Changes to the UK regulatory system

At the Mansion House on 16 June, the Chancellor of the Exchequer announced plans to change the system of UK financial regulation. A further statement was made by the Financial Secretary in Parliament on the following day.(1) A Government policy document for public consultation will be published before Parliament’s summer recess.

This *Report*, which was prepared largely ahead of these announcements, focuses on the Bank’s assessment of conjunctural risks and aspects of the broader international financial stability policy agenda, rather than the proposed changes to UK regulatory arrangements.

The changes will move the United Kingdom’s regulatory framework towards a ‘twin peaks’ model of financial regulation, with prudential regulation of banks separated from oversight of consumer protection and market conduct. The changes will also give the Bank a new responsibility for macroprudential regulation of the financial system. The process will be completed in 2012.

#### Prudential Regulation Authority

The Government plans to legislate to create a new Prudential Regulation Authority (PRA) as a subsidiary of the Bank to conduct prudential regulation of sectors such as

deposit-takers, insurers and investment banks. The PRA will be chaired by the Governor. The Chancellor announced that Hector Sants will remain at the FSA to oversee the transition and will become Chief Executive of the PRA and a new Deputy Governor of the Bank in due course. Andrew Bailey, the Bank’s Chief Cashier, will be Deputy in the new regulator, and will help with the transition. The Deputy Governor for Financial Stability will also sit on the PRA Board.

In addition to the PRA, there will be a new Consumer Protection and Markets Authority (CPMA), separate from the Bank, to regulate the conduct of all financial firms, including those prudentially regulated by the PRA. The CPMA will also have responsibility for the Financial Services Compensation Scheme.

The Governor will chair the FPC. Its members will include the Deputy Governors for monetary policy and financial stability, the new Deputy Governor for prudential regulation, the Chair of the CPMA, as well as external members and a Treasury representative. The Committee will be accountable to Parliament, as is the case with the Monetary Policy Committee, and to the Bank’s Court of Directors.

Speaking at the Mansion House, the Governor said: ‘It is not difficult to see what role such a macroprudential regime might have played in the run-up to the crisis. A progressive tightening of capital standards, for example, would have helped rein in the near-tripling of UK bank balance sheets between 2002 and 2007…But a macroprudential regime also has a key role to play in the downswing phase of the cycle.

Since 2008, credit conditions have tightened, jeopardising the recovery and, in turn, threatening renewed losses for banks. By allowing banks to draw on their macroprudential capital buffers, while credit conditions remain tight, the system is countercyclical. In other words, a credible macroprudential regime could help forestall both excessive exuberance and unnecessary caution’.

It is intended that an interim FPC will be set up by the autumn in advance of the passage of primary legislation.

#### Financial Policy Committee

The Government also announced that it will legislate to create a Financial Policy Committee (FPC) in the Bank, which will be placed in charge of macroprudential regulation. It will have responsibility to look across the economy at macroeconomic and financial issues that may threaten stability and will be given tools to address the risks it

identifies. It will have the power to require the new PRA to

implement its decisions by taking regulatory action with respect to all firms.

(1) The Chancellor’s speech is available at [www.hm-treasury.gov.uk/press\_12\_10.htm.](http://www.hm-treasury.gov.uk/press_12_10.htm)

The statement by the Financial Secretary is available at [www.hm-treasury.gov.uk/statement\_fst\_170610.htm.](http://www.hm-treasury.gov.uk/statement_fst_170610.htm)

# Overview

Since the December 2009 *Report*, markets have focused increasingly on strains placed on sovereign balance sheets. In April, concerns over Greek sovereign risk spilled over to other European countries and developed rapidly into a generalised retreat from risk-taking. Inadequate transparency about sovereign exposures led to counterparty concerns and renewed strains in bank funding markets. In response, the IMF and European authorities put in place a substantial package of support. While these measures helped to stabilise conditions, market pressures have not yet abated. EU leaders also recently announced plans to publish the results of stress tests conducted on the largest European banks; this will be another important step.

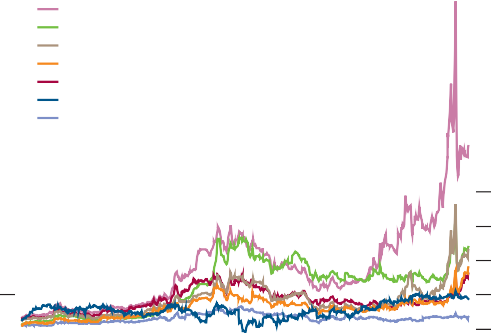
UK banks have raised their capital and liquidity buffers substantially, which has helped them weather recent tensions. But, in common with their peers, they face a number of challenges in the period ahead. UK banks need to maintain resilience in a difficult environment, while refinancing substantial sums of funding; they have a collective interest in providing sufficient lending to support economic recovery; and they will need over time to build larger buffers of capital and liquidity to meet more demanding future regulatory requirements. The new Basel regulatory regime will be agreed in the autumn. An extended transition to this new regime would enable banks to build resilience through greater retention of earnings, while sustaining lending.

A near-term challenge

Chart 1 European sovereign spreads(a)

Basis points

1,000



Greece Ireland Portugal Spain Italy

United Kingdom France

(b)

900

800

700

600

500

400

300

200

100

*Banks’ operating environment has become more challenging.* Since the December 2009 *Report*, markets have focused increasingly on strains placed on sovereign balance sheets. In April, concerns about the sustainability of the Greek fiscal position became acute and spilled over to a number of other European economies (Chart 1). Amid increased market uncertainty (Chart 2), corporate debt issuance dried up

and investors sought safer assets (Chart 3), such as US Treasuries. Concerns about banks’ sovereign debt

exposures contributed to a marked tightening in funding market conditions. In the face of heightened systemic risk, the IMF and European authorities put in place a substantial package of support measures (Table A), which helped to stabilise key markets.

Sovereign risk had been highlighted previously, including in the December 2009 *FSR* and by market participants in the Bank’s

2008 09 10

Sources: Thomson Reuters Datastream and Bank calculations.

+ 0

–

100

*Systemic Risk Survey* (Table B). But the speed with which Greece’s problems were transmitted to other countries and markets highlighted persisting fault lines in the global financial

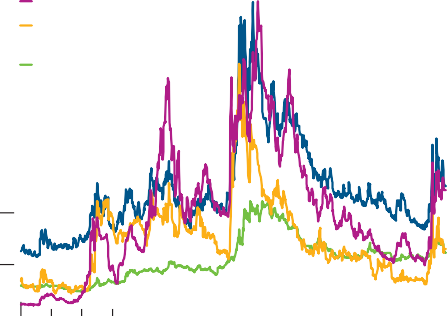
1. Spread of ten-year government bond yields over German bunds for selected countries. Data to close of business on 10 June.
2. December 2009 *Report*.

system. A lack of transparency about sovereign exposures amplified counterparty risk concerns, affecting funding

Chart 2 Market uncertainty(a)

Per cent Basis points

70



Equities (left-hand scale)

CDS premia (right-hand scale)

Interest rates (right-hand scale)

Currencies

(left-hand scale)

60

300

250

markets internationally. And strains in foreign exchange swap markets revealed the continued heavy reliance of many European banks on short-term dollar funding from wholesale markets (Chart 4).

50

40

30

20

10

0

200

150

100

50

0

2007 08 09 10

*UK banks have increased their resilience…*

UK banks strengthened their resilience during 2009. Capital increased significantly (Chart 5), with average ratios now at their highest level in more than a decade. This is a strong capital platform. In addition, leverage declined sharply

(Chart 6), reflecting equity issuance and reductions in assets in roughly equal measure. Those asset reductions were predominantly falls in intrafinancial sector exposures,

Sources: Bloomberg, British Bankers’ Association, Chicago Mercantile Exchange, Euronext.liffe, JPMorgan Chase & Co. and Bank calculations.

1. Three-month option-implied volatilities. For further details, see Chart 3.3.

Chart 3 Indicators of risk appetite(a)(b)

Standard deviations from mean(c)

3



Credit Suisse

State Street

2

1

+

0

–

1

2

3

4

2006 07 08 09 10

Sources: Bloomberg, Credit Suisse and Bank calculations.

1. Indices are adjusted so that positive numbers in both series indicate increased risk-taking and negative numbers indicate reduced risk-taking.
2. Data to close of business on 14 June 2010.
3. Mean and standard deviation calculated from 28 July 2004.

Table A European sovereign concerns timeline

Oct.-Dec. 2009 Greek sovereign debt ratings downgraded

Feb. 2010

Council of the European Union gives notice to Greece to correct its deficit by 2012

2008/2009

Recession and public sector support for banking sector lead to deteriorating fiscal positions

Oct. 2009

Newly formed Greek Government revises estimate for 2009 budget deficit from 3.7% to 12.5%

|  |  |
| --- | --- |
| Apr. 2010 ECB announces that it will keep the minimum credit rating threshold for eligible collateral at BBB- beyond 2010 | |
|  |  |
| Apr.-May 2010 Deterioration of Greek sovereign and bank funding market conditions spreads to a number of other European countries | |

including derivatives, rather than lending to the real UK economy.

But, like their peers, UK banks — as well as building societies (see box on pages 48–49) — face significant challenges. They need to remain resilient in a difficult environment, while refinancing substantial sums of funding in coming years. They have a collective interest in supporting lending, given the continued dependence of small and medium-sized businesses on bank credit and signs of more difficult capital market conditions for larger companies. And they need to plan their adjustment to tighter future regulatory requirements.

*…building up a buffer against sovereign concerns…* Although UK banks have limited holdings of sovereign debt in economies where fiscal concerns have been most acute (Section 2), they have counterparty relationships with European banking systems that have larger exposures

(Chart 7). These banks face further write-downs in 2010, according to the IMF and ECB.

If undiminished, sovereign concerns could also affect UK banks through their impact on global financial markets (Section 3). Renewed concerns about counterparty risk could further reduce the availability of bank funding. And funding strains could be exacerbated by any falls in the perceived value of government support for banks. Deteriorating investor sentiment could also trigger further falls in asset prices.

Market participants currently appear to place increased weight on such a tail scenario for asset prices (Chart 8).

Sovereign risk concerns in Europe might lead to a further shift in investors’ demand — both geographically (from European to Asian and US assets) and across the risk spectrum (from risky to safer assets). That redistribution of risk capital would weigh on prospects for growth in Europe. It would also intensify the slower-fuse risk of overheating in some emerging Asian economies (see box on pages 28–29).

IMF and European authorities announce a wide-ranging set of measures to support European financial stability

9 May 2010

ECB suspends the application of the minimum credit rating threshold for eligible Greek collateral

3 May 2010

€110 billion support package for Greece is announced with

€30 billion to be contributed by the International Monetary Fund and the remainder by euro-area Member States

2 May 2010

May-June 2010 Spain and Greece sovereign debt ratings downgraded.

Governments in Germany, Greece, Italy, Portugal, Spain and the United Kingdom announce accelerated plans for fiscal consolidation

International authorities have taken action to mitigate the immediate market consequences of perceived sovereign risks. On 9 May, the EU announced the creation of a European

Table B *Systemic Risk Survey* results: key risks to the UK financial system(a)

Stabilisation Mechanism, with the IMF providing complementary financing arrangements. In parallel, the ECB

Key risks

Risks most challenging to manage

has undertaken a range of measures, including purchases of

May 2010 Nov. 2009 May 2010 Nov. 2009

Sovereign risk and/or concerns

about public debt 69 24 43 3

Economic downturn 67 68 43 41

Regulation, taxes on banks 41 49 33 35

Funding and liquidity problems 33 35 20 30

Financial market disruption/

dislocation 28 30 20 19

Property price falls 28 27 6 5

Tight credit conditions 20 24 7 11

Household and corporate defaults 17 49 11 22

Election uncertainty 17 0 0 0

Financial institution failure/distress 15 11 11 14

Sources: Bank of England *Systemic Risk Surveys* and Bank calculations.

1. Per cent of respondents citing each risk. Market participants were asked to list (in free format) the five risks they believed would have the greatest impact on the UK financial system if they were to materialise, as well as the three risks they would find most challenging to manage as a firm. Risks cited in the previous survey have been regrouped into categories used to describe the latest data.

Chart 4 Euro-dollar basis swap rates(a)(b)

euro-area public debt and, in co-ordination with other central

banks, resumption of US dollar liquidity operations. The forthcoming stress test for European banks will be another important step.

*…and losses from legacy exposures to overextended borrowers.*

UK banks are exposed to domestic borrowers, some of whom overextended their balance sheets in the build-up to the crisis. To date, a combination of low interest rates and forbearance or restructuring of loans by banks has helped to contain stress to households and businesses. But weaker-than-anticipated growth or a pickup in market interest rates could increase financial pressures on those sectors and on banks. Corporate liquidations, including in the commercial property sector, could increase if banks become less willing or able to allow breaches in loan covenants (see box on pages 32–33).

Basis points

20



From 1 September 2008

From 1 July 2007

From 1 April 2010

+

0

–

20

40

60

80

US exposures account for around a quarter of UK banks’ foreign claims. While the US economic outlook has improved, there are downside risks to the US housing market, reflecting an overhang of supply and the potential for a rise in foreclosure rates as official sector support is unwound. That could increase losses on US household lending, where around a quarter of mortgagors are currently in negative equity (see box on pages 26–27).

0 20 40 60 80 100 120

Calendar days

Sources: Bloomberg and Bank calculations.

100

120

140

*Banks face a substantial refinancing challenge,…*

Banks internationally face a substantial refinancing challenge over the coming years, as private sector funding matures and extraordinary public support is withdrawn. Globally, banks are estimated to have at least US(5 trillion of medium to

1. Additional rate over three-month Euribor to swap US dollars, which pay three-month dollar Libor, for euros for one year.
2. Data to close of business on 14 June 2010.

Chart 5 Tier 1 capital ratios for selected European banking systems(a)(b)

Per cent

12

Average 2005–07

2008

2009

10

8

6

4

2

0

Italy Spain France Germany United

Kingdom

Sources: Capital IQ, Moody’s Investors Service, published accounts and Bank calculations.

1. Includes banks with total assets of more than US(100 billion.
2. Aggregated from individual banks, weighted by total assets.

long-term funding maturing over the next three years (Chart 9). In the United Kingdom, the largest banks will

need to refinance or replace around £750 billion–£800 billion of term loans and liquid assets by the end of 2012. That equates to over £25 billion each month on average, more than double the average monthly issuance achieved so far this year. UK banks also need to extend the maturity of their wholesale funding, around 60% of which falls due within

one year.

*…need to have credible plans in place,…*

The UK authorities are working with the UK banks to assess the individual and collective credibility of their funding strategies. In aggregate, banks might make optimistic assumptions about their ability to attract retail deposits, domestically and internationally, at a time when both they and non-banks are competing aggressively for inflows. That underlines the importance of some front-loading of efforts to term out funding, despite its relatively greater cost given the current slope of the yield curve.

Chart 6 Changes in major UK banks’ gross leverage ratio(a)(b)

Loans to non-UK households and PNFCs(d)

Loans to UK households and PNFCs(d) Average leverage

Leverage ratio

35

30

25

20

15

10

Capital

Derivatives Securities

Loans to banks and OFCs(c)

5

0

2008 Deductions 2009

Sources: Bank of England, published accounts and Bank calculations.

1. Bank of England estimates used to correct for a change in the reporting basis of loans to UK households — see Bank of England: *Monetary and Financial Statistics* (May 2009), Table A4.1 and footnotes.
2. Gross leverage is calculated as total assets divided by total equity. By accounting for derivatives positions on a gross basis, this measure best captures the risks around the associated counterparty exposures.
3. Other financial corporations.
4. Private non-financial corporations.

Chart 7 Selected BIS banks’ claims on public sectors(a)(b)

*…and support lending to the real economy,…*

Banks have a collective interest in supporting economic recovery through their lending activities. Credit availability remains tight for some sectors, despite recent improvements. And the recent retreat from risk by unleveraged investors might have increased those pressures. There is a risk that banks alleviate their own funding pressures by further constraining credit conditions for customers. That would dent economic recovery and so raise credit risk for all banks.

Over time, UK banks have the capacity to provide greater support to creditworthy customers — while meeting funding requirements and remaining resilient — by adopting more conservative retention policies. Banks have slightly reduced payout ratios. But, while profits remain buoyant, further reductions in discretionary distributions to staff and shareholders could raise substantial amounts of new capital (Chart 10).

*…during an extended transition to new regulatory requirements.*

While more prudent international regulatory standards are

Per cent

400

Spain

Portugal Ireland

Greece

Domestic(c) (left-hand scale)

350

300

250

200

150

100

50

0 Germany France United

Kingdom

Per cent

40

35

30

25

20

15

10

5

0

Spain Italy

required, the transition to the new regime should take due account of the economic environment. An extended transition would make it easier for banks to build resilience through profit retention, while sustaining lending. Lengthening the transition timetable should not, however, detract from the need to agree internationally the shape and calibration of the new Basel regulatory regime during the autumn, to reduce investor and management uncertainty.

### Safeguarding stability

*More prudent regulatory standards will be required when*

Sources: Bank for International Settlements (BIS), European Central Bank and Bank calculations.

1. Chart shows exposures of each country to the public sectors of other selected countries and to its own public sector. All claims are as a fraction of 2008 aggregate shareholder equity.
2. All claims exclude guarantees and derivatives. Claims of German banks are not adjusted for risk transfers.
3. Exposures to own public sector.

Chart 8 Market-implied probability distributions of S&P 500(a)

Density

March 2009 trough(b)

April 2010 peak(c)

June 2010

*Report*

0 500 1000 1500 2000

Index level

Sources: Chicago Mercantile Exchange and Bank calculations.

1. One year ahead. For further details, see footnote (a) in Chart 3.15.
2. Taken as 10 March 2009.
3. Taken as 23 April 2010.

*economic conditions improve.*

The Basel Committee for Banking Supervision (BCBS) is currently developing a package that will require banks to hold larger buffers of resiliently liquid assets and loss-absorbing capital. The required level of capital in the system depends on two key judgements. First, the amount of capital that banks would be expected to hold when credit supply is neither overly exuberant nor overly conservative. This must balance the costs of higher capital, such as any adverse impact on the cost of credit, against the benefits of fewer or less severe future financial crises (see box on pages 58–60). The

second judgement is the split of total capital between a credible hard minimum (below which the authorities would typically take action, such as placing a bank in resolution) and a usable buffer (Chart 11). The latter buffer should be material. As the Governor set out at the Mansion House,(1) it might also vary over the credit cycle, as part of the

(1) At the Mansion House on 16 June, the Chancellor of the Exchequer also announced plans to change the system of UK financial regulation. See the box on page 5 for further details.

Chart 9 Bank refinancing requirements internationally(a)

macroprudential toolkit. Following the passing of adverse shocks, banks could drain the buffer to absorb losses without

€ trillions

12

2010 (right-hand scale)

2011 (right-hand scale)

2012 (right-hand scale)

Banking sector assets (left-hand scale)

10

8

6

4

2

0

United

States

United Kingdom

Per cent of average annual issuance 2005–07

France Germany Italy

250

200

150

100

50

0

an unnecessary tightening of credit conditions.

*Policymakers plan to tackle fault lines in the regulatory treatment of trading activities…*

Ahead of the crisis, banks had an incentive to shift assets to the regulatory trading book where capital charges were often much lower than in the banking book. But, during the crisis, the majority of losses in banks’ trading books were linked to credit positions. The BCBS has started a fundamental review of the regulatory regime for trading assets. Two principles could usefully form building blocks for the eventual regime: consistent treatment of similar types of risk across banks’

Sources: Bank of England, Dealogic, ECB, FDIC, Fitch, SoFFin, UK DMO and Bank calculations.

(a) See Chart 4.16 for details.

Chart 10 Capital accumulation achievable through lower discretionary distributions by UK banks(a)(b)

balance sheets, irrespective of where they are booked; and

explicit allowance for the risk of swings in liquidity premia on positions that are marked to market.

*…and strengthen market discipline and risk management.*

 £5 billion  £10 billion

 £15 billion  £20 billion

Dividend to revenue ratio



2005

2007

2006

2009

0.14

0.12

0.10

0.08

0.06

0.04

0.02

0.00

Effective market discipline can contribute to a more resilient financial system. Convergence of international accounting standards would help facilitate comparisons of international banks’ financial positions. Market discipline would also be aided by improved disclosure by banks, including on the variation in key balance sheet measures during reporting periods (see box on pages 63–64). Better disclosure might have helped to mitigate strains in funding markets in recent years, which were exacerbated by a lack of information regarding banks’ exposures. Banks should also strengthen internal risk management, with treasury functions executing risk-based transfer pricing policies and not serving as profit centres.

0.2 0.22 0.24 0.26 0.28 0.3

Compensation to revenue ratio

Sources: Published accounts and Bank calculations.

1. Lines indicate staff compensation and dividend ratios that would generate various levels of retained capital, and are based on major UK banks’ 2009 results. Diamonds indicate compensation to revenue and dividend to revenue ratios for the major UK banks in various years. Diamonds for 2005–08 are not indicative of capital retained in 2005–08, as results in these years differ from the 2009 results used to calibrate the lines.
2. Compensation to revenue and dividend to revenue ratios were high in 2008, partly due to lower revenue in that year. Though the 2008 ratios are outside the limits of this chart, they are presented in Chart 4.20.

Chart 11 Varying capital buffers over the credit cycle

Capital requirements (per cent of risk-weighted assets)

Time-varying overall level

Time-varying buffer

‘Cycle-neutral’ buffer

Minimum requirement (hard floor)

*Policy action is needed to reduce the distortions created by too important to fail banks…*

Policy action is needed to reduce the structural problems caused by banks that are too important to fail (TITF). Larger UK banks expanded much more rapidly than smaller institutions in the run-up to the crisis (Chart 12) and have received disproportionate taxpayer support during this crisis. That reflected a misalignment of risks on TITF banks’ balance sheets, due to implicit guarantees on their liabilities.

Source: Bank of England.

Time

The Bank welcomes the Government’s establishment of a new independent commission to review the structure of and competition in the UK banking system. Incentives to become TITF could also be reduced by restrictions on activities and capital surcharges on institutions generating systemic risk.

And further measures are needed to ensure that banks’ uninsured creditors face a credible threat of loss. For example, there is international debate about requiring uninsured creditors to recapitalise distressed banks through an extension of the scope of statutory resolution regimes and through convertible debt instruments.

Chart 12 Liabilities of banks and building societies by size(a)

Index: 1998 = 100

900

Big

Medium

Small

800

700

600

500

400

300

200

100

0

1998 2000 02 04 06 08

Sources: Building Societies Association, published accounts and Bank calculations.

1. ‘Big’ includes Barclays, HBOS, HSBC, Lloyds TSB and RBS; ‘medium’ includes

Alliance & Leicester, Bradford & Bingley, Nationwide and Northern Rock; ‘small’ includes all current building societies except Nationwide. Based on subsample of institutions for 1998–2000.

*…and to strengthen market infrastructure.*

The crisis has underlined the importance of ensuring that emerging shifts in market structure do not result in systemic risks developing outside the banking system. For that reason, the authorities should monitor carefully the expansion of leverage in exchange-traded funds and in UCITS hedge funds that offer ready liquidity to investors. The crisis also highlighted the importance of strengthening the infrastructure supporting capital markets. Initiatives are under way to extend central counterparty (CCP) clearing. But this will only improve resilience if appropriate CCP risk management standards are in place (see box on pages 69–70). For example, holding sufficient resources to meet the default of at least the two largest member counterparties — in stressed but plausible market conditions — would help to reduce systemic risks. The ongoing review of international standards for financial market infrastructures represents an important opportunity to raise standards for the new markets.

# The provision of financial services to the UK economy

### A stable financial system is able to sustain the supply of key services to the economy even in the face of material shocks. This section reviews the performance of the financial system in delivering these core services over the past six months. Subsequent sections of this *Report* assess threats to stability in the period ahead and policy actions needed to sustain stability in the future.

Over the past six months, the provision of transactions services by banks and the key payments and settlement systems has remained resilient. Availability of credit to larger companies has improved since the crisis. But credit conditions for both smaller firms and some households remain tight. Most capital markets have improved significantly since the crisis, though recent concerns about sovereign risk have exposed some fragilities. Securitisation markets are not transferring risk, though insurance markets are functioning normally.

Chart 1.1 Sight deposits with UK banks(a)

Per cent 20

Private non-financial corporations (PNFCs)

Households(b)

15

10

5

+

0

–

5

The Bank has framed the purposes of its financial stability role

in terms of contributing to the maintenance of critical services that the financial system performs in the wider economy:(1) providing the main mechanism for paying for goods, services and financial assets; intermediating between savers and borrowers by channelling savings into investment through bank credit, debt and equity instruments; and helping to insure against and disperse risk across the system. The financial crisis impaired some of these functions, particularly credit intermediation services. This section reviews performance over the past six months.

2006 07 08 09 10 10

Source: Bank of England.

1. Twelve-month growth rates.
2. Includes individuals, unincorporated businesses and non-profit institutions serving households.

Chart 1.2 Velocity of transactions and savings money(a)

Indices: 1990 = 100

200

Savings(b)

Transactions(c)

Notes and coin

150

100

1977 79 81 83 85 87 89 91 93 95 97 99 2001 03 05 07 09 50

Sources: Bank of England and ONS.

1. Velocity is nominal GDP divided by money.
2. Savings is M4 excluding intermediate OFCs minus notes and coin. Intermediate OFCs are: mortgage and housing credit corporations; non-bank credit grantors; bank holding companies; and those carrying out other activities auxiliary to financial intermediation.
3. See footnote (2) on this page.
   1. Payment, settlement and transaction services

*Bank transaction services have been sustained…*

Banks, and in particular bank deposits, are a key source of transactions services to households, corporates and investment managers. During the financial crisis, there was a sharp slowdown in growth in sight deposits held at UK banks (Chart 1.1), which may have partly reflected concerns about UK banks’ viability. More recently, deposit growth has recovered. While holdings of cash have risen relative to GDP, the trend in transactions money velocity — measured as nominal GDP divided by transactions balances — has remained relatively stable in recent years, especially when compared with the financial liberalisation of the 1980s (Chart 1.2).(2)

1. Bank of England *Annual Report 2010*.
2. Transactions balances are measured using the Divisia index for money, which weights the growth rate of each of the M4 component assets according to the extent to which they provide transaction services.

Chart 1.3 Spreads on sight deposit rates(a)

Percentage points

1

PNFCs

Households

+

0

–

1

2

3

4

2006 07 08 09 10

Source: Bank of England.

(a) Effective sight deposit rates minus three-month Libor.

Chart 1.4 Advertised current accounts

 With overdrafts (right-hand scale)

 Without overdrafts (right-hand scale)  Of which pay interest(a) (left-hand scale)

Banks are offering relatively favourable terms on transaction accounts as they seek to attract deposits. The spread between interest rates on sight deposits and Libor narrowed markedly from October 2008 to September 2009 and has remained steady since then (Chart 1.3). The availability of current accounts with overdraft facilities is similar to before the crisis, although fewer accounts now pay interest (Chart 1.4).

*…and payment and settlement services have been resilient.* The provision of transactions services by banks is also reliant on the smooth functioning of critical payment systems. In the United Kingdom these include CHAPS, CLS and CREST, and Bacs and the Faster Payments Service (FPS) retail systems.

During 2010, these payment systems have continued to exhibit high levels of operational availability (Table 1.A). In May, CLS — which eliminates principal risk in its settlement of member banks’ foreign exchange transactions — handled spikes of over twice average volumes, reflecting higher foreign exchange market volatility associated with the recent sovereign debt concerns.

Banks use overnight sterling money markets, as well as

100 Per cent

80

60

40

20

0

Number of accounts

125

100

75

50

25

0

reserves at the Bank of England, to manage day-to-day fluctuations in customers’ transactions needs. Recent strains in some European sovereign debt markets have tested money markets but have not resulted in overnight markets becoming disorderly. Overnight market interest rates have remained close to Bank Rate.

Banks’ reserves account balances have risen sharply since early 2009 as one result of the Bank’s programme of asset purchases, to around £150 billion (Chart 1.5). In consequence,

a side effect of the Bank’s monetary interventions is that banks

2006 07 08 09 10

Sources: Moneyfacts Group plc and Bank calculations.

(a) Percentage of current accounts with overdrafts.

Table 1.A Selected payment systems(a)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Bacs | CHAPS | CLS | CREST | FPS |
| Average daily volumes 2010 to May | 22,405 | 125 | 782 | 191 | 1,615 |
| (thousands) 2007–09 | 22,221 | 134 | 484 | 219 | 945 |
| Average daily values 2010 to May | 16.0 | 220 | 2,657 | 536 | 0.62 |
| (£ billions) 2007–09 | 15.2 | 263 | 2,036 | 514 | 0.35 |
| Operational availability 2010 to May 100.000 | | 99.988 | 99.815 | 99.997 100.000 | |
| of core infrastructure 2007–09 99.987  (per cent) | | 99.848 | 99.753 | 99.468 99.999 | |

Sources: Bank of England, CLS Bank International, Euroclear UK & Ireland, UK Payments Administration and Bank calculations.

(a) Operational availability shows percentage of time systems have been available to process transactions during their normal opening hours. FPS data start in June 2008, its first full month of operation. CLS volumes and values are measured in sides. There are two sides to most foreign exchange transactions settled in CLS. Value figures report the total settlement obligations (effectively double the ‘value’ of the underlying

have a larger buffer against intraday payments shocks and the probability of a disruption to payment flows is correspondingly lower.

* 1. Intermediation services

The financial system channels surplus funds from firms and households to those that want to borrow. Savings can be held as bank or building society deposits or can flow into other financial institutions, such as pension and mutual funds.

Lending is provided by banks or finance can be raised directly through debt and equity capital markets.

*Savings have flowed to banks and non-banks…*

Savings deposits account for about a fifth of UK banks’ debt.(1) Being an important source of funds, these deposits are crucial for banks in providing credit. The trend in UK banks’ savings money velocity has remained relatively stable during the crisis

transactions). Volume figures report the number of sides before splitting (the process of breaking down high-value transactions into smaller parts in order to improve settlement efficiency). CREST volumes and

values are for sterling settlement only and do not include liquidity flows generated by the self-collateralising repo mechanism.

(1) For these purposes, savings with banks are measured as M4 excluding intermediate

OFCs minus notes and coin.

Chart 1.5 UK banks’ aggregate reserves account balances(a)

£ billions

2007 08 09 10

Source: Bank of England.

(a) Current account balances held by commercial banks at the Bank of England.

180

160

140

120

100

80

60

40

20

0

(Chart 1.2). This suggests that the UK banking system has largely been able to sustain its role as a store of value. Critical to this was government support of the banking sector.

Competition among banks for retail savings has been vigorous. The spreads between effective interest rates paid on time deposits to households and to firms and Libor rose sharply in 2009; they remain above historical averages. Competition has also come from non-banks, with strong flows into retail mutual funds over the past six months (Chart 4.18 in

Section 4).

Savings also flow back to banks through wholesale funding markets — for example, from corporate treasurers, local authorities, insurance companies, pension funds and investment trusts. As discussed in Section 4, banks’ unguaranteed debt issuance picked up in the early part of 2010, though it has since fallen back as market risk appetite

Chart 1.6 Household and corporate credit availability(a)

Net percentage balances

30

Secured to households Unsecured to households

Corporates

Increase in availability

Decrease in availability

20

10

+

0

–

10

20

30

40

50

Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 60

2007 08 09 10

Source: Bank of England *Credit Conditions Survey*.

(a) Net percentage balances are calculated by weighting together the responses of those lenders who answered the question as to how the availability of credit provided to the sector overall changed in the past three months.

Chart 1.7 Mortgage spreads by loan to value ratios and product availability(a)

Spreads over Bank Rate (percentage points)

5



May 2010

August 2009

August 2008

4

3

2

1

Up to 65 66–75 76–85 86 and above 0

Loan to value ratios (per cent)

Sources: Moneyfacts Group plc and Bank calculations.

1. End-month advertised rates for floating-rate products across different loan to value (LTV) ratios. Size of bubble reflects product availability. The spread is calculated over Bank Rate at the end-month for the relevant period. The first observation on the left is for products up to 65% LTV ratio, the second is for products in the 66%–75% range, the third is for products in the 76%–85% range and the final observation on the right is for products above 86% LTV ratio.

has diminished.

*…but bank lending to households remains tight…*

Household borrowing has slowed during the crisis. Although it is difficult to disentangle the influence of supply from demand, there is evidence of lower credit availability for some borrowers.

One source of information on the availability of credit is the Bank’s *Credit Conditions Survey*. Past responses to the survey indicate that the availability of credit to households was severely tightened in 2007 and 2008 (Chart 1.6). Secured credit was restricted through a reduction in the number of loan products available and steep rises in spreads, particularly at high loan to value (LTV) ratios (Chart 1.7). Partly as a consequence, the stock of lending to individuals has been increasing at a slow pace (Chart 1.8).

There have been few significant signs of increased availability of secured credit to households since the December 2009 *Report*. Lenders have reported some increase in maximum LTV ratios, breaking a two-year trend of declining maximum LTV ratios. But estate agent contacts suggest that demand from first-time buyers has been constrained by credit availability at higher LTV ratios. A box in the Bank’s June *Trends in Lending* shows that the median LTV ratio on new loans to first-time buyers has remained broadly unchanged during 2010.

In the 2010 Q1 *Credit Conditions Survey*, lenders reported little change in the amount of unsecured credit made available to households (Chart 1.6). And spreads on unsecured loans remain high. For example, the spread of credit card rates

over Bank Rate has remained about 6 percentage points wider than in 2004 (Section 2). Survey responses indicate

that credit scoring criteria are much tighter than at the start of 2008.

### Box 1

Provision of banking services to the UK economy by foreign-owned banks

Foreign-owned banks located in the United Kingdom account for almost half of total UK-resident banking sector assets. In part, that reflects the United Kingdom’s role as an international financial centre. But foreign banks also play a large part in the provision of banking services to the UK economy, a higher proportion than in many other developed economies (Chart A).

Chart A BIS banks’ consolidated foreign claims on non-bank private sector(a)(b)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Deposits(a) | Lending | Deposits | Lending |
| Country of ownership  Spain | 10 | 14 | – | 3(b) |
| Ireland | 2 | 3 | 4 | 7 |
| United States | 1 | 2 | 3 | 2 |
| Germany | 0 | 0 | 2 | 7 |
| France | 0 | 0 | 2 | 2 |
| Japan | 0 | 0 | 2 | 2 |
| Switzerland | 0 | 0 | 2 | 1 |
| Sample total(c) | 14 | 20 | 16 | 24 |

#### Deposit-taking services

Among foreign-owned banks, Spanish and Irish institutions are the largest holders of deposits from UK households and companies (Table 1). The share of household deposits held by Santander, and its share of lending to households, has grown following a series of acquisitions of UK-owned banks.

Table 1 Provision of UK banking services by selected foreign-owned UK-resident banks

Per cent of UK banking sector total

Households Non-financial corporates

Per cent 250

200

150

Sources: BIS, IMF *World Economic Outlook* (April 2010) and Bank calculations.

New Zealand

Ireland

United Kingdom

Belgium

Spain

United States

Italy

Germany

Canada

France

1. All claims as a percentage of 2009 nominal GDP.

100

50

0

Sources: Bank of England, published accounts and Bank calculations.

1. Includes deposits from unincorporated businesses and non-profit institutions serving households.
2. Lending to small and medium-sized enterprises only.
3. May differ from the sum of individual contributions due to rounding.

#### Lending services

Loans provided by Spanish-owned banks resident in the United Kingdom are predominantly to the household sector. By contrast, Irish banks provide a larger proportion of total

1. Data to end-2009, adjusted for risk transfers. Excludes guarantees and derivatives.

#### Size of the UK banking sector

The UK-resident banking sector(1) is large, relative to the size of

loans to corporates. At end-April, Irish banks accounted for 10% of total domestic commercial property lending and 14% of lending to hotels and restaurants (Table 2).

the UK economy, with household and non-financial corporate

deposits of around £1,270 billion (91% of 2009 UK GDP) and loans of £1,760 billion (126% of 2009 GDP). It is also concentrated, with six UK-owned lenders accounting for 69% of deposits and 67% of loans. UK-resident foreign banks account for around 20% of deposits and 26% of loans.

Table 2 Provision of lending services by selected foreign-owned UK-resident banks

Per cent of total lending to sector

Commercial Financial Health and Hotels and Manu- Utilities Transport, property inter- social restaurants facturing storage and mediation work communication

In addition, foreign banks provide cross-border lending to the UK private sector. Total cross-border claims of foreign banks

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| on the United Kingdom were £790 billion (58% of 2009 GDP) | United States | 0 | 12 | 0 | 0 | 11 | 1 | 6 |
| at end-2009. The majority of this can be accounted for by | Germany | 6 | 2 | 3 | 1 | 5 | 19 | 11 |
| interbank lending, which can then be lent on abroad. But | France | 1 | 2 | 1 | 1 | 6 | 7 | 6 |
| cross-border bank lending can also be an important channel | Japan | 0 | 1 | 2 | 1 | 6 | 10 | 6 |

Country of ownership

Ireland 10 1 11 14 3 4 2

through which some UK corporates obtain funds.

The presence of foreign lenders should help to diversify the provision of credit to the UK economy. This could prove important if domestic banks experience an idiosyncratic shock. However, there can also be risks. Following the failure of Lehman Brothers, and in line with the experience of other countries, there is some evidence that foreign banks reduced the provision of lending to the United Kingdom via their branch and cross-border operations (see Section 1).(2)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Switzerland | 0 | 11 | 0 | 0 | 0 | 2 | 1 |
| Sample total(a) | 18 | 29 | 18 | 18 | 31 | 43 | 32 |

Source: Bank of England.

1. May differ from the sum of individual contributions due to rounding.
   1. Balance sheet of UK banking operations of UK-owned and foreign-owned banks.
   2. See ‘Funding patterns and liquidity management of internationally active banks’, *Committee on the Global Financial System Papers*, No. 39, BIS, May 2010 and also December 2009 *Report* Box 2 ‘Cross-border capital flows and bank lending’.

Chart 1.8 Lending to UK individuals and businesses(a)(b)

Per cent

40

Business

Secured

Unsecured

30

20

10

+

0

–

10

20

1999 2000 01 02 03 04 05 06 07 08 09 10

Source: Bank of England.

* + 1. Three-month annualised growth rates.
    2. Lending by UK monetary financial institutions to UK PNFCs, and by UK monetary financial institutions and other lenders to individuals. Data cover lending in both sterling and foreign currency, expressed in sterling terms. Seasonally adjusted.

Chart 1.9 Credit conditions (across firm sizes)(a)

 Small businesses Medium PNFCs

Foreign-owned banks provide around a fifth of bank credit to UK households (Box 1). The presence of foreign-owned banks helps to diversify the provision of credit. But it also represents one of the key transmission channels to the UK financial system and economy for overseas shocks. Continuing trends since mid-2008, Irish banks have scaled back their lending to UK households during 2010, while Spanish-owned banks have expanded credit.

*…and bank credit availability for PNFCs remains restricted.* The stock of bank lending to UK companies has continued to fall, with debt repayments exceeding new lending (Chart 1.8). As with household borrowing, there is evidence that the supply of credit remains restricted compared with pre-crisis levels.

Recent *Credit Conditions Surveys* have pointed to increased credit availability for corporates overall (Chart 1.6).

Conditions for small firms, which depend more on banks for finance, remained unchanged in 2010 Q1 but were expected to improve in Q2 (Chart 1.9).

Spreads on loans for larger companies narrowed in early 2010

Large PNFCs

Net percentage balances

60

Increase in availability

Cheaper credit

Decrease in availability

Dearer credit

50

40

30

20

10

+

0

–

10

20

(Chart 1.9). Dealogic data also indicate lower primary loan

spreads in the first five months of 2010, compared with 2009. This is consistent with reports of increased competition from both domestic and foreign lenders. But estimates based on survey data from the Department for Business, Innovation and Skills suggest that spreads on lending to small firms remain close to levels at the end of 2009, and almost 1 percentage point above their levels at the end of 2008.

Foreign-owned resident banks account for more than a third of bank lending to UK companies (Box 1). Foreign bank lending has fallen very sharply through the crisis, particularly

Availability Spreads

Source: Bank of England 2010 Q1 *Credit Conditions Survey*.

1. The bars show the responses over the previous three months. The green diamonds show the expectations over the next three months. A positive balance indicates an increase in availability and cheaper credit.

Chart 1.10 Bank lending to UK non-financial corporations(a)

Per cent

15



Foreign branches(b)

Foreign subsidiaries(b)

UK-owned banks(b)

Cross-border(c)

10

5

+

0

–

5

foreign-branch and cross-border lending (Chart 1.10). Foreign-owned subsidiaries have cut back their lending relatively less, and to a similar extent to UK-owned banks. The fall in foreign-branch lending continued into 2010 Q1.

*The improvement in capital markets has been tested by recent volatility…*

Bank loans represent only about a third of PNFCs’ financial liabilities; capital markets provide an important source of corporate funding. A recovery in primary corporate bond and equity markets in 2009 (Chart 1.11) allowed larger firms to substitute away from bank credit (Chart 1.12). Although bond and equity finance raised in the first four months of 2010 was only about half of gross issuance in the same months of 2009, it was still above average levels between 2005 and 2008. It may also be that companies had pre-emptively secured funding during 2009. Recent market volatility has affected issuance since April.

2006 07 08 09 10 10

Sources: Bank of England, Bank for International Settlements (BIS) and Bank calculations.

1. Quarterly growth rates.
2. From UK-resident monetary financial institutions.
3. Lending by BIS banks to UK non-banks, including syndicated loans.

Spreads in markets for sterling non-financial commercial paper and bonds, which were severely affected by the crisis, have also fallen. For example, sterling investment-grade

Chart 1.11 Primary market functioning(a)

non-financial corporate bond spreads are close to pre-crisis levels (Chart 1.13), though they have risen somewhat since

Functioning Partially functioning

Impaired

Severely impaired

mid-April. The Bank’s Asset Purchase Facility, introduced in 2009, has acted as a backstop in recent months. For example, liquidity, as measured by market makers’ bid-ask spreads, was maintained during the recent period of volatility (Chart 1.13), when the facility was used.(1)

Jan. July Jan. July Jan. July Jan. 2007 08 09 10

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Corporate United States bonds United Kingdom  Euro area |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| RMBS United States  United Kingdom Euro area |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| CMBS United States  United Kingdom Euro area |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Bank United States  bonds United Kingdom Euro area |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Government United States bonds United Kingdom  Euro area |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

Sources: Bank of America Merrill Lynch, Bloomberg, Dealogic, JPMorgan Chase & Co. and Bank calculations.

1. Shading is based on a score that reflects issuance (relative to GDP) and spreads at issue of publicly placed debt without government guarantees, both expressed as a number of standard deviations from average. Standard deviations and averages were calculated using as much data as was available from January 1998.

Chart 1.12 PNFCs’ net finance raised(a)

£ billions

10

Equities(b) Bonds(b)

Loans

Commercial paper(b) Total(c)

8

6

4

2

+

0

–

2

4

6

8

Jan. Apr. July Oct. Jan. Apr. July Oct. Jan. Apr. 10 2008 09 10

Source: Bank of England.

1. Three-month moving averages. Includes sterling and foreign currency funds.
2. Non seasonally adjusted.
3. The total may not equal the sum of its components.

Chart 1.13 Sterling investment-grade corporate bond spreads

*…and there has been a glitch in international equity market infrastructure.*

The functioning of capital markets depends on resilient infrastructure. Capital market infrastructure has generally functioned well over the past six months. But there may be lessons to be drawn from the dislocation in US equity markets on the afternoon of 6 May. Between 2.30 pm and 2.47 pm (US EST) the S&P 500 declined by 5.9%. The falls were unevenly spread across individual stocks. While a precise trigger has not been identified,(2) the falls may have been exaggerated by reduced market liquidity from the NYSE switching to ‘go-slow’ mode, with trades being rerouted to other less liquid exchanges and some automated trading programmes being switched off before being manually overridden. The importance of robust market infrastructure is discussed in Section 5.

* 1. Risk transfer and insurance

*Securitisation markets are not transferring risk…*

A well-functioning financial system enables participants to transfer risk to those best placed to bear it. Securitisations, derivative products and insurance markets are all designed to transfer risk.

Securitisation enables banks to transfer at least part of the risk from long-term income streams to willing buyers. These markets, in the main, remain impaired. Issuance of residential mortgage-backed securities (RMBS) improved during 2010, although commercial mortgage-backed securities (CMBS) markets continue to be dysfunctional (Chart 1.11). In the

450

400

350

300

250

200

150

100

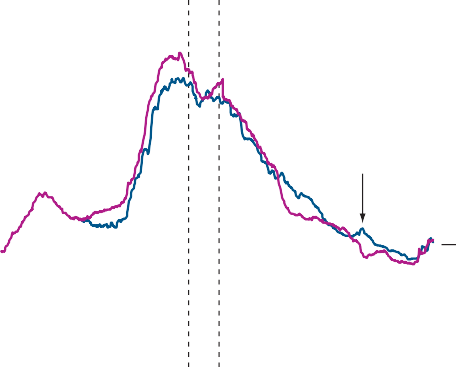
50

0

Basis points

Basis points

45



(a) (b)

Non-financial spreads(c) (left-hand scale)

Median non-bank

bid-ask spreads(d) (right-hand scale)

40

35

30

25

20

15

10

5

0

United Kingdom, all four publicly issued RMBS in the first five

months of 2010 were AAA-rated, with the originator retaining the subordinated tranches. And two of these deals included a put option giving the investor the right to return the securities to the bank on a specified date.(3) In this sense, they acted like covered bonds, UK issuance of which was about £6 billion in the first five months of 2010. And a significant portion of the securitisations since September 2009 have been bought by other banks, so that risk remains within the banking system. In other words, recent securitisations have been funding rather than risk transfer vehicles.

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

2008 09 10

Sources: UBS Delta and Bank calculations.

1. Asset Purchase Facility announcement.
2. Corporate bond facility launched.
3. Option-adjusted spread over government rates.
4. Based on 444 investment-grade sterling bonds issued by non-bank firms.
   1. ‘Markets and operations’, *Bank of England Quarterly Bulletin*, 2010 Q2, pages 78–91.
   2. ‘Preliminary Findings Regarding the Market Events of May 6, 2010: Report of the Staffs of the CFTC and SEC to the Joint Advisory Committee on Emerging Regulatory Issues’, 18 May 2010.
   3. In return investors receive the principal less any credit losses incurred during the period.

Chart 1.14 Activity in exchange-traded derivatives markets(a)

Indices: 2004 Q1 = 100

450

Commodity contracts(b)

Futures(c)

Options(c)

400

350

300

250

200

150

100

50

0

2004 05 06 07 08 09 10

Source: BIS.

1. Turnover in the number of contracts.
2. Commodity contracts include both futures and options contracts.
3. Interest rate, currency and equity index derivatives on all exchanges.

Chart 1.15 Average daily flows over LCH.Clearnet Ltd’s UK-embedded payment system(a)

£ billions (equivalent)

12

Total

Sterling

US dollar

Euro

Other

10

8

6

4

2

0

2007 08 09 10

Sources: LCH.Clearnet Ltd and Bank calculations.

1. Data are at a monthly frequency and adjusted to account for errors and omissions. Flows represent the value of payments between LCH.Clearnet Ltd and its members through the twelve banks that participate in its UK-embedded payment system.

Table 1.B Recent developments in clearing of OTC derivatives

Product Launch date CCP North American Markit CDS indices Mar. 2009 ICE Trust

Iron ore swaps June 2009 LCH.Clearnet Ltd

European iTraxx indices July 2009 ICE Clear Europe

European iTraxx indices July 2009 Eurex Clearing Corporate single-name CDS July 2009 Eurex Clearing Overnight index swaps July 2009 LCH.Clearnet Ltd Corporate single-name CDS Dec. 2009 ICE Trust Corporate single-name CDS Dec. 2009 ICE Clear Europe North American Markit CDS indices

and corporate single-name CDS Dec. 2009 CME Clearing European iTraxx indices Mar. 2010 LCH.Clearnet SA 50-year interest rate swaps May 2010 LCH.Clearnet Ltd

Sources: CME Group Ltd, Eurex Clearing AG, Intercontinental Exchange Inc. and LCH.Clearnet Group Ltd.

*…but derivatives markets have functioned smoothly…* Derivatives markets are critical for helping financial market participants and non-financial companies to manage interest rate, currency, commodity and credit risk. Having fallen from its peaks during the crisis, activity in interest rate, currency and equity options and futures markets has started to increase (Chart 1.14). Activity in commodity derivatives, which was steady during the crisis, picked up in 2009 and remains at a higher level. The recent fall in notional values outstanding of credit default swaps (CDS) is at least in part due to the termination of offsetting contracts — a welcome industry initiative to reduce settlement risks.

Central counterparties (CCPs) can promote the smooth functioning of financial markets by helping participants to manage their counterparty credit risk. In the United Kingdom, CCPs serve a wide range of markets, including equities, debt securities, derivatives, commodities and energy. Volumes processed through CCPs have generally increased during 2010. LCH.Clearnet Ltd is the United Kingdom’s largest CCP. Values transferred across its UK-embedded payment system are below those seen at the height of the crisis in 2008, though they increased in May (Chart 1.15).

CCPs have also continued to expand their service offerings, particularly in relation to over-the-counter (OTC) derivatives. In recent months, CCPs have begun clearing products such as overnight index swaps, 50-year maturity interest rate swaps and single-name CDS (Table 1.B).

*...and insurance markets are operating normally.*

Insurance markets are another means by which risk can be pooled and dispersed.(1) Despite significant losses on insurers’ investment portfolios in 2008 and early 2009, and with the important exception of financial guarantee markets, insurance markets have continued to function well. Credit risk premia on UK insurance firms in the first half of 2010 remain well below crisis levels.

The 2010 Q1 *CBI/PricewaterhouseCoopers Financial Services Survey* reported the first growth in business volumes by life insurers since September 2007. In contrast, general insurers experienced a sharp decline in activity because of slackening demand. The catastrophe bond market has continued its recovery that began in late 2009. Issuance in 2010 so far has been robust at over US(2 billion compared to US(3.4 billion for the whole of 2009. Contacts have reported no impairment of reinsurance markets in 2010.

1. For background on the role of insurance companies in capital markets see Rule, D (2001), ‘Risk transfer between banks, insurance companies and capital markets: an overview’, *Financial Stability Review*, December, pages 137–59.

# Credit risks to the UK banking system

UK banks are exposed to credit risks through their lending to non-bank customers in the

United Kingdom and overseas and through their counterparty credit exposures to domestic and foreign banks. Credit risks among some borrowers have receded as the global economic recovery has continued. But downside risks to growth persist in some countries as borrowers, including some governments, seek to strengthen their balance sheets.

In the euro area, a number of countries face pressures. The counterparty credit risk faced by UK banks on exposures to other major European banking systems has risen, including in France and Germany, because of their exposures to smaller countries in the region, as recently discussed in the *Financial Stability Review* published by the ECB. In the United States, banks remain exposed to any renewed deterioration in the US housing market. And in the United Kingdom, some parts of the household and corporate sector, including commercial property companies, remain highly leveraged and vulnerable to a setback to economic recovery or higher market interest rates.

Chart 2.1 Major UK banks’ credit exposures(a)(b)(c)(d)

This section focuses on the credit risk faced by major UK banks(1) from lending to the real economy and bank borrowers,

United Kingdom

United States

17%

9%

17%

Europe

Other

56%

both domestically and internationally (Chart 2.1). This risk is ultimately driven by default losses among households and companies in the United Kingdom and overseas. Traded-credit risks to UK banks — and other non-credit risks arising from their activities in global financial markets — are discussed in Section 3.

* 1. International risks

Sources: Bank of England, Federal Deposit Insurance Corporation (FDIC), published accounts and Bank calculations.

* 1. Aggregate balance sheet at end-2009, except for National Australia Bank and Nationwide

*Growth has continued to recover internationally…*

The global economy has continued to recover. In the *World Economic Outlook* published by the IMF in April, world output was projected to grow by more than 4% in 2010, higher than at the time of the December 2009 *Report*. Output has

which are as of March 2010 and April 2010 respectively.

* 1. Includes exposures to households, non-financial companies,

banks and other financial

continued to recover in the United Kingdom, as described in

corporations, and holdings of sovereign debt.

* 1. Total assets come from consolidated accounts. UK-owned

banks’ foreign exposures reflect

the May 2010 *Inflation Report*. But the outlook for growth is

consolidated claims of their banking operations. Non-UK owned banks’ foreign exposures are sourced from consolidated global group accounts.

* 1. The percentages do not sum to 100% due to rounding.

uneven across countries (Chart 2.2), with external forecasters expecting weak growth in the euro area by international comparison during 2010 and 2011. Recent developments in the region will have added to the downside risks to those forecasts.

* + 1. Membership of the major UK banks peer group is based on the provision of customer services in the United Kingdom, regardless of country of ownership. The following financial groups, in alphabetical order, are currently members: Banco Santander, Bank of Ireland, Barclays, Co-operative Financial Services, HSBC, Lloyds Banking Group, National Australia Bank, Nationwide, Northern Rock and RBS. Foreign-owned banks’ UK operations are locally incorporated except for Bank of Ireland, which operates as a branch.

Chart 2.2 International GDP growth forecasts

 April 2009

November 2009

*…but concerns about sovereign risk have increased…*

The period since the previous *Report* has been dominated by concerns about sovereign credit risk, centred in Southern

 May 2010

Per cent

6

United

Kingdom United States Euro area Asia Pacific

5

4

3

2

1

+

0

–

1

2

3

4

Europe. In response, the cost of insuring against sovereign risk, as implied by credit default swap premia, has risen for most countries (Table 2.A). In some countries, borrower credit risk may have risen as downside risks to growth have increased given the need for some governments to contract fiscal policy.

Concerns among investors about the commitment and ability of some European governments, in particular Greece, to strengthen their balance sheets became acute in April. This prompted large-scale intervention by the euro-area authorities and the IMF. Governments in Germany, Greece, Italy, Portugal,

2009 10 11 2009 10 11 2009 10 11 2009 10 11 5

Source: Consensus Economics Inc.

Table 2.A Selected sovereign credit default swap premia(a)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | January 2008 | June 2009  *Report* | December 2009  *Report* | June 2010  *Report* |
| United Kingdom | 9 | 87 | 70 | 93 |
| United States | 8 | 45 | 32 | 43 |
| France | 10 | 38 | 24 | 95 |
| Germany | 7 | 34 | 23 | 50 |
| Greece | 22 | 155 | 182 | 762 |
| Ireland | 13 | 220 | 150 | 285 |
| Italy | 20 | 105 | 85 | 245 |
| Portugal | 18 | 77 | 70 | 358 |
| Spain | 18 | 98 | 86 | 269 |

Source: Thomson Reuters Datastream.

(a) Senior five-year credit default swap premia in basis points.

Chart 2.3 Externally-held public debt for selected European economies(a)

Per cent of GDP 100

80

60

40

20

0

Estonia Bulgaria Ukraine

United Kingdom

Poland Latvia

United States

Spain Germany Ireland Hungary France Italy Portugal Greece

Sources: BIS, IMF *World Economic Outlook* (April 2010), Joint External Debt Hub, OECD and World Bank.

(a) As at end-2009.

Spain and the United Kingdom have since announced accelerated plans for fiscal consolidation. Market contacts nevertheless suggest that the perceived likelihood of a sovereign debt restructuring in Greece remains high. Greece and some other smaller European economies have large external financing requirements (Chart 2.3), leaving them vulnerable to changes in sentiment among overseas investors.

Heightened concerns about sovereign risk, and the possibility of weak economic growth in parts of Europe, have been accompanied by investors reallocating their portfolios towards safer assets within the region and internationally (Section 3). If this were to continue, the lower availability of risk capital could increase downward pressures on growth, amplifying credit risk across borrowers.

Some high-risk borrowers are particularly vulnerable to a sharp deterioration in euro-area economic growth. Borrowers in some European economies are highly indebted, including households in Spain, Portugal and Ireland (Chart 2.4). And

in the corporate sector, although default rates of speculative-grade companies have receded over the past six months, according to Moody’s they would increase sharply under a pessimistic scenario (Chart 2.5). Exposures to

non-bank borrowers in Europe account for around 20% of UK-owned banks’ total foreign claims (Table 2.B).

*…and UK banks face increased counterparty credit risk on exposures to other European banks.*

UK banks’ direct claims on Greece and other small European economies facing economic pressures are modest relative to their capital (Chart 2.6). They are also small relative to UK banks’ other foreign claims (Table 2.B). But the interconnectedness of the financial system amplifies the credit risk faced by individual banking systems. In the euro area, a number of banking systems have significant exposures to countries under economic pressure — including

countries in Central and Eastern Europe (CEE) and the Balkans

Chart 2.4 Household debt relative to GDP for selected European economies(a)

Per cent

120

Ireland Portugal Spain Germany

Greece France Italy

100

80

60

40

20

0

2000 01 02 03 04 05 06 07 08

Sources: IMF *World Economic Outlook* (April 2010), OECD.Stat Extracts and Bank calculations.

1. Total household loans as a proportion of GDP. Annual data, available to end-2008.

Chart 2.5 Speculative-grade corporate default rates(a)(b)

Per cent

18



(c)

United States

Per cent

Europe

16

14

12

10

8

6

4

2

0

18

16

14

12

10

8

6

4

2

0

2000 02 04 06 08 10

Source: Moody’s Investors Service.

1. Trailing twelve-month issuer-weighted speculative-grade corporate default rate and forecasts as of May 2010 for the United States and Europe.
2. Solid green lines show Moody’s ‘baseline’ forecasts. Dashed green lines show Moody’s ‘pessimistic’ and ‘optimistic’ forecasts.
3. December 2009 *Report*.

(Chart 2.6).(1) Together, French and German banks have large exposures to borrowers in Spain, among which credit risk remains elevated. The IMF reported in its April *World Economic Outlook* that it expects Spain to grow more slowly than the euro area during 2010 and 2011. UK-owned banks are particularly exposed to the French and German banking systems, which account for around one quarter of their claims on banks globally (Table 2.B).

Uneven disclosures by individual banks about their exposures have exacerbated uncertainty among investors about the scale of default losses that major European banking systems could face. This has led to a significant increase in perceptions of counterparty credit risk during 2010 (Chart 2.7). There have also been signs of tiering in funding costs among euro-area banks (Section 3).

Major European banking systems strengthened their resilience during 2009 by raising capital and lowering risk-weighted assets (Chart 2.8). European banks’ loan loss provisions also rose during 2009 (Chart 2.9). But the IMF estimated in its April *Global Financial Stability Report* that banks in the euro area may need to increase provisions significantly during 2010, having realised to date proportionally fewer losses than banks in the United Kingdom and United States.

Losses could rise if, for example, a persistent withdrawal of capital from smaller European economies and emerging markets in the region caused growth to weaken. Equity markets already appear to have reappraised prospects for the European banking system, with prices having fallen substantially during 2010 (Chart 2.10). As downside risks have built over the past six months, credit lines from overseas lenders to some smaller European banks, including in Spain, have reportedly been withdrawn, increasing counterparty credit risk. The European Council plans to disclose, by the second half of July, results from an EU-wide macroeconomic stress-testing exercise of banks’ resilience that has been carried out by the Committee of European Banking Supervisors. This is clearly an important exercise.

*Property markets remain a source of credit risk in the United States…*

The outlook in the United States is stronger than in some countries in Europe (Chart 2.2). While loss rates on US loans remain elevated, they remain well below the levels implied from the banking system stress tests performed by the US authorities in 2009 (Chart 2.11). And looking ahead the IMF expects loss rates on US loans to fall, including on loans to companies. This is consistent with Moody’s central case for US corporate defaults (Chart 2.5).

(1) Vulnerabilities from concentrated exposures of some euro-area banks to borrowers in Central and Eastern Europe are discussed in Section 4 of the June 2010 *Financial Stability Review* published by the European Central Bank (ECB).

Table 2.B UK-owned banks’ foreign claims(a)(b)(c)

Per cent of which are claims on:

Chart 2.7 Counterparty credit risk for selected European banking systems(a)(b)

Basis points Basis points

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Per cent of total | £ billions | Banks | Non-bank private sector | Public sector |
| World | 100.0 | 2,204 | 20.3 | 61.6 | 18.1 |
| Europe | 31.2 | 687 | 33.7 | 51.1 | 15.2 |

1,250

|  |  |  |
| --- | --- | --- |
|  | Greece (left-hand scale) France (right-hand scale) Germany (right-hand scale) |  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |

1,000

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| France | 7.0 | 155 | 43.0 | 41.7 | 15.3 |  |
| Germany | 5.0 | 111 | 39.9 | 24.9 | 35.2 | 750 |
| Ireland | 4.9 | 107 | 22.9 | 73.9 | 3.2 |  |
| Spain | 3.1 | 68 | 19.5 | 72.2 | 8.4 |  |
| Italy | 2.1 | 47 | 18.6 | 59.9 | 21.6 | 500 |
| Portugal | 0.7 | 16 | 21.4 | 65.7 | 12.9 |  |
| Greece | 0.4 | 10 | 35.4 | 41.3 | 23.4 |  |
| Developing | 0.9 | 20 | 19.9 | 58.8 | 21.4 | 250 |
| United States | 29.3 | 645 | 13.0 | 74.3 | 0  12.7 | |

Jan. Feb. Mar. Apr. May June

2010

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Other developed | 9.0 | 199 | 31.7 | 43.2 | 25.2 |
| Asia (excluding Japan)(d) | 16.6 | 365 | 13.7 | 58.0 | 28.3 |

Sources: Capital IQ, Thomson Reuters Datastream and Bank calculations.

200

180

160

140

120

100

80

60

0

Other developing(e) 8.3 184 8.8 65.8 25.4

*Memo item: other*(f) *5.6 124 – – –*

Sources: Bank of England and Bank calculations.

1. End-2009, adjusted for risk transfers. Excludes guarantees and derivatives.
2. UK-owned banks, including local claims by subsidiaries and branches.
3. Peer group composition differs from Chart 2.1.
4. Developing Asia, Hong Kong and Singapore.
5. Africa, Middle East, Latin America and Caribbean.
6. All other external claims.

Chart 2.6 European banking systems’ claims on selected countries and regions(a)(b)

4,000 Per cent of equity Per cent of equity 500

CEE excluding Balkans(c) CIS(d)

Balkans(e)

Portugal Ireland

Italy Greece Spain

Domestic

400

3,000

300

1. Average five-year senior credit default swap premia, weighted by assets, for banks with assets of more than US(100 billion.
2. Data to close of business on 14 June 2010.

Chart 2.8 Tier 1 capital ratios for selected European banking systems(a)(b)

Per cent

12

Average 2005–07

2008

2009

11

10

9

8

7

6

5

4

3

2

1

2,000

0

France Germany Spain Italy United Kingdom

1,000

0

200

100

0

Sources: Capital IQ, Moody’s Investors Service, published accounts and Bank calculations.

1. Includes banks with total assets of more than US(100 billion.
2. Aggregated from individual banks, weighted by total assets.

Chart 2.9 Loan loss provisions for selected European banking systems(a)(b)

Per cent(c)

Germany

Belgium

Austria

France

Netherlands

Portugal

Greece

United Kingdom

Italy

Spain

2.5

Sources: BIS, ECB, national central banks and Bank calculations.

1. All claims are as a fraction of end-2008 aggregate shareholders’ equity.
2. Grey bars show claims of resident banks on domestic residents (left-hand scale). Other bars show selected foreign claims (right-hand scale). Coverage and timeliness of data vary slightly across countries.
3. Includes Czech Republic, Estonia, Hungary, Latvia, Lithuania and Poland.
4. Includes Kazakhstan, Russia and Ukraine.
5. Includes Bulgaria, Croatia, Romania and Serbia.

2.0

1.5

Average 2005–07

2008

2009

1.0

0.5

France Germany Spain Italy United Kingdom

Sources: Capital IQ, published accounts and Bank calculations.

* 1. Includes banks with total assets of more than US(100 billion.
  2. Aggregated from individual banks, weighted by total assets.
  3. As a fraction of gross loans.

0.0

### Box 2

Risks to the US housing market

US house prices fell by 30% between July 2006 and April 2009. Recent stabilisation has been attributed to government support, with a first-time buyer (FTB) tax credit and around US(1.5 trillion in purchases of government-sponsored enterprise debt. But risks to the

US housing market remain and may crystallise as this support is withdrawn. This box considers those risks and potential financial stability implications. Developments in supply and

non-recourse mortgage lending in some states, which provides an incentive for borrowers to default upon entering negative equity, leaving the property with the lender. It also reflects the shock to borrower income from declines in US employment.

There are some signs of foreclosures flattening off. But the continuing rapid rise in the number of mortgages more than 90 days in arrears (Chart B) suggests the respite might be temporary. While the Home Affordability and Stability Program may help banks limit the number of foreclosures up to end-2012 (when the programme expires), the effect may be to defer foreclosures rather than avoid them.(1)

demand are important in understanding risks to the US

housing market.

#### Excess supply of housing

Rental and owner-occupied vacancies were at historic highs in 2005, pointing to a surplus of housing units at that point.

From 2006 to 2008, household formation was low by historic standards, particularly in 2008 as the worst of the recession was felt. Over that period, construction of new houses (net of units destroyed) exceeded the number of new households formed by around 2.6 million (Chart A).

Chart B US mortgage loan delinquencies

Number of loans (thousands)

3,000

Mortgage loans in foreclosure process

Mortgage payments past due 90 days

2,500

2,000

1,500

1,000

Chart A US household formation and housing units built

 Housing units completed, net of estimated losses  Increase in households

2005 06 07 08 09 10

500

0

 Surplus housing units built — annual

 Surplus housing units built — cumulative from 2005

2006 07 08 09

Sources: US Bureau of the Census and Bank calculations.

Thousands

3,000

2,500

2,000

1,500

1,000

500

+

0

–

500

1,000

1,500

Sources: Mortgage Bankers Association, Thomson Reuters Datastream and Bank calculations.

Sales of foreclosed properties crystallise losses for lenders. This is compounded by those assets typically being sold at discounts to the market price.(2) Sales at distressed prices would weigh on house prices, potentially worsening levels of negative equity and triggering more defaults and foreclosures.

#### Demand factors

On one hand, demand-side factors may help to counter the excess supply problem. Housing market activity should be supported by improved affordability indicators. For example, the US house price to income ratio is below the average observed between 1987 and 2009 (Chart C).

On the other hand, factors such as continuing high levels of

In 2009, a strong rebound in household formation cut the surplus of housing units built since 2006 to around

1.75 million. However, assuming pre-crisis rates of household formation and housing unit construction, even that surplus will take around two years to remove. This overhang of houses would, other things being equal, tend to exert downward pressure on house prices.

#### Sales of foreclosed properties

The number of properties in the foreclosure process has risen significantly since 2008. In part that reflects the role of

unemployment, economic uncertainty, fears of further price falls and tight credit conditions would tend to discourage buyers from entering the housing market. Moreover, if the FTB tax credit has brought forward purchases from that segment of the market, demand from FTBs may weaken in 2010. Taken together, this suggests there are likely to be a number of obstacles to the re-emergence of demand for owner-occupied housing over the coming months, which will weigh on prices.

The overall effect of demand and supply factors on prices is hard to predict and is likely to vary between regions. In a

Chart C US house price:income ratio

Index (100 = 1987–2009 average) 140

Chart D US house prices

Indices: 1 January 2000 = 100

250



Case-Shiller 10-City Index Case-Shiller 20-City Index SCAP Base Case-Shiller 10-City

SCAP Adverse Case-Shiller 10-City

130

200

120

110

150

100

100

90 50

80

1987 89 91 93 95 97 99 2001 03 05 07 09

0

1987 89 91 93 95 97 99 2001 03 05 07 09 11

Sources: Standard & Poor’s Case-Shiller, Thomson Reuters Datastream and Bank calculations.

recent survey of expectations, mean forecasts for different

US national and cross-regional house price indices suggested a range of views on growth, from -3.9% to +3.3% in 2010.(3) So there remains a relatively high degree of uncertainty about prospects for US house prices in the near term, with further falls a downside risk.

#### Financial stability implications

The transmission mechanism from US house prices to financial stability operates most directly through banks’ losses on lending to US households and losses on holdings of securities linked to US mortgages (although there may be other instruments referenced to US mortgages). The prevalence of non-recourse lending in some states means mortgage defaults are inversely correlated with US house prices. And with around 25% of owners in negative equity,(4) loss given default will also be correlated with house price falls.

The Supervisory Capital Assessment Program (SCAP) conducted in 2009 assessed US banks’ ability to maintain a 4% core Tier 1 capital ratio under a scenario involving the S&P/Case-Shiller 10-City Index falling by 22% in the first year (2009) and a further 7% in the second. The results suggested that large US banks held sufficient capital to meet that test. With actual prices falling by only 2.4% in 2009 and the banks having accumulated further capital in the meantime, this suggests a degree of resilience among US banks to further house price declines. Chart D illustrates the path for the

10-City Index projected under the base and adverse scenarios for the SCAP, relative to actual movements in the house price index.

As at end-2009, the largest UK banks had a combined exposure to the US housing sector and holdings of

non-government residential mortgage-backed securities (RMBS) equal to £92.4 billion, representing 48% of core Tier 1 capital (Table 1).(5) If losses consistent with those implied by the SCAP ‘adverse’ scenario occurred, alongside write-downs

Sources: Fiserv and Standard & Poor’s Case-Shiller.

on remaining holdings of non-government US RMBS consistent with peak to trough price falls to date, total losses would be less than 8% of core Tier 1 capital for UK banks (though increases in risk-weighted assets would depress capital ratios further). Large UK banks have a larger direct exposure than their European peers, for whom equivalent losses are estimated to amount to around 4% of core Tier 1 capital.

Table 1 Exposure to US mortgages and US non-government RMBS as a percentage of core Tier 1 capital (end-2009)

Mortgage loans RMBS Total

United Kingdom(a) 34.9 13.1 48.1

European Union(b) 6.6 8.8 15.4

United States(c) 221.8 26.4 248.2

Sources: Published accounts and Bank calculations.

1. Barclays, HSBC, LLoyds Banking Group and RBS.
2. BNP Paribas, Credit Suisse, Deutsche Bank and Société Générale.
3. Bank of America Merrill Lynch, Citi, Goldman Sachs, JPMorgan and Morgan Stanley.

In isolation, this might suggest that even severe US house price declines would have only a limited impact on the largest global banks’ balance sheets. However, losses related to house price falls may be non-linear, because of the potential adverse impact of US housing market instability on the wider economic environment and on global capital markets via reduced risk appetite. These were key mechanisms propagating the

sub-prime crisis in 2007. Recent examples of market disruption have illustrated the fragility of bank funding markets and the effects of uncertainty over the extent and location of losses. Given the source of the stress, its impact could be expected to fall hardest on dollar funding, a particular source of ongoing concern.

1. The programme seeks to improve the ability of households with high loan to value ratios to refinance and to reduce monthly repayments, in part through forms of loan modification.
2. In May 2009 the National Association of Realtors estimated distressed sale discounts in the United States were 20%.
3. See ‘First Quarter 2010 Survey of Professional Forecasters’, Federal Reserve Bank of Philadelphia, February 2010.
4. See ‘How long will negative equity last?’, CoreLogic research note, March 2010.
5. In the hard copy of this *Report* the exposure of the largest UK banks was incorrectly stated as £224 billion. The exposure as a proportion of the largest UK banks’ core Tier 1 capital remains 48%.

### Box 3

Risks from emerging market capital inflows

This box assesses two risks to financial stability: a possible sudden stop in capital inflows to emerging market economies (EMEs) and medium-term overheating in these economies. If these risks were to crystallise, they could affect UK financial stability adversely through the credit exposures of UK banks and their counterparties or through a reduction in global risk appetite and market liquidity. UK-owned banks’ EME credit exposures are largest in Asia, especially in South Korea and Hong Kong, but are also concentrated in Brazil, South Africa and the United Arab Emirates.

#### EME capital inflows

Notwithstanding outflows in May, net capital inflows to EMEs have risen strongly since the December 2009 *Report*. Strong inflows have been accompanied by an increase in growth in many EMEs, resulting in a more modest pickup in inflows as a fraction of GDP. Moreover, changes in inflows differ across regions (Chart A). Inflows into EME equities and debt have both been strong: cumulative inflows into EME funds amount to US(32 billion since the December 2009 *Report*, and the third and fourth quarters of 2009 set records for net foreign currency debt issuance by EMEs. By contrast, bank credit to EMEs from developed countries remained weak as banks repaired their balance sheets, only turning positive in 2009 Q4.

Chart A Net private capital flows to EMEs

 Direct investment  Portfolio investment

vulnerabilities. One concern is a disruptive and sudden stop in inflows. Economic models do not provide robust forecasts of when sudden stops in capital flows will arise. But plausible contributory factors could include the underlying reasons for the capital flows and the type of investor involved.

An analysis of EME bond spreads suggests that until

March 2010 the pattern of flows — and the concomitant fall in spreads — was driven by both ‘push’ factors and ‘pull’ factors, with the former being of relatively greater importance

(Table 1). In terms of pull factors, investors have been attracted by relatively favourable EME growth prospects and sound public finances. At the same time, global risk appetite and market liquidity have — until the recent market turbulence

— pushed capital into EMEs. The preponderance of push factors, particularly since March, suggests that capital inflows to EMEs remain sensitive to changes in risk appetite and liquidity.

Table 1 Accounting for changes in EME spreads

Basis points

March 2010 to May 2010 May 2009 to March 2010

|  |  |  |
| --- | --- | --- |
| Risk appetite (push) | 100 | -95 |
| Market liquidity (push) | 0 | -125 |
| Credit rating (pull) | -10 | -15 |
| Growth forecasts (pull) | 0 | -40 |
| Unexplained | -10 | 70 |
| Total change in actual bond spreads  Source: Bank calculations. | 80 | -205 |

Low interest rates in advanced countries relative to EMEs,

Other investment

Pre-Asian crisis(a) Pre-current crisis(b)

2009

2010 forecast

Pre-Asian crisis(a)

Annual flows as percentages of GDP

10

Pre-current crisis(b)

8

2010 forecast

Pre-Asian crisis(a) Pre-current crisis(b)

2009

6

2009

and lower exchange rate volatility, have also raised the attractiveness of traditional carry trades. Interest rate differentials, adjusted for exchange rate volatility, rose markedly for Brazil, Turkey and Indonesia up until May 2010, but have fallen back slightly recently.

Latin America(c)

Central and Eastern Europe(d)

4

2

2010 forecast

+

0

–

2

Emerging Asia(e)

The potential for abrupt withdrawals of capital may also depend on the characteristics of EME investors. So far, the majority of inflows appear to have been from unleveraged investors who typically invest long term and have stable sources of funding. EME inflows from developed country banks remain relatively depressed. Market intelligence suggests that leverage among EME-focused hedge funds also remains well below pre-crisis levels. That reduces the risk of a

Sources: IMF *World Economic Outlook* (April 2010) and Bank calculations.

1. 1995–96 average.
2. 2003–07 average.
3. IMF Western Hemisphere country group.
4. IMF Central and Eastern Europe country group.
5. IMF Developing Asia country group plus Hong Kong, Singapore, South Korea and Taiwan, excluding Bangladesh and Pakistan.

#### The near-term risk of a sudden stop

While new investment in EMEs is welcome, particularly in countries that faced severe financing challenges during the global crisis, excessive capital inflows can lead to a build-up of

disorderly unwinding of positions. During the recent market turbulence, market contacts report that hedge funds did cut emerging market positions sharply. But EME equity and debt funds also experienced some outflows over this period, demonstrating that disruptions can also occur through real money investors.

A sudden stop in inflows could have adverse consequences, particularly for EMEs in which growth prospects remain weak

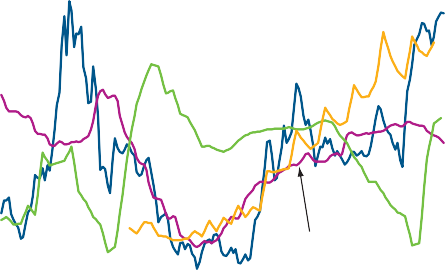
and public finances strained, including some countries in Central and Eastern Europe (CEE). Direct UK bank exposures to CEE are low (Chart 2.6), but some financial institutions in the euro area that are important counterparties of UK banks have large exposures to these countries. In the event of a crisis in CEE, liquidity in European interbank markets could become impaired due to uncertainty about individual bank holdings of CEE debt, potentially affecting UK banks’ funding.

#### The risk of overheating in the medium term

Despite weaker and more volatile inflows in May, a return to the conditions seen over most of the period since the December 2009 *Report* could lead to a medium-term risk of overheating in some EMEs. For the most part, the increase in

Chart C Property price to rental indices(a)(b)

Indices: series averages(c) = 100



Hong Kong

China

Singapore

South Korea

1995 2000 05 10

Sources: CEIC and Bank calculations.

140

130

120

110

100

90

80

70

EME asset prices represents a rebound from the depressed levels reached during the crisis. But some EME stock market valuations have exceeded historical averages (Chart B). And property price to rental indices in some Asian countries are approaching levels last seen in the run-up to the Asian crisis (Chart C). But any comparison with the Asian crisis should not be exaggerated. Domestic credit growth and investment ratios in most Asian economies remain far lower now than then.

Chart B EME equity price to earnings ratios(a)

Brazil India Indonesia Mexico South Africa

Current earnings(b)

Forward earnings(c)

Below average

Above average

Poland Hong Kong

Turkey Russia Hungary Singapore Argentina China(d)

1. Data are on a monthly basis until April 2010, except for Singapore which is quarterly to March 2010 and China which is quarterly from June 1999 to December 2009.
2. Using residential property indices, except for China which uses broader property indices.
3. Series averages are calculated over the period shown on the chart.

#### Policy responses

Many EMEs have adopted prudential policies to curb exuberance.(1) China has tightened payment requirements on some real estate transactions and increased bank reserve requirements. Brazil and South Korea recently imposed capital controls. Several EMEs have also accumulated reserves, either as precautionary balances or to resist currency appreciation (Chart D). To the extent that these reserves are channelled back to advanced country government instruments (particularly US Treasuries), this would tend to depress interest rates in developed countries, while also possibly contributing to an underpricing of risk. This was the same set of global savings-investment imbalances that contributed to the financial crisis.

Chart D Reserve accumulation and currency appreciation(a)

Per cent 45

Currency appreciation versus US dollar, year on year Reserve accumulation, year on year

40

60 40 20 – 0 + 20 40 60 35

Per cent deviation of latest ratio from its historical average(e)

Sources: Thomson Reuters Datastream and Bank calculations.

1. All ratios are based on domestic currencies, except for Brazil and Russia price to forward earnings ratios which are in US dollars.
2. Market capitalisation of the index in each country divided by current earnings of all companies in the index.
3. Weighted average price to earnings ratio based on twelve-month forward earnings.
4. China’s mainland A-share market.
5. Averages are median values over sample periods that vary by country, the longest starting in 1995 and the shortest in 1999.

In Asia, a sharp growth contraction in China remains a particular concern. UK banks’ exposures to important Chinese trade partners, such as Hong Kong, South Korea and Singapore are large. Latin America has also experienced strong capital inflows, with Brazilian and Mexican equity valuations looking high (Chart B). Potential overvaluation in Latin America could also affect UK financial stability via euro-area banks with large operations in both the euro area and Latin America.

30

25

20

15

10

5

0

Turkey

Malaysia

India

China

Russia

Mexico

Hungary

South Africa

South Korea

Brazil

Indonesia

Poland

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

1. Appreciation and accumulation are year-on-year changes to end-March 2010.

(1) See ‘Macroprudential instruments and frameworks: a stocktaking of issues and experiences’, CGFS paper No. 38, May 2010.

Chart 2.10 Equity prices for selected international banking systems(a)(b)

Indices: 1 January 2010 = 100 130

United States

United Kingdom

Europe(c)

120

110

100

90

80

70

60

Jan. Feb. Mar. Apr. May June

2010

Sources: Thomson Reuters Datastream and Bank calculations.

1. Data to close of business on 14 June 2010.
2. FTSE bank equity price indices, which are expressed in US dollar terms.
3. Excluding the United Kingdom.

Chart 2.11 Loan loss rates in the United States(a)

Per cent

10



Consumer

Commercial and industrial Commercial real estate Residential

9

8

7

6

5

4

3

2

1

0

1991 93 95 97 99 2001 03 05 07 09 11 13

Sources: FDIC, Federal Reserve, IMF and Bank calculations.

1. Diamonds represent implied 2010 adverse scenario loss estimates from the Federal Reserve’s Supervisory Capital Assessment Program. These are calculated by deducting 2009 loss rates from the mid-points of the 2009–10 range of loss estimates published in the overview of results on 7 May 2009. Dashed lines represent the IMF’s central forecast of the future path of US loss rates.

Chart 2.12 International commercial property prices(a)

Indices: end-2000 = 100

180

France Spain

United Kingdom United States Germany Ireland

160

140

120

But downside risks to the US economy persist, including from the housing market (Box 2). UK-owned banks are exposed to these risks, both through lending to non-bank private borrowers and to US banks, including securities dealers.

Exposures to those borrowers account for around 20% and 4% of UK-owned banks’ foreign claims respectively (Table 2.B).

Secured loans to US households accounted for around one fifth of the UK LCFIs’(1) US lending at the end of 2009. Lower house prices would increase loss given default rates among borrowers and could impede recovery in securitisation markets, with implications for credit availability to non-bank borrowers. Counterparty credit risk on UK banks’ exposures to large US banks would also increase. These banks are proportionally more exposed than smaller banks to the residential mortgage market in the United States.

Small and mid-sized regional US banks have more concentrated exposures to US commercial real estate (CRE). Almost all of the 249 FDIC-insured bank failures since 2007 have involved smaller banks that held less than US(10 billion in assets. US commercial property prices remain substantially below their peak (Chart 2.12), leaving a number of borrowers in negative equity or with high LTV ratios. So far, defaults among US CRE companies have been contained by US banks extending and restructuring loans when borrowers have encountered difficulties. But refinancing needs among those firms are heavily skewed towards the near term. They peak in 2012, by which time approximately US(500 billion of US CRE loans are scheduled to mature. This is around one third of FDIC-insured commercial banks’ common equity. Lenders’ willingness and ability to refinance these loans will be an important driver of future defaults and will in turn affect the losses borne by US banks.

*…while credit risks from other countries overseas appear to be relatively low in the near term.*

The credit risk posed to the UK banking system by international borrowers in countries other than the euro area and the United States remains relatively low in the near term. In some cases risks have receded, reflecting robust economic growth. For example, China has continued to expand rapidly over the past six months and is projected by the IMF to grow by around 10% in real terms in 2010 and 2011. Over the medium term, however, there is a risk of overheating in some emerging market economies, including in Asia (Box 3).

100

80

2001 02 03 04 05 06 07 08 09 10 60

Sources: IPD, Thomson Reuters Datastream and Bank calculations.

1. Annual data, except for United Kingdom and Ireland, which are quarterly to 2010 Q1.

(1) The large complex financial institutions (LCFIs) include the world’s largest banks that carry out a diverse and complex range of activities in major financial centres. UK LCFIs are defined here as Barclays, HSBC and RBS.

Chart 2.13 Major UK banks’ loans to UK customers(a)

* 1. Domestic risks

 PNFC (CRE) (left-hand scale)

 PNFC (non-CRE) (left-hand scale)  Total (right-hand scale)

 Household (unsecured) (left-hand scale) Household (secured) (left-hand scale)

*Balance sheets remain stretched within the UK household sector…*

100 Per cent £ trillions 1.6

1.5

80

1.4

In the United Kingdom, secured lending to households accounts for around two thirds of UK banks’ loans to UK customers (Chart 2.13), equivalent to just under four times their core Tier 1 capital, but has only accounted for around 5%

60

40

20

0

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

2004 05 06 07 08 09

1.3

1.2

1.1

1.0

0.9

of UK banks’ domestic write-offs since the beginning of 2007. Over the past decade, rapid secured lending growth has left the UK household sector with high debt gearing in aggregate (Chart 2.14). In the absence of significant deleveraging by the household sector, UK banks are exposed to the risk of higher defaults were interest rates to rise from their current historically low levels or recovery to falter. Income gearing — historically closely associated with secured arrears rates — has continued to be held down by low market interest rates

Sources: Bank of England and Bank calculations.

(a) Only includes loans from banks’ UK operations.

Chart 2.14 UK household debt and capital gearing

120 Per cent of GDP Per cent 22

Other financial liabilities(a) (left-hand scale) Unsecured debt(b) (left-hand scale) Mortgage debt (left-hand scale)

Capital gearing(c) (right-hand scale)

(Chart 2.15). But if, for example, Bank Rate were to rise to 5%, even if mortgage spreads reverted to their pre-crisis average, household income gearing would be close to its recent peak in 2008 — assuming for illustration that household debt and income remained unchanged.(1) In this scenario, household debt outstanding would need to fall to around 92% of GDP to

100

80

60

40

20

0

20

18

16

14

12

1990 92 94 96 98 2000 02 04 06 08 10

restore income gearing to its historical average of just below 9%. The ratio of UK household debt to GDP was last at this level in late 2003 (Chart 2.14). If lending spreads remained at current levels, income gearing would rise to its early-1990s’ levels. The ratio of debt to GDP would then need to fall to around 75% to maintain income gearing at its historical average, a level last seen in 2000. In practice, the impact of higher interest rates on the household sector would depend on the wider economic environment, with higher interest rates against a backdrop of robust growth likely to have a more

Sources: Bank of England, ONS and Bank calculations.

1. Households’ total financial liabilities less mortgage and unsecured debt.
2. Unsecured debt owed to monetary financial institutions only.
3. Household debt relative to the value of households’ financial assets and gross housing wealth.

Chart 2.15 UK household income gearing(a)

Per cent

15

Actual

With Bank Rate at 5% and spreads at current level(b)

With Bank Rate at 5% and spreads at 1999–2003 average(b)

14

13

12

11

10

9

8

7

6

5

0

1990 92 94 96 98 2000 02 04 06 08

Sources: Bank of England, ONS and Bank calculations.

1. Gross interest payments as a percentage of post-tax income, excluding the impact of Mortgage Interest Relief at Source.
2. Mechanical impact only, holding household debt and income constant. Bank Rate was most recently 5% on 7 October 2008.

benign impact than if growth were weak.

UK house prices stand around 10% above their trough in 2009, at around 12% below their peak in October 2007. Looking ahead, external forecasters expect house prices to increase slightly during 2010. But there are signs that the supply of houses for sale may be increasing, with new instructions exceeding new buyer enquiries in May for the fifth consecutive month according to the Royal Institution of Chartered Surveyors. As discussed in Section 1, credit availability is substantially tighter than pre-crisis.

Lenders report that loss rates on UK secured lending fell in 2010 Q1. They are well below their peak in the early 1990s. This partly reflects the dampening effect of recently rising house prices on losses in the event of default. But it may also reflect forbearance by UK banks. Towards the end of the credit boom, possessions by lenders rose ahead of secured arrears (Chart 2.16), contrary to the expected sequence. This would

(1) As described in the May 2010 *Inflation Report*, a change in market interest rates of this size is not at present expected by market participants.

Chart 2.16 Arrears and possessions rates on secured lending to UK households(a)

4.0 Per cent Per cent

Arrears rate(b) (left-hand scale)

Possessions rate (right-hand scale)

3.5

3.0

2.5

2.0

1.5

1.0

0.5

0.0

1985 90 95 2000 05 10

Sources: Council of Mortgage Lenders and Bank calculations.

0.25

0.20

0.15

0.10

0.05

0.00

be consistent with banks seeking to contain losses by taking early possession of properties. As house prices then fell, banks may have had an incentive to forbear on loans in arrears to avoid losses crystallising, thereby containing possessions (Chart 2.16). But mortgage arrears and possessions could both still increase in future if higher market interest rates reduced debt affordability among UK households and weakened the willingness of banks to forbear.

The majority of households have significant equity in their houses. But at end-2009, around 5% of mortgagors had no housing equity (Chart 2.17). These borrowers may have been unable to roll over expiring pre-crisis mortgage deals and therefore moved onto lenders’ standard variable rates. So they are likely to be particularly exposed to a rise in market interest rates or unemployment. Some households also have high

1. Quarterly rates expressed as a percentage of mortgagors. Series converted from semi-annual rates to quarterly rates between 1985–99.
2. Arrears of more than six months, brought forward six months.

Chart 2.17 Loan to value ratios on UK borrowers’ outstanding secured debt(a)

Percentages of mortgagors 45

1995 (BHPS)

2005

2007

2008

2009

40

35

30

25

20

15

10

5

0

0–25 25–50 50–75 75–100 100+

LTV ratio (per cent)

Sources: British Household Panel Survey (BHPS), NMG Financial Services Consulting survey and Bank calculations.

1. Mortgage debt from the BHPS (1995 data) captures mortgage debt owed by households on all properties they own. Mortgage debt from the NMG survey (data for other years) captures only mortgage debt owed on households’ primary residences.

Chart 2.18 UK corporate debt and capital gearing

repayment gearing. For example, in 2009 almost 5% of UK mortgagors had repayment gearing of between 50% and 100% of their income.(1)

*…and unsecured lending is a persistent source of credit risk…*

Unsecured lending to UK households accounts for a relatively small proportion of UK banks’ loans to domestic customers (Chart 2.13), equivalent to a little under half of their core Tier 1 capital. But since the beginning of 2007 these exposures have accounted for around two thirds (£23 billion) of domestic write-offs by UK banks.

Lenders report that write-off rates on unsecured credit to UK households have recently been lower than they had expected.(2) Write-off rates on credit card lending have nevertheless reached record highs, hitting 10.4% in 2010 Q1 from 7.0% in 2007 Q1. In response, spreads on unsecured lending have risen sharply over the past two years, offsetting the low level of Bank Rate and causing payment difficulties for some borrowers. The spread over Bank Rate on UK credit card lending stands at around 12 percentage points, double its level at the trough in 2004. A setback to the economic recovery could aggravate household distress, particularly among the tail

40 Per cent of GDP 35

Debt(a) (left-hand scale)

Capital gearing(b) (right-hand scale)

30

25

20

15

10

5

Per cent 45

40

35

30

25

20

15

of borrowers with high unsecured debt repayment gearing.

*…while some UK companies remain vulnerable…*

Aggregate leverage among UK companies remains above its average over the past two decades. Corporate debt relative to GDP stands around twice the level of its trough in the

mid-1990s (Chart 2.18). As with households, corporate income gearing continues to be held down by low market interest rates, but is sensitive to shocks pushing borrowing costs higher or which weaken corporate profitability.

Corporate loans account for one quarter of UK banks’ loans to

0

10

1990 92 94 96 98 2000 02 04 06 08 10

domestic customers, equivalent to around 1.4 times their core

Sources: Bank of England, ONS and Bank calculations.

1. Only includes debt owed to UK monetary financial institutions.
2. Debt net of liquid assets relative to the market value of capital.
   1. The financial position of UK households, including the distribution of mortgage repayment gearing is discussed in the 2009 Q4 *Quarterly Bulletin*, pages 274–85.
   2. See June 2010 *Trends in Lending*.

Chart 2.19 Ratio of total debt to total global turnover by UK company sector(a)

Electricity, gas and water supply Renting and business activities

2002

2008

Real estate activities Transport, storage and communications

Hotels and restaurants Wholesale and retail trade

Construction Mining and quarrying

Manufacturing Agriculture, hunting, forestry and fishing

Other/unknown

0 1 2 3 4

Ratio

Sources: Bureau van Dijk Fame database and Bank calculations.

1. Data include firms reporting turnover, short-term debt and long-term debt (a sample of around 28,000 firms in 2008 and 41,000 in 2002). Subsidiaries, as identified from current company structures, are excluded from the data set. Company accounts are assigned to calendar years according to the end of their accounting period. Sectors are based on SIC (2003) codes.

Chart 2.20 Major UK banks’ intra-system large exposures(a)

 UK LCFIs(b)

Major UK banks(c) excluding UK LCFIs

Tier 1 capital, of which around half is to CRE companies(1) (Chart 2.13). Since the beginning of 2007, these loans have accounted for around one quarter of UK banks’ domestic write-offs. During 2009, some UK banks substantially increased provisions against losses on UK corporate lending.

Within the UK corporate sector, CRE companies are particularly indebted relative to their turnover (Chart 2.19). Commercial property values in the United Kingdom have risen by around 10% over the past six months. This partly reflects record net capital inflows into CRE funds in 2009 Q4, which remained strong in 2010 Q1, with investors attracted by the relative yield available on such investments. But recent demand from investors for UK commercial property exposures has been focused on prime properties with reportedly little appetite for lower-quality investments. There are also recent signs of demand faltering. Values remain more than one third below the peak in June 2007. And market contacts suggest that LTV ratios for many UK commercial property companies are significantly above levels at which banks would usually be willing to extend further credit.(2)

To date, banks appear to have accommodated breaches of LTV

£ billions

Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 2008 09 10

Sources: FSA regulatory returns and Bank calculations.

1. Exposures that exceed 10% of eligible capital at the end of the reporting period.
2. Includes Barclays, HSBC and RBS.
3. Excludes Bank of Ireland.

150

125

100

75

50

25

0

covenants among companies that have continued to service their loans. They have also helped to restructure debt taken out by borrowers experiencing cash-flow pressures. This is a pattern that has been mirrored in other parts of the corporate sector and helps to account for the low liquidation rate

(Box 4).(3) But if banks were to become less willing or able to forbear on breaches of covenants, this could prompt an increase in corporate liquidations and a greater supply of foreclosed property. That could in turn trigger a renewed fall in prices and a rise in losses in the event of default on banks’ commercial exposures. Market contacts suggest that the cost of breaking interest rate hedges, contracted when market interest rates were higher, may have contributed to forbearance among lenders. This cost could fall if market interest rates were to rise. Many of these hedges are in any case scheduled to terminate over the next couple of years.

*…though interconnectedness among UK banks has fallen.* UK banks are also indirectly exposed to credit risk through their exposures to UK LCFIs. Large exposures to UK LCFIs fell further in 2010 Q1 and are less than half the peak reached in 2009 Q1. Exposures among UK banks also fell (Chart 2.20). This is consistent with the pattern of deleveraging among UK banks being concentrated in intrafinancial system exposures, as discussed in Section 4.

* 1. This includes companies involved in the development, buying, selling and renting of real estate. Exposures do not include banks’ holdings of commercial mortgage-backed securities or loans to other companies collateralised by UK real estate.
  2. See, for example, the end-2009 results of the De Montfort survey.
  3. Forbearance by major lenders is also described in Section 1 of the May 2010 *Inflation Report*.

### Box 4

Explaining corporate liquidations

The severe recession, alongside sharp falls in commercial property prices and tight credit conditions, has led to an increase in corporate distress and rising write-off rates on

Chart B Corporate liquidations rate in England and Wales and GDP

 Recessions(a)

 GDP(b) (right-hand scale)

 Liquidations rate(c) (left-hand scale)

Per cent Percentage change on a year earlier

3.5 8

corporate exposures. To date, however, the corporate liquidations rate appears low relative to past recessions and the number of firms entering liquidation has fallen back over recent quarters. This box considers why the corporate liquidations rate has remained low, prospects for liquidations and the potential implications for UK banks.

#### Recent data

The number of corporate liquidations has so far remained below its 1990s’ peak, even though the number of active companies has more than doubled over this period. Changes

3.0

2.5

2.0

1.5

1.0

0.5

0.0

6

4

2

+

0

–

2

4

6

1976 80 84 88 92 96 2000 04 08 8

introduced under the Enterprise Act 2002 may have led to an increasing use of administration procedures in circumstances in which companies would previously have entered liquidation. But, although the number of other types of corporate insolvency rose sharply in 2008, the total number of insolvencies in any one quarter has been a little below the 1990s’ peak (Chart A).(1)

Chart A Corporate insolvencies in England and Wales(a)

Number per quarter

10,000

Company voluntary arrangements Administrations

Receivership appointments Compulsory liquidations Creditor voluntary liquidations

9,000

8,000

7,000

6,000

5,000

4,000

3,000

2,000

1,000

1990 92 94 96 98 2000 02 04 06 08 10 0

Source: The Insolvency Service.

1. Figures for administrations, receiverships and company voluntary arrangements are not directly comparable to those for the 1990s due to changes introduced by the Enterprise Act 2002. In some cases companies moving from one insolvency procedure into another will appear twice in the chart. Administration figures for 2006 Q4 and 2008 Q4 exclude the failures of multiple separate companies for which a single administrator was appointed which distorted the official statistics. None of the figures are seasonally adjusted. 2010 Q1 figures are provisional.

The annual rate of liquidations, at 0.84% in 2010 Q1, remains less than a third of its peak in the early 1990s recession and below 2000–03 levels. The pickup in liquidations has looked particularly modest when viewed alongside falls in output (Chart B): in the six quarters to 2009 Q3 (inclusive), the longest period of contraction since quarterly records began in 1955, output fell by more than 6% — more than double the fall in the early 1990s.

Sources: The Insolvency Service and ONS.

1. Recessions are defined as two consecutive quarters of falling output (at constant market prices) estimated using the latest data. The recessions are assumed to end once output began to rise.
2. Chained-volume measure at market prices.
3. Calculated as the total number of liquidations in the previous four quarters divided by the average number of active registered companies. Since the Enterprise Act 2002 a number of administrations have subsequently converted to creditors’ voluntary liquidations. These are not included in the chart.

Liquidations rates in the 1980s and early 1990s may have been pushed up by structural shake-outs in parts of the corporate sector. It is also possible that rapid growth in the number of (particularly very small) companies since 2001 — driven, in part, by changes in the incentives for firms to incorporate — may have distorted the recorded liquidations rate relative to the past. For example, very small companies may be less likely to enter formal insolvency procedures. Even so, the pickup in the liquidations rate appears small relative to the 1990s, even if all of the growth in the number of companies since end-2001 is removed.

#### Explaining the data

Why has the corporate liquidations rate remained low? Using a simple econometric model (in which the corporate liquidations rate is estimated to depend on GDP growth, commercial property price growth, corporate lending growth and average interest rates facing corporates) two potential explanations can be identified. Low interest rates have been a key explanatory factor. By reducing the cost of servicing debt, accommodative monetary conditions have helped to offset the pressures from the sharp contraction in demand and tighter credit availability. By contrast, in the 1990s high interest rates added significantly to the pressure created by declining demand.

At the same time, the model suggests that the full effects of past deterioration in the economy may have not yet fully fed through. Significant lags between deterioration in the economy and rises in the insolvency rate would be consistent with the 1980s and 1990s. For example, the peak in

liquidations occurred in 1992 Q4, nine quarters after the first period of negative growth (Chart C) and significantly after the trough. Such lags may partly reflect the fact that businesses can survive for short periods by running down their financial reserves and are likely to enter liquidation only when these have been exhausted. Knock-on supply chain effects are likely to create persistence in liquidations, particularly if large companies enter insolvency procedures. So, although liquidations have fallen back over recent quarters, the effects of declining output and property prices in 2008 and 2009 may be yet fully to feed through.

Chart C Number of corporate liquidations in England and Wales

Number of liquidations per quarter

8,000

Early 1990s recession

2008–09 recession

6,000

4,000

tight credit conditions feed through. Assuming interest rates for companies are broadly in line with market expectations, the liquidations rate is likely to remain well below its 1990s’ peak. There is, however, significant uncertainty surrounding the outlook. For example, a rise in borrowing costs could further aggravate corporate distress, particularly among the tail of companies with high levels of gearing.

#### Implications for UK banks

The low current corporate liquidations rate may suggest a benign outlook for banks in terms of losses on corporate exposures. However, the mapping between the liquidations rate and write-offs is imprecise. Indeed, write-off rates have picked up much more sharply than the liquidations rate (Chart D), with write-offs on lending to domestic private

non-financial corporates by UK monetary financial institutions totalling nearly £10 billion in the eight quarters to

end-2010 Q1. This might indicate that banks are facing a larger proportion of losses from companies that have not entered formal insolvency procedures. This explanation would be consistent with the use of corporate restructuring as an alternative to liquidation.

2,000

Chart D Corporate liquidations and write-off rates

Per cent

Write-off rate(a)

Liquidations rate(b)

12 8 4

– 0 +

0

4 8 12

3.0

Quarters from first quarter of negative growth

Sources: The Insolvency Service, ONS and Bank calculations.

2.5

Aside from these influences, a number of contacts have suggested that bank forbearance has played a role in limiting insolvencies. In the commercial property sector, banks have shown forbearance with respect to loan to value covenant breaches so long as income streams remain healthy. Banks have reportedly also made use of loan restructurings, sometimes involving debt-for-equity swaps or interest-only repayment, as an alternative to liquidation. Forbearance appears to have been at least in part strategic, with lenders

1986 88 90 92 94 96 98 2000 02 04 06 08 10

Sources: Bank of England, The Insolvency Service and Bank calculations.

2.0

1.5

1.0

0.5

0.0

hoping to enable some corporates to ride out the downturn or to increase expected recovery rates from repossessed properties or other assets by waiting until a later point in the cycle.

Lenders and other contacts of the Bank’s Agents have also highlighted the impact of HMRC’s Business Payment Support Service programme. By the time of the March 2010 *Budget*, over 200,000 businesses in temporary difficulty had postponed tax payments under this scheme. It is unclear, however, precisely how many of these firms would have entered insolvency procedures in the absence of this support.

#### Prospects for liquidations

The liquidations rate may pick up over the next year as the full effects of past falls in activity, commercial property prices and

1. Write-off rate on lending by UK monetary financial institutions to domestic private

non-financial corporates. Figures are calculated by dividing write-offs in a quarter by the corresponding loans outstanding at the end of the previous quarter, with the figures chain-linked over the four most recent quarters to produce an annual rate. Quarterly write-off data are only available from 1993 Q4 onwards. The blue diamonds prior to this show estimated annual data.

1. Corporate liquidations rate is calculated as in Chart B and relates only to England and Wales.

Corporate exposures are also likely to be lumpy. As a result, even if the corporate liquidations rate remains low, banks could face significant losses if a small number of companies with large amounts of debt outstanding were to fail. So although the major UK banks have already recorded substantial impairment charges on their banking book exposures to UK non-financial corporates, it is possible further significant charges could be required to cover future write-offs.

(1) Excluding the failures of multiple separate managed service companies — for which a single administrator was appointed — which distorted the official statistics in

2008 Q4.

# Risks to UK banks from the international financial system

### In recent months, developments in global financial markets have been dominated by sovereign risk concerns, as market participants have focused on the strains placed on fiscal positions from recession and public sector support for banking systems. This has re-exposed market fragilities and prompted a retreat of risk capital from some financial markets and institutions.

Going forward, banks face a number of risks from fragile international financial markets. Any sustained reappraisal of risk appetite would reduce the valuations of banks’ risky assets, which could impact on solvency positions. Falls in market liquidity could reduce recent buoyant revenues from trading activities. And disruption to key funding markets could heighten the significant refinancing challenge facing banks internationally. But a crystallisation of these risks is not inevitable.

Chart 3.1 International equity indices(a)(b)

Indices: 4 December 2009 = 100 115

FTSE All-Share

S&P 500

Euro Stoxx

110

105

UK banks are exposed to risks from the international financial system given their size, sophistication and international focus. These risks remain considerable and have heightened over the past six months. Respondents to the Bank’s latest *Systemic Risk Survey* viewed funding and liquidity problems, and financial market dislocation, as among the most challenging risks for UK financial institutions to manage.

Dec. Jan. Feb. Mar. Apr. May June 2009 10

Sources: Thomson Reuters Datastream and Bank calculations.

1. Data to close of business on 14 June 2010.
2. Denominated in units of local currency.

100

95

90

85

* 1. Market developments

*Heightened financial market volatility…*

Since the December 2009 *Report*, developments in global financial markets have been dominated by rising concerns over sovereign risk. After rallying at the start of the year, asset prices have fallen in recent months (Chart 3.1) and risk appetite has reduced (Chart 3.2). Measures of market volatility, although still well below the levels at the height of the crisis, have increased substantially (Chart 3.3). Trading conditions in some core financial markets have deteriorated.

*…due to sovereign risk concerns…*

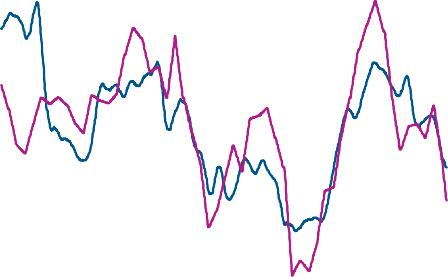
Sustained support for the global banking system by the authorities internationally, together with exceptional monetary policy measures, played a vital role in stabilising the financial system following the collapse of Lehman Brothers in September 2008. As discussed in the December 2009 *Report*, low risk-free interest rates and reduced uncertainty among investors led to a rebound in a range of asset prices during 2009. Activity in many capital markets returned to more normal levels.

During that period, market liquidity also improved, with increased competition between market makers resulting in

Chart 3.2 Indicators of risk appetite(a)(b)

Standard deviations from mean(c)

3



Credit Suisse

State Street

2

1

+

0

–

1

2

3

4

2006 07 08 09 10

Sources: Bloomberg, Credit Suisse and Bank calculations.

1. Indices are adjusted so that positive numbers in both series indicate increased risk-taking and negative numbers indicate reduced risk-taking.
2. Data to close of business on 14 June 2010.
3. Mean and standard deviation calculated from 28 July 2004.

Chart 3.3 Implied volatilities(a)(b)

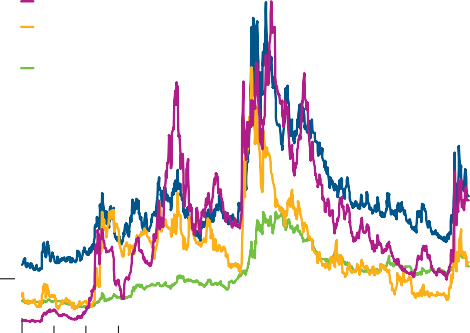
Per cent Basis points

declining bid-ask spreads (Chart 3.4). While still impaired, markets through which banks have traditionally redistributed risk — such as markets for asset-backed securities (ABS) and commercial mortgage-backed securities — were slowly improving (Chart 1.11 in Section 1). And there were signs of a return in appetite for some more illiquid securities — for example, a collateralised loan obligation was issued in

March 2010 for the first time in more than a year.

But in recent months, markets have increasingly focused on the strains placed on fiscal positions by recession and public sector support for banking systems. Market participants have questioned the ability of some countries to solve their fiscal problems in a timely and credible way. These concerns led to an increase in sovereign credit default swap (CDS) premia (Table 2.A in Section 2) and had knock-on effects to a broader class of private sector assets (Chart 3.5). There has been a withdrawal of risk capital from some financial markets and institutions.

70



Equities(c) (left-hand scale)

CDS premia(d) (right-hand scale) Interest rates(e)

(right-hand scale)

Currencies(f)

(left-hand scale)

60

50

40

30

20

10

0

2007 08 09 10

300

250

200

150

100

50

0

*…has resulted in market fragilities being re-exposed…*

In late April and early May, government financing problems in Greece adversely affected sentiment in many other asset markets and countries. The yield spread of Greek government debt over German bunds increased markedly, with spillovers to sovereign debt markets in Portugal, Ireland, Spain and Italy (Chart 3.6). Increased market concerns about the possibility of a Greek sovereign debt restructuring severely restricted the access of Greek banks to wholesale funding markets.

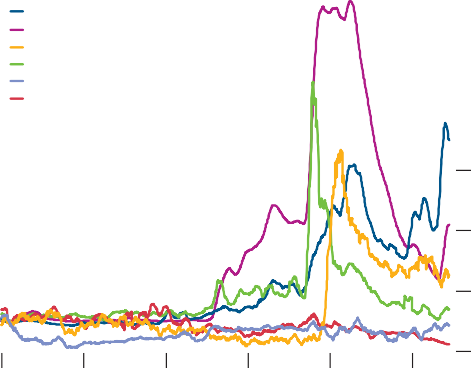
Due to a lack of transparency on banks’ sovereign debt exposures, concerns about counterparty credit risk led to

Sources: Bloomberg, British Bankers’ Association, Chicago Mercantile Exchange, Euronext.liffe, JPMorgan Chase & Co. and Bank calculations.

1. Three-month option-implied volatilities.
2. Data to close of business on 14 June 2010.
3. Average of FTSE 100, S&P 500 and Euro Stoxx 50.
4. Average of five-year on-the-run iTraxx Europe and CDX North America.
5. Average of three-month short sterling, euro-dollar and Euribor.
6. Average of USD/EUR, EUR/GBP and USD/GBP.

Chart 3.4 Bid-ask spreads on selected assets(a)(b)(c)

Indices: January 2005 = 100



Government bonds Corporate bonds Currencies

Equities

Interest rate swaps Commodities

dislocations in core funding markets. Although considerably lower than in Autumn 2008, Libor rates internationally rose and banks found it increasingly difficult to obtain funding at and beyond three-month maturities. Counterparty credit concerns were also reflected in an increasing amount of money being deposited with the ECB. In early June, banks deposited a record €350 billion overnight.

2005 06 07 08 09 10

Sources: Bloomberg, UBS Delta and Bank calculations.

1. Monthly moving averages of daily bid-ask spreads.

1,200

1,000

800

600

400

200

0

This episode highlighted the continued reliance of many European banks on short-term dollar funding to finance dollar-denominated assets. At the end of 2009, euro-area banks had dollar-denominated net international claims on

non-bank borrowers of over US(200 billion (Chart 3.7). These dollar claims are normally funded by either borrowing dollars directly in the interbank market or by swapping local currency liabilities into dollars (‘cross-currency funding’).

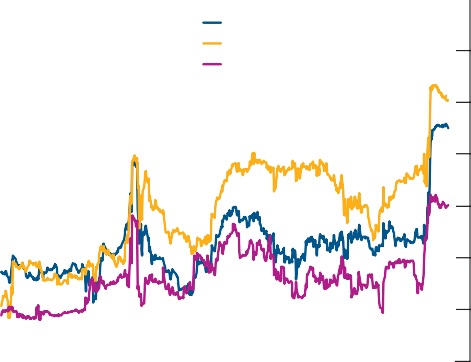
Non-bank financial institutions are also an important source of dollar funding. The ten largest prime US money market mutual funds (MMMFs) provided European banks with approximately US(300 billion of short-term funding during

1. iBoxx € Corporates for corporate bonds; S&P 500 for equities; iBoxx € Sovereigns for government bonds; sterling-dollar exchange rate for currencies; gold price for commodities; and euro five-year swaps for interest rate swaps.
2. Data to close of business on 14 June 2010.

2009 (Chart 3.8) and the BIS estimates that MMMFs provide in total around one eighth of those euro-area banks’ liabilities

Chart 3.5 Comovements between equity returns and changes in sovereign CDS premia(a)(b)(c)

Per cent 100



European and UK LCFIs European equity indices US LCFIs

90

80

70

60

50

40

30

0

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

2008 09 10

Sources: Bloomberg, Thomson Reuters Datastream and Bank calculations.

1. Percentage of variation in daily equity price returns and daily changes in CDS premia explained by the first principal component over a three-month rolling window. Equity returns expressed in common currency terms.
2. European equity indices include the CAC 40, DAX, FTSE MIB and IBEX 35, and sovereign CDS are of Greece, Ireland, Italy, Portugal and Spain.
3. Data to close of business on 14 June 2010.

Chart 3.6 Selected government bond spreads(a)(b)

Basis points

1,000

Greece Spain

Portugal Italy Ireland

800

denominated in US dollars. The uncertainty about the outlook for European banks in late April led some US MMMFs to roll over maturing funding at shorter maturities and, in some cases, to stop rolling over completely. During May, new regulation came into effect, requiring funds to reduce the weighted average maturity of their portfolios. This may have further reduced the availability of MMMF deposits to

euro-area banks. As following the collapse of Lehman Brothers, the withdrawal of MMMF funding increased pressures in dollar markets. The cross-currency basis swap market came under particular pressure — the level of the

one-year euro-dollar basis swap rate reached -52 basis points on 7 May, falling 11 basis points in two days (Chart 3.9).

*…eliciting an international policy response…*

To alleviate funding pressures, some euro-area banks appeared to sell liquid assets, including equities. This contributed to declines of up to 10% in major equity indices during the first week of May. Asset price falls also appear to have triggered margin calls leading to repo-financed carry trades — in which funds are raised in one currency and invested in assets denominated in another — having to be unwound. Japanese yen, an important carry trade funding currency, appreciated by 3% on 7 May, one of the largest daily appreciations since October 2008.

Jan. Feb. Mar. Apr. May June 2010

Sources: Thomson Reuters Datastream and Bank calculations.

1. Ten-year government bond spreads over German bunds.
2. Data to close of business on 14 June 2010.

600

400

200

0

In response to deteriorating and broadening market disruption, authorities reacted internationally with a package of support measures. These measures appeared to stall the downward dynamics. But market uncertainty has remained high. Market participants continue to attach a high probability to Greece having to restructure its sovereign debt. And liquidity pressures in a number of financial markets and countries have persisted during June.

*…and a redistribution of risk capital across the global financial system.*

Chart 3.7 BIS reporting banks’ net international claims(a) on non-banks in US dollars

US( billions

These events appear to have triggered a redistribution of risk capital across global financial markets. For most of the period since the December 2009 *Report*, there was a resumption of

2006 07 08 09

Sources: BIS and Bank calculations.

600

500

Japan

(b)

United Kingdom

Euro area

400

300

200

100

+

0

–

100

gross international capital flows, including large net private capital inflows into emerging market equity and debt funds (Chart 3.10). These flows were led predominantly by unleveraged investors, seeking higher-yielding assets from economies with stronger growth prospects. These investors do not rely on short-term money markets for funding and usually invest at longer horizons than leveraged investors.

But in recent months, as the risk appetite of unleveraged investors has reduced, some emerging market funds have experienced outflows. At the same time, capital has flowed away from riskier assets in the euro area into assets perceived as safe, particularly US Treasuries (Chart 3.11). The

1. ‘International claims’ include cross-border claims and the local claims of banks’ foreign affiliates in foreign currency.
2. Lehman Brothers Holdings files for Chapter 11.

trade-weighted euro exchange rate index has depreciated substantially and in excess of the impact expected from

Chart 3.8 Assets held by top ten prime US money market mutual funds during 2009

US( billions 400

Corporate bonds Government/agency/municipal debt Term deposits

Repurchase agreements

Commercial paper issued by conduits Commercial paper

Certificates of deposit

changes in relative interest rates (Chart 3.12). This is consistent with a rise in the risk premium required to hold euro-denominated assets.

Issuing entity

Government(a)

European banks

US banks

UK banks

Other banks

Non-banks

Sources: SEC filings and Bank calculations.

1. Includes agency and municipal issuers.

300

200

100

0

If sustained, the moderation of flows into emerging market funds could lower some of the risks associated with such inflows. But if they reverse, there is a risk of overheating and a rebuilding of global imbalances (see Box 3 on pages 26–27).

The withdrawal of risk capital from euro-area assets carries its own risks. Euro weakness, combined with low growth in the euro area, is likely to lead to large current account surpluses in some European countries. This is likely to reduce the willingness of some surplus Asian countries to allow nominal appreciation of their currencies, thereby hindering global rebalancing. It exacerbates the risk of a two-speed global recovery, raising concerns over the exposures of UK banks to the weaker European economies (Section 2).

Chart 3.11 Foreign net purchases of US securities

Chart 3.9 Euro-dollar basis swap rates(a)(b)

Treasury bonds

Equities  Corporate bonds

Total

Basis points

20



From 1 September 2008

From 1 July 2007

From 1 April 2010

+

Purchases

Repatriation

Agency bonds Treasury bills

Other

US( billions

200

0 150

–

0 20 40 60 80 100 120

Calendar days

20

40

60

80

100

120

140

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

2008 09 10

100

50

+

0

–

50

100

150

Sources: Bloomberg and Bank calculations.

1. Additional rate over three-month Euribor to swap US dollars, which pay three-month dollar Libor, for euros for one year.
2. Data to close of business on 14 June 2010.

Sources: Treasury International Capital (TIC) data reporting system US Treasury and Bank calculations.

Chart 3.12 €ERI and interest rate differentials(a)(b)

Chart 3.10 Net inflows into emerging market debt mutual funds(a)(b)

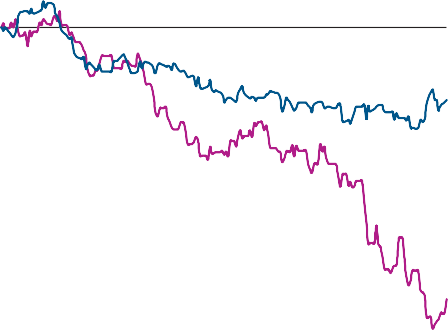
US( billions US( billions

90 2.0

Weekly flows (right-hand scale) Total assets (left-hand scale)

Per cent

2



Interest rate news

€ERI

+

0

–

2

80

70

60

50

40

30

1.5

1.0

0.5

+

0.0

–

0.5

1.0

1.5

4

6

8

10

12

Nov. Dec. Feb. Apr. May 14

20

10

2007 08 09 10

2.0

2.5

2009 10

Sources: Bloomberg and Bank calculations.

1. Interest rate ‘news’ is calculated from the uncovered interest parity (UIP) condition. Unanticipated movements in UK relative to international forward interest rate differentials are cumulated from the start point of 4 November 2009. For more information see

Source: Emerging Portfolio Fund Research.

1. Flows into dedicated emerging market funds.
2. Data to close of business on 9 June 2010.

Brigden, A, Martin, B and Salmon, C (1997), ‘Decomposing exchange rate movements according to the uncovered interest rate parity condition’, *Bank of England Quarterly Bulletin*, November, pages 377–89.

(b) Data to close of business on 14 June 2010.

Table 3.A Mark-to-market losses on selected financial assets(a)(b)

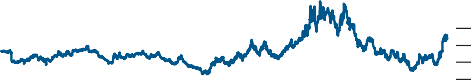
|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| US) trillions |  | | | | |
|  | Outstanding amounts(c) | Mid-Mar. 2009(d) | Dec. 2009  *Report*(d) | End-Mar.  2010 | June 2010  *Report* |
| Equities | 35.3 | 20.2 | 5.9 | 4.6 | 7.7 |
| Corporate bonds | 15.4 | 2.0 | -0.8 | -1.0 | -0.8 |
| RMBS(e) | 3.1 | 1.3 | 0.7 | 0.6 | 0.5 |
| CDOs(f) and CLOs | 0.7 | 0.5 | 0.3 | 0.3 | 0.3 |
| CMBS | 0.8 | 0.3 | 0.2 | 0.1 | 0.1 |
| Memo: debt securities | 19.9 | 4.1 | 0.4 | -0.1 | 0.1 |
| Total losses | – | 24.3 | 6.2 | 4.5 | 7.8 |
| Source: Bank calculations. |  |  |  |  |  |

1. Data to close of business on 14 June 2010.
2. Estimated loss of market values since January 2007, except for US CLOs, which are losses since May 2007. Assets cover the United Kingdom, United States and euro area, except for equities, which are global.
3. Outstanding face values, except for equities, which are market values.
4. Updated to reflect new estimates of outstanding amounts since the December 2009 *Report*.
5. Includes prime, non-conforming and buy-to-let mortgages for the United Kingdom; residential mortgages for the euro area; prime, Alt-A and sub-prime mortgages for the United States.
6. US high-grade and mezzanine home equity loan ABS CDOs.

Chart 3.13 International equity risk premia(a)

Per cent

8



United Kingdom

United States

Euro area

7

6

5

* 1. Sources of risk from the global financial system

Developments in global financial markets have important implications for the solvency and liquidity positions of UK banks, in particular through their trading and investment banking activities and through their reliance on wholesale funding markets. Through these channels, UK banks are at present exposed to three broad classes of risk:

* + - market risk through a fundamental reappraisal of asset valuations, or a sustained reversal in investor sentiment, adversely affecting risk pricing;
    - business risk through the impact of reduced risk-taking, lower business activity and interest rate increases on financial market profits; and
    - funding liquidity risk through reduced availability of funds in the interbank, swap and secured money markets arising from heightened sovereign risk concerns.

*Asset valuations remain vulnerable to a fall in risk appetite…*

(1)

4 At end-2009, financial assets

3

and derivatives accounted for

6

5

4

3

2

1

9

8

7

6

5

4

3

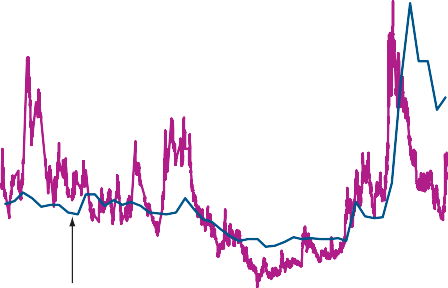
2005 06 07 08 09 10

Sources: Bloomberg, Thomson Reuters Datastream and Bank calculations.

(a) As implied by multi-stage dividend discount model. Shaded areas show interquartile ranges for implied risk premia since 1998 for United Kingdom, 1991 for United States and 2000 for euro area.

Chart 3.14 Market uncertainty measures

50 Percentage points Percentage points 2.5



FTSE 100 one-year implied volatility (left-hand scale)

MPC GDP uncertainty

one year ahead (right-hand scale)

40 2.0

30 1.5

around 40% of UK banks’ total assets. The sustained rise in risky asset prices since the trough of March 2009 has substantially reduced mark-to-market losses on a range of securities (Table 3.A). At their low point in March 2010, those mark-to-market losses had fallen to US(4.5 trillion from a peak of over US(24 trillion in March 2009. This has considerably improved the solvency position of holders of risky assets, including the major UK banks (Section 4).

But recent market developments have highlighted how quickly gains on traded assets can be reversed. Most equity indices now stand slightly below their end-of-year levels. And both investment and sub-investment grade corporate bond spreads have returned to December 2009 levels. In consequence, mark-to-market losses have risen to around US(8 trillion.

Valuation models provided little indication that equities or corporate bonds had become significantly overvalued. In March 2010, model-based estimates of equity risk premia looked to be within the ranges experienced over the course of the past two decades (Chart 3.13).(2) At the same time, market-based measures of uncertainty over equity prices decreased proportionately more than measures of uncertainty around economic activity during 2009 (Chart 3.14).

20 1.0

10 0.5

0 0.0

1998 2000 02 04 06 08 10

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

1. Financial assets include: trading assets, assets held at fair value and available for sale financial investments.
2. See Inkinen, M, Stringa, M and Voutsinou, K (2010), ‘Interpreting equity price movements since the start of the financial crisis,’ *Bank of England Quarterly Bulletin*, Vol. 50, No. 1, pages 24–33 for a discussion of the dividend discount model.

Chart 3.15 Market-implied probability distributions of S&P 500(a)

Density

March 2009 trough(b)

April 2010 peak(c)

June 2010

*Report*

0 500 1000 1500 2000

Index level

Sources: Chicago Mercantile Exchange and Bank calculations.

1. One year ahead probability densities calculated using options data and assuming that investors are risk-neutral. For more details see Clews, R, Panigirtzoglou, N and Proudman, J (2000), ‘Recent developments in extracting information from options markets’, *Bank of England Quarterly Bulletin*, February, pages 50–60.
2. Taken as 10 March 2009.
3. Taken as 23 April 2010.

Chart 3.16 Decomposition of sterling and dollar investment-grade corporate bond spreads(a)(b)(c)

 Actual

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

Falls in risk premia from their peak in March 2009 appeared to reflect reduced fears about tail outcomes for the real

economy. But implied probability distributions for asset prices suggest that the market may now perceive a greater chance of a tail scenario (Chart 3.15), not least given the perceived constraints on government balance sheets. In corporate bond markets, this is reflected in an increase in the spread to compensate for uncertainty about future default losses

(Chart 3.16). Model-based estimates of equity risk premia have also risen (Chart 3.13). If sovereign risk concerns rise or risk appetite continues to diminish, asset prices could fall further. This would have a significant impact on the solvency positions of holders of these assets, including both UK and global banks.

*…with limited support provided by leveraged investors.*

An increase in risk-taking by leveraged investors could provide one source of support for asset valuations, particularly in the event of declining risk appetite by unleveraged investors.

Market contacts report that hedge fund leverage has recently picked up slightly. But it remains low relative to pre-crisis levels. And there are now fewer fixed-income and convertible arbitrage funds in existence that tended to have the highest leverage.

There are some tentative signs that particular sources of

Compensation for expected default losses

Basis points

500

450

400

350

300

250

200

150

100

50

0

June 2009 *Report*

Dec. 2009

*Report*

June 2010

*Report*

April 2010(d)

Oct. 2007

*Report*

leverage may be re-emerging — for example, new UCITS hedge funds combining liquidity with leverage (Section 5). There may also be new sources of embedded leveraged activity in the system, including in the rapidly growing exchange-traded funds market (Box 5). While at present such innovations do not appear to be particularly widespread, they warrant watching going forward.

A significant source of leveraged risk-taking in the past came from the banking sector. Before the crisis, banks provided leverage not only through direct lending to households and companies but also through liquidity support to the shadow

US( £ US( £ US( £ US( £ US( £

Sources: Bank of America Merrill Lynch, Bloomberg, Thomson Reuters 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.
2. Option-adjusted spreads over government bond yields.
3. Data to close of business on 14 June 2010.
4. Trough in spreads on 23 April 2010.

banking system, including structured investment vehicles, conduits and collateralised debt obligations. During the crisis, shadow banking activity collapsed while banks internationally reduced their own leverage through capital raising, retained earnings and, to a lesser extent, balance sheet reduction (Chart 3.17). At end-2009, median leverage of the US LCFIs(1) had fallen to 28 times, compared with 49 times at end-2008. Likewise, median leverage of the European LCFIs(2) was

31 times, compared with 51 times at end-2008. Results from 2010 Q1 suggest that deleveraging has stabilised at around current levels. But the concern is that risk-taking by leveraged investors may be too low to compensate for the loss of risk

1. US LCFIs are currently identified as Bank of America, Citigroup, Goldman Sachs, JPMorgan Chase & Co. and Morgan Stanley.
2. European LCFIs are currently identified as BNP Paribas, Credit Suisse, Deutsche Bank, Société Générale and UBS.

### Box 5

Exchange-traded funds

Exchange-traded funds (ETFs) are investment vehicles that provide exposure to pools of securities, often to an index. Investors can buy shares in funds through market makers who provide intraday liquidity in these shares. The ETF provider takes exposure to the underlying securities either through physical or swap-based investment. The provider can issue extra shares in the fund depending on investor demand. ETFs first appeared in the late 1980s, initially focused on equities, but have since branched out into commodities and fixed income investments.

ETF assets under management are reported to have grown rapidly in recent years and now exceed US(1 trillion, with around US(800 billion (Chart A) in US markets and over US(225 billion in Europe. Equity assets still dominate ETFs, but fixed income now accounts for over US(100 billion while commodity ETFs are more than US(75 billion.

Chart A Growth of US-listed ETF assets

investors to achieve passive index returns at a lower cost than through traditional asset management products.

#### Potential risks to stability

While offering a number of benefits, ETFs also potentially bring some risks to the financial system, and these will need watching.

#### Intraday liquidity management

Market makers typically provide continuous intraday liquidity in ETFs so are exposed to changes in the value of the shares between trading with investors and closing out those positions with the fund. These exposures are hedged, often through high frequency trading, especially in equities. This hedging helps arbitrage price differences between the fund’s share price and the underlying securities. Sizable deviations are possible where underlying securities are not highly liquid, however.

Commodity ETFs are reported to be most prone to these deviations. And market makers are not obliged to make markets at all times, so may withdraw liquidity in volatile markets, exacerbating differences between the value of the fund and the underlying securities.

US( billions

Levered/inverse Commodity

Fixed income Equity Currency

1999 2000 01 02 03 04 05 06 07 08 09 10

Sources: Bloomberg, Goldman Sachs and Thomson Reuters Datastream.

900

800

700

600

500

400

300

200

100

0

#### Leverage

ETFs offering leveraged returns represent only around 3% of the ETF market. But turnover is on average much higher than for funds offering unleveraged returns, with leveraged return funds accounting for around 20% of daily turnover according to contacts. Investors in ETFs offering leveraged returns include those not permitted to hold derivative positions in the underlying assets. The leverage offered may amplify dislocations between fund value and the underlying index. It is very important that this should be watched going forward. As in other areas, there would be potential for a basically good market to be undermined over time if it becomes dependent on leverage.

#### Securities lending

In the United States, retail and institutional investors are the main investors and, perhaps more recently hedge funds, while in Europe it is institutional investors. In the United Kingdom, retail involvement is expected by some commentators to grow, as independent financial advisors are now permitted to recommend ETFs to clients.

#### Potential advantages of ETFs

ETFs can give a wider population of investors access to a wide range of instruments in a reasonably liquid form.

Many funds are low cost, have proved highly liquid so far and have tracked closely underlying indices. The broad range of funds available can sometimes make ETFs a more attractive hedging vehicle than futures, while their lower fees may help

Physical ETF providers aim to replicate the returns of the underlying index by either purchasing the relevant securities or by using assets that are correlated with the index. Providers can then generate additional return through securities lending. Investors in the fund may benefit from such income through lower fees charged on the ETF, although the provider will often take a share. Some contacts have questioned the transparency over the securities lending part of some ETFs, including with regard to reinvestment guidelines and associated risks. One risk is that in the event of failure of the firm providing the ETF, the ETF investor could end up holding something other than the intended index exposure and possibly face liquidity constraints on exiting their investment. Given the unfortunate developments in the securities lending markets in the run up to the current crisis,(1) this should not be under emphasised.

#### Counterparty risks

Swap-based ETFs are more complex than physical funds, usually using total return swaps (TRS) to gain exposure to an index. The provider typically sells shares in the ETF for cash which is invested in a collateral basket containing securities of similar quality to those in the underlying index. The return on this basket of securities is then swapped for a floating rate which is then paid to the TRS counterparty against payments in line with the underlying index (Chart B).

Chart B Cash flows for a swap-based ETF

Collateral basket

Cash

Collateral basket return (fixed)

Cash

Investor

Cash

Euribor

TRS

counterparty

Shares

ETF

Market maker

Shares

Euribor

Index return

Collateral basket return (fixed)

Asset swap counterparty

Swap-based funds would be expected to see lower transaction costs than physical funds, and according to some contacts, would expect to have smaller tracking errors. However, counterparty credit exposure is embedded in the funds through the various derivative transactions; and in complex ways.(2)

#### Conclusion

The growth of ETFs has been rapid and their use is broadening out across and within asset classes and new forms of the product are being offered. One risk is that the benefits of ETFs become outweighed by complexity, opacity and contingent risks. Swap-based ETFs have already come in for some criticism for their complexity, while a number of ETFs are not fully transparent about the risks arising from securities lending and counterparty risks from derivative exposures. It is important that the industry does not overreach when innovating in the ETF arena; the industry and regulators have an interest in the integrity and resilience of the market.

1. See Tucker, P (2010), ‘Shadow banking, financing markets and financial stability’, available at [www.bankofengland.co.uk/publications/speeches/2010/speech420.pdf.](http://www.bankofengland.co.uk/publications/speeches/2010/speech420.pdf)
2. The SEC announced that it would evaluate the use of derivatives by exchange traded funds, see [www.sec.gov/news/press/2010/2010-45.htm](http://www.sec.gov/news/press/2010/2010-45.htm)

Chart 3.17 LCFIs’ leverage(a)(b)

Maximum-minimum range Median

US LCFIs

Ratio

European LCFIs

2007 08 09 10 Q1(c) 2007 08 09

Sources: Published accounts and Bank calculations.

120

100

80

60

40

20

0

appetite among unleveraged investors. In that event, financial market valuations may fall below fundamentals in some markets.

*Low levels of activity may affect non-interest income…*

In the run-up to the financial crisis, leverage became an important means of generating income for most international banks. Over recent quarters, institutions have been able to generate revenues from alternative sources that require lower leverage, such as market making. This involves more modest risk-taking, but is based on strong financial market activity, including by unleveraged investors. LCFIs benefited from buoyant trading revenues during 2009 and 2010 Q1, particularly in fixed income, currency and commodities trading (Chart 3.18).

1. Assets adjusted on a best-efforts basis to achieve comparability between institutions reporting under US GAAP and IFRS. Derivatives netted in line with US GAAP rules. Off balance sheet vehicles included in line with IFRS rules until 31 December 2009. See footnote (c).
2. Assets adjusted for cash items, deferred tax assets, goodwill and intangibles. For some firms, changes in exchange rates have impacted foreign currency assets, but this cannot be adjusted for. Capital excludes Tier 2 instruments, preference shares, hybrids, goodwill and intangibles.
3. Revision to US GAAP accounting rules on consolidation.

Chart 3.18 Decomposition of US LCFIs’ investment banking revenues

US( billions

It is not clear, however, that the recent strength in trading revenues is sustainable. Recent increases in market volatility have reduced trading and issuance activity, particularly in certain financial markets. An increase in market uncertainty could dampen other forms of investment banking activities, such as underwriting and advisory services. As discussed in

2004 05 06 07 08 09(d)

Sources: Published accounts and Bank calculations.

1. Other includes prime brokerage and securities services.
2. FICC includes fixed income, currency and commodities.

180

160

One-off items Equities trading

Other(a) FICC trading(b)

Advisory Total before one-offs(c)

Debt and equities Total underwriting

140

120

100

80

60

40

20

+

0

–

20

40

Section 1, although corporate bond issuance picked up in 2009, issuance during 2010 has been more subdued. Equity issuance shows a similar picture. Given the importance of strong revenues from ‘flow’ trading and investment banking activities over the past 18 months, global LCFIs are vulnerable to the risk of these revenues subsiding at a time when banking books remain under pressure.

*…alongside the prospect of a flattening yield curve.* In the current low interest rate environment, banks internationally are able to generate substantial interest

income within their trading books through a carry trade on the yield curve, borrowing at low short-term interest rates and trading in assets that yield higher long-term rates. Over recent

months, the slope of the sterling nominal yield curve has been

1. Adjusted for write-downs and changes in fair value on FICC and equities trading revenues.
2. Revenues adjusted to reflect change in reporting cycle for US securities houses.

Chart 3.19 Slope of the sterling yield curve(a)

Basis points

500

Market expectation(b)

Historical

400

300

200

100

+

0

at its highest level since the late 1970s (Chart 3.19). But market-implied forward rates point to a sharp flattening in the yield curve over the next one to five years. This could have a negative effect on trading profits and, for banks that are not fully hedged, on net interest margins in their banking books. Moreover, if the expected flattening were driven by higher short-term rates, that may coincide with higher credit risk for banks, as borrowers’ debt-servicing costs rose (Section 2). It would also increase funding costs for those banks with funding concentrated at shorter maturities.

1970 75 80 85 90 95 2000 05 10 15

Source: Bloomberg and Bank calculations.

–

100

200

300

*Funding conditions have become more fragile…*

At end-2009, wholesale funding represented over a third of UK banks’ total liabilities. Over the first quarter of 2010, greater confidence in institutions’ resilience due to capital raising contributed to some recovery in bank funding markets

1. Spread between ten-year and two-year UK government bond yields. Chart shows only end-of-month data.
2. Derived from the UK government bond forward yield curve.

(Chart 1.11 in Section 1). But sovereign risk concerns have more recently led to deterioration in funding markets.

Chart 3.20 Deviation of three-month Libor submissions(a)

Basis points

6

Euro

US dollar

Sterling

5

4

3

2

1

Dec. Jan. Feb. Mar. Apr. May June 0 2009 10

Sources: Bloomberg and Bank calculations.

1. Average absolute deviation of submissions from Libor panel banks from Libor.

Chart 3.21 Standalone and support ratings for major banking systems(a)

Credit rating

Aaa

Notches of support assumed Bank financial strength rating Bank deposit rating

Aa1 Aa2 Aa3 A1 A2 A3

Baa1 Baa2 Baa3 Ba1 Ba2 Ba3

Ireland

Japan

United Kingdom

Italy

Spain

United States

Switzerland

Germany

France

Canada

Source: Moody’s.

1. Ratings are averages of individual bank ratings weighted by assets, as published in Moody’s most recent *Banking System Outlook* for the relevant financial system.

Chart 3.22 Flow of lending in the United States

In interbank markets, while short-term spreads are now close to pre-crisis levels, tiering across banks persists, particularly for euro-area banks. The extent of such tiering can be seen in the deviation of three-month Libor submissions — that is, the average absolute difference of individual submissions from the final fixing. This deviation had traditionally been around

1 basis point and increased only slightly prior to the collapse of Lehman Brothers. It then reached a maximum of

28 basis points in dollars, 13 basis points in euros and 11 basis points in sterling, before gradually narrowing

throughout 2009. More recent data suggest that, although the deviation in sterling and dollar rates remains quite low at around 2 basis points, it increased sharply to over

5 basis points in euro rates (Chart 3.20). Tiering is desirable to the extent it signals that investors are rationally differentiating between banks. But it also illustrates that funding vulnerabilities persist for some institutions, heightening the challenge they face as they seek to refinance substantial private and government-supported funding (Section 4).

Banks’ long-term credit ratings benefit from the implicit support given by governments. A broad-based rise in sovereign risk concerns would reduce the perceived value of such support to banking systems. This would tend to put downward pressure on banks’ credit ratings. UK banks are among those vulnerable to these pressures. Moody’s ratings suggest expectations of government support improve their bank ratings by up to five notches (Chart 3.21). A reduction in these support ratings could increase banks’ costs of funding and hit growth prospects if banks were to attempt to preserve margins through a pull-back in bank lending.

*…and there is little evidence of a return of alternative sources of funding.*

Pre-crisis, elements of the shadow banking system had become important contributors to global credit provision. This included MMMFs, government-sponsored entities, non-agency

 Rest of the world

 Asset management sector Agency RMBS

Government and central bank

 Non-financial sector  Banking sector

Shadow banking sector Total

US( billions

5,000

4,000

3,000

2,000

1,000

+

ABS, finance companies, real estate investment trusts, securities brokers and dealers and funding corporations. In the United States, shadow banks provided around a quarter of total lending.

Many of these sources of finance were severely affected by the crisis and they remain fragile. Shadow banks, including

non-agency ABS, have become a much-reduced source of lending to the real economy (Chart 3.22). The shadow

0 banking system remains an important funding vehicle for

– banks, but such finance can be unstable. As demonstrated by

2004 05 06 07 08 09 10 Q1(a)

Sources: Federal Reserve and Bank calculations.

(a) 2010 Q1 data are seasonally adjusted and annualised.

1,000

2,000

3,000

4,000

recent events, any unexpected deterioration in the outlook for banks could lead US MMMFs to stop rolling over funding. This intensifies the challenge banks face internationally to tackle current funding issues.

# The resilience of UK banks

### UK banks’ resilience has continued to improve since the December 2009 *Report*. Leverage has fallen and the quantity and quality of liquid assets and capital has improved. But UK banks’ profitability remains constrained. Loan impairments remain at elevated levels and credit quality sensitive to the economic outlook. Trading revenues recovered strongly in 2009, but may be less buoyant in the future. And the need to refinance maturing funding and to extend funding maturities remain key challenges. There is a risk that, in aggregate, banks’ funding plans make optimistic assumptions about system-wide deposit growth and envisage reductions in lending that suggest tight credit conditions. Increased efforts to retain higher capital, by limiting discretionary distributions to shareholders and staff while profits are stronger, would help banks to build resilience and prepare for Basel III while sustaining lending to companies and households.

Chart 4.1 Major UK banks’ leverage ratio(a)(b)

 Maximum-minimum range Interquartile range Average(c)

Ratio

60

50

40

30

20

10

0

The previous two sections discussed the challenges facing the UK banks in the present fragile environment. This section discusses the longer-term challenges they face in building capital to sustain resilience and lending, while replacing and extending the term of maturing debt. Like their overseas counterparts, the major UK banks have faced a more challenging environment in recent weeks. But their success in continuing to obtain finance, albeit generally at shorter maturities, suggests that they are generally more robust than six months ago.

*Leverage continues to fall…*

The average leverage ratio of the major UK banks(1) fell further in 2009 H2, with assets now around 19 times capital, down from 30 times at the end of 2008 (Chart 4.1). The dispersion of leverage also continued to decline, with most banks in a narrow band around 20 times capital. As noted in Section 3, this is a global phenomenon, with similarly large falls at the US and continental European LCFIs over the period.

Accounting for derivatives positions on a gross basis — which

2005 06 07 08 09

Sources: Published accounts and Bank calculations.

1. Gross leverage is calculated as total assets divided by total equity. Total reserves are used as total equity where appropriate.
2. Excludes Northern Rock.
3. Asset weighted.

best captures the risks around the associated counterparty exposures — the reduction in UK banks’ leverage has been the result of an increase in capital and a reduction in assets in roughly equal measure, with a fall in intrafinancial sector

* 1. Membership of the major UK banks peer 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, Co-operative Financial Services, HSBC, Lloyds Banking Group, National Australia Bank, Nationwide, Northern Rock and RBS. The LCFIs include the world’s largest banks 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, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, JPMorgan Chase & Co., Morgan Stanley, RBS, Société Générale and UBS.

Chart 4.2 Major UK banks’ core Tier 1 capital ratios

Per cent

14

Core Tier 1 maximum-minimum range Core Tier 1 interquartile range

Median core Tier 1 capital ratio

12

10

8

6

4

2

0

2001 02 03 04 05 06 07 08 09

Sources: Published accounts and Bank calculations.

Chart 4.3 Major UK banks’ profits and consensus profit forecasts

£ billions

80

Santander HSBC

RBS Barclays

Lloyds Banking Group

60

40

20

+

0

–

20

40

2006 07 08 09 10 (E) 11 (E) 12 (E) 60

Sources: 2006 to 2009 data are from published accounts. 2010 to 2012 are Bloomberg consensus forecasts.

Chart 4.4 Major UK banks’ spreads on floating-rate mortgages and deposits(a)(b)

exposures (including derivatives) accounting for around three quarters of the latter.

*…as more capital is raised.*

Over the course of 2009, major UK banks increased core Tier 1 (‘CT1’) capital by £71 billion (net of impairments and trading losses). They now hold £273 billion of core capital against unexpected losses. This has increased the sector’s CT1 ratio from 6.3% to 9.2% from end-2008 to end-2009. The majority of capital issuance was raised via public and private issuance and by debt conversion. The quality of capital also improved, with the CT1 share of total capital rising from 47% to 61%.

This is a strong capital platform.

Among the major UK banks, there remains a considerable range of CT1 ratios (Chart 4.2). Close to 40% of lending to UK households and corporates by the major UK banks is currently provided by banks in the bottom quartile of the distribution of CT1 capital. That suggests future lending growth is vulnerable to capital constraints at the less

well-capitalised banks.

*But impairments largely offset rising profits.*

UK bank profitability recovered in 2009. The median

UK bank’s return on equity rose from 0.5% to 2.5%. Overall, revenues were 30% higher in 2009 than in 2008. Results were, however, heavily tiered between profitable and

loss-making banks (Chart 4.3).

Profits from traditional banking activities, such as lending, were subdued. Average net interest margins remain compressed. This was particularly true for banks whose business is focused on UK lending. While spreads on new

UK lending have increased, the repricing of existing loans has not yet been completed. This leaves banks with a stock of assets paying low interest rates. Competition for deposits has also pushed funding costs up significantly, so margins remain tight (Chart 4.4).

Percentage points

3

Combined spread

Spread of floating-rate mortgages Spread of deposits

2

1

+

0

–

1

2007 08 09 10 2

Sources: Bank of England and Bank calculations.

1. Excludes Bank of Ireland. Includes Britannia and Nationwide from 2008.
2. Spreads calculated as effective stock mortgage rate less monthly average of Bank Rate; and monthly average of Bank Rate less effective rate on sight (excluding non-interest bearing) and time deposits.

Set against that, non-interest income was significantly higher in 2009 than in 2008, driven by buoyant fixed-income, currency and commodities activity, as markets rallied. Trading revenues contributed almost £40 billion to full-year revenues

— an increase of £26 billion (Chart 4.5).

Supporting the increase in revenues, write-downs on credit market instruments held in the four largest UK banks’ trading books fell from £20 billion in 2008 to £9 billion in 2009. In 2009 H2, they totalled just £2 billion (Chart 4.6). Overall, the largest four UK banks’ exposures to credit market instruments fell by 21% to £207 billion during 2009 (Chart 4.7). This suggests that the future threat posed by write-downs on those exposures has diminished. More broadly, non-derivative assets held at fair value reduced from seven times to five times CT1 capital during 2009. In part, this reflects the reclassification of

Chart 4.5 Major UK banks’(a) trading revenues

£ billions

30

Investment banking Equities

Fixed income, currency and commodities

Credit market

Trading income

25

20

15

10

5

+

0

–

5

10

15

H1 H2 H1 H2

2008 09

Source: Published accounts.

1. Chart shows data for a subset of the major UK banks peer group — Banco Santander, Barclays, HSBC and RBS.

Chart 4.6 Major UK banks’ and LCFIs’ write-downs(a)

US( billions

80

Credit valuation adjustments(b) Commercial mortgage-backed securities Residential mortgage-backed securities

Leveraged loans Other(c)

70

60

50

40

30

20

10

+

0

–

10

H2 H1 H2 H1 H2 H2 H1 H2 H1 H2 H2 H1 H2 H1 H2 2007 08 09 2007 08 09 2007 08 09

over £65 billion of assets from trading to banking book between 2008 and 2009. It suggests that UK banks’ capital ratios are now less vulnerable than they were, but are certainly not immune to short-term fluctuations in market prices.

Despite this, UK banks’ pre-tax, pre-provision profits of

£98 billion in 2009 (versus £37 billion in 2008) were largely offset by loan impairments (Chart 4.8). Impairment charges were £80 billion in 2009, up from £52 billion in 2008. This offset three quarters of pre-provision profits and reached an historic high as a proportion of net interest income. This meant that only a small share (£2.6 billion) of the increase in capital during 2009 came through profit retention.

*Assets were reduced further.*

Between 2008 and 2009 H2, major UK banks’ assets fell by

£1.9 trillion, to £7.4 trillion (Chart 4.9). Three quarters (£1.4 trillion) of the fall reflected a reduction in derivatives portfolios. Overall, exposures within the financial sector (derivatives exposures, loans to banks and holdings of

securities) declined by £1.6 trillion. Customer lending was also reduced. UK bank lending to non-UK customers fell by

£270 billion (14%) and to UK PNFCs and households by

£34 billion (3%). Foreign banks’ cross-border lending to the United Kingdom also fell by 11% (or US(557 billion) between 2008 Q4 and 2009 Q4 (see Section 1). This reflected a generalised scaling back of cross-border credit provision by internationally active banks. This global retrenchment means that economies, including the United Kingdom, are highly dependent on the stability of their home institutions for the provision of credit.

US LCFIs

European LCFIs

Major UK banks

Sources: Published accounts and Bank calculations.

1. Includes write-downs due to mark-to-market adjustments on trading book positions where details are disclosed by firms.
2. On exposures to monolines and others.
3. Other includes SIVs and other ABS write-downs.

Chart 4.7 Major UK banks’ net credit market exposures(a)

*There was a slight improvement in funding structures…*

UK banks have reduced their dependence on wholesale markets for funding. The UK banks’ customer funding gap fell to £475 billion at end-2009, close to its 2005 level and a fall of over £360 billion from its peak in 2008 H2. Just 15% of

 SIV holdings

 Monoline guarantees  Other ABS and MBS  CMBS

 Leveraged loans

 Alt-A and US prime(b)  US sub-prime

 Other £ billions

300

250

200

150

100

50

0

customer loans are now funded through the wholesale markets, a level not seen since 2003 (Chart 4.10).

A customer funding gap is less of a concern to the extent that it is funded from long-term and stable wholesale funding sources. But there has been little improvement on this front over the past year. Banks remain heavy users of short-term funding: 60% of wholesale funding has a maturity of less than a year, 44% of less than three months (Chart 4.11). This maturity structure leaves banks vulnerable to refinancing risk driven by changes in market sentiment, as seen recently.

The major UK banks have increased their holdings of liquid assets, such as high-quality government bonds and central

H2 H1 H2 H1 H2 2007 08 09

Sources: Published accounts and Bank calculations.

1. Includes banking book and trading book exposures.
2. Includes private label RMBS only. RMBS issued by government-sponsored entities is included in ‘Other ABS and MBS’.

bank reserves, from around £175 billion to around £425 billion over the course of 2009. A significant proportion reflects the impact of Bank of England intervention. Much of the remainder was financed through the Bank’s Special Liquidity

Chart 4.8 Major UK banks’ core Tier 1 capital ratios in 2009(a)(b)

Per cent

15

Core Tier 1

Impairments and write-downs(c) Other(d)

Change in RWA

Reduction in RWA assets through the APS

Core profit(e)

Capital raised — private

Capital raised — public (ex. APS)(f) Capital provided under the APS

10

5

0

End-2008 Deductions Additions End-2009

Sources: Published accounts and Bank calculations.

1. Additions and end-2009 figure include significant completed or announced capital raisings, asset disposals and buybacks/exchanges since end-2009.
2. Average core Tier 1 capital, defined as common shareholders’ equity adjusted for goodwill and intangibles and regulatory reductions. Excludes contingent capital.
3. Includes banking book impairments, trading book write-downs and other adjustments.
4. Negative contribution to core Tier 1 reflects currency movements, dividends, taxes, and other movements in reserves.
5. Based on pre-provision profit before trading book write-downs.
6. Includes Lloyds Banking Groups’ capital raising during the acquisition of HBOS in January 2009 and the public sector share in Lloyds’ rights issue in November–December 2009.

Chart 4.9 Major UK banks’ total assets(a)

£ trillions

10

Cash and central bank balances Derivatives(b)

Securities

Loans to banks and OFCs Loans to PNFCs

Loans to households

Other assets(c) RWA

9

8

7

6

5

4

3

2

1

0

2005 06 07 08 09

Sources: Published accounts and Bank calculations.

1. Assets converted at year-end exchange rates.
2. Derivatives are presented on a gross basis.
3. Includes intangible property, investment and tax assets.

Chart 4.10 Major UK banks’ customer funding gap(a)

Percentage of customer loans and advances

100

Maximum-minimum range Interquartile range

Median

80

60

40

20

+

0

–

20

40

60

1998 99 2000 01 02 03 04 05 06 07 08 09 10

Scheme (SLS) and HM Treasury’s Credit Guarantee Scheme (CGS) and will need to be refinanced as these facilities are withdrawn.

*…to which markets initially responded favourably.*

Short-term funding markets were, until recently, relatively calm. Market intelligence suggested that unsecured funding was beginning to extend beyond the six-month horizon. The major UK banks continued to access term debt markets.

Investor perceptions of an improvement in UK banks’ resilience were reflected in a rise in bank equity prices (Chart 4.12) and a fall in CDS premia over the course of 2009 and the first quarter of 2010. UK banks have taken advantage of this, including through issuance of around £41 billion of senior debt and medium-term notes in 2010 to date, as well as £22 billion of covered bonds and RMBS.

More recently, however, funding conditions deteriorated significantly. As concerns over sovereign risk surfaced,

UK banks’ CDS spreads widened, their funding spreads over Libor increased and the maturity of their wholesale financing contracted. There was negligible issuance of senior term debt in May, although June has seen a modest recovery.

*The challenges ahead are little changed.*

Looking ahead, the challenges facing the UK banks remain much the same as those identified in the December 2009 *Report*. They need to build capital through issuance and retention of profits to maintain resilience, while sustaining the supply of credit to support the recovery. And they need to refinance the significant concentration of funding falling due over the coming years, while reducing reliance on, and extending the term of, their wholesale funding. There remain a number of potential headwinds to the achievement of those objectives.

*Income is constrained…*

Taken as a whole, banks’ margins remain under pressure (Chart 4.4). As discussed in Section 1, competition for retail deposits has pushed up spreads over Bank Rate. Margins are likely to remain depressed as long as interest rates remain low and demand for credit constrained. The impact of low margins has been particularly pronounced on the building society sector (see Box 6).

UK banks, like their counterparts overseas, have relied heavily on non-interest income, and particularly on income derived from activities in the fixed-income markets, to support earnings. As discussed in Section 3, this may not prove sustainable, particularly if market volatility or heightened economic uncertainty reduce activity levels in financial markets.

Sources: Dealogic, published accounts and Bank calculations.

1. Customer funding gap is customer loans less customer deposits, where customer refers to all non-bank borrowers and depositors.

### Box 6

The building society sector

The building society sector has assets of £314 billion. It accounts for 15% of the stock of the UK mortgage market, and 20% of the retail deposit market. Taken as a whole, the sector’s resilience matters for the provision of financial services to the UK economy. It also plays a role in maintaining a competitive and diverse banking sector. Average core Tier 1 capital ratios in the sector of 15% at end-2009 provide societies with a buffer against shocks. But they have limited options for replenishing capital in the event of balance sheet stress. This box discusses challenges to the sector and highlights actions that might improve resilience.

#### Structural and cyclical vulnerabilities

The capital structure of building societies is different from that of banks. As mutual organisations, societies are owned by members rather than by external shareholders. But as depositors, member shareholders benefit from depositor protection and so face little risk of loss.

Each member has one vote, regardless of how much they have invested. This dilutes the incentive for larger investors to monitor management and makes it hard for active

Interest income accounts for over 70% of the sector’s earnings. The low interest rate environment has squeezed interest margins, an effect exacerbated, in some cases, by contractual limits on societies’ ability to raise interest rates on existing loans. This has eaten into building societies’ profitability (Chart B).

Chart A Changes in UK bank and building society leverage(a)

Percentage point change

10

Assets Capital

Leverage

5

+

0

–

5

10

15

2007/08 08/09 2007/08 08/09

Largest ten building societies(b) Major UK banks

Sources: Published accounts and Bank calculations.

1. See footnotes (a) and (b) in Chart 3.17.
2. Largest ten building societies as at April 2010 excluding Nationwide, measured by balance sheet size.

shareholders to exert any influence. Wholesale creditors’

incentive to exercise market discipline on management is also Chart B Largest ten building societies’(a) pre-tax profits

diminished because, unlike in banks, they rank above retail depositors in the capital structure.

In a number of cases, the incentives created by this capital structure seem to have resulted in societies taking risks without appropriate controls being in place. For example, in the run-up to the crisis several societies expanded into risky lending activities, such as commercial property and sub-prime lending, without understanding the risks involved and holding

1.0

0.8

0.6

0.4

0.2

+

0.0

Per cent

£ millions

160

140

120

100

80

60

40

20

+

0

too little capital to cope with the resulting losses.

Such behaviour was not exclusive to building societies. But societies’ mutual structure means that their options for

–

0.2

0.4

2000

–

20

Maximum-minimum range (right-hand scale) Interquartile range (right-hand scale)

Median (right-hand scale)

Pre-tax return on assets (left-hand scale)

40

60

01 02 03 04 05 06 07 08 09

replenishing core Tier 1 capital are very limited in the event of balance sheet stress. They lack a viable core Tier 1 capital instrument: demand for equity-like capital issued by

non-profit maximising firms will inevitably be limited. Work is under way within the sector to try to design an instrument. In the meantime, however, societies are reliant, to a much higher degree than banks, on retained earnings. This is an inflexible form of capital at times of stress, as it takes time to accumulate. Partly as a consequence, societies have found it harder to reduce leverage than the major UK banks (Chart A).

Cyclical challenges have put further downward pressure on building societies’ earnings during the course of the crisis.

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

1. Largest ten building societies as at April 2010 excluding Nationwide, measured by balance sheet size.

Societies depend less heavily on wholesale markets for funding than banks, and have further reduced their reliance in recent months. Nevertheless, in 2009, rising impairments and credit rating downgrades caused creditors to reassess building society risk, cutting credit lines and/or demanding higher rates of return. This raised the cost of wholesale funding for building societies.

Pressures on margins are likely to persist so long as interest rates remain low. In addition, like the banks, the sector faces a

refinancing challenge (Chart C). In 2010 the sector (excluding Nationwide) needs to refinance £22 billion of fixed-rate bonds, around 16% of total liabilities. Banks are competing intensively for retail deposits so it is possible that the building society sector will either face further pressure on profits or need to reduce balance sheet size, tightening credit conditions. Most societies have already cut back on lending sharply: net lending flows by building societies to households fell by 61% in 2008 and were negative throughout 2009.

Chart C Fixed-rate retail bond maturities(a)(b)

Percentage of retail balances

25

20

15

1. Use of pooled securitisation for funding. One means by which societies could, in principle, diversify funding sources is through further RMBS or covered bond issuance. For smaller societies, however, this may require collective action through the use of pooled funding vehicles to achieve the scale required for marketable issuance. Any such vehicle would need to be bankruptcy remote to prevent contagion in the event of default.
2. Cost efficiency. The sector has traditionally had a high cost base (Chart D), partly reflecting high customer service but in some cases weaker cost control. In 2009, the sector’s average cost to income ratio was 73% compared with the average for the larger UK banks of 61%. The stronger societies have tended to be those that maintain

cost-income ratios below 50%. There may be scope for societies to contain costs through increased co-operation, for example by sharing back-office services.(2)

10

Chart D Building societies’ cost to income ratios(a)

2010 11 12

Sources: FSA and Bank calculations.

1. Excludes Nationwide.

5

0

Per cent 160

140

Maximum-minimum range Interquartile range

Median

Largest five UK banks(b)

120

100

1. Percentage figures represent cumulative refinancing requirements each year as a percentage

of end-2009 retail balances. 80

What might improve the resilience of the sector? There are a number of measures that societies could take to improve their resilience and provision of financial services to the UK economy.

1991

60

40

20

0

93 95 97 99 2001 03 05 07 09

1. Capital retention. The sector needs to continue to work on the design of other viable core Tier 1 capital instruments.

In their absence societies will need to continue to build up retained earnings. Given the rigidity of their capital structure and the incentives created by their governance structure, societies should be required to hold higher levels of capital and/or face tighter limits on the range of activities they can undertake than banks.

1. Strengthened governance. Eliminating wholesale creditors’ preferential status, by implementing the relevant provisions of the Building Societies (Funding) and Mutual Societies (Transfers) Act 2007, could help to reinforce market discipline on societies’ management. The Walker Review identified a number of other lessons which could be applied in tackling shortcomings in building society governance.(1) The previous Government’s *Pre-Budget Report 2009* proposed a new governance code for building societies and other financial mutuals.

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

* 1. Non-interest expense over revenues.
  2. As measured by total assets at 2009 H2. Chart shows data for a subset of the major UK banks peer group — Barclays, HSBC, Lloyds Banking Group, RBS and Santander.

1. Consolidation. This offers another means of achieving lower costs through economies of scale. In 1990, there were 101 building societies. This number had fallen to

67 by 2000 and there are now just 50. In the long term, it is possible the industry could coalesce around a small number of stronger, larger societies. But in the near term cyclical pressures and the fact that most large societies have recently been involved in mergers are likely to limit the scope for further consolidation somewhat.

* 1. Walker, D (2009), *A review of corporate governance in UK banks and other financial industry entities*.
  2. Precedents for co-operation exist with Mutual One, Newcastle Intermediary Services and Yorkshire Key Services.

Chart 4.11 Term structure of major UK banks’ wholesale funding(a)

*…and impairments remain a headwind to profitability.*

Non-performing loans (NPLs) amount to two thirds of banks’ CT1 capital. Write-off rates are high and continue to rise

<3 months

1–3 years >5 years

 Total (left-hand scale)

3–12 months

£ billions

1,600

1,550

1,500

1,450

1,400

1,350

1,300

1,250

1,200

3–5 years

Undated

Per cent 100

90

80

70

60

50

40

30

20

10

(Chart 4.13). There is substantial tiering across institutions: the range in NPLs between the strongest and weakest bank is around 140 percentage points of CT1 capital. At an aggregate level, UK banks’ coverage ratio — provisions relative to NPLs — fell from 60% in 2008 to 54% in 2009. The December 2009 *Report* highlighted how UK banks’ coverage ratios are systematically lower than their continental European or

US counterparts. Most banks believe that the level of impairments has peaked, but that it will remain at around the current high level for at least the remainder of 2010. Impaired assets are likely to continue to act as a brake on profitability (Chart 4.14).

1,150

0

Q3 Q4 Q1 Q2 Q3 Q4 Q1

2008 09 10

*Although banks are well placed to absorb further losses…*

Sources: FSA regulatory returns and Bank calculations.

(a) Chart shows data for a subset of the major UK banks peer group — Banco Santander (Santander UK only), Barclays, HSBC, Lloyds Banking Group, National Australia Bank (Clydesdale only) and RBS. Includes bank deposits, OFC deposits, debt securities and subordinated liabilities. Excludes repos.

Chart 4.12 Major UK banks’ equity prices

1 January 2009 = 100 300



Barclays

Major UK banks(a) Santander

HSBC RBS

Lloyds Banking

Group

250

200

150

100

50

0

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

2009 10

Sources: Bloomberg, Thomson Reuters Datastream and Bank calculations.

1. Series represents an average of the entire major UK banks peer group.

Chart 4.13 UK banks’ and building societies’ annual write-off rates(a)(b)

Per cent 12

Credit card lending to UK households

Other unsecured lending to UK households(c) Lending to UK PNFCs

Secured lending to UK households

10

8

6

4

2

0

Impairments and write-downs seem unlikely, of themselves, to threaten major UK banks’ solvency. Ignoring future profits (on the upside) and the impact of new lending and impairments (on the downside), UK banks currently hold enough capital to be able to sustain over £150 billion of further losses, while remaining above the FSA’s current 4% CT1 minimum. That compares with the £175 billion of banking book provisions and trading book write-downs over the crisis to date. Stress tests undertaken in 2008–09 subjected UK banks to a scenario with a severe and prolonged recession, high unemployment rates, and substantial house and commercial property price falls.(1) This provides some assurance that UK banks should be adequately capitalised against plausible downside risks in the current environment, although not necessarily against a conflagration of risk associated with a collapse of confidence in sovereign debt solvency around the world. More recently, the Committee of European Banking Supervisors has undertaken an EU wide macroeconomic stress-testing exercise with major EU banks. The results of this exercise will be released in July.

*…replacing maturing funding remains a substantial challenge.*

The December 2009 *Report* highlighted the refinancing challenge the major UK banks face over coming years. They are estimated to have around £480 billion of unsecured senior debt, subordinated debt, covered bonds and securitisations maturing or callable over the period to end 2012 (Chart 4.15). The withdrawal of extraordinary public support means that over the same period £165 billion of high-quality collateral supplied under the SLS will be repaid.(2) All of the £120 billion in remaining guarantees issued under the CGS will also expire, but banks have the option to roll over up to one third of their

1986 88 90 92 94 96 98 2000 02 04 06 08 10

Sources: Bank of England and Bank calculations.

1. Building societies are included from 2008 onwards.
2. Write-offs of unsecured lending to UK households and lending to UK PNFCs series were estimated from 1986–92, and for secured lending to UK households from 1992–96. See Cattermole, A (2004), ‘UK banks' write-offs of bad debt’, Bank of England Monetary and Financial Statistics.
3. Prior to 1992, all write-offs to individuals were allocated to ‘other unsecured lending’.
   1. The scenario featured a peak to trough fall in GDP of 6.9%, a rise in unemployment to a peak of 12.5%, a peak to trough fall in residential property prices of 50%, and in commercial property prices of 60%. See FSA, *Financial Risk Outlook 2010*,

pages 22–24.

* 1. See Bank of England *Annual Report*, page 17.

Chart 4.14 Major UK banks’ impairment charges as a percentage of net interest income(a)

Per cent 200

Maximum-minimum range Interquartile range Recessions

Median

180

160

140

120

100

80

60

40

20

0

1981 83 85 87 89 91 93 95 97 99 2001 03 05 07 09

Sources: ONS, published accounts and Bank calculations.

1. Chart shows data for a subset of the major UK banks peer group — Barclays, HSBC (from 1993), Lloyds TSB (until 2008), Lloyds Banking Group (2009), Midland (until 1992), Natwest

(until 1999) and RBS (from 2000).

Chart 4.15 Major UK banks’ maturing funding

initial limit of CGS drawings (as fixed at the inception of the scheme) until April 2014.(1)

This means that the major UK banks will need to refinance or replace around £750 billion to £800 billion of term funding and liquid assets by end-2012.(2) On a straight-line basis, that would imply over £25 billion would need to be raised every month for the next two and a half years. This is significantly ahead of the £12 billion average monthly public issuance so far this year, or the monthly run-rate between 2001 and 2007 (around £15 billion).

UK banks are not alone in facing a significant refinancing challenge. Global banks(3) are estimated to have around US(5 trillion of medium to long-term funding maturing over the next three years, with the Italian, French and German banking systems facing large maturities relative to historic issuance (Chart 4.16). Issuance this year has been relatively lower in the United States, with banks issuing US(230 billion

Funding supported by the CGS(a)

Long-term repos with the Bank of England(b) RMBS(c)

Bonds

Funding supported by the SLS(d)

£ billions

300

250

200

150

100

50

0

(61% of the required run-rate) in the first five months of 2010, than in the euro area where banks have issued US(133 billion (71% of the required run-rate) over the same period. At over US(363 billion, total issuance by US and euro-area banks dwarfs UK issuance (of around (60 billion), underlining the scale of competition for funds in global markets that banks face.

*The banks are developing strategies for addressing this challenge.*

The UK authorities are working with the UK banks to assess the individual and collective credibility of their strategies for

2010 11 12 13 2010–12

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

1. Based on publicly known issuance for the major UK banks from the DMO’s list of liabilities guaranteed under the scheme.
2. Allocation of long-term repos across all counterparties accessing the scheme.
3. Shows the date at which markets expect the residential mortgage-backed securities to be called. Excludes Britannia, Co-operative Financial Services and HSBC.
4. Shows the total SLS drawings for all 32 counterparties as per the Bank of England’s *Annual Report* from 2 June 2010.

Chart 4.16 Banking system refinancing requirements(a)

meeting the refinancing challenge. And internationally they have been actively encouraging the FSB and Basel authorities to co-ordinate exchanges of information between countries.

There is a risk that UK banks collectively assume strong growth in retail deposits relative to lending growth to meeting funding needs. That would rely on a higher savings ratio generating increased deposits, whereas past experience suggests that

€ trillions

12

2010 (right-hand scale)

2011 (right-hand scale)

2012 (right-hand scale)

Banking sector assets (left-hand scale)

10

8

6

4

2

0

United

States

United Kingdom

France Germany Italy

Per cent

250

200

150

100

50

0

growth in lending is the main driver of higher deposits. Even when the savings ratio has risen, deposit growth has rarely exceeded loan growth. For example, following the early 1990s recession, the increase in household deposits was smaller than the increase in household loans, despite the savings ratio averaging 11% for three years (Chart 4.17).

Moreover, households and companies have a choice over where to invest their savings. Recent data show that competition for retail deposits is fierce, not only among banks but from alternative instruments such as mutual funds, which

Sources: Bank of England, Dealogic, ECB, FDIC, Fitch, SoFFin, UK DMO and Bank calculations.

1. Calculated as a percentage of average issuance between 2005 and 2007. Only senior unsecured debt, subordinated debt, covered bonds, RMBS (public and retained) and official sector support (government-guaranteed debt issuance and asset swap facilities) have been included in the calculations. RMBS issued in the United States and EU have been assumed to mature, on average, around four and five years respectively, following origination. Only issuance to end-2009 is included in calculations.
   1. See Debt Management Office market notice ‘European Commission State Aid Approval for Extension of the Drawdown Window and Rules Amendments for the UK Government’s 2008 Credit Guarantee Scheme’, 17 December 2009.
   2. This excludes privately issued debt.
   3. Figures here are for the US, UK, German, French and Italian banks.

Chart 4.17 UK historical saving ratio(a)

140 £ billions Per cent 14

Loans (left-hand scale) Deposits (left-hand scale)

Saving ratio

(right-hand scale)

have seen strong inflows in 2010 (Chart 4.18). Aggregate funding plans are also predicated on sizable asset disposals which rest on the assumption that these assets could be sold

120

100

80

60

40

20

0

12

10

8

6

4

2

0

1988 90 92 94 96 98 2000 02 04 06 08

outside of the UK banking sector, to foreign banks or

non-banks, if they are to reduce the UK banks’ funding burden.

*The impact on banks’ margins is likely to be material…*

If, in aggregate, banks’ assumptions about retail deposit growth and asset disposals were to prove optimistic, larger amounts of wholesale funding would be needed, potentially at a higher cost. Term funds are far costlier, relative to

short-term funding, than was the case prior to the crisis (Chart 4.19). Those costs are likely to mount the longer banks are perceived to be taking to develop and implement credible

Sources: Bank of England, ONS and Bank calculations.

(a) Chart shows annual household sector sterling deposits with UK-resident banks, and sterling loans to the household sector from UK banks.

Chart 4.18 Retail flows to UK unit trusts(a)

£ billions 12

Household deposits (M4 flows)

Retail unit trust sales

10

8

6

4

2

+

0

–

2

4

1998 99 2000 01 02 03 04 05 06 07 08 09 10

Source: Bank of England.

(a) Data are seasonally adjusted.

Chart 4.19 Spread curve for senior debt of the six largest UK banks(a)(b)(c)

Basis points 350

Maximum-minimum range Median 2010

Median 2006

300

250

200

150

100

50

+

0

–

50

1 2 3 4 5 6 7 8 9 10 15

Years

Sources: British Bankers’ Association data obtained from Bloomberg, UBS Delta and Bank calculations.

(a) Spreads to maturity-matched swap rates.

(a) Six largest banks as at end-2009: Barclays, HSBC, Lloyds Banking Group, Nationwide, RBS and Banco Santander.

(c) One-year spread calculated as the average between bank specific six-month Libor quotes minus six-month Libor and two-year debt spreads. Nationwide was assumed to obtain six-month funding at Libor.

funding strategies. This underlines the importance of prompt and determined action by banks to term out their funding. The alternative of banks relying increasingly on short-term wholesale markets for funding is undesirable. It would perpetuate the structural fragilities in funding profiles that have caused disruption over the past three years.

*…and issuance plans are sensitive to shocks.*

To meet their refinancing challenge, banks will need to maintain a steady flow of issuance of term funding. In practice the pattern of issuance in 2010 has been lumpy. January saw strong public issuance of around £25 billion of unsecured, secured and securitised term debt by the major UK banks.

Issuance was also strong in March at around £20 billion. But total public issuance was around £18 billion for February, April and May combined. The lack of issuance in May largely reflected the emergence of concerns over euro-area sovereign risk. This illustrated the vulnerability of banks’ issuance plans to disruption by wider events and the importance of banks taking a far-sighted and strategic approach to treasury management.

Any broadening of sovereign concerns to non euro-area economies could further affect international banks’ funding costs. Past correlations suggest that the cost of bank debt rises by around 80 basis points for every 100 basis points rise in government bond yields. And any fall in banks’ debt ratings, for example as a consequence of a sovereign downgrade, may increase banks’ debt costs by around 30 basis points for every notch lost, judging from past relationships.

*UK banks remain reliant on dollar funding…*

As discussed in Section 3, recent events also reinforced concerns over global banks’ reliance on dollar funding. These concerns were reduced by the reintroduction of swap lines with the Federal Reserve which, in the event, have not been intensively used. But large UK banks — like their counterparts overseas — remain vulnerable to loss of access to dollar funding markets. Around 40% of UK banks’ international claims are dollar denominated. In aggregate, those assets are fully funded by dollar liabilities. But some of those liabilities —

such as the US(80 billion (£50 billion) of deposits and other instruments held by the top ten prime US money market mutual funds (MMMFs) — have proved to be unstable at times of financial market stress. Recent changes to MMMF regulation, noted in Section 3, could reduce the maturity of deposits and other investments they provide to banks. That would tend to heighten fragilities in dollar funding of the international banking system.

*…and planned changes in capital regulation remain a challenge…*

On top of funding challenges, banks will need to hold materially more high-quality capital in future due to the effects of tighter regulation. Changes to the regulatory framework for market risk agreed by the Basel Committee on Banking Supervision (BCBS) in July 2009 will require UK banks to hold more capital against trading activities, particularly securitisations. All the elements of this trading book package will need to be implemented by 31 December 2011.

*…that an extended transition period would help.*

Further improvements to capital and liquidity standards are planned by the BCBS as part of a package of reforms known as Basel III. The period over which these new requirements will be introduced has yet to be agreed. Section 5 discusses work under way in more detail. It is unlikely that all the major

UK banks will be able to acquire the capital needed through retention of profits alone, other than over an extended transition period. The December 2009 *Report* urged banks to add to capital, both through issuance and by reducing discretionary distributions to staff and shareholders, to ease the transition to higher regulatory standards.

Chart 4.20 Major UK banks’ use of total revenue(a)

*Discretionary distributions are little changed…*

Since the December 2009 *Report*, UK banks have made some

 2005

 2006

2007

 2008

2009

Per cent of total revenue

50

40

30

20

10

+

0

–

10

20

progress towards raising capital through increased retention of income. Excluding loss-making banks, the dividend payout ratio of UK banks was 39% in 2009, compared with an average of 50% between 2005 and 2008. This allowed profitable banks to retain an extra £2 billion of earnings. The average staff cost to revenue (‘compensation’) ratio was 26% in 2009

— down from 30% in 2008 (Chart 4.20). This was driven by higher revenue rather than reduced costs, with costs rising by 14% to £52 billion. Between 2005 and 2007, the average compensation ratio was only 23%.

*…and should be contained as maintaining lending remains important for banks’ risks.*

The December 2009 *Report* also emphasised the importance

Retained profits Dividends Staff costs Credit provisions

Source: Published accounts.

(a) Retained profits are calculated as profit attributable to group minus ordinary dividends.

of an adequate supply of credit to the UK economy. Other things being equal, stronger lending should support recovery, bolstering banks’ balance sheets and improving access to capital and funding. With unleveraged investors withdrawing risk capital, the need for supportive lending by the banking sector has, if anything, increased since the December *Report*.

Table 4.A Banks’ CDS premia in 2010(a)

|  |  |  |  |
| --- | --- | --- | --- |
|  | Current level | Change in 2010 | Percentage change  in 2010 |
| Germany | 144 | 43 | 43 |
| United States | 157 | 57 | 56 |
| Italy | 182 | 103 | 130 |

While future financing and regulatory challenges exist, the UK banks are well capitalised by recent historical standards and relative to plausible stresses short of a conflagration.

Significantly, UK banks have not been singled out during recent turbulence as potential sources of weakness (Table 4.A). This suggests that progress in bolstering their capital position is

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| United Kingdom | 183 | 82 | 81 | recognised by market participants. |
| France | 202 | 95 | 88 |  |
| Spain | 359 | 190 | 112 | But despite appearing profitable (Chart 4.21), lending has |
| Ireland | 397 | 77 | 24 | remained weak. There is a risk that banks’ funding strategies |
| Portugal | 497 | 407 | 453 | could constrain lending to the household and, in particular, the |
| Greece | 582 | 299 | 106 | corporate sector in 2010 and 2011. The effect might well |

Sources: Thomson Reuters Datastream and Bank calculations.

1. Average senior five-year CDS premia of banks with assets exceeding US(100 billion, in basis points.

Chart 4.21 Spreads on floating-rate mortgage lending by the major UK banks(a)

sustain tight credit conditions and temper economic growth. That could imply lower income and higher levels of impairments — and so lower levels of capital — for the

UK banking sector.

Per cent

3.0

Spreads on new lending

Spreads on stock of existing lending(b)

2.5

2.0

1.5

1.0

0.5

0.0

2004 05 06 07 08 09 10

Sources: Bank of England and Bank calculations.

1. Excludes Bank of Ireland. Includes Britannia and Nationwide from 2008.
2. Spreads calculated as the average of the monthly observations of the effective mortgage rate less Bank Rate. 2010 data are to end-April.

Chart 4.22 Capital accumulation achievable through variations in compensation and dividend expense(a)(b)

There remains scope for banks to build capital while sustaining lending to the real economy. This would require banks to increase their efforts to contain discretionary distributions to shareholders and staff. The benefits from more concerted action are potentially considerable. Chart 4.22 illustrates the capital which could be created through different combinations of dividend and compensation ratios, assuming current revenue levels for the largest UK banks. Based on 2009 results, it suggests that constraining compensation ratios to pre-crisis levels, while limiting dividend payouts to 2009 levels, could enable the major UK banks to generate around £10 billion of additional capital over 2010. There is considerable scope to increase capital further by constraining dividends below 2009 levels (or paying them in equity).

Based on average risk weights on domestic lending derived from 2009 balance sheets, if the UK banks were to use that

£10 billion of additional capital, then around £50 billion of

 £5 billion  £10 billion

 £15 billion  £20 billion

Dividend to revenue ratio

0.14

0.12

0.10

new UK lending could be sustained. This would help offset any reduction in lending that could otherwise be necessary if banks are to meet the funding challenges set out above.

0.08



2005

2007

2006

2009

0.06

0.04

0.02

0.2 0.22 0.24 0.26 0.28 0.3

Compensation to revenue ratio

0.00

Sources: Published accounts and Bank calculations.

1. Lines indicate staff compensation and dividend ratios that would generate various levels of retained capital, and are based on major UK banks’ 2009 results. Diamonds indicate compensation to revenue and dividend to revenue ratios for the major UK banks in various years. Diamonds for 2005–08 are not indicative of capital retained in 2005–08, as results in these years differ from the 2009 results used to calibrate the lines.
2. Compensation to revenue and dividend to revenue ratios were high in 2008, partly due to lower revenue in that year. Though the 2008 ratios are outside the limits of this chart, they are presented in Chart 4.20.

# Preserving financial stability

### In the current environment, a balance needs to be struck between maintaining bank resilience, encouraging lending to support economic recovery and gradually moving towards higher levels of capital and liquidity in the banking system. There is an emerging international consensus that more stringent regulatory requirements are necessary over the medium term. But from a macroprudential perspective, it is important that the transition allows banks to maintain lending to the real economy.

Regulatory reform is part of a wider package of policy measures intended to ensure the stable supply of financial services to the real economy. To be effective, the policy framework needs to guard against cyclical build-ups of risk as well as removing the problem of banks that are too important to fail. Imposing restrictions on banks’ activities will be considered by the Independent Commission on Banking established by the Government. Higher capital requirements, improved resolution arrangements, stronger market discipline and robust market infrastructure also have a role to play.

Table 5.A Regulatory milestones

Date Event

Mid 2010 Comprehensive impact assessment of the capital and liquidity measures proposed in the December 2009 BCBS consultation document.

September 2010 EMIL (European Market Infrastructure Legislation) legislative

proposal from the European Commission, including moving OTC derivatives onto exchanges and strengthening market infrastructure standards.

October 2010 European Commission to set out proposals for the development of a new crisis management framework.

October 2010 FSB report on systemic institutions.

Q4 2010 FSA to make further announcement on implementation of new liquidity regime.

Late 2010 Agreement on Basel III.

2011 All major G20 financial centres to have adopted the Basel II capital framework.

Q1 2011 CPSS-IOSCO report on the general review of standards for financial market infrastructure to go to consultation.

June 2011 International accounting bodies to have completed convergence project.

Mid 2011 BCBS proposals on trading book fundamental review.

September 2011 Independent Commission on Banking to produce a final report on banking system reform.

End 2011 Implementation of July 2009 revisions to the Basel II market

risk framework.

End 2012 All standardised OTC derivative contracts to be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties.

Sources: BIS, European Commission, FSA and G20.

Previous *Reports* have described reforms required to preserve financial stability over the medium term. This Section provides an update on a subset of these reforms (Table 5.A).

* 1. The transition to new regulatory requirements

*Banks are concerned that regulatory reform is constraining lending…*

The Basel Committee on Banking Supervision (BCBS) is currently working towards agreement on a comprehensive package of reforms to international capital and liquidity standards by late 2010. Calibration of these new standards (‘Basel III’) should aim for materially higher levels of capital and liquidity in the banking system.

Banks have reported that uncertainty over the future shape of financial regulation is having a significant influence on their lending decisions. Recent surveys of banking sector opinion, and responses to the Bank’s *Systemic Risk Survey*, paint a similar picture (Chart 5.1).

*…with significant increases in capital and liquidity requirements in the pipeline…*

As noted in Section 4, the BCBS agreed in July 2009 revisions to the regulatory framework for market risk that will require banks to hold additional capital against tradable assets. These

Chart 5.1 *Systemic Risk Survey* results: regulation and taxes as a key risk(a)

 Key risks to the UK financial system

Risks most challenging to manage as a firm

Per cent of survey respondents citing risk

60

50

40

30

20

10

0

July May Nov. May

2008 09 10

Sources: Bank of England *Systemic Risk Survey* (July 2008, May 2009, November 2009 and May 2010) and Bank calculations.

(a) Per cent of respondents citing regulation and taxes as a risk. Market participants were asked to list in free format the five risks they believed would have the greatest impact on the UK financial system if they were to materialise, as well as the three risks they would find most challenging to manage as a firm. Risks cited in previous surveys have been regrouped into the categories used to describe the latest data.

Chart 5.2 Estimates of the impact of CRD3 and CRD4 on core Tier 1 capital ratios of the five largest UK banks

 Maximum-minimum range  Average

Percentage point reduction 4.5

4.0

3.5

3.0

2.5

2.0

1.5

1.0

revisions are being implemented in the EU through

amendments to the Capital Requirements Directive (CRD3). According to FSA estimates, the overall effect of CRD3 on UK banks’ core capital ratios is likely to be relatively modest. The BCBS has also decided to delay implementation of the package until the end of 2011. This should limit the overall economic impact by giving banks more time to adjust their

balance sheets without reducing lending to the real economy.

But further planned changes to regulatory standards as part of the Basel III package are likely to have a materially larger effect on UK banks’ capital positions . Market participants estimate that preliminary European Commission proposals for further revisions to the Capital Requirements Directive (CRD4) to implement Basel III would, if implemented immediately, reduce the major UK banks’ core Tier 1 capital ratios by up to

4 percentage points, compared to less than 2 percentage points for CRD3 (Chart 5.2).

*…so it is important that the transition allows banks to maintain lending.*

Finalisation of the Basel III package will take place this year. This should provide banks and other market participants with a clearer view on future regulatory requirements, thereby reducing uncertainty. But it is important that policymakers also provide clarity over the implementation timetable for the new requirements.

Although higher levels of capital will ultimately be needed, it would not be appropriate for banks to be increasing their capital buffers immediately if this were at the expense of a reduction in lending to the real economy. Work is under way internationally to gauge these transitional costs. The transition to new regulatory standards does not need to

be rushed and should, in principle, be contingent on the economic environment. Consistent with this approach, the FSA announced in March that it would postpone introduction of the quantitative elements of its new liquidity regime until macroeconomic conditions have improved.

CRD4 CRD3 CRD4 CRD3 CRD4 CRD3

0.5

0.0

* 1. Constraining excessive risk-taking by the

Autonomous Research(a)

Credit Suisse

Deutsche Bank

banking system

Sources: Autonomous Research, Credit Suisse, Deutsche Bank and Bank calculations.

(a) Where an assessment of the impact of CRD3 is described as ‘not material’ it has been assumed to be zero.

A suitably designed and calibrated regulatory framework can help to constrain the financial system from taking on excessive risk during the upswing of the credit cycle, while cushioning the effects of excessive caution during the downswing.

*New regulatory requirements should be based on analysis of the long-run costs and benefits…*

As part of the Basel III package, the BCBS is currently undertaking a calibration exercise to determine appropriate ‘steady-state’ requirements for banks’ capital and liquidity.

The calibration of regulatory capital requirements should reflect two key judgements:

* + - First, a view on the ‘cycle-neutral’ level of capital — the amount of capital banks would be expected to hold on average over the economic cycle.
    - Second, an allocation of the cycle-neutral level of capital between a buffer of usable capital and a ‘hard minimum’ capital requirement (below which a bank would typically be subject to regulatory action, such as entry into the resolution regime).

Chart 5.3 Schematic representation of a future regulatory capital framework

Capital requirements (per cent of risk-weighted assets)

Time-varying overall level

Time-varying buffer

‘Cycle-neutral’ buffer

Minimum requirement (hard floor)

Calibration of the cycle-neutral level of capital should weigh the economic costs and the stability benefits of higher regulatory requirements. As discussed in Box 7, requiring banks to hold larger capital buffers could increase the cost of credit, leading to a slightly lower steady-state level of economic activity. But it would also reduce the frequency and severity of future financial crises and the output losses these crises entail.

The hard minimum would be a backstop measure to capture uncertainty over the value of a bank’s assets and hence its solvency. But it would not be a usable source of capital for banks; it would need to be complemented by an additional buffer of capital that banks can use to absorb unexpected losses and maintain lending to the real economy. This buffer should vary over time, rising in periods of credit exuberance and falling during the subsequent downturn (Chart 5.3). As set out in the Governor’s Mansion House speech, this countercyclical role for capital ratios is one possible macroprudential tool.(1)

Source: Bank of England.

Time

*…and tackle fault lines in the regulatory treatment of trading activities.*

It is also important that relative risks across the spectrum of banks’ activities are properly measured. The most evident

Chart 5.4 Relative importance of the trading book in

overall capital requirements and total assets

Per cent 60

Maximum-minimum range Interquartile range

Median

50

40

30

20

10

0

fault line in the current regulatory framework has been the treatment of banks’ trading activities, where capital held against trading assets is much smaller than their share of total assets (Chart 5.4).

The current definition of the regulatory trading book is based on the concept of ‘trading intent’. From a prudential perspective, however, a firm’s intention to trade is less relevant than its ability to trade, which may be constrained by a lack of market liquidity. The current regime is also inconsistent in the treatment of risk either side of the trading/banking book boundary. Broadly, the banking book captures default risk, while the trading book focuses on market risk. And the assumption underlying the trading book regime is that

Trading book capital charges

(per cent of total capital charges)(a)

Sources: FSA and Bank calculations.

Trading book assets

(per cent of total assets)

positions can be liquidated or hedged in a short time period.

(a) Trading book capital charges are defined as the sum of capital requirements against market

risk and counterparty credit risk. This likely overestimates the amount of capital banks hold against trading book exposures. Some market risk and counterparty credit risk capital charges relate to positions booked in the banking book.

(1) King, M (2010), Speech at Mansion House, available at [www.bankofengland.co.uk/publications/speeches/2010/speech437.pdf.](http://www.bankofengland.co.uk/publications/speeches/2010/speech437.pdf)

### Box 7

The long-term economic impact of higher capital levels

Higher prudential capital levels for banks can have both costs and benefits for the economy. Costs may arise if banks pass any increase in their funding costs onto firms who then reduce investment. But there may also be benefits if higher capital levels make the banking system more resilient, reducing the probability or severity of financial crises. This box discusses these costs and benefits and outlines a simple cost-benefit framework that may be helpful for thinking about these issues.(1) It applies the framework to produce some illustrative estimates of the long-term macroeconomic impact of higher capital levels.

#### Cost-benefit framework

A key factor determining banks’ response to a higher required capital ratio is the length of the transition period during which these requirements are phased in. If the transition period is short, banks might choose to shrink their assets by rationing credit. With a longer transition, banks have more time to meet the requirements by retaining earnings and issuing equity. In such circumstances, banks are unlikely to risk losing market share by rationing credit and so macroeconomic costs are likely to be smaller. Since regulatory changes should be assessed by their long-run impact, this box assumes a lengthy transition period.

In the long run, banks are likely to respond to higher marginal funding costs by attempting to restore their profit margins, including by increasing interest rates on lending. If so, and assuming no offsetting factors, non-financial firms might reduce their investment, the long-run level of productive capital in the economy might decline and steady-state GDP might fall.

But there are offsetting factors which might limit the steady-state increase in banks’ funding costs, other things being equal. Given their reduced leverage, the cost of bank debt should fall. And investors in bank equity may demand lower risk premia due to a reduction in the likelihood of extreme events.(2)

Turning to the benefits, it is difficult to assess the relationship between capital levels and the probability and severity of systemic crises. History suggests, however, that financial crises have often been extremely costly, with significant output losses and scarring effects that permanently reduce the level of output. For example, the IMF estimate that output remains 10% below its pre-crisis trend seven years after the start of a typical systemic crisis.(3) So even if the probability of crises can be reduced slightly, the potential gains would be

large. And there might be additional welfare benefits deriving from greater stability in a regime with less frequent crises.

This box considers a simple example which attempts to place rough bounds on the steady-state costs and benefits of higher capital levels. The analysis assumes that the costs and benefits only affect the level of GDP, not its long-term trend growth rate. The estimates are subject to considerable uncertainty.

#### The economic costs of higher capital

Assume that all capital is fully loss-absorbing, that the definition of risk-weighted assets remains unchanged compared to Basel II and that banks respond to higher capital requirements by replacing debt with equity and leaving the asset side of their balance sheet unchanged.

Total assets of the UK banking sector — here proxied by a group of major banks in the United Kingdom — were about

£9 trillion in 2008 and risk-weighted assets were about

£3 trillion. An increase in the capital ratio by 1 percentage point would imply that, in aggregate, banks would have to raise an additional £30 billion in equity. If remunerated at 10%, this would cost banks £3 billion per year.(4) But, at the same time, banks could retire debt worth £30 billion.

Assuming a typical cost of wholesale debt of 5% and a tax rate of 28%, this would result in an after-tax saving of about

£1 billion.(5) This would leave banks with an annual increase in funding costs of around £2 billion to recoup. If this were recovered solely from global lending to non-bank customers, the lending spread after accounting for taxes would have to increase by about 7 basis points. This cost estimate rises linearly with increases in capital levels. For example, if the capital ratio was increased by 2 percentage points, lending spreads would rise by twice that amount.

The long-run impact of higher bank lending spreads on GDP can be assessed using a simple production function. In this framework, an increase in non-financial firms’ cost of capital reduces their investment and, ultimately, the level of GDP. Using a Cobb-Douglas production function, the elasticity of output with respect to firms’ cost of capital is  / ( – 1), where , the output elasticity of capital, is taken to be 0.3.(6) As bank lending represents only part of firms’ total external financing, firms’ overall cost of capital is likely to rise by only about a third of the increase in banks’ lending spreads. On this assumption, a 7 basis point increase in lending spreads maps into a 0.1% permanent decline in the level of GDP.(7) Table 1 contains cost estimates for larger increases in capital requirements.

Assuming a discount rate of 2.5%, this would suggest that the present value costs of increasing the capital ratio by

1 percentage point would be around 4% of 2008 UK GDP.(8)

Table 1 Estimated permanent decline in the level of GDP

Increase in level of capital, per cent of risk-weighted

assets (percentage points) 4 6 8

Estimated decline in the long-run level of GDP

(per cent) -0.4 -0.6 -0.8

Source: Bank calculations.

This calibration assumes that there is no impact of lower leverage on the cost of debt or equity and all of the adjustment falls on customer lending rates rather than through lower operating costs, increased non-interest income, or lower retail deposit rates. Relaxing these assumptions would reduce the impact on GDP. In addition, empirical

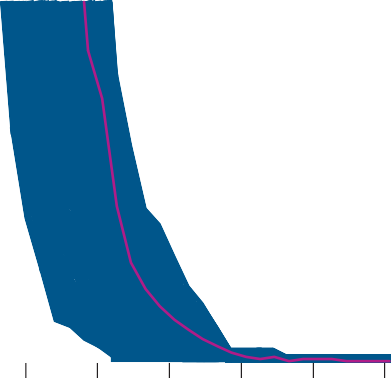
would amount to 20% of GDP and the benefits to 110% of GDP.(14)

Estimates from the structural model can be used to compare the marginal benefits and costs of higher capital levels.

Chart A shows that marginal costs are roughly linear in the capital ratio. Marginal benefits decline sharply as capital levels rise, reflecting the decreasing likelihood of shocks that are large enough to cause a bank’s default (Chart B). Confidence intervals around the central estimates (magenta lines) are also shown.(15) Although only illustrative, these estimates suggest marginal costs and benefits are equated at capital ratios between 10% and 15%.

evidence suggests that, for the United Kingdom, the

Cobb-Douglas production function tends to overestimate the reaction of output to changes in firms’ cost of capital. In that sense, these long-run cost estimates are probably an upper bound.



#### The economic benefits of higher capital

To assess the benefits of higher capital levels, consider a

1 percentage point reduction in the probability of financial crises. Suppose that the initial output loss in a systemic crisis is 10%, with three quarters of this lasting for five years, while the remainder is permanent.(9) Using the same discount rate, the present value benefit of reducing the likelihood of systemic crises by 1 percentage point is around 55% of 2008 GDP.(10) If there were no permanent scarring effect, this would reduce to 20% of GDP.

Several techniques can be used to try to assess the relationship between capital requirements and the probability and severity of systemic crises.(11) This box takes a structural approach. The banking sector is modelled as a portfolio of banks whose default risks are correlated.(12) A bank is assumed to fail if its capital ratio approaches the current Basel 4% minimum; for purposes of illustration only, a 2 percentage point buffer is used. The model is calibrated using data for the five largest UK banks, with a systemic crisis defined as the joint default of at least two of these banks.

The model predicts that small increases in capital above the viability threshold can reduce the likelihood of systemic crises substantially. On the basis of this illustrative modelling, the additional reduction in the probability of crises appears to be small for capital thresholds above 13%.(13)

#### Implications for capital requirements

A simple way to compare the costs and benefits of higher capital levels is to ask by how much the probability of a crisis would have to fall to offset the costs of higher capital levels. If, for example, the capital ratio was increased by 5 percentage points and the crisis probability fell from 4% to 2%, the costs

Chart A Marginal cost from higher capital levels

Marginal cost (per cent of GDP)

15

10

5

0

9.0 10.5 12.0 13.5 15.0 16.5 18.0

Bank capital as a proportion of risk-weighted assets

Source: Bank calculations.

Chart B Marginal benefit from higher capital levels

Marginal benefit (per cent of GDP)

15

10

5

0

9.0 10.5 12.0 13.5 15.0 16.5 18.0

Bank capital as a proportion of risk-weighted assets

Source: Bank calculations.

One method of double-checking the plausibility of these results is to evaluate banks’ losses during past systemic banking crises. Evidence from such crises suggests that banks typically make losses equivalent to 4% to 5% of risk-weighted assets (Chart C).(16)

Chart C Cumulative peak losses as a percentage of risk-weighted assets at the start of the crisis(a)

Per cent 35

30

In addition, banks are likely to need additional capital to maintain a reasonable growth of lending. For example, to maintain growth in risk-weighted assets of 8% per year for five years after the start of a crisis, banks would need an additional buffer of about 3% of risk-weighted assets.(17)

Korea (1997–99)

Finland (1990–93)

Sweden and Norway (1990–93)

25

20

15

10

5

0

UK recent crisis (2007–09)

Taken together, and for illustration, this particular model suggests a cycle-neutral capital requirement in a broad range around 10-15%. The robustness of this would depend on the results of alternative models and calibrations.(18) This analysis is consistent with banks holding more capital at the height of the credit cycle to be resilient and able to continue lending.

This framework is complementary and reaches broadly similar conclusions to FSA analysis.

Sources: Capital IQ, Bankscope published by Bureau van Dijk, Korean FSS, published accounts, and Bank calculations.

1. The chart includes only those banks that incurred losses. Each shaded band shows 5% (between the 5th and 95th percentiles) of the support of the interpolated distribution across banks. The diamond shows the median. Start of crisis defined as a year before a bank incurred a loss (defined as net income after tax and before distributions). UK figures based on the major loss-making UK banks.

* 1. In a complementary cost-benefit analysis, Barrell *et al* (2009) find that there are substantial net benefits from higher levels of capital and liquidity. See Barrell, R, Davis, E, Fic, T, Holland, D, Kirby, S and Liadze, I (2009), ‘Optimal regulation of bank capital and liquidity: how to calibrate new international standards’, *FSA Occasional Paper No. 38*.
  2. Modigliani and Miller (1958) argue that either the cost of equity or the cost of debt (or both) need to fall when more expensive equity funding substitutes for cheaper debt funding. Barro (2006) argues that the cost of equity includes a premium to compensate for the risk of extreme events/high volatility — this risk should fall when banks are better capitalised. See Modigliani, F and Miller, M (1958), ‘The cost of capital, corporation finance and the theory of investment’, *American Economic Review*, Vol. 48, pages 261–97; and Barro, R (2006), ‘Rare disasters and asset markets in the twentieth century’, *The Quarterly Journal of Economics*, Vol. 121(3), pages 823–66.
  3. IMF (2009), *World Economic Outlook*, October.
  4. Academic studies place the cost of equity for banks at slightly below 10%. See, for example, Zimmer, S A and R N McCauley (1991), ‘Bank cost of capital and international competition’, *FRBNY Quarterly Review*, Winter, pages 33–59; King, M (2009), ‘The cost of equity for global banks: a CAPM perspective from 1990 to 2009’, *BIS Quarterly Review*; and Capie, F and Billings, M (2004), ‘Evidence on competition in English commercial banking, 1920–70’, *Financial History Review*, Vol. 11(1),

pages 69–104.

* 1. The effective marginal tax rate is approximated by the current corporate tax rate, and the marginal pre-tax cost of debt by the average bank sterling 5–7 year senior debt yields over the past seven years.
  2. The formula assumes that labour supply does not change in response to higher interest rates.
  3. A 7 basis point (bp) increase in bank funding costs raises firms’ cost of capital — here taken to be 10% — by 7 bp / 3, approximately equal to 2 bp or about 0.2%. This suggests that output might fall by about 0.2% x  / ( – 1), or 0.1%.
  4. HM Treasury (2003) suggest that the discount rate should depend on the time during which the regulatory reform yields benefits. A range between 1% and 3.5% appears to be an appropriate choice. See HM Treasury (2003), *The Green Book: appraisal and evaluation in central government*, London.
  5. This is broadly consistent with the IMF evidence mentioned above. But estimates of the long-run impact of banking crises on GDP are rare and fraught with uncertainty. For example, Furceri and Mourougane (2009) argue that the permanent decline is about 2% of GDP; Cerra and Saxena (2008) find evidence of a permanent 7.5% decline. Barrell *et al* (2009) argue that in the majority of crises, there is no permanent effect on output. See Furceri, D and Mourougane, A (2009), ‘Taking stock of existing structural policy and outcome indicators’, *OECD Economics Department Working Paper No. 668*; and Cerra, V and Saxena, S (2008), ‘Growth dynamics: the myth of economic recovery’, *American Economic Review*, Vol. 98, pages 439–57.
  6. This is computed as the product of the cost per crisis per year (10% of 2008 GDP), and the probability-weighted sum of the discount factors, 1% \*(1/$ x 1 / (1 – ) + 3/$ x (1 – 5) / (1 – )) / (1 – ), where , the discount factor, is 1 / (1 + 2.5%). For a similar approach, see Haldane, A (2010), ‘The (100 billion question’, available at [www.bankofengland.co.uk/publications/speeches/2010/speech433.pdf.](http://www.bankofengland.co.uk/publications/speeches/2010/speech433.pdf)
  7. For a reduced-form approach, see Barrell *et al* (2009).
  8. The model is based on Elsinger, H, Lehar, A and Summer, M (2006), ‘Using market information for banking system risk assessment’, *International Journal of Central Banking*, Vol. 2(1), pages 137–65; and Merton, R (1974), ‘On the pricing of corporate debt: the risk structure of interest rates’, *Journal of Finance*, Vol. 29(2),

pages 449–70. The volatility of each bank’s assets is inferred from the volatility of the market value of its equity. Losses arising from defaults are transmitted via a network of interbank exposures and can lead to contagious defaults. As with any structural model of credit losses, some of its assumptions may lack realism.

* 1. The results are sensitive to the period over which it is calibrated. The more volatile equity prices over the period, the greater the inferred volatility of the bank’s assets, and the greater the chance that the asset value falls sufficiently to push a bank’s equity below the viability threshold. The inferred volatility of banks’ assets might be too low if government intervention reduces the volatility of bank equity prices.
  2. The frequency of crises since 1973 suggests that on average, one banking crisis occurs every 25 years in industrialised countries.
  3. For the costs, the confidence intervals comprise three additional scenarios: one in which differences in the tax treatment of interest payments and dividends are the only deviation from Modigliani/Miller’s theorem; another in which the unit cost of equity is 15% instead of 10%; and a third in which banks offset a third of the increase in funding costs by a reduction in their operating costs. For the benefits, the swathe includes the case in which a quarter of the output losses of crises are permanent and the case in which there is no permanent effect.
  4. See Box 5 in the December 2009 *Financial Stability Report* for details on this approach. Losses are defined as (negative) net income after tax and before distributions.
  5. Over five years, loans would grow by (1 + 0.08)5 – 1 = 45% of risk-weighted assets. If 6% of this is funded with capital, the required additional capital is about 3% of

risk-weighted assets.

* 1. The effect of using new risk weights would be to increase somewhat the marginal costs of higher capital, but the impact on the benefits is unclear. It would be unlikely to alter materially the choice of capital ratio.

Chart 5.5 Mortgage-backed securities, per cent of total trading assets, top 20 US bank holding companies(a)

Per cent

20

18

16

14

12

10

8

6

4

2

1995 96 97 98 99 2000 01 02 03 04 05 06 07 08 0

Sources: Federal Reserve Bank of Chicago and Bank calculations.

(a) Top 20 US bank holding companies (BHCs) by total assets. The composition of the sample of BHCs changes through time and includes foreign-owned BHCs.

Chart 5.6 Trading revenues of US commercial banks, 1996–2009

This treatment of risk renders the framework susceptible to regulatory arbitrage, as banks have an incentive to classify assets as ‘tradable’ in order to benefit from lower capital charges.

This arbitrage opportunity was reflected in the accumulation of increasingly large volumes of illiquid credit-related products in banks’ trading books prior to the crisis (Chart 5.5). During the crisis, a large proportion of trading losses were linked to these credit positions (Chart 5.6).

The July 2009 revisions to the regulatory framework for market risk move in the right direction. But it is important that a wider, more fundamental review of the trading book has also been initiated by the BCBS. In the Bank’s view, two broad principles should underlie the future capital treatment of trading activities:

* + - First, to minimise the risk of arbitrage, any future framework should treat similar types of risk consistently across banks’ balance sheets.

 Credit exposures(a)

 Commodity and other exposures  Equity risk and index exposures

 Foreign exchange exposures  Interest rate exposures

 Total

US( billions

25

20

15

10

5

+

0

–

5

10

15

* + - * Second, any future framework needs to account explicitly for market liquidity risk, as well as credit risk, and in particular for the risk that shifts in liquidity premia will affect positions that are marked-to-market for accounting purposes.

*Banks should reduce their reliance on external ratings…* Banks should not hold assets with risks they cannot understand or manage. In part, this might be achieved by reducing the reliance of capital regulation on external credit ratings.

There has been considerable criticism of credit rating agencies (CRAs) following the crisis, particularly their assessments of

1996 97 98 99 2000 01 02 03 04 05 06 07 08 09 20

Sources: Office of the Comptroller of the Currency and Bank calculations.

(a) The category ‘credit exposures’ was introduced as a separate revenue category in 2007. Prior to that, most of these exposures would have been measured as interest rate exposures.

Chart 5.7 Global structured finance ratings changes(a)

Per cent 50

Downgrades

Upgrades

40

30

20

10

0

structured credit products (Chart 5.7). But improving the performance of CRAs is a separate issue from the role of external ratings in the regulatory framework. Recognition for regulatory purposes can alter the market perception of a rating; it may cease to be seen as an opinion but instead as a point of fact. Moreover, banks’ dependence on the same small set of CRAs may reduce diversity in the financial system, leading to concentrated exposures. The ‘cliff-edge’ effects of ratings downgrades can also amplify procyclicality.

There are various ways of reducing the role of external ratings in the regulatory framework. As discussed in the December 2009 *Report*, capital incentives could be provided to firms that use both internal and external ratings. Similarly, firms could be offered a capital incentive to carry out enhanced due diligence. It is also important for supervisors to focus on banks’ understanding of their portfolios.

1991 93 95 97 99 2001 03 05 07

Source: Fitch Ratings.

(a) Data compare beginning-of-the-year rating with end-of-the-year rating. This does not account for multiple rating actions throughout the year.

*…and strengthen internal treasury management.* There is scope for banks to strengthen their internal risk management practices — for example, by ensuring that

liability management has a more significant influence on balance sheet growth than prior to the crisis. Recent instability in funding markets underlines the need for further improvements to banks’ treasury management functions.

These functions should not seek to be independent profit centres. Rather, their role should be to support, and to some extent constrain, banks’ business units.

Chart 5.8 Foreign bank ownership and cross-border bank lending flows in emerging market economies

Cross-border bank flows (per cent of GDP), average 2003–07 20



15

10

5

+

0

–

0 20 40 60 80 100 5

Foreign ownership of banking system (per cent), 2008

Sources: BIS, Federal Reserve Bank of New York, IMF *World Economic Outlook* (Spring 2010) and Bank calculations.

Chart 5.9 Estimates of the foreign currency maturity mismatch in different countries’ banking systems, 2009 Q4(a)

Per cent of 2009 GDP

250

Maximum-minimum range Midpoint

200

150

100

50

+

0

In that connection, the crisis revealed shortcomings in banks’ internal transfer pricing — the process of allocating central treasury funding to different business lines. Margins on new business often did not appropriately reflect the level of risk. This may have contributed to excessive cross-border credit growth by affiliates of international banks, including in emerging markets (Chart 5.8). It is important that banks continue to upgrade their internal transfer pricing policies, in order to align better the behaviour of business units with the risk appetite and strategy of the entire firm, and also that supervisors include these policies in their reviews.

*Market discipline requires improved disclosure…* Market discipline depends on reliable, timely and granular information, which is comparable across institutions and

jurisdictions. Market participants have been critical of the standard of disclosure by banks during the crisis. The market has, for example, been unable to quantify accurately individual banks’ exposures to European sovereign risk over recent months. This lack of transparency has probably compounded problems in bank funding markets.

Previous *Reports* have flagged the need to improve banks’ disclosure practices in a number of areas, including reporting of intraperiod averages and highs and lows (Box 8). Recent disclosures, including of Lehman Brothers’ use of ‘Repo 105’, underline the importance of improved information for investors.

Better aggregate information is also needed, including on the maturity profile of national banking systems’ foreign currency assets and liabilities. The crisis revealed that some international banking systems had accumulated large maturity mismatches in foreign currency. But a lack of published data means that it is not possible to quantify accurately the scale of these mismatches (Chart 5.9). So further steps are necessary to help policymakers and market participants gauge risks from international capital flows. This, and the need to monitor

–

vulnerabilities in national balance sheets, was previously

50

United Kingdom

Switzerland

Austria Sweden Netherlands

Spain

France Canada Australia Belgium Japan Germany Greece

Portugal Italy

United States

identified as a lesson from the emerging market crises of the

1990s.(1)

Sources: BIS, IMF *World Economic Outlook* (Autumn 2009) and Bank calculations.

(a) The estimates assume that banks’ claims on non-banks are all long term and claims on other banks are all short term. The lower bound estimate additionally assumes that non-banks’ liabilities are exclusively long term, while the upper bound also assumes that all liabilities to non-banks are short term.

(1) The Financial Stability Forum (the forerunner to the Financial Stability Board (FSB)) published a report in 2000 identifying a number of areas where better data on aggregate external positions was required — see Financial Stability Forum (2000), ‘Report of the Working Group on Capital Flows’.

### Box 8

Disclosure of intraperiod information in financial reporting

Reliable, timely and granular information is essential for banks’ own internal risk management and for market discipline to work as an effective restraint on banks’ behaviour. One area where better disclosure is required is on the variation in banks’ balance sheets during the course of a reporting period.

Intraperiod information is particularly important in understanding risks where exposures are held for only a short period of time — for example, market making, underwriting, syndicating loans and money market activity. Chart B shows how activity in the overnight sterling market fluctuates sharply around the end of the month.

Chart B Average daily activity in the overnight sterling market(a)(b)

Currently, quantitative disclosures by UK banks focus on

end-period figures. Where intraperiod information is reported in annual reports, it is mostly restricted to average values of basic balance sheet items. No information on intraperiod highs and lows is provided on a regular basis. In addition, these disclosures are not sufficient to allow comparison across institutions or jurisdictions.

End-period information can be unrepresentative of banks’ behaviour during a reporting period for two reasons. First, due

£ billions

22.0

Maximum

Mean

Average daily volume

Minimum

21.5

21.0

20.5

20.0

19.5

19.0

18.5

18.0

17.5

17.0

to intraperiod volatility in banks’ normal business activity. Second, because of deliberate actions by banks to tailor financial reports at period end.

#### Intraperiod fluctuations

*t*-8 *t*-7 *t*-6 *t*-5 *t*-4 *t*-3 *t*-2 *t*-1 *t t*+1 *t*+2 *t*+3 *t*+4 *t*+5 *t*+6 *t*+7 *t*+8

Sources: Wholesale Market Brokers’ Association and Bank calculations.

1. Average daily activity between January 2006 and June 2010.
2. ‘*t*’ represents last trading day of month.

0.0

End-period data record the balance sheet position of firms at a specific point in time. In isolation, such data can potentially be unrepresentative of the risks a bank is running through the reporting period. For example, Chart A suggests that over the past ten years end-year and half-year figures on the major UK banks’ short-term sale and repurchase (repo) liabilities have underestimated the typical volume of transactions throughout the year.

Chart A Liabilities under repo for major UK banks: average end-month position(a)

£ billions

Some of the funding techniques used in the years leading up to the crisis demonstrate clearly how point-in-time data can be unrepresentative in practice. For example, Northern Rock made extensive use of short-term wholesale liabilities to fund expansion of its mortgage book ahead of a securitisation. Such strategies could lead to wide variations in liability profiles over short periods of time. There is nothing wrong with that in itself but it should be apparent to investors, creditors and regulators.

#### Avoiding window dressing

Reliance on end-period information can also provide incentives for banks to ‘window dress’ their accounts.(1) Window dressing

m1 m2 m3 m4 m5 m6 m7 m8 m9 m10 m11 m12 Month of year

Sources: Bank of England and Bank calculations.

1. Average end-month stock between January 1999 and December 2009.

350

300

250

200

150

100

50

0

involves the use of short-term financial transactions to change accounting values around end-of-period reporting dates. This can lead to a lack of confidence in institutions’ balance sheet disclosures and, equally importantly, to higher system-wide risks as activity is concentrated in particular markets and infrastructures around period ends.

Lehman Brothers provides an example of window dressing in practice. The Lehman Brothers Examiner’s Report highlighted the use of an accounting device known as Repo 105. This device exploited a difference between New York and English law to allow Lehman Brothers to achieve an advantageous treatment under the US accounting rules, moving securities off its consolidated balance sheet and using the cash received to temporarily pay down liabilities.

Lehman Brothers entered into high volumes of such Repo 105 transactions near quarter end to ‘window dress’ its balance sheet (Chart C). This lowered net leverage ratios, which had become an important focus for credit rating agencies, markets and regulators, even though the obligation to repurchase the securities remained. The repo transactions were unwound shortly after each reporting date.

Chart C Lehman Brothers’ use of ‘Repo 105’ transactions(a)(b)

US( billions

60



29 Feb.

30 May

30 Nov.

31 Aug.

50

40

30

20

10

0

Aug. Nov. Feb. May Aug.

2007 08

Source: United States Bankruptcy Court Southern District of New York, Report of Anton R Valukas, Examiner, Vol. 8, 11 March 2010.

1. Dates highlighted are end-quarters within fiscal years.
2. Diamonds denote data points collected by the Examiner on archived Lehman Brothers Global Consolidated Balance Sheets.

#### Current initiatives

International Financial Reporting Standards (IFRS) and Pillar 3 of Basel II currently require banks to disclose period averages where end-period information is unrepresentative of intraperiod positions. Two recent papers consider this issue. An FSA 2009 *Discussion Paper* considers period averages and highs and lows in a section on the comparability and complexity of financial reports.(2) The paper presents two approaches to improve disclosures: a template approach and a principles-based approach (an industry code of practice). A recent paper by the Committee of European Banking Supervisors (CEBS) provides a set of high-level principles for public disclosures during times of stress.(3) Disclosure of intraperiod averages and highs and lows is in line with the principles proposed in both the FSA and CEBS papers.

These initiatives are welcome. But the current scarcity of quantitative intraperiod information, the lack of comparability across institutions and the need to enforce a minimum standard suggest that principles may need to be complemented with a more prescriptive approach.

#### Necessary improvements

A sensible starting place for the disclosure of period averages and ranges (highs and lows) would be a breakdown of assets and liabilities. But basic balance sheet information on period

averages is already published in the United States and the case of Lehman Brothers shows that it is not sufficient. So additional detail might be provided on short-term activities undertaken by banks — for example, loans to and deposits from other banks and financial corporations, repo activity, funding via securities lending, derivative positions and trading activity, both on and off balance sheet. Improvements to Pillar 3 requirements within the Basel framework would usefully take these issues into account.

Some firms may be wary of publishing data on averages if those numbers are influenced heavily by exceptional highs and lows caused by one-off intraperiod transactions. But this situation is one that would seem to warrant more disclosure rather than less. Qualitative information on those exceptional positions could also be disclosed.

Regardless of any minimum regulatory guidance, it is in banks’ longer term interest to ensure that they provide sufficient information for investors to understand risk positions throughout the period. More radically, auditors could be given an explicit responsibility to check for and report on signs of window-dressing actions. If it becomes clear that disclosure repeatedly does not comply with accounting and regulatory standards, or banks are undertaking actions that distort their financial reports, explicit sanctions on banks, and their boards, could be considered by regulators.

1. Basel Committee on Banking Supervision Multidisciplinary Working Group on Enhanced Disclosure (2001), *Final report*.
2. FSA (2009), ‘Enhancing financial reporting disclosures by UK credit institutions’,

*Discussion Paper 09/5*.

1. Committee of European Banking Supervisors (2010), ‘Principles for disclosures in times of stress (lessons learned from the financial crisis)’.

Chart 5.10 Total assets of international banking groups under US GAAP and IFRS(a)

Total assets under IFRS (derivatives gross) £ trillions

3.5

End-2008 US GAAP reporting bank End-2009 US GAAP reporting bank End-2008 IFRS reporting bank

End-2009 IFRS reporting bank

3.0

2.5

2.0

1.5

*…and reforms to accounting standards.*

Reported accounts do not always provide a clear indication of the true risk profile of banks, even when all legal and professional requirements are satisfied. The independent accounting standard-setters are currently undertaking fundamental reviews of their existing standards, including on the classification and measurement of financial instruments.

Revised impairment rules are likely to lead to a more forward-looking approach to provisioning.

0 1 2 3

Total assets under US GAAP (derivatives net) £ trillions

Sources: Published accounts and Bank calculations.

1.0

0.5

0.0

Differences between international accounting standards make comparisons of global banks’ balance sheets problematic, hindering risk assessment by both investors and supervisors. For example, the overall size of banks’ balance sheets can appear significantly different under the two main international accounting standards — the International Financial Reporting

(a) Deviation from the dashed line shows that the total assets of the banking group differ when calculated under IFRS and US GAAP due to different treatment of derivative positions under the two accounting standards.

Chart 5.11 Government capital injections into UK banks and building societies, 2007–10(a)(b)(c)

Standards (IFRS) and the US Generally Accepted Accounting Principles (GAAP) — partly due to differences in the treatment of derivative positions (Chart 5.10). So initiatives to achieve convergence between IFRS and GAAP are crucial. The

Percentage of assets

0.7

Direct injection (left-hand scale) Contingent capital (left-hand scale) Direct injection (right-hand scale)

Contingent capital (right-hand scale)

0.6

0.5

0.4

0.3

0.2

0.1

0.0

Big Medium Small

Sources: HM Treasury, published accounts and Bank calculations.

£ billions

60

50

40

30

20

10

0

International Accounting Standards Board (IASB) has also proposed the introduction of a Regulatory Income Statement, which could include, for example, a breakdown of gains/losses on holdings of illiquid and hard-to-value assets. The Bank supports this proposal.

* 1. Reducing structural vulnerabilities

A robust regulatory framework and enhanced transparency will improve the financial system’s resilience to fluctuations over the credit cycle. But it is also important that policymakers tackle deeper, structural vulnerabilities exposed by the recent

1. ‘Big’ includes Barclays, HSBC, Lloyds Banking Group, RBS; ‘medium’ includes

Alliance & Leicester, Bradford & Bingley, Nationwide, Northern Rock; ‘small’ includes all building societies except Nationwide.

1. Total assets as of end-2008.
2. The Asset Protection Scheme is not included in contingent capital.

Chart 5.12 Liabilities (2001 = 100) and leverage of banks and building societies by size(a)

crisis.

*Policy measures are required to remove implicit government guarantees for large banks…*

In the current crisis, the vast majority of Government capital

support to the UK banking system was provided to larger

Leverage of ‘big’ (right-hand scale) Leverage of ‘medium’ (right-hand scale) Leverage of ‘small’ (right-hand scale)

 Liabilities of ‘big’ (left-hand scale)

 Liabilities of ‘medium’ (left-hand scale)  Liabilities of ‘small’ (left-hand scale)

institutions (Chart 5.11). This underlines the problem of banks

Index Leverage ratio(b)

350 45

that are too important to fail (TITF) — a major public policy

issue that entails a substantial implicit subsidy to the banking

300

250

200

150

100

50

0

40

35

30

25

20

15

10

5

0

2001 02 03 04 05 06 07

system, mostly centred on the largest banks.(1)

The implicit guarantee undermines market discipline and has the effect, by reducing the cost of debt finance, of incentivising TITF banks to take on additional risk. The rapid growth of the largest UK banks relative to smaller institutions prior to the crisis is consistent with this hypothesis (Chart 5.12), suggesting that the TITF problem may have exacerbated the credit boom that ultimately led to the crisis. Correcting this

Sources: Building Societies Association, published accounts and Bank calculations.

1. ‘Big’ includes Barclays, HBOS, HSBC, Lloyds TSB and RBS; ‘medium’ includes

Alliance & Leicester, Bradford & Bingley, Nationwide, and Northern Rock; ‘small’ includes all current building societies except Nationwide.

1. Leverage ratio is calculated as total assets divided by equity.

(1) One possible method for estimating the scale of the subsidy is suggested in Haldane, A (2010), ‘The (100 billion question’, available at

[www.bankofengland.co.uk/publications/speeches/2010/speech433.pdf.](http://www.bankofengland.co.uk/publications/speeches/2010/speech433.pdf) This method estimates the aggregate subsidy for UK banks at £100 billion in 2009 alone, almost all of which was concentrated among larger banks.

distortion may require significant changes to the rules of the game for the financial system. The Financial Stability Board (FSB) is currently co-ordinating international work on possible policy responses and will present recommendations to the G20 later in the year.

Chart 5.13 Concentration of US banking system and average assets relative to GDP of US commercial banks, 1935–2008

Per cent Per cent

*…potentially including restrictions on banks’ business activities…*

As discussed in the December 2009 *Report*, restrictions on banks’ activities, either by business line or by geography, could contribute to tackling the TITF problem. These restrictions could include regulatory limits on the use of insured retail deposits to fund risky assets. For example, in the United States there is an active debate on proposals to prohibit

deposit-taking banks from engaging in proprietary trading — the so-called ‘Volcker Rule’.

More broadly, there is a debate over the case for wider activity

45

(a) (b)

Concentration(c)(d) (left-hand scale)

Average size

(right-hand scale)

40

35

30

25

20

15

10

5

0 1936 41 46 51 56 61 66 71 76 81 86 91 96 2001 06

0.014

0.012

0.010

0.008

0.006

0.004

0.002

0.000

restrictions on the financial system with the objective of making it less prone to systemic risk. In the United States, between the 1930s and the early 1990s, geographical and business line restrictions constrained the size of individual banks and the concentration of the banking industry (Chart 5.13). Over that period, the United States did not

experience a fully systemic crisis, although there were several regional banking crises. More than 200 small banks have failed in the United States since 2008, with minimal systemic disruption given the safety net established by the Federal Deposit Insurance Corporation (FDIC).

Sources: FDIC and Bank calculations.

1. Removal of inter-state branching restrictions.
2. Removal of Glass-Steagall restrictions on commercial and investment banking.
3. Top three banks by total assets as a percentage of total banking sector assets.
4. Data include only insured depository subsidiaries.

In the United Kingdom, the Government has announced that the Independent Commission on Banking will consider the future structure of the UK banking industry. The Commission will be chaired by Sir John Vickers and is due to report by September 2011. The Bank strongly supports this initiative.

*…or by increasing the cost of actions that generate systemic risk.*

An alternative (and not mutually exclusive) policy option is to increase the cost of banking activities that create systemic risk

* for example, by imposing tighter regulatory capital requirements on larger and more complex banks. The FSB and the BCBS are currently exploring that possibility. As well as enhancing resilience, such capital add-ons would create an incentive for banks to adjust their balance sheets to reduce the systemic impact of their distress or failure. Levies on the banking system could, in principle, encourage similar balance sheet adjustment. The Government has recently announced that a levy will be introduced in the United Kingdom from January 2011 and will apply to all UK-resident banks above a certain threshold level of liabilities.(1)
  1. The French and German Governments have announced their intention to introduce similar levies.

*Improvements to resolution arrangements are necessary...* Robust resolution arrangements could also help tackle the TITF problem. Ensuring uninsured creditors face a credible threat of incurring losses would remove the implicit subsidy and sharpen market discipline. The United Kingdom’s Special Resolution Regime (SRR), introduced in 2009, provides the Bank with a range of tools to resolve a failing bank while maintaining continuity of critical financial services. But, as internationally, it is apparent that there are practical barriers to resolving large and complex financial institutions using standard resolution tools such as the SRR.

Chart 5.14 Complexity of international banking groups(a)(b)

 Less than 20 countries Between 20 and 40 countries

 More than 40 countries

Total assets (£ billions)

2,000

1,800

1,600

1,400

1,200

1,000

800

600

400

200

0 500 1,000 1,500 2,000 2,500 3,000 0

Total number of subsidiaries

Sources: Capital IQ, Herring, R and Carmassi, J (2010), ‘The corporate structure of international financial conglomerates', in Berger *et al* (eds), *The Oxford Handbook of Banking*, Oxford University Press and Bank calculations.

1. Each diamond represents an international banking group.
2. Number of countries in which the banking group has at least one majority-owned subsidiary.

International work to prepare recovery and resolution plans for the largest international banks is an important step towards identifying barriers to orderly resolution. Lowering these barriers may require changes to banks’ legal and organisational structures. For example, it is currently not uncommon for large banking groups to comprise more than 1,000 separate legal entities and to operate in at least 40 countries

(Chart 5.14). These institutions are unresolvable with their current structures. Harmonisation of national resolution regimes, while desirable, will not be sufficient to prevent divergent national interests from obstructing co-ordinated resolution of a cross-border bank during a crisis.

*…including new tools for recapitalisation by creditors.* Given these challenges, and the deadweight costs of bankruptcy, an international debate is under way on the

possibility of introducing new tools that could help ensure that uninsured creditors provide capital support to a bank to allow it to continue as a going concern — creditor recapitalisation.

Creditor recapitalisation could, in principle, be achieved through a statutory regime that allows the resolution authority to impose haircuts on uninsured creditors and then convert part of their residual claims into common equity in the event of failure.(1)

A related initiative would involve introducing contractual clauses into banks’ debt liabilities that require some of the debt to convert into equity once a specified trigger event, or set of trigger events, occurs. These clauses could be mandated by regulation or could become market practice. They would allow prompt and sequential recapitalisation of a bank by its uninsured creditors, without the need for regulatory intervention. This is related to ongoing work by the BCBS on the role of contingent capital instruments in the regulatory framework. These instruments might be used to meet capital add-ons for systemically important banks.

(1) As discussed in Tucker, P M W (2010), ‘Resolution of large and complex financial institutions: the big issues’, available at [www.bankofengland.co.uk/publications/speeches/2010/speech431.pdf.](http://www.bankofengland.co.uk/publications/speeches/2010/speech431.pdf)

*Robust infrastructure also reduces the systemic impact of bank failures…*

Previous *Reports* have argued that extending central counterparty (CCP) clearing can help to address structural vulnerabilities within the financial sector, particularly in

over-the-counter (OTC) derivatives markets. Further progress has been made in extending CCP clearing in the interest rate swaps market. Around 45% of the total notional market value is centrally cleared. Index and liquid single-name CDS clearing is also provided by a number of CCPs, with around 25% of the market centrally cleared. The FSB is currently investigating ways to increase product standardisation and further extend CCP clearing in OTC derivative markets.

Chart 5.15 Proportion of eligible OTC derivative event volume subject to electronic confirmation(a)

 2009

 2010 Per cent

100

90

80

70

60

50

40

30

20

10

Interest rate Credit Equity FX Commodity 0

derivatives derivatives derivatives derivatives derivatives

Source: *ISDA Operations Benchmarking Survey 2010*.

(a) OTC derivative events include new trades, novations and terminations.

Chart 5.16 Proportion of OTC derivative trade records containing errors

 2008

2009

2010

Per cent

20

18

16

14

12

10

8

6

4

2

*…including rigorous global standards for CCP risk management…*

The contribution central clearing can make to overall financial stability is critically dependent upon the adequacy of CCP risk management. Guidelines on how existing standards should be applied to OTC derivatives have already been issued by central banks and securities commissions, and a major review of global standards for CCPs is also under way.

This review is an important opportunity to improve standards in key areas (Box 9). These standards can help to limit the room for CCPs to lower risk controls in response to competitive pressures, which may arise, for instance, when some CCPs are for-profit organisations or part of exchanges. The review will also examine risks arising from arrangements that allow members of different CCPs to trade on the same trading platform but clear through different CCPs — so-called ‘interoperability’. This can create exposures between CCPs and potentially diminishes some of the systemic benefits of central clearing. Where interoperability of this kind is permitted, it is important that CCPs hold additional resources against the default of another CCP.

*…sound bilateral clearing arrangements and robust trading platforms.*

Derivatives transactions that remain outside of CCP clearing houses will continue to be subject to bilaterally agreed risk management arrangements. It is critical that these arrangements allow market participants to measure and manage their counterparty risks effectively.

While the industry has made progress, more is needed. For example, less than 75% of eligible FX derivative trades are electronically confirmed, compared with more than 90% for CDS trades (Chart 5.15). Similarly, there is scope to reduce trade input errors, particularly for interest rate, credit and equity derivatives (Chart 5.16).

Interest rate derivatives

Credit derivatives

Equity derivatives

FX

derivatives

Commodity 0

derivatives

The use of portfolio reconciliation across market participants is also variable. Reconciliations allow counterparties to confirm

Source: *ISDA Operations Benchmarking Survey 2010*.

their respective trade obligations, providing a more accurate

### Box 9

Strengthening CCP risk management

Previous *Reports* have set out some of the systemic risk benefits of central counterparty (CCP) clearing — particularly for OTC derivatives markets. If these benefits are to be fully realised, standards for CCP risk management need to be strengthened.

The need for strengthening is partly driven by lessons from the recent crisis, notably the fragility of market liquidity and the extent to which markets and participants are interlinked.

But it is also driven by the additional risks arising from the expansion of CCP clearing into new products. These products

— including some OTC derivatives — can be long dated, less frequently traded than exchange-traded products, and may also have non-linear pay-off features that present particular risk management challenges. New clearing participants — such as smaller banks, dealers, and buy-side firms — also present new credit and operational risks that a CCP needs to manage.

A further driver for more robust standards is the scope for competition between new and incumbent CCPs. In such circumstances, CCPs may be tempted to water down risk controls to reduce upfront costs for market participants and attract market share. This is particularly problematic in global markets like those for OTC derivatives, where the intrinsic complexity of the product may make comparisons of risk management structures difficult.

To address these issues, central banks and securities commissions are currently revising the *Recommendations for Central Counterparties*, as part of a broader exercise to consolidate and strengthen international standards for financial market infrastructures. This box highlights some key areas where strengthening is required.

#### Counterparty credit risk management

A key risk faced by a CCP is counterparty credit risk — the risk that its member counterparties fail to perform on contracts to which the CCP is principal. A crucial means of managing this risk is collateral. In contrast to bilateral arrangements, which often only collateralise mark-to-market exposures, a CCP collateralises potential future exposures too through initial margin. This helps protect the CCP against market movements between the time of a member’s default and the CCP closing out the defaulter’s positions. The current standard calls for a CCP to be able to withstand the failure of its largest member in ‘extreme but plausible’ market conditions.

Recent events have shown that the probability of coincident defaults among financial institutions may be higher than

previously considered. Holding sufficient resources to meet the default of at least the two largest members — in extreme but plausible market conditions — would reduce systemic risk.

Current standards are largely indifferent to the mix of a CCP’s risk resources. In practice, CCPs rely on a mix of defaulter-pays margin and a survivors-pay default fund. But margin should be strongly preferred for covering all but the most extreme potential exposures (which may be more appropriately

co-insured through the default fund). Margins also allow a CCP to respond rapidly to changes in market conditions, and help ensure that participants face the full cost of the risks they present to the CCP.

High minimum benchmarks for margining are needed. CCPs should be transparent about how they meet such benchmarks, allowing agents to compare robustness between CCPs and across markets. Other controls like concentration limits can also help to constrain participants’ risk-taking *ex ante*.

#### Default management

Successful handling of a member default requires the CCP to manage down its credit exposure rapidly and comprehensively. This is done by closing out or transferring the defaulter’s positions to other members and using collateral held (margin and default fund) to cover any market losses incurred through doing so.

Closing out positions requires surviving market participants to transact with the CCP. This process is reliant on a functional, liquid market, and participants having the requisite balance sheet strength. This is likely to be particularly problematic where the underlying products have become illiquid.

The importance of robust default processes was highlighted following the failure of Lehman Brothers. Some CCPs were able to auction portfolios off rather than rely on closing out the defaulter’s portfolio on a contract-by-contract basis. This underlines the importance of carefully considered default procedures such as auctions or, as a last resort, compulsory allocations. These mechanisms limit the risk of fire sales by dealing with defaulters’ positions on a portfolio basis.

Default arrangements can force potentially significant risks back on to a CCP’s members. They should be clearly and transparently set out and be regularly tested. These arrangements should also be reflected in access requirements, ensuring that participants have the balance sheet and operational abilities to deal with them.

#### Payments and liquidity risk management

Given the importance of collateral to a CCP’s risk management, the way that it collects and holds that collateral is of critical importance.

Where the settlement of cash collateral payments occurs across the accounts of private banks (as opposed to a central bank), a CCP must ensure that the resulting settlement risks are managed appropriately. This requires adequate diversification across settlement banks, active monitoring and management of intraday payment flows — including the enforcement of payment deadlines — and rapid investment of cash into secured investments or high-quality assets to limit credit risk.

Cash held by the CCP should only be invested in liquid and secure assets. These include high-quality government bonds traded in liquid markets, short-term secured investments held in a segregated manner with reputable custodians, and deposits with central banks. Collateral accepted by the CCP should also be liquid and secure and subject to prudent haircuts. Given the sharp reductions in liquidity even in some core markets during the crisis, CCPs ought to subject their arrangements to stress testing based on conservative assumptions regarding liquidity, including the failure of a custodian or settlement bank.

#### Broader considerations

Another lesson from the default of Lehman Brothers was the treatment of client positions. Agreements between clients and their banks allowed client trades to be treated as house trades at the CCP, thus reducing margin requirements. They also allowed for margin to be held away from the CCP (and in some cases rehypothecated), enabling clearing members to invest client margin themselves. While market participants should generally be free to negotiate terms commensurate with their risk appetites, it is clear that these risks were mispriced and potential losses underestimated. It was also the case that, in some cases, CCPs did not have processes in place to offer further segregation of positions and assets.

Requiring CCPs to offer gross, segregated accounts is a necessary step in tackling these problems. However, it may not always be clear to the market who has taken up such segregation arrangements and who has not. Even where a market participant is fully segregated, its counterparties may not know this is the case. Their rational response could be to minimise their risk by seeking to reduce rapidly exposures to that participant. From a broader financial stability perspective, there is a case for more transparent as well as more certain segregation requirements between market participants.

Finally, despite best efforts to strengthen risk management standards, there remains the residual risk that a CCP may itself default. This could occur because of inadequate counterparty credit risk management or because of investment, business or operational risks. CCPs should set out how they would replenish resources following a default, and CCPs should hold capital against their broader business risks. Authorities also

need to consider appropriate resolution arrangements in the event of a CCP’s failure. These arrangements need to be robust in the growing number of cases where CCPs operate across jurisdictions.

Chart 5.17 Reconciliation frequency of OTC derivative portfolios

 All market participants(a)

 Major dealers Per cent

60

50

40

30

20

10

Daily Weekly Monthly Other 0

Source: *ISDA Margin Survey 2010*.

1. Percentages do not sum to 100 due to incomplete survey responses.

Chart 5.18 Degree of collateralisation of OTC derivative counterparty credit exposures, by type of contract(a)

Per cent

80

Credit

Total(b)

Fixed income

Equity

Foreign exchange

70

60

50

40

30

20

10

2003 04 05 06 07 08 09 10 0

Source: *ISDA Margin Survey 2009* and *2010*.

1. Data for individual derivative types in 2010 are unavailable.
2. Data for 2010 are preliminary as at 22 April 2010.

Chart 5.19 Degree of collateralisation of OTC derivative counterparty credit exposures, by counterparty type

Per cent

160

140

120

100

80

60

40

20

0

Bank/Broker

Hedge fund

Institutional investor

Sovereign/Supranational

Corporate

Other

Total

measure of risk and facilitating risk management processes.

Major dealers now reconcile large interdealer portfolios daily, but other reconciliations are generally far less comprehensive (Chart 5.17). Regular reconciliation should be standard market practice, so that disputes over the terms or value of particular trades are not the only trigger for reconciliations.

Collateralisation of positions has continued to increase overall. But growth has slowed and coverage is variable across market segments (Chart 5.18) and by counterparty type (Chart 5.19). Operational and legal arrangements should be strengthened to ensure that posted collateral can be made bankruptcy remote. The use of rating-related credit triggers in margin agreements should be minimised since they can result in large margin calls that add to procyclicality in the financial system. Proposed increases in capital charges on counterparty credit exposures, as part of the Basel III package, are also welcome, particularly in light of the large mark-to-market losses incurred by banks due to credit valuation adjustments (CVA) during the crisis.(1)

The dislocation in US equity markets on 6 May demonstrates the risks to proper market functioning from trading infrastructure. Fragmentation of trading venues, and the growing importance of high-frequency trading, add to the complexity of the trading landscape. The relevant authorities, infrastructures and market participants need to ensure that the risks arising from changing trading infrastructures are properly understood. Further analysis of recent ‘near misses’ is required to understand these emerging risks.

*Initiatives to reduce borrowers’ dependence on bank credit are also needed.*

The December 2009 *Report* noted that some UK borrowers are heavily dependent on bank credit, with limited access to alternative sources of finance. The recent deterioration in capital market conditions has increased this dependence, at least in the short term, by reducing issuance opportunities for potential borrowers.

Developing alternative sources of finance would make the overall supply of credit to the real economy more robust to banking system distress. For example, borrowers’ access to non-bank finance could be improved by enhancing documentation and information flows in public corporate bond markets and deepening private placement markets.(2)

Regulatory arrangements could help encourage development of non-bank finance, while also avoiding new systemic risks. Box 5 on pages 40–41 discusses some of the potential benefits

Source: *ISDA Margin Survey 2010*.

1. The role of banks’ CVA desks in managing counterparty credit risk is discussed in the Bank’s *Quarterly Bulletin*, Vol.50, No. 2, page 81.
2. The Bank and the ECB have recently launched separate consultation exercises on requiring greater transparency of information relating to asset-backed securities which are eligible collateral in their market operations.

and risks from rapidly emerging exchange traded funds (ETFs). Improvements in liquidity management in the hedge fund sector since the late 1990s (such as the introduction of notice periods and ‘gates’ to limit investors’ access to funds) have helped reduce risk. Current EU legislation on Undertakings for Collective Investments in Transferable Securities (UCITS) allows compliant hedge funds to create leverage while also offering investors daily liquidity — a combination that could require fund managers to sell assets rapidly to meet redemption orders. Regulation should aim to discourage structures that could destabilise markets, at the same time as protecting the interests of investors.