was announced that Nationwide had been selected as the preferred bidder for the social housing loans and related deposits held by DBS Bridge Bank Ltd. Since its transfer to DBS Bridge Bank Ltd, the social housing business has been carried on in the usual course for its customers.

The remainder of Dunfermline’s business, including commercial loans, acquired residential assets, subordinated debt and most treasury assets, was placed into the Building Society Special Administration Process.

The Bank and the other tripartite authorities are drawing on recent experiences, including Dunfermline, to continue preparation including:

* Considering additional information relevant to resolution which it will be necessary to collect from firms on an ongoing basis.
* Enhancing information-sharing arrangements between the Bank and the FSA.
* A revised protocol for in-crisis co-ordination between the tripartite authorities to reflect the changes brought about by the Banking Act.

Table 3.D Changes to deposit insurance schemes in selected countries

|  |  |  |
| --- | --- | --- |
|  | Funding method(a)(b) | Coverage per eligible depositor, May 2009 |
| Belgium | *Ex-ante* | Increased to €100,000 |
| Germany | *Ex-ante* and risk-based premium (for voluntary schemes) | Proposed increase to  €50,000 minimum by  June 2009, and €100,000 by Dec. 2010 and abolition of co-insurance |
| Netherlands | *Ex-post* | Increased to €100,000 until October 2009 and abolition of co-insurance |
| Sweden | *Ex-ante* and risk-based premium | Increased to SEK500,000 |
| Switzerland | *Ex-post* | Increased to CHF100,000 |
| United Kingdom | *Ex-post* | Increased to £50,000 and abolition of co-insurance |
| United States | *Ex-ante* and risk-based premium | Increased to US(250,000 reverting to US(100,000 in 2014. No limit for  non interest bearing transaction accounts until 2010 |

Sources: Individual country schemes.

1. Under *ex-ante* funding, deposit insurance premia are collected regularly to contribute to building and maintaining a deposit insurance fund. Under *ex-post* funding, premia are collected to meet the concurrent funding requirements of the deposit insurer that arises from compensation payments.
2. Risk-based premia are typically adjusted to take into account premium-paying banks’ risk of failure.

Summary representation of Dunfermline resolution

|  |  |
| --- | --- |
| Assets | Liabilities |
| Originated residential mortgages Nationwide | Retail and wholesale deposits Nationwide |
| Social housing portfolio  DBS Bridge Bank Ltd | Deposits associated with social housing portfolio  DBS Bridge Bank Ltd |
| Commercial loans and mortgages  Left in administration | Subordinated debt and general reserve  Left in administration |
| Other assets  Either transferred to Nationwide/ DBS Bridge Bank Ltd or left in administration | Other liabilities  Either transferred to Nationwide/ DBS Bridge Bank Ltd or left in administration |

This summary table sets out only in general terms where the majority of each asset/liability class resides following the resolution. The size of the blocks in the table does not reflect the relative sizes of classes of assets and liabilities. In addition, the description of each asset/liability is generic and does not reflect the actual terminology in the documentation effecting the resolution.

The creation of a Special Resolution Regime (SRR) in the United Kingdom under the Banking Act 2009 has increased the chances of orderly failure of deposit-taking institutions. The way in which the Bank, working with the Financial Services Authority (FSA), resolved Dunfermline Building Society in March 2009 is arguably testament to that. Table 3.C provides more detail. It is likely that the SRR resolution of Dunfermline, which resulted in subordinated debt being left in administration, was a factor which led those institutions that held subordinated debt in West Bromwich Building Society to convert to profit participating deferred shares. This suggests that the existence of SRR tools can influence behaviour even outside a formal resolution.

But a credible threat of closure is inherently more difficult for firms which are large, complex, or which have international reach. There is also an open question in the United Kingdom about whether a different (from the normal corporate insolvency) regime is needed for non-depository institutions to ensure the continuous provision of economically significant services. For example, HMT is currently consulting on developing effective resolution arrangements for investment banks. There may also be a case for a special regime for market infrastructures that could pose a threat to stability.

*…and through risk-based premia for deposit insurance.* The UK authorities have substantially strengthened the protection of depositors since the onset of the banking crisis,

as have other countries (Table 3.D).(1) And work is under way to improve the speed of payout. This should increase depositor confidence and help to avert future bank runs. But the existence of an effective deposit insurance scheme will tend to weaken insured depositors’ monitoring incentives.

The importance of limiting this moral hazard is recognised in

(1) Deposit insurance limits have been increased and co-insurance removed. The Special Resolution Regime and Bank Insolvency Procedure, introduced under the Banking Act 2009, are designed to give depositors in a failed bank speedy access to their funds.

joint guidance issued by the Basel Committee on Banking Supervision (BCBS) and the International Association of Deposit Insurers.(1)

Charging higher deposit insurance premia to riskier banks would go some way towards correcting this distortion. These premia should be collected every year, not only following a bank failure, so that risky banks incur the cost at the time when they are taking on the risk. That would also allow a deposit insurance fund to be built up. This could be used, as in the United States and other jurisdictions, to meet the costs of bank resolutions. It would also reduce the procyclicality of a pay-as-you-go deposit insurance scheme, which places greatest pressures on banks’ finances when they can least afford it. For these reasons, the Bank favours a pre-funded, risk-based deposit insurance scheme.

#### Greater self-insurance

Greater self-insurance

Financial institutions’ own resources should be the first line of defence against financial pressures through:

* higher levels of bank capital, consisting of common equity;
* capital buffers built up in periods of strong earnings to absorb losses in times of financial stress;
* reduced reliance on rating agencies;
* larger liquidity buffers, comprising government bonds;
* contingent capital plans for accessing capital in times of stress;
* contingency funding plans, including testing use of the Discount Window Facility;
* contingent wind-down plans in the event of failure or restructuring;
* institutions providing banking services being regulated as banks; constant net asset value MMMFs should be regulated as banks or forced to convert to variable net asset funds; and
* improved cross-border crisis management arrangements.

Crisis events have revealed that the financial system needs to insure itself to a much greater extent than in the past. In part because of the existence of public insurance, banks will tend to underinsure against their own failure. And they systematically underinsure relative to the social costs of their failure. So regulation is typically required to ensure that appropriate standards of resilience are set. As a by-product, this counters the tendency for financial institutions to factor in official sector support, which distorts private risk-taking incentives.

Greater self-insurance, enforced through tighter regulation, is required for firms’ capital, liquidity and wind-down plans. The institutional scope of regulation needs also to be reconsidered.

*Aggregate levels of capital in the banking system need to rise…*

Levels of capital in the banking system need to be sufficient to ensure that banks can survive adverse economic conditions and continue to support the real economy. A clear lesson from the crisis is that banks’ levels of capital were inadequate to meet this objective and so need to increase in the medium term.

Some increase in levels of capital will be delivered as a result of improvements to the risk calibration of Basel II. For example, the BCBS has proposed changes to increase capital held against trading book exposures, including for complex structured credit products.

The Bank believes that there needs to be a fundamental reassessment of overall levels of capital held in the banking system. In the *Turner Review*, the FSA has already expressed its view that minimum capital levels should increase significantly.(2) Certainly, there are historical precedents for the banking system holding substantially higher levels of

1. Basel Committee on Banking Supervision and International Association of Deposit Insurers (2009), *Core principles for effective deposit insurance systems*, June.
2. Financial Services Authority (2009), *The Turner Review: a regulatory response to the global banking crisis*, March.

Chart 3.2 Long-run capital levels for UK and US banks(a)

Per cent

55

(b)

(c) (d)

(e)

United States

United Kingdom

(f)

(g)

50

45

40

35

30

25

20

15

10

5

0

1840 60 80 1900 20 40 60 80 2000

Sources: Berger, A, Herring, R and Szegö, G (1995), ‘The role of capital in financial institutions’, *Journal of Banking and Finance*, pages 393–430; United Kingdom: Billings, M and Capie, F (2007), ‘Capital in British banking 1920–1970’, *Business History*, Vol. 49(2), pages 139–62;

British Bankers’ Association; and published accounts.

1. US data show equity as a percentage of assets (ratio of aggregate dollar value of bank book equity to aggregate dollar value of bank book assets). UK data show risk-weighted Tier 1 capital ratios for a sample of the largest banks.
2. National Banking Act 1863.
3. Creation of Federal Reserve 1914.
4. Creation of Federal Deposit Insurance Corporation 1933.
5. Implementation of Basel risk-based capital requirements 1990.
6. From Billings and Capie (2007).
7. BBA and Bank calculations. This series is not on exactly the same basis as 1920–70, so comparison of levels is merely indicative.

Chart 3.3 Five-year CDS premia versus Tier 1 capital ratio(a)

2005 2007 CDS premia

capital than at present (Chart 3.2). The BCBS has committed

to review the regulatory minimum level of capital in 2010.

Higher returns on equity compared with debt suggest that raising the level of bank capital could be expensive for banks. But the cost should not be overestimated. As a bank raises more equity and reduces its debt, the probability of insolvency falls and with it the cost of debt. In a world of frictionless markets, the fall in the cost of debt would exactly offset the shift towards more expensive equity finance, leaving banks’ overall cost of finance unchanged (the Modigliani-Miller theorem).(1)

In practice, there are of course frictions which mean that requiring banks to hold more capital may not be costless. But some of the most important frictions may themselves be distortions. For example, the cost of debt may be less sensitive to the bank’s financial strength than it should be because of the probability which unsecured creditors attach to the bank receiving public support. As Chart 3.3 shows, there is not a strong relationship in practice between banks’ capital positions and the cost of debt (as proxied by credit default swap (CDS) premia).

*…should incorporate countercyclical buffers,…*

Capital buffers have also proved insufficient to guard against cyclical fluctuations in the economy, thereby exacerbating adverse feedbacks between the financial system and the real

5 6 7 8 9 10 11 12 13 14

Tier 1 capital ratio (per cent)

350

300

250

200

150

100

50

0

economy. Banks need to build up larger capital buffers during periods of strong earnings growth, which can then be used to absorb losses during periods of economic and financial stress.(2) From a technical standpoint, this could be achieved in many different ways — for example, through dynamic provisions (which are not technically part of banks’ Tier 1 capital) or through dynamic reserves (which are).(3) The key is that these requirements should come in addition to banks’ minimum capital requirements, with banks not allowed to ‘gear up’ on, that is leverage their balance sheet on, the additional capital they accumulate in good times.

*…need to comprise common equity alone…*

Sources: Bankscope published by Bureau van Dijk Electronic Publishing and UBS Delta (Markit Partners).

1. Sample includes 40 of the 100 largest banks in the G10 by total assets, due to data availability.

Capital should be used to absorb unexpected losses, thus enabling a bank to continue as a going concern. But over time the quality of banks’ regulatory capital has been steadily diluted, as subordinated debt and hybrid instruments have substituted for common equity. This trend has until recently been particularly evident among UK banks (Box 4).

The dilution of capital reduces banks’ ability to absorb losses. Capital needs to be permanently available to absorb losses and banks should have discretion over the amount and timing of

* 1. Modigliani, F and Miller, M H (1958), ‘The cost of capital, corporation finance and the theory of investment’, *American Economic Review*, Vol. 48, pages 261–97.
  2. This is consistent with the recommendations of the FSB in its April 2009

*Recommendations for addressing procyclicality in the financial system*.

* 1. The FSA’s *Turner Review* contains a useful discussion on this.

distributions. The only instrument reliably offering these characteristics is common equity. For that reason, the Bank favours a capital ratio defined exclusively in these terms — so-called core Tier 1 capital. This has increasingly been the view taken by market participants during the crisis, which is one reason why a number of global banks have undertaken buybacks and exchanges of hybrid instruments (Box 4).

Pre-committed capital insurance instruments and convertible hybrid instruments (debt which can convert to common equity) may also satisfy these characteristics. As such, these instruments could also potentially form an element of a new capital regime, provided banks and the authorities have appropriate discretion over their use. Taken together, these instruments might form part of banks’ contingent capital plans. There is a case for all banks drawing

up such plans and regularly satisfying regulators that they can be executed. Subordinated debt should not feature as part of banks’ contingent capital plans, even though it may help to protect depositors in an insolvency.

*…and banks should rely less on external credit ratings.* External ratings are used to determine banks’ capital requirements under the Standardised Approach of Basel II, and for securitisation exposures under the Internal Ratings Based Approach. This reduces the incentives for firms to perform their own independent internal assessment of risks. It can also result in lower than optimal levels of capital if credit rating agencies’ (CRAs) methodologies and models fail to reflect credit risk accurately. That was the case for structured finance products during the current crisis, as discussed in previous *Reports* (see, for example, pages 54–55 and Box 6 of the October 2007 *Report*).

The Joint Forum has published a stock-take of the use of credit ratings, including ways of reducing any adverse incentive effects of their use in regulation. In addition, the European Union will be introducing regulation later this year intended to deal with CRAs’ conflicts of interest, the quality of their methodologies and disclosure practices. A reduction in the use of external ratings in regulatory rules would encourage firms to improve their own due diligence and risk models. For that reason, the Bank encourages this migration.

*Firms’ resilience to liquidity risk needs to improve…*

As previous *Reports* have highlighted, and as the crisis has demonstrated, regulatory rules for liquidity risk need to be strengthened materially. The FSA’s proposals published in December represent a significant step forward.(1) But it is important that higher standards for managing liquidity risk are also agreed internationally. The BCBS took a significant step towards this goal in 2008 with the publication of *Principles for*

(1) Financial Services Authority (2008), CP08/22: *Strengthening liquidity standards*, December.

*sound liquidity risk management and supervision*.(1) It continues to pursue actively further agreement on a harmonised international standard.

*…through holding larger buffers of reliably liquid assets…*

A key in protecting banks, and the wider financial system, against acute periods of liquidity stress is the maintenance of a large buffer of high-quality, unencumbered securities that can reliably be traded or exchanged in private markets, including in stressed circumstances. In many economies, that would mean the buffer should focus on government bonds. The guidance issued by the BCBS and the FSA’s proposals for reform of liquidity regulation in the United Kingdom support this definition of the buffer, and are strongly endorsed by the Bank.

Chart 3.4 Sterling liquid assets relative to total asset holdings of UK banking sector

Percentages of total assets (all currencies)

35

Competition and credit control 1971

Broad ratio(a) Reserve ratio(b) Narrow ratio(c)

Cash ratio deposits 1981

Sterling stock liquidity regime 1996

30

25

20

15

10

5

0

1968 73 78 83 88 93 98 2003 08

Sources: Bank of England and Bank calculations.

1. Cash + Bank of England balances + money at call + eligible bills + UK gilts.
2. Proxied by: Bank of England balances + money at call + eligible bills.
3. Cash + Bank of England balances + eligible bills.

It is essential that there is no automatic link drawn between eligibility in central bank operations and definition of the regulatory liquidity buffer. A regulatory regime that defined liquid assets as those that were central bank eligible, but were not reliably liquid in private markets, would imply a reliance on central banks as liquidity providers of first resort rather than last. Knowing this, the incentives for firms to manage their liquidity risk prudently would be reduced, with a commensurate increase in the risk of financial instability.

Chart 3.4 shows a long-term decline in banks’ holding of liquid assets in the United Kingdom. The FSA’s proposals make clear that banks’ liquidity buffers have been too low and must increase substantially once normal conditions in funding markets are restored. The required size of the buffer should depend on the liquidity risk that each firm runs across its whole balance sheet. That will provide incentives for firms to manage their liquidity risk prudently — for example, to maintain a prudent funding maturity structure relative to their asset base and contingent commitments.

*…and ensuring that contingency funding plans can be used in times of stress.*

Firms should maintain contingency funding plans and should test them regularly. For example, firms should periodically turn over a meaningful share of their liquid assets buffer in the market and should test/use regularly central bank facilities such as the Bank’s Discount Window Facility (DWF). This will reduce the potential for these actions — when needed in periods of stress — to attract negative reaction in the market. These contingent liquidity plans are an essential self-insurance device and should regularly be reviewed by regulators and central banks to ensure they are up to date and operational.

*Firms should actively consider and plan for their own failure…*

The Bank believes firms should also develop and maintain contingency plans for dealing with their own wind-down or

(1) Basel Committee on Banking Supervision (2008), *Principles for sound liquidity risk management and supervision*, September.

restructuring in the event of problems. In effect, this would be asking banks to ‘write a will’. The authorities should review these plans regularly to ensure they are up to date and feasible. Resolution authorities and insolvency practitioners should specify what information they would expect to see in these plans. Firms should provide the data underlying these plans to the authorities on an ongoing basis. They should be based on information on a legal entity, rather than business line, basis and should include information that could be used by insolvency practitioners or resolution authorities in a

wind-down.

Developing contingent wind-down plans could help to incentivise firms to avoid complex group structures and discourage practices, such as not segregating clients’ assets and funds from those of the firm, that make wind-down more difficult and costly. They would force management to contemplate failure in good times and would thus encourage them to prepare better for risks. They would also provide the authorities with a richer data set with which to assess the systemic impact of a firm’s failure. Disclosing wind-down plans would mean investors would be less likely to adopt investment strategies that assume the liabilities of large banks have government support.

Chart 3.5 BIS reporting banks’ cross-border claims(a)

Percentages of world GDP(b)

120

Euro

Sterling

US dollar

Other

100

80

60

40

20

1985 87 89 91 93 95 97 99 2001 03 05 07 0

Sources: BIS locational banking statistics by residence and World Bank World Development Indicators.

1. Cross-border claims are the sums of cross-border assets and liabilities of all BIS reporting banks.
2. 2008 world GDP based on forecast by World Bank.

The *Principles for cross-border co-operation on crisis management*, agreed by the Financial Stability Board (FSB) in April 2009, recognise the need for firms to develop wind-down plans and for the authorities to review them.(1) The Bank strongly supports this initiative.

*..and robust international co-ordination arrangements are a priority.*

Cross-border banking activity has roughly doubled over the past decade (Chart 3.5). UK-resident banks in aggregate hold 50% of their assets abroad. These developments pose additional challenges for resolution. Practically, there is a need to collect and collate information from a range of foreign authorities and to co-ordinate a timely intervention involving multiple authorities, often in different time zones. Legally, different regimes may create frictions in implementing a

co-ordinated resolution. And because national authorities are each accountable to their own fiscal authorities, incentives may not necessarily be aligned. During the recent crisis, there have been renewed lessons about the importance of international co-operation.

Recommendations to address some of these challenges were made in a 2001 report by an FSF G10 Task Force on the Winding Down of Large and Complex Financial Institutions. A number of recent cases of distress at cross-border banks have highlighted their ongoing importance. Recognising this, the FSB’s *Principles for cross-border co-operation on crisis*

(1) Financial Stability Board (2009), *Principles for cross-border co-operation on crisis management*, April.

Table 3.E Financial Stability Board (FSB)(a) *Principles for cross-border co-operation on crisis management*

The FSB Principles cover three types of co-ordination arrangements:

1. Common support tools, to develop a common language/expectations that countries can draw on in preparing for and managing a crisis. As well as the principles themselves, under the FSB a group will develop: a list of key data that authorities will share; a systemic impact assessment framework; an ‘experience library’ that pools lessons from senior policymakers who have had to deal with distress in cross-border firms recently; and a generic crisis preparations template/menu that can be used when discussing specific firms.
2. Firm-specific crisis preparation discussions: relevant authorities from key countries that have an interest in a specific firm will meet at least annually to discuss the specific barriers that they might face in co-ordinating action in the event of distress at that firm. These crisis preparations groups will include supervisors, central banks and finance ministries, for each bank that has an FSB core supervisory college.
3. In-crisis co-ordination principles: in handling a financial crisis, authorities will look for internationally co-ordinated solutions that take account of the impact of the problem on other countries. They will look to share information as freely as possible, including assessments of systemic impact, from an early stage, and to discuss national measures and share plans for public statements where a fully co-ordinated solution is not possible.

The full version of the principles is available at: [www.financialstabilityboard.org/publications/r\_0904c.pdf.](http://www.financialstabilityboard.org/publications/r_0904c.pdf)

Source: Financial Stability Board (2009), *Principles for cross-border co-operation on crisis management*, April.

(a) The FSB was called the Financial Stability Forum when the principles were published.

*management* provide a systematic framework for improving cross-border preparations for a financial crisis (Table 3.E). The G20 Heads of Government agreed at their April summit that implementation of the FSB principles should begin immediately. Specifically, supervisors, central banks and finance ministries from relevant countries need to engage in

*ex-ante* discussions to understand the barriers they may face in resolving specific cross-border firms.

*Appropriate standards should be set for institutions performing ‘bank-like’ functions…*

Measures to strengthen regulation and supervision will inevitably also increase avoidance incentives. Left unaddressed, this potentially poses risks for the future. Money market mutual funds (MMMFs) and structured investment vehicles (SIVs) are just two examples from the recent crisis of entities which contributed importantly to the build-up of risk in the financial system, but were not appropriately regulated.

By offering to redeem their liabilities at par and effectively on demand, constant net asset value MMMFs in effect offer banking services to investors, without being regulated accordingly. The majority of the global industry comprises US domestic funds, with over US(3 trillion under management. During the crisis, as fears grew that these funds would not be able to redeem liabilities at par — so-called ‘breaking the buck’

— official sector interventions to support MMMFs were required. To guard against a recurrence, such funds need in future either to be regulated as banks or forced to convert into variable net asset value funds.(1)

*…and institutions posing potential systemic threats.*

At present, regulation of hedge funds or other investment vehicles is indirect, either through authorisation of investment managers or restrictions on the providers of leverage to the funds. The current debate centres on whether to enhance these arrangements — for example, by regulating hedge funds themselves directly. The overarching aim should be to give regulators the ability, directly or indirectly, to control leverage in the financial system as a whole, collect data to assess developing risks and set standards for enhanced transparency.

Direct regulation would undoubtedly cause a fundamental shift in the structure of the hedge fund and private equity industries. If it were to drive activity offshore, it could prove counterproductive to stability over the longer run. More broadly, direct regulation needs also to weigh the potential liquidity benefits that hedge funds bring to markets. A combination of regulatory reporting of counterparty exposures from the banks, allied with information on risk exposures

(1) In the United States, the Department of the Treasury has recently announced plans to strengthen the regulatory framework around MMMFs. The Group of Thirty, under Paul Volcker’s chairmanship, has recommended that MMMFs be recognised as

special-purpose banks, with appropriate prudential regulation and supervision.

Chart 3.6 Global financial network, 1985(a)

 0.003–0.03

 0.03–0.2

collected by investment management industry associations, may represent a baseline approach. The appropriate regulatory perimeter is being considered by the FSB as input to the G20 deliberations.(1)

#### Improved management of risks arising from interactions among firms and with the real economy

Improved management of risks arising from interactions among firms and with the real economy

The authorities need better information and means of managing interconnections between financial institutions and between the financial system and the real economy through:

* improved information on connections between financial institutions, including flow of funds data, and improved information on the activities of key market participants;
* common stress tests that factor in feedback effects from financial institutions’ response to shocks;
* capital and liquidity buffers gauged to firms’ systemic importance;
* countercyclical prudential policy in order to limit the growth of financial imbalances;
* an international monetary system that limits the build-up of international imbalances;
* expanded use of central counterparties for clearing financial contracts;
* more trading of key financial instruments on exchange or other well-designed and open trading platforms; and
* measures to improve the robustness of key markets.

*Better data on interconnections within the financial system are needed…*

In assessing risks across the financial system as a whole, the authorities need new and better sources of data. In particular, better data are needed on the network of exposures that exist between individual institutions. This information is not typically captured by firm-by-firm regulatory reporting systems, but is essential if spillovers across the financial system are to be identified and gauged quantitatively.

Financial interdependencies have increased over time. Charts 3.6 and 3.7 show how cross-border stocks of external assets and liabilities in 18 countries have increased

 >0.2



IND

BRA

SPN

PRT

GER

UK

FRA

ME

CAN

US

JPN

HKG

ITL

SNG

CHN

KOR

AUS

ARG

between 1985 and 2005. The strong spillovers following the failure of key firms during this crisis suggest connections between financial institutions have also increased over time. Chart 3.8 shows that certain firms within the UK financial network are particularly important to the resilience of the system as a whole.

X

The United States publishes detailed data on financial linkages between domestic and foreign residents and between different parts of the financial sector and the real economy.(2) This allows a more comprehensive assessment of global risks to the US financial system. And the high frequency of these data

Sources: BIS, IMF, OECD, UNCTAD and Kubelec and Sa (2009).

(a) Nodes represent countries and are scaled in proportion to a country’s gross external financial stocks (Total External Assets + Total External Liabilities). The thickness of the lines between the nodes is proportional to the bilateral external financial stocks, relative to the nodes’ combined GDP, ie (Total External Assets*ij* + Total External Liabilities*ij*)/(GDP*i* + GDP*j*).

Chart 3.7 Global financial network, 2005(a)

 0.003–0.03

 0.03–0.2

 >0.2

allows for a better understanding of sharp shifts in the international flow of funds, as have occurred over the past

six months (Box 2). The Bank proposes that these data should be collected across a broader range of countries and markets, to enable construction of an improved map of the domestic and international flow of funds. As well as work on UK ‘Flow of Funds’ data, part of such an initiative might ideally be

KOR



JPN

ITL

ARG

AUS

GER

PR

SNG

CAN

CHN

FRA

UK

BRA

HKG

US

SPN

IND

MEX

co-ordinated at an international level — for example, as with the BIS international banking statistics.

T There is a case for augmenting these institutional data with improved trading information from central repositories such as exchanges, clearing corporations and registries. In the

United States, industry representatives have committed to reporting credit default swaps, interest rate and equity derivatives trades in either central counterparties (CCP) or

Sources: BIS, IMF, OECD, UNCTAD and Kubelec and Sa (2009).

(a) See footnote (a) in Chart 3.6 above.

1. In the United States, the Department of the Treasury has called for national authorities to require hedge funds or their managers to be registered. The European Commission has proposed a new Directive on Alternative Investment Funds and Managers.
2. ‘Flow of Funds’ data.

Chart 3.8 Network of large exposures(a) between UK banks(b)(c)



Source: FSA returns.

1. A large exposure is one that exceeds 10% of a lending bank’s eligible capital during a period. Eligible capital is defined as Tier 1 plus Tier 2 capital, minus regulatory deductions.
2. Each node represents a bank in the United Kingdom. The size of each node is scaled in proportion to the sum of (1) the total value of exposures to a bank, and (2) the total value of exposures of the bank to others in the network. The thickness of a line is proportionate to the value of a single bilateral exposure.
3. Based on 2008 Q1 data.

Chart 3.9 Regulatory capital ratios and total assets for the 100 largest banks in G10 countries(a)(b)

Regulatory capital ratio (per cent)

20

IFRS

US GAAP

Local GAAP

18

16

14

12

10

8

6

4

2

0

0.0 0.5 1.0 1.5 2.0 2.5

Total assets (US( trillions)

Sources: *The Banker* and published accounts.

1. Bank size defined by total assets. Sample contains 97 of the largest 100 banks in the G10, due to data availability.
2. Data from end-2006 are used here to illustrate the pre-crisis relationship between capital and size.

trade repositories. As more instruments are cleared by a CCP, these data would allow an improved assessment of the

build-up of risk within key financial markets. This should be considered elsewhere.

*…with improvements in firms’ stress testing...*

Recent events have shown that firms have devoted insufficient resources to contingency planning and stress testing. One deficiency of stress testing has been the failure to test against sufficiently extreme macroeconomic outcomes. Another is the failure to take account of adverse effects arising from the behaviour of other firms in markets or via the real economy, such as banks’ tightening credit conditions.

To address these weaknesses, regulators should periodically ask groups of firms to test the impact of a prescribed, common stress scenario on their financial position. These common stress tests should consider the interactions among firms and their consequences for system-wide risk. Some of these features have been evident in the stress-testing exercises recently undertaken in the United States and the

United Kingdom.

The authorities should also engage with the industry to promote the adoption of stress-testing best practice guidelines. The proposed introduction of a new reverse stress-test requirement on firms by the FSA later this year

should promote more imaginative thinking when devising risk scenarios.(1) These stress-tests results need then to inform firms’ choices about risk appetite. The Bank strongly supports these initiatives.

*…and regulatory standards calibrated to firms’ contribution to systemic risk.*

Banks’ resilience should be commensurate with the costs that their failure would impose on the financial system and economy as a whole. To deliver that objective, capital and liquidity requirements need to be calibrated, *inter alia*, to reflect each firm’s contribution to systemic risk. Regulation should in that sense ‘tax’ the potential spillover costs that each firm imposes on the financial system and thus, potentially, the public taxpayer. Appropriately designed, such a systemic regulatory regime would help deter banks from taking on excessive risk or becoming too large or interconnected to be allowed to fail in a disorderly way.

In the past, larger banks have tended, if anything, to have lower capital ratios (Chart 3.9). This generated perverse

risk-taking incentives, especially among large, interconnected banks ahead of crisis. Switzerland now sets higher standards of resilience for especially large or significant firms, and the United States has announced its intention to do so. The next

(1) Financial Services Authority (2008), CP 08/24: *Stress and scenario testing*, December.

Chart 3.10 Asset prices and credit in the United Kingdom(a)(b)

step is to give such systemic regulation practical effect by devising an operational, internationally agreed framework.

 PNFC credit

 Household credit

 Asset price Per cent

60

50

40

30

20

10

+

0

–

10

20

*Additional tools are needed to offset procyclicality in the financial system…*

Higher levels of capital should help make banks sufficiently resilient to continue lending through a downturn. But they will not necessarily prevent the build-up of financial imbalances in the first place. The crisis has demonstrated the need to curtail the accumulation of excessive leverage across the system.

Stock imbalances were widespread in the run-up to the crisis, both domestically and internationally. Between the early 1990s and 2007, the ratio of debt to GDP has risen sharply in the United Kingdom and in other countries (see Chart A in

30

1971 75 79 83 87 91 95 99 2003 07

Sources: Bank of England, Global Financial Data Inc., Halifax, Nationwide, ONS, Thomson Datastream and Bank calculations.

1. The chart shows ratios of real asset prices, household credit and private non-financial corporate (PNFC) credit to GDP, relative to their ten-year moving averages. A positive level thus indicates above-trend growth.
2. The dashed lines show start dates for banking crises. The chart shows the secondary banking crisis, small banks crisis and the current crisis.

Chart 3.11 Global current account balances(a)

Box 7). And the subsequent unwinding of these imbalances has had adverse macroeconomic consequences (Chart 3.10).

These developments have exposed a gap between existing macroeconomic policy instruments and regulatory instruments designed to preserve sound banks. The Bank believes a set of instruments is needed to control the growth of the financial sector and its interactions with the wider economy. There is an emerging consensus among the official sector on the need for such countercyclical instruments.

As yet, however, there is no clear consensus on the precise objectives which such instruments are intended to serve. As discussed in Box 7, a variety of potential objectives and instruments of countercyclical regulatory policy are possible.(1) The successful implementation of a countercyclical regime will depend critically on its robustness and credibility. For that reason, its design and implementation should not be rushed.

*…with reform of the international monetary system to*

 Oil exporters(b)  China

 Other advanced economies

Other emerging market economies (EMEs)(c)

*prevent the build-up of international imbalances.*

The build-up of risk prior to the recent crisis was closely linked

Japan United States

US( billions

1,400

1,200

1,000

800

600

400

200

to the accumulation of large imbalances between countries (Chart 3.11). The authorities need in future to take better account of this interaction between financial institutions and the macroeconomic strategies pursued by different countries.

The international monetary system needs to be designed to ensure that countries are made responsible for the external

+ 0 implications of their actions. For example, ideally mechanisms

– would be found for placing symmetric obligations on countries

1990 93 96 99 2002 05 08

Sources: IMF *World Economic Outlook* (April 2009) and Bank calculations.

(d)

200

400

600

800

1,000

that run persistent current account surpluses or deficits — a problem identified, but not solved, at the Bretton Woods conference in 1944. Means of achieving this would include making reserve accumulation less attractive or providing collective alternatives to individual countries insuring

1. Global current account balances do not sum to zero due to errors and omissions.
2. The sum of the ten largest oil exporters in 2004: Algeria, Iran, Kuwait, Mexico, Nigeria, Norway, Russia, Saudi Arabia, United Arab Emirates and Venezuela.
3. Other EMEs includes the newly industrialised Asian economies.
4. IMF *World Economic Outlook* (April 2009) forecast for 2009 and 2010.

themselves against financial stress.

* 1. The FSA’s *Turner Review* also contains a useful discussion on possible instruments.

Chart 3.12 Interest rate swaps — SwapClear trade registration volumes by month

Number of trades (thousands)

30

New (intraday) trades Backloaded trades

25

20

15

10

5

Jan. Apr. July Oct. Jan. Apr. July Oct. Jan. Apr. 0 2007 08 09

Source: LCH.Clearnet Ltd.

Chart 3.13 Gross notional outstanding credit products(a)(b)

US( trillions

35

All CDS

Single names

Indices

Tranches

30

25

20

15

10

5

0

Nov. Dec. Jan. Feb. Mar. Apr. May

2008 09

Source: Depository Trust and Clearing Corporation.

1. Decomposes total notional outstanding values of all CDS into: (1) single names; (2) indices; and (3) tranches.
2. Data based on an estimated 90% of total CDS trades.

Chart 3.14 Lending(a) by UK banks and building societies to UK households and PNFCs(b)

£ billions

PNFCs (securitised and transferred loans) M4 lending to PNFCs (on balance sheet)

Households (securitised and transferred loans) M4 lending to households (on balance sheet)

*The use of central counterparties should be expanded…* Risks arising from connections between firms can also be addressed through the more widespread adoption of CCP clearing. CCPs typically adopt transparent and consistent counterparty risk management procedures, including in valuations and haircuts. A CCP also offers transparent participant default management processes, as was evident following the Lehman’s default. And by acting as counterparty to every trade, a CCP can reduce the multi-dimensionality, and hence uncertainty, that characterises the network of bilateral exposures in financial markets.

Central clearing can also play a role in ensuring or reviving market liquidity. By substituting its own credit standing for that of market participants, a CCP, by offering prudent but wide access, can facilitate anonymous trading by eliminating name-specific credit risk. This can aid market liquidity and efficiency, increasing the range of counterparties who may trade with each other and reducing the constraints imposed by bilateral trading limits.

The benefits of central clearing are maximised for standardised products with liquid secondary markets (Box 8). There is some evidence that trading in certain markets has recently shifted to CCP clearing where it has been available. For example, the value of OTC interest rate swaps cleared through

LCH.Clearnet Ltd’s SwapClear has increased, including the backloading of existing contracts (Chart 3.12).

Going forward, the authorities may need to be more active in facilitating, and where necessary in managing, the transition from bilateral to central clearing in markets where CCP clearing is warranted but product standardisation is not yet sufficiently advanced. This would include a range of OTC instruments, both cash and derivatives (Box 8). A commitment to central clearing can act as a catalyst for greater product standardisation and fungibility, which in turn can lead to better market liquidity. Recent US initiatives are a good case study of this approach and the Bank supports them.

1990 92 94 96 98 2000 02 04 06 08

Sources: Bank of England and Bank calculations.

2,500

2,000

1,500

1,000

500

0

The benefits of central clearing are smaller for bespoke contracts. In those circumstances, it is important that bilateral clearing arrangements are transparent and robust. Much has already been achieved on operational standards and electronic trade confirmation for OTC derivatives. Portfolio compression services in certain markets also appear to have reduced the size of bilateral exposures (Chart 3.13). But more work should be done in this area, particularly by requiring greater, more regular and more consistent collateralisation of exposures when trading OTC products.

*…and continuity of key financial markets needs to be assured…*

1. Lending covers loans, advances and securities held by banks and building societies, all in sterling only. Data are not seasonally adjusted.
2. Private non-financial corporations.

Key markets should be more resilient in times of stress, without the need for public intervention. In the recent crisis, a

#### Box 7

The objectives and instruments of countercyclical regulatory policy

Recent events have exposed a gap in policy frameworks in the United Kingdom and other countries. Monetary policy was aimed at stabilising inflation through balancing aggregate supply with demand. Microprudential policy was focused on the regulation and resilience of individual firms with the aim of protecting depositors. Neither policy focused explicitly on the build-up financial imbalances. There is broad consensus that this gap needs to be filled by a ‘macroprudential’ toolkit. There are a range of important dimensions to macroprudential policymaking, as discussed throughout this *Report*, which could address the resilience of the system as well as the

build-up of imbalances both across the system and over time.

This box discusses instruments that could deal with the build-up of financial imbalances in one of these dimensions, namely over time.

Between 2000 and 2007, the ratio of private credit to GDP in the United Kingdom grew by around 45% (Chart A). During the same period, major UK banks’ balance sheets roughly trebled in size. Without a policy instrument to exert influence over the financial system as a whole, vulnerabilities were allowed to build up. In dealing with this problem, authorities could use countercyclical regulatory instruments (CRI) to moderate excessive growth in the financial sector and its interactions with the real economy.

Chart A Ratio of private credit to GDP in selected countries(a)

Ratio

2.5

sector, a key first step is for the authorities to determine the objectives which the new instrument (or instruments) is intended to serve. Second, a set of criteria for assessing the suitability of various instruments in achieving these objectives must be established. Only then does it make sense to consider the third step, the appropriate institutional arrangements for the operation of instruments.

##### Objectives

Clarity over the objective of CRIs is an essential first step in the design of a new policy framework. To date, however, such an assessment has largely been absent from the debate. In considering objectives, there is a useful distinction to be drawn between measures aimed at increasing the resilience of individual banks and those aimed at protecting the economy from excessive risk-taking in the financial sector.

Changes designed to increase resilience speak to an augmentation of the traditional objective of prudential regulation, which is to reduce the likelihood of individual bank failure. The application of CRIs to meet this objective would make banks in future more resilient against cyclical variations in the economy. An example of an instrument which could meet this objective is the Spanish policy of dynamic provisioning (see, for example, Box 6 of the October 2008 *Report*).

A broader objective of CRIs would be the protection of the real economy from financial imbalances. Recent events have highlighted the vulnerabilities created when credit supply is allowed to grow unmoderated. As such, instruments could be used to dampen excessive growth in credit, thereby reducing the potential for undesirable macroeconomic feedback

effects when the credit cycle reverses. With this more ambitious objective, the real economy would, to a degree, be insulated against shocks emanating from within the financial system.

Germany

Switzerland

United Kingdom

United States

Spain

2.0

1.5

1.0

0.5

The first objective does not necessarily ensure that the second, more macro-oriented, objective would be met. In other words, requiring banks to build up buffers in good times to protect them in a future downturn may not be a sufficient condition for controlling the systemic implications of financial imbalances.

##### Instruments

1960 64 68 72 76 80 84 88 92 96 2000 04

Source: World Bank.

0.0

##### Categorisation

One way of categorising CRIs is by their precise sphere of

1. Private credit defined as claims on the private sector by deposit money banks and other financial institutions. It excludes credit issued to governments and public enterprises. The ratio is designed to measure the activity of financial intermediaries in channelling savings to investors. Measured on real (deflated) basis.

The design of a countercyclical regulatory policy framework should ideally occur in three stages. Drawing on the analysis of underlying frictions and market failures in the financial

influence within the financial system. A number of tools target components of individual bank balance sheets, using restrictions on either prices (p) or quantities (q) (Table 1). But, in principle, these restrictions need not be applied solely to banks. Controls could be widened beyond banks to include certain non-bank financial institutions.

Table 1 Instruments targeting the size and composition of bank balance sheets

q Gross quantity: Direct controls on the level or growth of lending.

|  |  |  |
| --- | --- | --- |
| Assets |  | Asset mix/quality: Concentration limits, reserve requirements, maximum loan to value/loan to income ratios. |
| p | Controls on lending rates. |
| Liabilities | q | Gross quantity: Direct controls on the level or growth of liabilities. |
| Debt mix/quality: Structural funding limits. |
| Debt/equity structure: Various types of capital requirement can constrain the structure of bank liabilities, including risk-weighted capital requirements, leverage ratios, dynamic provisioning, and capital requirements which are linked to the growth of certain lending concentrations. |
| p | Controls on deposit rates. |

Other instruments target financial market behaviour — for example, minimum requirements for initial margins and haircuts for over-the-counter derivatives and securities financing transactions. Existing margining practices tend to be procyclical. Enforceable minimum margin requirements that are more stable across the cycle, or even countercyclical, would provide a constraint on the growth of trading books during the upswing.

Finally, an instrument could target aggregate debt directly — for example, through a tax levied on any type of debt, at issuance or on interest payments.(1) This could be varied in a countercyclical way to exert some degree of control over the aggregate credit cycle.

##### Assessing the instruments

CRIs can be assessed against a set of desired properties, including:

* Effectiveness — The effectiveness of a CRI depends on the strength and resilience of the link between the instrument and financial imbalances. For example, although countercyclical capital requirements appear to be a popular candidate instrument, the link between required capital and credit availability is far from well established.
* Minimal economic distortions — A CRI will inevitably lead to some degree of distortion to financial sector behaviour and the allocation of credit within the economy. There is an inherent tension in separating unsustainable credit growth from innovation-driven expansion. Under an effective countercyclical regulatory policy, some marginal borrowers such as low-income households or small firms may be denied access to credit in an

economic upturn.

* Resilience to regulatory arbitrage — The resilience of the instrument to cross-sector and cross-border arbitrage is of special importance. Historical experience suggests that there will inevitably be strong incentives to avoid regulatory

rules by moving business outside the regulatory boundary, whether drawn in institutional or geographic terms.

* Ease of implementation — A major operational difficulty will be to judge the economy’s position in the credit cycle and to calibrate use of the instrument accordingly. The cross-border nature of banking could compound this problem. Banks operate in many countries and none of those countries will have perfectly aligned credit cycles.

##### Other practical issues

Several other practical issues are relevant to the design and implementation of a set of CRIs, including:

* Single or multiple instruments — As authorities analyse the merits of different instruments, they should consider whether there should be a single CRI or a framework of multiple instruments in which each contributes incrementally to the objective.
* Rules or discretion — Another issue is whether the operation of the instrument should be left to the discretion of authorities or achieved through a set of rules which are applied quasi-mechanically. Rules are effective as a

pre-commitment device for policymakers. But the subjectivity involved in the evaluation of credit conditions may favour discretion. The principle of ‘constrained discretion’, where broad rules are defined before the application of discretion, is used in monetary policy and may well be the best approach.

##### Conclusion

Clearly, there is a formidable set of issues that needs to be resolved in the design and implementation of CRIs. Work aimed at mitigating procyclicality in the financial system is being undertaken internationally in fora such as the Financial Stability Board and the Basel Committee on Banking Supervision. Past experience suggests that even carefully considered regulatory interventions can have unexpected consequences — for example, the credit controls used in the 1960s and 1970s led to disintermediation of the banking sector. This suggests that the process this time should not be rushed.

(1) See Jeanne, O (2008), ‘Dealing with credit booms and busts: the case for prudential taxation’, available at [http://econ.jhu.edu/people/jeanne.](http://econ.jhu.edu/people/jeanne)

Chart 3.15 Global issuance of asset-backed securities(a)

US( billions 1,000

Prime RMBS(b) Sub-prime RMBS CMBS(c) Other ABS(d)

Total

900

800

700

600

500

400

300

200

100

2005 06 07 08 09 0

Source: Dealogic.

1. Bars show non-retained issuance proxied by issuance eligible for inclusion in underwriting league tables. Line includes retained issuance proxied by issuance not eligible for inclusion.
2. Residential mortgage-backed securities.
3. Commercial mortgage-backed securities.
4. Other asset-backed securities. Includes auto, credit card and student loan ABS.

Table 3.F Industry initiatives to increase transparency in the securitisation market

Nine European and global trade associations announced in July 2008 the following initiatives to increase transparency in the European securitisation markets, in response to the European Council of Finance Ministers’ call, in their 4 October 2007 Roadmap, to ‘enhance transparency for investor, markets and regulators’.

* Increasing transparency in the reporting of securitisation exposures under the capital requirements directive Pillar 3.
* Organise comprehensive, frequent and relevant statistical data: new securitisation data report.
* Asset-backed commercial paper issuer disclosure code of conduct/principles.
* Term securitisation issuer transparency and disclosure principles.
* Opening access to transaction information.
* Development of industry data portals.
* Residential mortgage-backed securities and collateralised debt obligation issuer/manager directories on the European Securitisation Forum’s website.
* Improve standardisation and digitisation of reporting templates and granularity of information.
* Standardising definitions.
* Developing investor credit assessment and valuations principles.

Source: Executive Summary of the *Ten industry initiatives to increase transparency in the securitisation market*, 2 July 2008. Available at [www.europeansecuritisation.com/dynamic.aspx?id=1518.](http://www.europeansecuritisation.com/dynamic.aspx?id=1518)

range of capital markets have been impaired. This has required extraordinary interventions by the authorities to reinvigorate them, including in the United Kingdom, the Asset Purchase Facility (APF); in the euro area, the ECB’s covered bonds programme; and in the United States, the Federal Reserve’s Commercial Paper Funding Facility and the Term Asset-Backed Securities Loan Facility.

No one structure would have necessarily ensured robust liquidity in all markets. In some cases, exchanges with their central limit order books represent the best trading structure to ensure continuous liquidity. For example, it is worth considering whether liquidity of corporate bond and

asset-backed securities markets might be improved if these instruments were traded on exchange.

Exchange trading may be less suitable for financial products that are infrequently traded. For these products, formalised electronic trade platforms, as well as electronic broking services or electronic auctions, may be more important. In less liquid markets still, dedicated market makers can play an important role if they have the incentive to carry on in all conditions. Many modern exchanges are hybrids, offering different trading arrangements that reflect different products’ trading characteristics. Conflicting interests between market participants, and the potential for systemic disruption if these markets fail, suggest the authorities might play a more proactive role in shaping future trading infrastructures.

*...including measures to improve the robustness of securitisation markets.*

Securitisation has played a significant role since around 2000 in channelling capital from money market funds, hedge funds, insurance companies and other non-bank lenders to the real economy. Chart 3.14 shows that the proportion of lending to private non-financial corporations and households via

asset-backed securities (ABS) has risen to 20% since the start of the century. But since the onset of the crisis, securitisation markets have effectively shut and issuance has collapsed (Chart 3.15).

Specific measures are needed to ensure continuity of market functioning in the future. First, there needs to be greater transparency, with standardisation of core parts of the documentation used in ABS transactions. Table 3.F describes some of the industry-led measures which have been undertaken to address this problem. There is also a need to reduce end-investors’ overreliance on external credit ratings, to ensure independent due diligence on securities.(1)

(1) The Group of Thirty has made various recommendations which are intended to restore confidence in securitisation markets and improve transparency in structured product markets.

Chart 3.16 Concentration of domestically owned banking sector(a)(b)(c)

Per cent

Sources: *The Banker*, Bankscope published by Bureau van Dijk Electronic Publishing and Bank calculations.

Switzerland

Ireland

France

United Kingdom

Italy

Australia

Spain

Canada

Japan

United States

Germany

100

80

60

40

20

0

#### Banks should not be too big or complex

Greater market discipline, self-insurance and a systemic focus to regulation and infrastructure design and use would increase the resilience of the financial system. Another important question, both for effective *ex-ante* regulation and crisis resolution, is the appropriate structure and size of banking groups. A number of commentators have drawn attention to problems caused by the size and concentration of banking systems in some countries. Balance sheet size may reduce the number of tools available to the authorities to resolve a bank

Banks should not be too big or complex

The size and structure of the financial system needs to be compatible with maintaining financial stability through:

* simpler, more transparent, legal structures that are capable of being supervised and resolved; and
* potential changes to the structure or size of banks to ensure they can be effectively supervised and wound up.

— for example, there may be fewer private sector firms able to provide necessary support. This is a particularly relevant consideration when banking sectors are both large and concentrated, as in the United Kingdom (Charts 3.16 and 3.17).

That puts a premium on ensuring large firms are not too complex. Complex legal structures can impede orderly resolution in a number of ways. Some large, complex banks have over 2,000 distinct legal entities across different countries. The legal structure of a banking group is important in a crisis because it is legal entities, not business functions, that go into insolvency. Because of that, the resolution authorities need to have access to information on a legal entity basis. But firms sometimes do not produce data in that form, given their day-to-day focus on business functions. That

1. Share of the three largest domestically owned banks in total domestically owned banking sector assets. This includes assets of domestic banks held abroad.
2. End-2007, except in the United Kingdom, which is at end-2008.
3. Data for all countries except the United Kingdom are from *The Banker’s* ranking of the world’s largest 1,000 banks by assets. This measure will underestimate the size of banking systems that have a large proportion of banking sector assets outside of the list. The UK data are from Bankscope and include all banks and building societies.

Chart 3.17 Consolidated banking group assets relative to GDP by nationality of ownership(a)(b)(c)

Percentage of annual GDP

1,000

800

600

400

200

0

Switzerland

United Kingdom

Ireland

France

Germany

Spain

Japan

Australia

Canada

Italy

United States

Sources: *The Banker*, Bankscope published by Bureau van Dijk Electronic Publishing, International Monetary Fund and Bank calculations.

1. Total consolidated banking group assets for domestically owned banking sector only. This includes assets of domestic banks held abroad.
2. End-2007, except for the United Kingdom, which is at end-2008.
3. Data for all countries except the United Kingdom are from *The Banker’s* ranking of the world’s largest 1,000 banks by assets. This measure will underestimate the size of banking systems that have a large proportion of banking sector assets outside of the list. UK data are from Bankscope and include all banks and building societies.

needs to be addressed.

*Authorities must ensure that groups providing economically critical functions are capable of being supervised and*

*resolved.*

Authorities, domestically and internationally, should consider whether they need more actively to influence or constrain the future size and structure of the system to support stability. It has to be possible to supervise effectively institutions that pose greater risks to the economy or the taxpayer in the event of failure and to resolve them if need be in the event of severe distress. Possible measures could include limiting the scope of banks’ businesses to a narrower range of relatively low-risk activities, or imposing higher capital and liquidity charges on institutions that pose greater risks to the economy or taxpayer in the event of failure. Such measures ought to go hand in hand with improved resolution powers to wind down large and complex financial institutions in an orderly manner.

Determining the optimal policy mix poses major challenges, including how to determine the boundary between functions and how to prevent activities beyond any perimeter themselves becoming a threat to stability, but merits further debate internationally.

#### Box 8

Expanding the use of central counterparties

There are a range of potential costs and benefits from central counterparty (CCP) clearing. Recent events have demonstrated some of the benefits, including following the default of Lehman Brothers, a major market participant.

This raises the question of whether the use of CCP clearing should be expanded. In the past, CCP clearing houses have typically served liquid markets in vanilla contracts and where transacting incurs significant counterparty credit risk. The best examples of this are standardised derivatives markets, where participants commit to make and receive future,

state-dependent payments that can be large and long-dated.

These factors can give rise to significant counterparty credit risk, which is unrelated to the risks that market participants seek to hedge or speculate on through the derivatives contract. A CCP can monitor and manage this counterparty credit risk over the life of the contract, ensuring that positions are marked-to-market and guaranteeing contract performance.

Some CCPs also serve markets where counterparty credit risk is negligible. These include secondary markets for third-party obligations, including equities and some debt securities. In these cases, the key benefits of a CCP can include a reduction in cash and physical settlement exposures through multilateral netting. A CCP also facilitates anonymous, exchange-based trading by eliminating name-specific credit risk.

CCP clearing has traditionally limited itself to exchange-traded products. However, authorities in the United States and Europe — in conjunction with market participants — have recently announced their intention to expand the use of CCPs for the clearing of over-the-counter (OTC) derivative products.

##### Expanding CCP clearing for OTC derivatives

Table 1 sets out the size of some key OTC derivative markets. While the notional value aggregates the reference amounts for each outstanding contract, the gross market value better reflects the risk transferred through these contracts. It is the absolute sum of all positive and negative market values of outstanding contracts.

Interest rate swaps are by far the largest category of OTC derivatives. This market has been served by a CCP operated by LCH.Clearnet Ltd (Chart 3.12) since 1999. A range of other derivatives markets are also currently CCP cleared. Greater use of these services — by existing members, through expanding membership, or by broadening the product range — could increase the proportion of CCP-cleared trades further.

Table 1 Outstanding amounts of derivatives(a)

|  |  |  |
| --- | --- | --- |
| )US billions | Notional | Gross |
| Interest rate  Interest rate swaps | 328,114 | 16,573 |
| Options | 51,301 | 1,694 |
| Forward rate agreements | 39,262 | 153 |
| Total | 418,678 | 18,420 |
| Foreign exchange  Forwards and foreign exchange swaps | 24,562 | 1,732 |
| Currency swaps | 14,725 | 1,588 |
| Options | 10,466 | 597 |
| Total | 49,753 | 3,917 |
| Credit default swaps  Single-name instruments | 25,730 | 3,695 |
| Multi-name instruments | 16,138 | 1,957 |
| Total | 41,868 | 5,652 |
| Equity  Forwards and swaps | 1,632 | 338 |
| Options | 4,862 | 775 |
| Total | 6,494 | 1,113 |
| Source: Bank for International Settlements. |  |  |
| (a) Amount outstanding in December 2008. |  |  |

The settlement of foreign exchange transactions has received much attention from the authorities and the industry in recent times, culminating in the establishment of CLS Bank.

Relatively less attention has been paid to pre-settlement risks. As foreign exchange forward and swap contracts generally involve a two-way payment obligation through the exchange of different currencies, pre-settlement risks can be limited.

But they can be important for high-value or long-lived contracts. Further investigation into the potential benefits of expanding CCP clearing in these markets is warranted.

Credit default swaps (CDS) based on indices were cleared through ICE US Trust’s CCP service for the first time in March. Expansion of CCP clearing to other index products — as well as CDS referencing single-name index constituents — is expected. These developments are an example of products that may have become sufficiently standardised to move into CCP clearing arrangements. Care will need to be taken to ensure that such expansion is limited to suitably liquid instruments, particularly in the case of single-name contracts which can have jump-to-default risks and so demand very high margin requirements. That underlines the vital significance of effective risk management by the clearing houses.

##### Expanding CCP clearing for cash markets

Unlike derivatives markets, cash markets generally give rise to limited counterparty credit risk. Principal risk can be eliminated through delivery-versus-payment settlement.

Replacement cost risk — the risk that a trader will need to

replace a failed transaction following a counterparty’s default

— is small for short settlement periods. A CCP can probably help to manage this residual replacement cost risk through prudent risk management and novation, by which the CCP substitutes itself as counterparty to the transaction.

A range of cash markets are supported by CCP clearing. This includes many equities markets, as well as markets for sovereign debt securities and repo transactions. These products tend to be standardised, liquid and traded across electronic platforms and exchanges.

In contrast, the markets for commercial paper and corporate debt are not generally supported by CCP clearing. These products can be highly customised, in terms of maturity, seniority, collateralisation and call provisions. The market might debate whether a CCP — coupled with greater transparency and appropriate trading arrangements — could help to underpin liquidity in these markets.

There are also some markets where CCP clearing is likely to provide little benefit due to the intrinsic characteristics of the product. Unsecured money markets and loans have not had ready secondary markets, within which a CCP could act to mitigate counterparty credit risk arising from the transfer of third-party obligations. In these cases it is important that ready alternatives — such as repo markets — are robust and supported by appropriate post-trade infrastructures.

The integrity and soundness of CCP clearing houses will be vital as they expand the scale and range of markets cleared. As overseer of the payments systems embedded in clearing houses, the Bank will work with the FSA and international counterparts to ensure that this is the case.

#### Clear principles for public safety nets

Clear principles for public safety nets

Where self-protection fails, a safety net is needed that encourages prudent behaviour and contains risks to the public finances through:

* clear principles guiding market maker of last resort interventions; and
* principles for public sector provision of capital support.

The first line of defence against financial stress should be the buffers held by firms. Where these are inadequate, the firm ought to be allowed to fail in an orderly fashion under the control of an appropriate resolution regime. Even with these measures in place, however, there may be situations where public sector support is needed as the ultimate backstop. To be effective and time-consistent, these public sector insurance frameworks need to be robustly designed and transparent.

That, together with appropriate self-insurance, guards against risk-taking incentives becoming distorted.

*Enhancing the framework for central bank liquidity insurance…*

In the United Kingdom, the Bank has introduced substantial changes to its framework for providing liquidity insurance to the banking system.(1) The Bank confirmed that it stands ready, via its public facilities, to lend against a wide range of collateral, subject to haircuts and other terms, notably through its DWF and long-term repos.

As with other types of public insurance, this must not encourage imprudent behaviour on the part of banks. The Bank aims to deal with this risk through appropriate pricing and collateral haircuts. It is also important that banks know that these public facilities will not be available when there is serious doubt about their viability or solvency.

It is important that banks regularly use the Bank’s DWF as part of their contingency planning, including using the government securities which they borrow from the Bank to generate liquidity by repoing them out. This will reduce the risk that, when they actually need to use the DWF in periods of stress, they encounter operational problems or attract negative reactions in the market. The Bank also believes that all banks and building societies should sign up for the DWF.

*…central banks acting to maintain liquidity in key asset markets…*

The current crisis has illustrated the problems that can result from a severe reduction in liquidity in important markets. For example, through its APF, the Bank aims to catalyse liquidity in sterling corporate markets. These types of intervention take central banks into largely uncharted territory.

That underlines the importance of having a set of clear principles to guide these actions in future.(2) As well as consistency with monetary policy, these might include that

1. *The development of the Bank of England’s market operations*, Bank of England, October 2008.
2. Tucker, P (2009), ‘The repertoire of official sector interventions in the financial system: last resort lending, market-making, and capital’, speech at the

Bank of Japan 2009 International Conference on Financial System and Monetary Policy Implementation, 27–28 May, Tokyo, available at [www.bankofengland.co.uk/publications/speeches/2009/speech390.pdf.](http://www.bankofengland.co.uk/publications/speeches/2009/speech390.pdf)

the central bank balance sheet should not assume large amounts of risk. The interventions should take place at prices which discourage use when normal market conditions return

— for example, by purchasing at prices below fundamental values. That is consistent with these interventions being catalytic in nature, aiming to help kick-start a market rather than replace it. The Bank’s APF schemes were designed with such principles in mind.

*…and capital provider of last resort.*

There may be situations where the authorities need to provide capital support to the financial system — a capital provider of last resort (COLR). At a high level, the principles for COLR could mirror those for central bank liquidity insurance: the terms of capital provision should not incentivise imprudent behaviour; COLR policies should be clear and time-consistent; and they should have a well-defined exit strategy.

One possibility is to establish a regime where the eventual cost of any COLR would be allocated back to the banking system rather than the general taxpayer. For example, the authorities could claim back the cost of any support via an insurance levy on the banking system once the crisis had safely passed. The authorities would in effect provide a bridging loan to banks in need of capital, repaid from the banking system once crisis has abated. The Bank supports further work in developing principles and a clearer framework for the operation of all of these public sector insurance schemes.(1)

(1) See Tucker, P (2009) as above.