

Financial Stability Report

November 2012 | Issue No. 32



BANK OF ENGLAND





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In June 2010, the Chancellor of the Exchequer set out a plan for fundamental changes to the system of UK financial regulation. In July 2010 and February 2011, the Government published consultation documents on the proposed changes, and in January 2012 introduced the Financial Services Bill to Parliament. The legislation will establish a Financial Policy Committee (FPC). The responsibility of the Committee will relate primarily to the identification of, monitoring of, and taking of action to remove or reduce, systemic risks with a view to protecting and enhancing the resilience of the UK financial system, and subject to that, supporting the economic policy of Her Majesty's Government, including its objectives for growth and employment.

The Government intends the FPC to be a Committee of the Bank of England's Court of Directors, and in February 2011 the Court created an interim FPC to undertake, as far as possible, the future statutory FPC's macroprudential role. Although lacking the proposed statutory powers of Direction and Recommendation of the statutory FPC, the interim FPC contributes to maintaining financial stability by identifying, monitoring and publicising risks to the stability of the financial system and advising action to reduce and mitigate them. It also carries out preparatory work and analysis in advance of the creation of the permanent FPC.

The proposed legislation will require the FPC to publish a *Financial Stability Report* twice a year. This *Financial Stability Report* was produced under the guidance of the interim FPC. It covers the Committee's assessment of the outlook for the stability and resilience of the financial sector at the time of preparation of the *Report*, and the policy actions it advises to reduce and mitigate risks to stability.

The interim Financial Policy Committee:

Mervyn King, Governor

Paul Tucker, Deputy Governor responsible for financial stability

Charles Bean, Deputy Governor responsible for monetary policy

Andrew Bailey, Head of the Prudential Business Unit of the Financial Services Authority

Adair Turner, Chairman of the Financial Services Authority

Alastair Clark

Michael Cohrs

Paul Fisher

Andrew Haldane

Robert Jenkins

Donald Kohn

John Kingman attended as the Treasury member.

Martin Wheatley, Head of the Conduct Business Unit of the Financial Services Authority and CEO Designate of the Financial Conduct Authority, also attended in a non-voting capacity.

This document was delivered to the printers on 28 November 2012 and, unless otherwise stated, uses data available as at 20 November 2012.

The *Financial Stability Report* is available in PDF at www.bankofengland.co.uk.

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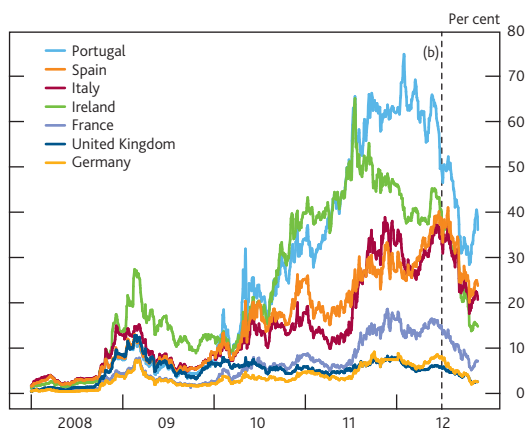
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Executive summary

The interim Financial Policy Committee agreed the following policy recommendation at its meeting on 21 November:

- The Committee recommends that the Financial Services Authority (FSA) takes action to ensure that the capital of UK banks and building societies reflects a proper valuation of their assets, a realistic assessment of future conduct costs and prudent calculation of risk weights. Where such action reveals that capital buffers need to be strengthened to absorb losses and sustain credit availability in the event of stress, the FSA should ensure that firms either raise capital or take steps to restructure their business and balance sheets in ways that do not hinder lending to the real economy.

Chart 1 Market-implied default probabilities over the next five years for selected sovereign debt^(a)



Sources: Markit Group Limited and Bank calculations.

(a) Probability of default, derived from CDS premia, from the perspective of a so-called 'risk-neutral' investor that is indifferent between a pay-off with certainty and an uncertain pay-off with the same expected value. If market participants are risk-averse, these measures may overstate actual probabilities of default. A loss given default of 60% is assumed.

(b) June 2012 Report.

Risks and developments

The outlook for financial stability has improved a little since the previous *Report*. Global growth and financial conditions, however, remain weak. Market concerns about severe near-term stresses in the euro area have reduced significantly following a period of heightened concern over the summer (**Chart 1**). In part, this reflects further policy initiatives by the European Central Bank, including the announcement of a prospective programme of Outright Monetary Transactions. While that has reduced the immediate threat of countries exiting the euro area, the fragmentation of euro-area credit flows, and economic headwinds, have persisted. And imbalances within the euro area remain substantial, with ongoing uncertainty about how they will be resolved in the medium term.

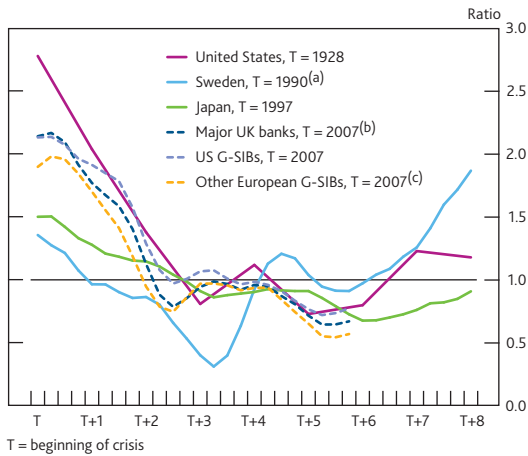
UK credit growth has remained weak since the June 2012 *Report*, though there are some signs of improvement in credit conditions looking ahead, with reduced funding costs being partially passed through to some lending rates.

Resilience

In the United Kingdom, progress by banks in raising capital has slowed and investor confidence remains low. One indicator of that is the market value of major UK banks' shareholder equity, which has fallen on average to around two thirds of the book value (**Chart 2**).

Market concerns are likely to reflect in part uncertainty about bank capital adequacy. One factor which may make stated levels of capital misleading is underrecognition of expected future losses on loans. Information from supervisory intelligence and banks' own public disclosures suggest that

Chart 2 Price to book ratios of banking sectors following past financial crises



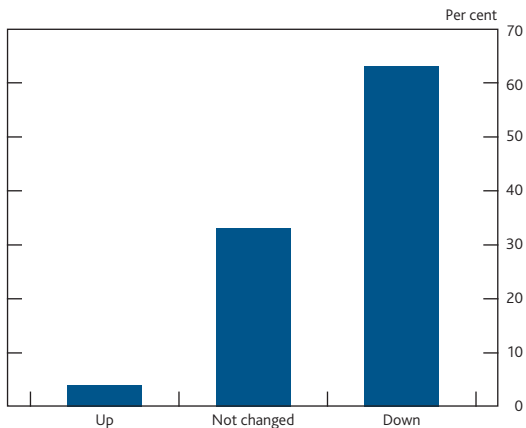
Sources: Calomiris, C W and Wilson, B (2004), 'Bank capital and portfolio management: the 1930s 'capital crunch' and the scramble to shed risk', *Journal of Business*, Vol. 77, No. 3, pages 421–55, Thomson Reuters Datastream and Bank calculations.

(a) Svenska Handelsbanken and SEB.

(b) Excludes Britannia, Co-operative Banking Group, Nationwide and Northern Rock (from end-2007).

(c) See footnote (d) in Chart 2.3.

Chart 3 Investor perceptions: has your confidence in risk-weighted assets gone up or down?(a)



Source: Barclays Research.

(a) Based on survey responses of over 130 investors carried out in 2012 H1, of perceptions over the past year.

expected losses on loans, including those subject to forbearance, are in some cases greater than current provisions and regulatory capital deductions for UK banks' expected losses.

In recent years, UK banks have also underestimated and underprovisioned for costs for conduct redress, notably for payment protection insurance mis-selling. In 2012, the number of identified conduct issues has grown and it seems likely that banks could face additional sizable costs.

Banks' capital positions could also be overstated because of aggressive application of risk weights. The current framework for calculating risk weights used in determining regulatory measures of capital adequacy is complex and opaque and that may have undermined investor confidence (Chart 3). A number of initiatives under way domestically and internationally are aimed at improving the calculation of risk weights.

In combination, these factors would imply that UK banks' capital buffers, available to cushion losses and maintain the supply of credit following realisation of a stress scenario, are not as great as headline regulatory capital ratios imply.

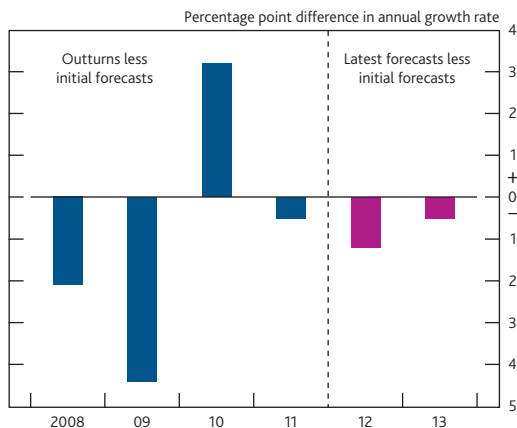
As has been emphasised in previous FPC recommendations, the Committee assesses the risks from the euro area to be considerable. While the immediate risks have reduced, there remains a possibility of disorderly outcomes, which if they occurred would have major implications for UK financial stability. But it is impossible to determine in advance exactly how risks may crystallise or the precise impact that they would have on the UK banking system. While UK banks have significantly reduced their direct exposures to sovereigns and banks in vulnerable euro-area economies, exposures to non-bank private sectors in these countries are likely to remain significant for some time, unless they sell loans or businesses.

Historical experience suggests that more rapid progress in tackling balance sheet problems would support improved funding conditions and the ability of banks to extend new loans to households and businesses. The FPC's recommendation is aimed at achieving such an outcome.

1 Global financial environment

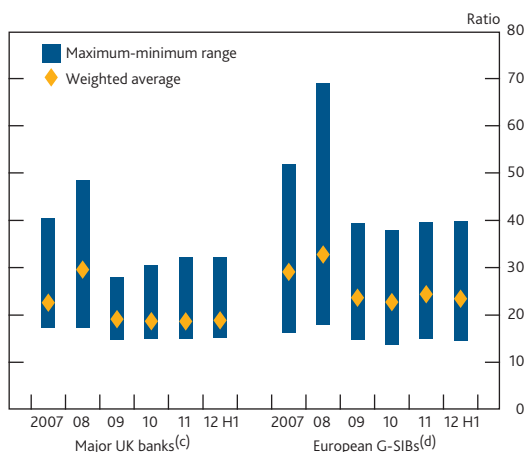
Global growth prospects remained weak reflecting the continuing adjustment of imbalances that built up before the financial crisis. With the economic and financial environment remaining fragile, several central banks announced substantial further policy action. In the euro area, this helped assuage market concerns about the most severe sovereign risks. Financial asset prices increased internationally and there were signs of portfolio rebalancing into riskier assets. Bank funding conditions also improved. Credit conditions in the United Kingdom showed some signs of improvement but remained tight, while in the euro area they tightened further.

Chart 1.1 Global growth revisions



Sources: IMF *World Economic Outlook* and Bank calculations.

Chart 1.2 Leverage ratios^{(a)(b)}



Sources: Bank of England, Capital IQ, SNL Financial, published accounts and Bank calculations.

- (a) Leverage ratio is defined as total assets divided by total equity.
 (b) 2007 to 2011 show year-end positions. Due to different reporting years, March data are used for Nationwide and October data for National Australia Bank. Where 2012 H1 data are not available yet, end-2011 data have been used.
 (c) Banco Santander, Bank of Ireland, Barclays, Co-operative Banking Group, HSBC, Lloyds Banking Group, National Australia Bank, Nationwide and Royal Bank of Scotland.
 (d) BBVA, BNP Paribas, Crédit Agricole Group, Deutsche Bank, Groupe BPCE, ING Bank, Nordea, Société Générale, UBS and UniCredit Group. Credit Suisse is not included as it reports financial results according to US GAAP which is not easily comparable to IFRS results due to the treatment of derivatives and off balance sheet vehicles. All other G-SIBs report on an IFRS basis.

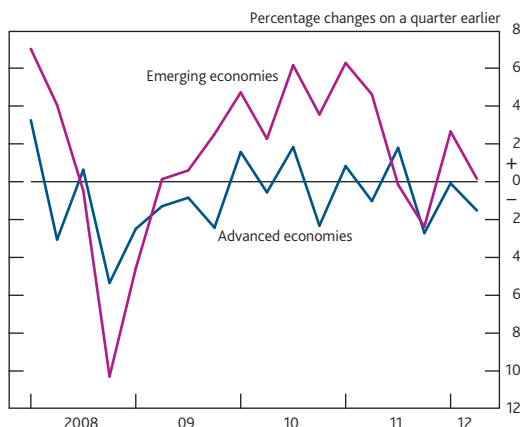
This section summarises key developments in the global financial environment since the June 2012 *Report*, including the provision of financial services to UK households and companies during this period. The rest of the *Report* examines: short-term (Section 2) and medium-term (Section 3) risks to the financial system; the activity of the FPC and progress on previous recommendations (Section 4); and, against that backdrop, the policy actions that the FPC advises to reduce risks to the financial system (Section 5).

Global growth has remained weak...

Since the June 2012 *Report*, prospects for the world economy have deteriorated. Survey indicators pointed to a weaker near-term outlook. And, in October, the International Monetary Fund (IMF) revised down its forecasts for 2013 growth, particularly in Europe but in major emerging economies as well. That was consistent with the pattern of revisions to global growth forecasts since 2007: only in 2010 did growth turn out higher than initially expected (Chart 1.1). The IMF also judged that the downside risks to global growth had increased.

The weak global growth outlook reflected continuing adjustment of imbalances that built up before the financial crisis, in particular the process of balance sheet repair in advanced economies. Private sector debt remained elevated relative to GDP, notwithstanding declines since 2009. Public sector debt was at a level around 30 percentage points higher as a share of GDP than at the start of the crisis (Section 3). Banks' leverage ratios fell after 2008 (Chart 1.2), as the level of banks' assets fell in 2009 and capital increased, but have since levelled off. And the dispersion of current account deficits and surpluses across countries remains wide, despite improvements since the beginning of the financial crisis. Market contacts continue to highlight uncertainty around the resolution of imbalances, and the risk that weak growth may persist, as key financial stability concerns (Section 3).

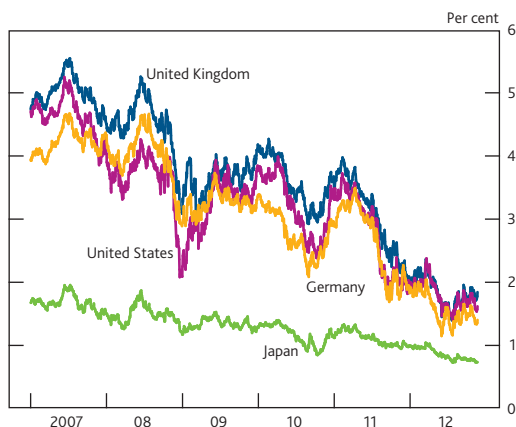
Chart 1.3 Gross cross-border claims by all BIS-reporting banks by recipient region^(a)



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

(a) Change in BIS-reporting banks' aggregate cross-border claims by region, exchange rate adjusted.

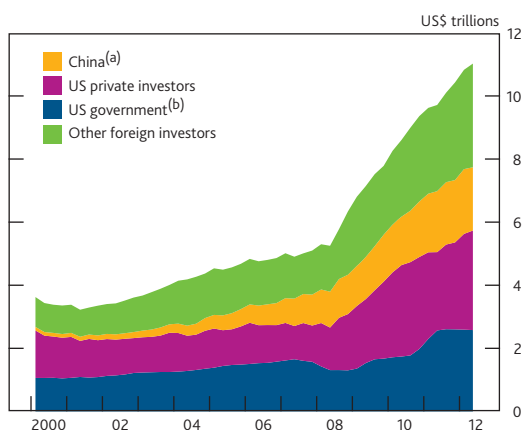
Chart 1.4 International ten-year spot government bond yields^(a)



Source: Thomson Reuters Datastream.

(a) Yields to maturity.

Chart 1.5 Holdings of US Treasury securities



Sources: CEIC, Federal Reserve US flow of funds, IMF COFER and Bank calculations.

(a) Assumes proportion of Chinese reserves held as Treasuries is the same as the world average. Other foreign holdings are calculated as the residual between total foreign holdings of Treasuries and the estimate of Chinese holdings.

(b) Includes holdings by state and local government, government retirement funds, government-sponsored enterprises and the Federal Reserve.

...as euro-area banks continued to deleverage.

As part of the process of balance sheet repair, deleveraging by banks has continued, albeit with some signs of slowing. Cross-border financing within the euro area continued to fall — referred to as a ‘fragmentation’ of the euro-area banking system (Box 1). That was reflected in continued non-resident deposit outflows from the vulnerable euro-area countries. And domestic deposit outflows continued in Portugal and Spain, although domestic deposits increased in Greece, Ireland and Italy in the three months to September.

Cross-border financing patterns outside the euro area were more positive. After a sharp fall at the end of 2011, lending outside the euro area by euro-area resident banks was steadier in 2012. However, there were reports that euro-area banks were seeking to make their subsidiaries outside the euro area more reliant on local funding. Globally, aggregating across banks, cross-border bank deleveraging in 2012 was significantly less severe than during 2008–09 (Chart 1.3).

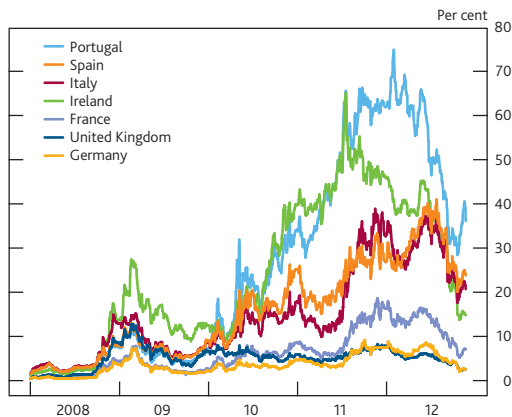
But there was evidence of continuing retrenchment by banks in some types of lending. Issuance of syndicated loans to emerging economies continued to decline. And there were also falls in the provision of trade finance by euro-area banks — to less than half the level in 2010 — and by non euro-area banks. This was unlikely to have been fully offset by increases in non-bank lending.

The fragile environment prompted substantial policy action by authorities...

Several authorities announced substantial further policy action in response to this fragile environment. In July, the Bank of England and the UK Government launched the Funding for Lending Scheme (FLS) to provide banks and building societies with a cheaper form of financing for domestic lending. In September, the European Central Bank (ECB) announced its Outright Monetary Transactions (OMTs) programme to purchase short-term government bonds issued by certain euro-area countries, with the aim of reducing government bond yields where they reflect unjustified market fears of a euro-area country redenominating its currency. A condition for initiating OMTs is that a country must have been granted a European Financial Stability Facility (EFSF)/European Stability Mechanism (ESM) programme. In October, EU leaders agreed a timetable for implementing a Single Supervisory Mechanism to give the ECB ultimate responsibility regarding specific supervisory tasks for euro-area banks.⁽¹⁾

(1) Under the proposals, the ECB would become responsible for a number of tasks such as: authorising credit institutions; compliance with capital, leverage and liquidity requirements; and conducting supervision of financial conglomerates. The ECB would be able to carry out early intervention measures when a bank breaches or risks breaching regulatory capital requirements.

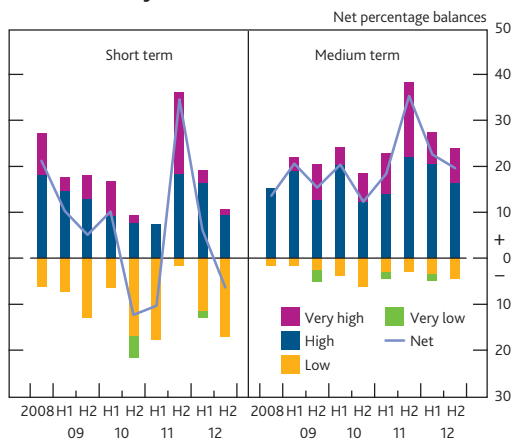
Chart 1.6 Market-implied default probabilities over the next five years for selected sovereign debt^(a)



Sources: Markit Group Limited and Bank calculations.

(a) Probability of default, derived from CDS premia, from the perspective of a so-called 'risk-neutral' investor that is indifferent between a pay-off with certainty and an uncertain pay-off with the same expected value. If market participants are risk-averse, these measures may overstate actual probabilities of default. A loss given default of 60% is assumed.

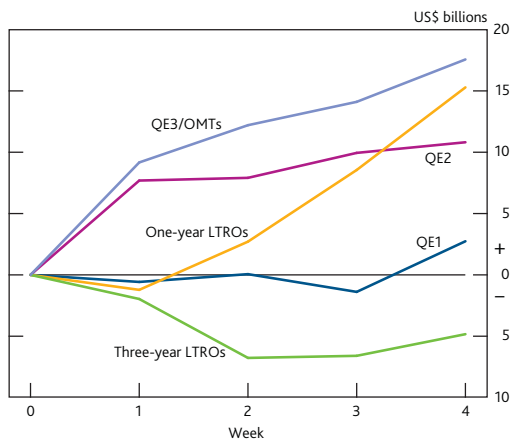
Chart 1.7 Probability of a high-impact event in the UK financial system^(a)



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

(a) Respondents were asked for the probability of a high-impact event in the UK financial system in the short and medium term. From the 2009 H2 survey onwards, short term was defined as 0–12 months and medium term as 1–3 years. The net percentage balance is calculated by weighting responses as follows: very high (1), high (0.5), medium (0), low (-0.5) and very low (-1). Bars show the contribution of each component to the net percentage balance.

Chart 1.8 Cumulative flows into higher-risk assets following central bank policy announcements^{(a)(b)}



Sources: EPFR Global and Bank calculations.

(a) 'Higher-risk assets' include emerging market equities, emerging market and US high-yield bonds.
 (b) Chart begins at the dates of official policy announcements: the first set of US Federal Reserve asset purchases, known as QE1, on 25.11.08; QE2 on 3.11.10; the ECB's two one-year longer-term refinancing operations (LTROs) on 6.10.11; the ECB's two three-year LTROs on 8.12.11; and QE3 on 13.9.12. OMTs were announced the week before QE3.

These measures were accompanied by other central bank policy actions. The US Federal Reserve announced further asset purchases in September, which will continue until the labour market outlook has improved substantially. It also announced that it anticipated that the federal funds rate would remain at exceptionally low levels until at least mid-2015. The Bank of England announced a further round of asset purchases in July, as did the Bank of Japan in September. In the euro area, the main refinancing interest rate was reduced by 25 basis points in July to 0.75%, a record low. Policy rates were also cut by central banks in Australia and China, as the outlook for GDP growth weakened.

...as yields on less risky assets remained near historical lows.

Against this backdrop, yields on US, UK and German government bonds remained near historically low levels (Chart 1.4). Yields remained low despite high levels of public sector debt. US private investors and foreign investors, including China, have significantly increased their US Treasury debt holdings since the start of the financial crisis, by about US\$2 trillion and US\$3 trillion respectively (Chart 1.5).

Policy action reduced the risk of high-impact events...

In the euro area, policy measures helped assuage market concerns about the most severe sovereign risks. For example, the cost of default protection on Spanish sovereign debt, as measured by credit default swaps (CDS), fell to its lowest level since July 2011 (Chart 1.6). Respondents to the Bank of England's 2012 H2 Systemic Risk Survey reported that the perceived probability of a high-impact event in the UK financial system in the short term had fallen back further from its peak a year earlier (Chart 1.7).

...and encouraged portfolio rebalancing into riskier assets...

There were some signs that the low-yield environment was encouraging portfolio rebalancing, with investors seeking higher yields by moving into riskier assets. Following the announcement of further asset purchases by the US Federal Reserve (QE3) and OMTs by the ECB, it appeared that capital flowed into riskier asset classes (such as US high-yield bonds, and bonds and equities in emerging economies) to a greater extent than following other central bank policy announcements (Chart 1.8). Market contacts thought this might reflect the open-ended nature of QE3, which distinguished it from previous asset purchase announcements. Flows into riskier assets increased as fund managers progressively ran down their excess cash holdings. Consistent with this, global fund managers' asset allocations were reported to have switched from being overweight in cash in July — relative to past average positions — to being underweight in November (Chart 1.9).

In the United States, market contacts reported that the impact of portfolio rebalancing was particularly marked in domestic credit markets. Unlike during the mid-2000s, purchases of

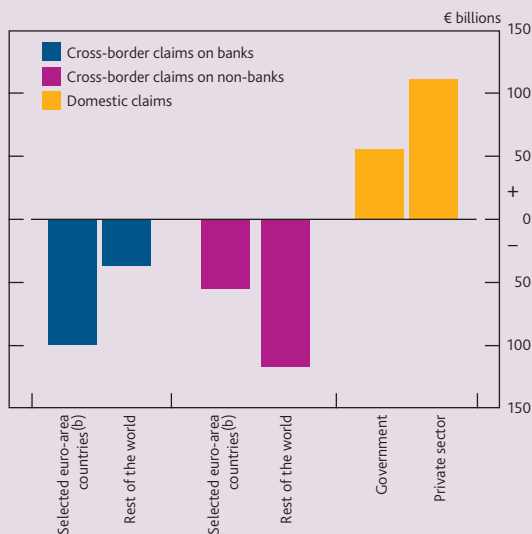
Box 1 Euro-area banking sector fragmentation

Over the past year, international banks and investors have actively reduced their cross-border activities. This trend has been particularly evident in the euro area. This box examines the scale, causes and impact of recent euro-area banking sector fragmentation.

The extent of fragmentation

Since the reintensification of the European sovereign debt crisis in 2011 H2, global banks' consolidated cross-border claims on the euro area have fallen by US\$950 billion. Within the euro area, bank deleveraging has further contributed to a fragmentation of banking sectors along national lines. In particular, since June 2011 banks in Germany and France have reduced their claims on banks in vulnerable euro-area countries by €100 billion (Chart A) and, to a lesser extent, their claims on the public and non-financial private sectors of these countries by another €55 billion. At the same time, banks in Germany and France have increased their domestic exposures by €170 billion.

Chart A Change in French and German resident banks' claims since June 2011^(a)



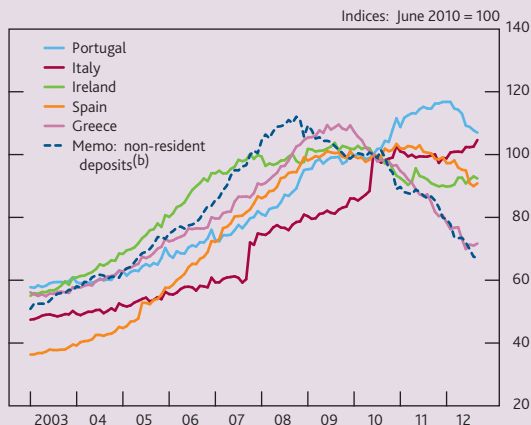
Sources: BIS, ECB, national central banks and Bank calculations.

(a) Data to June 2012.
(b) Refers to Greece, Ireland, Italy, Portugal and Spain.

The reduction in cross-border financing can be seen in a pickup in non-resident deposit outflows from some euro-area banking systems since the beginning of the euro-area debt crisis in 2010. During much of that period, foreign banks became increasingly reluctant to provide funding to banks, first to those in Greece, Ireland and Portugal, and then to those in Spain and Italy. Since mid-2010, total non-resident deposits from these countries have declined by 33% or €570 billion.

Resident retail depositor flight has also been significant over this period for some countries. In Greece, retail deposits have declined by 30% since June 2010, and in Spain by 12% since capital flight began there in June 2011 (Chart B).

Chart B Resident retail deposits in selected euro-area countries^(a)

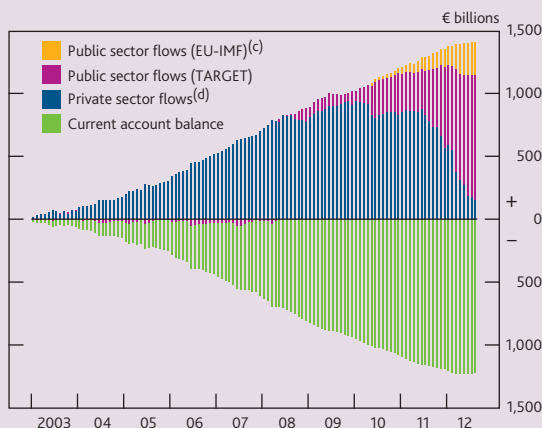


Sources: National central banks and Bank calculations.

(a) Data to September 2012.
(b) The sum of non-resident deposits in Greece, Ireland, Italy, Portugal and Spain.

Since mid-2011, deposit flight, as well as deleveraging of other types of assets by banks and investors, has contributed to €700 billion of private capital outflows from the vulnerable euro-area countries (Chart C). That equates to around a quarter of these countries' aggregate nominal GDP in 2011. Inflows of private capital helped to fund the current account deficits of the vulnerable euro-area countries in the period before the crisis. Since then, outflows of private capital have been largely replaced by a rise in public sector inflows.

Chart C Cumulative capital flows for selected euro-area countries^{(a)(b)}



Sources: Central Statistics Office, European Commission, IMF, national central banks and Bank calculations.

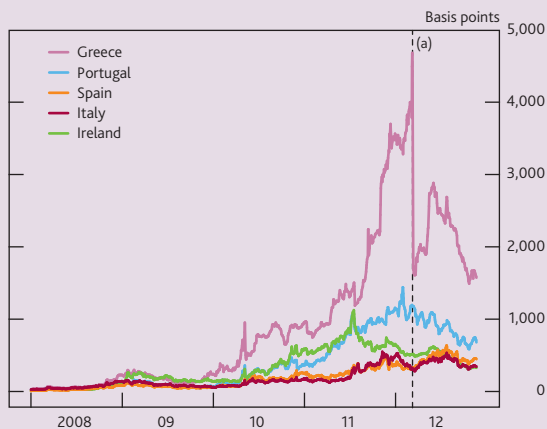
(a) Refers to Greece, Ireland, Italy, Portugal and Spain.
(b) Data to August 2012, with the exception of balance of payments data for Ireland, which is to June 2012 and extrapolated thereafter.
(c) Loans disbursed under joint financing package with contributions from the EFSM, the EFSF, individual EU members under bilateral arrangements, and the IMF.
(d) The sum of the financial and capital accounts net of public sector flows.

Although some vulnerable euro-area countries have benefited from EU-IMF programme finance, public sector inflows have largely taken the form of increased intra-Eurosystem TARGET liabilities⁽¹⁾ as stressed banking sectors have become reliant on ECB liquidity support. While there has been a rapid shrinking of current account deficits in vulnerable euro-area countries since private capital outflows began, the presence of such central bank inflows has slowed the speed of this adjustment and helped to prevent a disorderly unwind of external imbalances.

Causes of euro-area fragmentation

Since the beginning of the euro-area debt crisis in early 2010, investors have been less willing to hold the sovereign debt of the more vulnerable euro-area countries. That has manifested itself in an increased differentiation of risk premia and the cost of credit across countries (**Chart D**), as well as a reduction in cross-border claims on those countries. These in turn reflect the broader deterioration in the credit outlook and an increase in redenomination and legal risks that would arise if the euro area were to break up (Section 2).

Chart D Selected ten-year government bond spreads to German bunds



Sources: Thomson Reuters Datastream and Bank calculations.

(a) Greek debt restructuring agreed on 9 March 2012.

Market contacts suggested that some global institutions were already moving towards a business model in which more activities are funded locally, and that market participants were increasingly managing risk along sovereign, rather than currency, lines. These developments help to reduce the risks of redenomination. And in some countries, this has been reinforced by changing supervisory attitudes.

Conclusion

Fragmentation within the euro area, were it to continue at this pace, would pose significant risks to financial stability. Reduced cross-border credit has already contributed to acute funding pressures for vulnerable euro-area banks and a

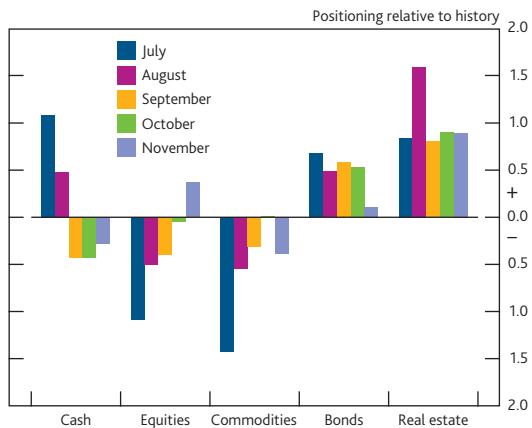
deterioration of their asset quality. It has also led to restricted credit supply in vulnerable euro-area countries.

Since the ECB announcement of Outright Monetary Transactions in September, aimed at lowering the borrowing costs of vulnerable euro-area countries and at providing a backstop against tail risks in the euro area, there have been tentative signs of a slowdown in fragmentation. September data show a fall in TARGET liabilities of €48 billion across the vulnerable euro-area countries and a stabilisation in deposit outflows from banks in vulnerable euro-area countries as domestic retail deposits increased by €42 billion. TARGET liabilities have since fallen by another €34 billion across Spain and Italy in October.

But banks in vulnerable euro-area countries still had foreign deposits of €1.2 trillion as at end-September. And latest quarterly BIS international banking statistics indicate French and German-owned banks alone still had €700 billion of consolidated cross-border claims on vulnerable euro-area countries as at end-June. So despite some signs of easing, the potential for further significant fragmentation remains.

(1) TARGET2 is a payment system owned and operated by the Eurosystem for the settlement in central bank money of central bank operations, interbank transfers and other large-value euro-denominated payments.

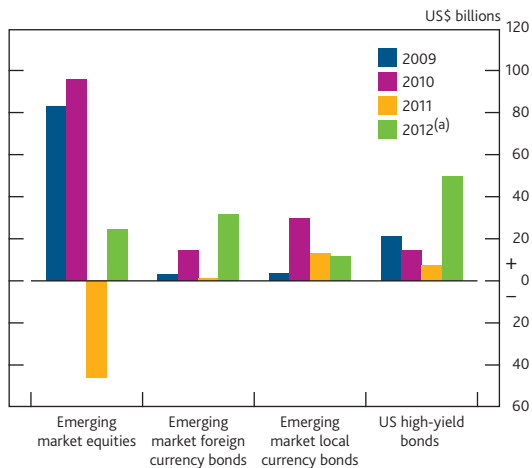
Chart 1.9 Global asset class positioning by investment funds^(a)



Source: Bank of America Merrill Lynch Global Research.

(a) Positioning captures whether funds are overweight (positive scores) or underweight (negative scores) in each asset class relative to historical asset allocations. Historical asset allocations are based on data since 2006 for commodities and real estate and since 2001 for equities, bonds and cash.

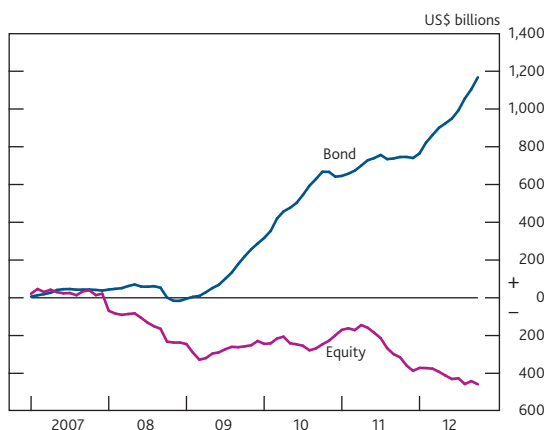
Chart 1.10 Flows into mutual funds investing in higher-risk asset classes



Sources: EPFR Global and Bank calculations.

(a) Year to date.

Chart 1.11 Cumulative investment flows into equity and bond funds



Source: EPFR Global.

credit instruments were not generally financed by borrowing. An exception to that was the rapid growth since 2010 in mortgage-backed securities held by real estate investment trusts (REITs). Market intelligence suggested that REITs have bought mortgage-backed securities with funds raised in wholesale markets.

There were also signs of portfolio rebalancing starting to emerge in the UK insurance sector. Market contacts reported that some insurance companies were considering significant changes in investment portfolios as they chased yields and diversified away from traditional fixed-income securities. The potential changes included increased allocations to infrastructure investment and, to a lesser extent, direct lending to the corporate sector. This was against the backdrop of continued pressure on insurers' profits and capital, reflecting subdued growth, the low interest rate environment and the continuing euro-area crisis.

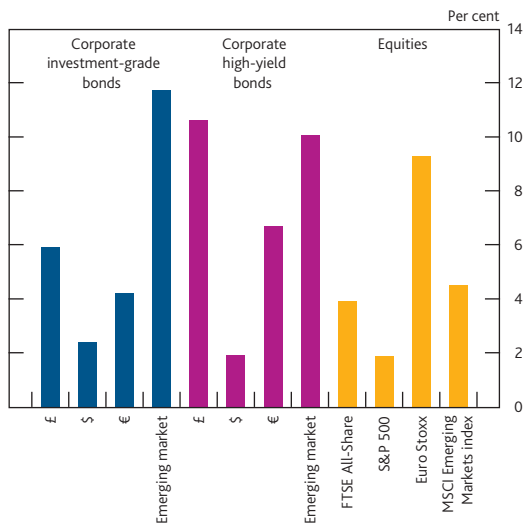
...with investor flows concentrated in simple and transparent assets, particularly bonds.

Investor flows were concentrated in simple and transparent assets, with investors remaining wary of more complex and opaque assets. While contacts reported some flows into standard securitisation products, there was no re-emergence of the synthetic securitisations seen pre-crisis. There was also some discrimination within bond markets. Flows into local-currency denominated emerging market bonds were weaker than in 2010–11 (Chart 1.10). Instead, there was a preference for US high-yield bonds and emerging market bonds denominated in US dollars.

One aspect of pre-crisis bond markets that saw a revival in activity in 2012 was payment in kind (PIK) toggles on bonds — where the interest may be paid in cash or additional debt securities. But contacts noted that recent deals were concentrated among a small group of investors who were thought to be aware of the risks, while the issues themselves offered more investor protection than pre-crisis issues and were priced at a greater discount to vanilla bonds.

Pension funds have increasingly moved into bonds in recent years, as they have sought to match their assets more closely to their liabilities. In 2012, UK defined benefit pension funds held 43% of their assets in gilts and fixed-interest instruments compared with 39% in equities. This was the highest allocation to gilts and fixed-interest instruments recorded by The Pensions Regulator since the series began in 2006. Since the start of the financial crisis, there has been a broader trend in financial markets for investors to move into bonds. Flows to global equity funds have been relatively weak since 2007, while flows to bond funds have been relatively strong (Chart 1.11).

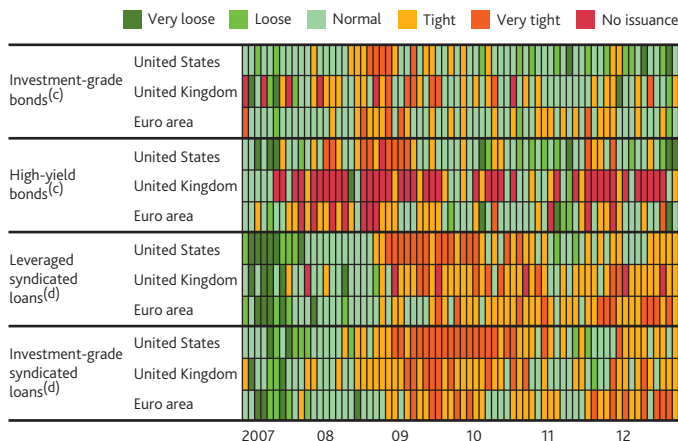
Chart 1.12 Changes in asset prices since the June 2012 Report^(a)



Sources: Bank of America Merrill Lynch, Thomson Reuters Datastream and Bank calculations.

(a) Calculated in local/stated currency, except emerging markets which are calculated in US dollars.

Chart 1.13 Primary corporate debt market conditions^{(a)(b)}



Sources: Dealogic and Bank calculations.

(a) Shading is based on a score that reflects gross issuance (relative to nominal GDP) and spreads in primary markets, expressed as a number of standard deviations from its historical averages, using available data from January 1998. Where spreads are not available, indicators are based solely on issuance. Latest data point is October 2012 (using most recent GDP data).

(b) Only private non-financial corporates are included and their financial vehicles are excluded.

(c) Gross issuance of bonds.

(d) Gross issuance of syndicated loans, excluding cancelled or withdrawn facilities.

Policy action underpinned rises in asset prices...

Portfolio rebalancing supported a rise in global asset prices, despite the weaker prospects for world growth. Emerging market dollar-denominated sovereign bond spreads fell significantly, by about 80 basis points. And spreads on corporate bonds fell across advanced and emerging market economies. In equity markets, European and emerging market indices recovered, rising by 9% and 4% respectively, since the June 2012 Report (Chart 1.12).

...and increased financial market activity...

Some companies were able to take advantage of improved market conditions to issue new debt, as conditions generally improved in both investment-grade and high-yield corporate bond markets, although conditions in syndicated lending markets remained tight (Chart 1.13). Issuance of bonds by UK private non-financial corporations (PNFCs) was around 40% higher than a year earlier. And there were large increases in US and euro-area PNFC bond issuance. There was also some improvement in conditions in government bond markets for vulnerable euro-area countries. Italy was able to raise €18 billion in a single issuance of index-linked government bonds — a European record.

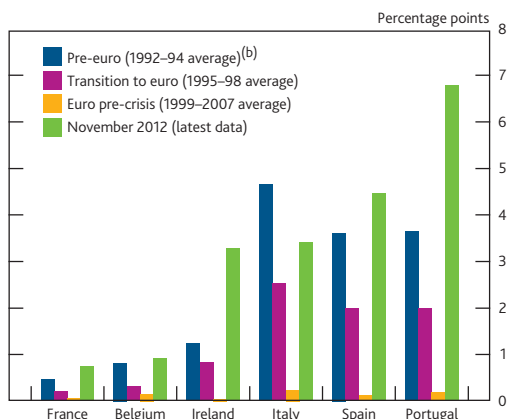
While issuance increased, bond market liquidity remained low. For example, market-making inventories in US corporate bond markets (which facilitate trades between buyers and sellers of the bonds) have declined significantly since the start of the financial crisis, in part because low interest rates reduce the income that dealers earn. Trading volumes as a percentage of the outstanding corporate bond market have fallen to less than half pre-crisis levels. Contacts thought that anticipation of regulatory developments constraining proprietary trading may have contributed to this development.

...including in derivatives markets...

Activity also continued to recover in some derivatives markets. By the end of 2012 H1, measured by notional value, the amount of over-the-counter (OTC) interest rate swaps outstanding was 23% higher, and foreign exchange derivatives 19% higher, than at the end of 2007. But CDS activity remained subdued, with the stock of outstanding derivatives down by half since the start of the financial crisis. And there was little progress in increasing the proportion of standardised OTC derivatives cleared through central counterparties (CCPs).

Since the June Report, there have been several developments that help to enhance CCPs' ability to absorb losses. In August, LCH.Clearnet Ltd (LCH) established a new ring-fenced default fund of approximately £500 million in respect of its clearing of repo transactions. This followed the introduction earlier in the year of ring-fenced default funds in respect of its clearing of interest rate swaps (IRS) and foreign exchange non-deliverable forwards (FX NDF), of approximately £2.5 billion and £175 million respectively as of August 2012. Previously LCH

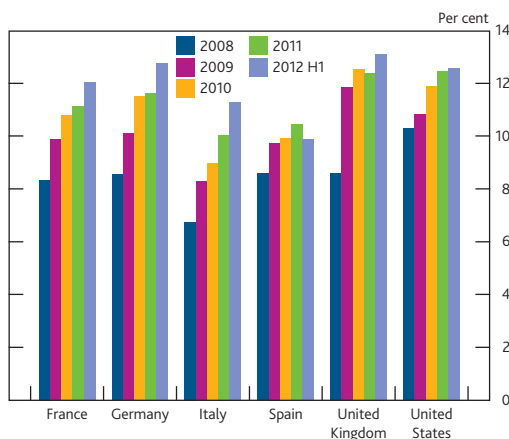
Chart 1.14 Spreads of selected euro-area government bonds over German bunds^(a)



Sources: Thomson Reuters Datastream and Bank calculations.

(a) Ten-year benchmark government bond spreads over German bunds.
 (b) Data for Portugal cover July 1993 to December 1994.

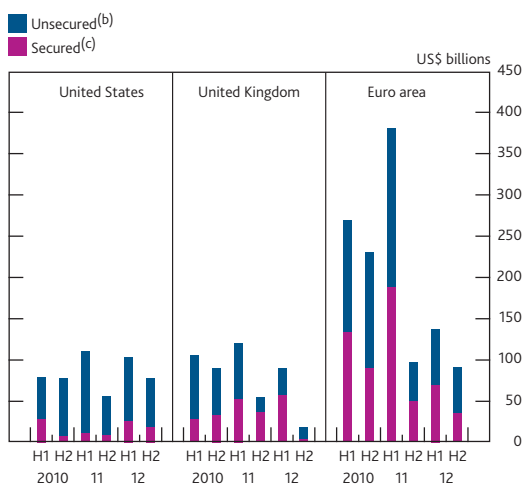
Chart 1.15 Tier 1 capital ratios^{(a)(b)}



Sources: SNL Financial, published accounts and Bank calculations.

(a) Data are to end-year 2008-11 and to end-June for 2012.
 (b) Aggregated Tier 1 capital divided by aggregated (risk-weighted) assets. All figures are under local accounting conventions.

Chart 1.16 Issuance of term bank senior secured and unsecured debt in public markets^(a)



Sources: Dealogic and Bank calculations.

(a) Securities with an original contractual maturity or earliest call date of at least 18 months. Includes primary market issuance only and excludes issuance under government-guarantee schemes. 2012 H2 data are up to and including 20 November 2012.
 (b) Unsecured issuance includes investment-grade and high-yield bonds and medium-term notes.
 (c) Secured issuance includes asset-backed securities, mortgage-backed securities and covered bonds.

had maintained a single default fund across all its services of £585 million.⁽¹⁾ New default 'waterfall' arrangements were also introduced earlier this year for IRS, FX NDF and repo clearing, allowing LCH to call for additional resources from clearing members, up to a limit, in the event that a loss were to exceed the default fund.⁽²⁾

...while financial infrastructure generally operated effectively.

More generally, central financial infrastructure in the United Kingdom continued to function effectively. Over the period July-October 2012, the operational availability of CREST improved relative to the first half of the year, with no material interruptions to settlement. While there was a brief outage of the SWIFT secure messaging system, the timing meant that there was no disruption to UK wholesale payment systems. However, Royal Bank of Scotland experienced a serious problem with its internal systems in June, causing difficulties for its banking customers that in some cases continued into July. While UK financial infrastructure generally operated effectively, market infrastructure in the United States was disrupted by the effects of Hurricane Sandy in late October, with the New York Stock Exchange closing for two days.

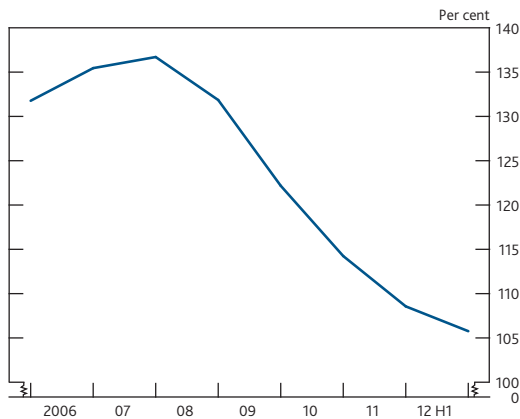
But there were some signs of continuing risk aversion...

Despite the improvement in financial market conditions, respondents to the Bank's 2012 H2 *Systemic Risk Survey* continued to highlight sovereign risk and an economic downturn as the two main risks to the UK financial system. The perceived probability of a high-impact event in the financial system in the medium term remained material (**Chart 1.7**). For a number of countries, spreads of government bonds over German bunds remained higher than before the introduction of the euro (**Chart 1.14**). Market contacts also increasingly focused on the potential impact of the prospective fiscal tightening in the United States in early 2013, when large tax increases and spending cuts are scheduled to come into effect (Section 2).

Risk aversion in equity markets also remained high. Estimates of premia required by investors to hold equities remained high relative to pre-crisis levels. And some measures of market volatility were consistent with uncertainty in vulnerable euro-area country equity markets remaining higher than in other advanced-economy equity markets.

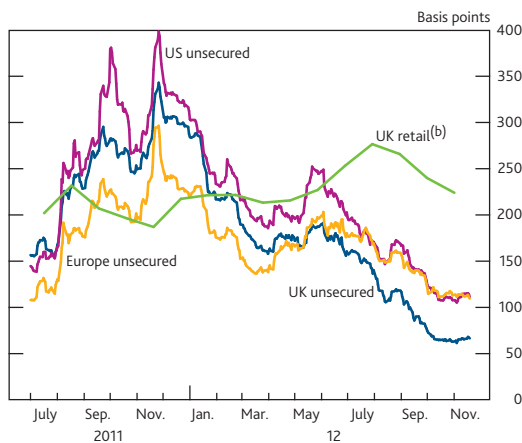
(1) The size of the default fund covering other products was £410 million as of August 2012. The default funds form an important part of the resources that a CCP maintains to absorb losses that it may suffer due to the default of a member (see Chart 3.16 on page 35 of the June 2012 *Report*). The recently updated international 'Principles for financial market infrastructures' produced by the Basel Committee on Payment and Settlement Systems and the International Organization of Securities Commissions would require those CCPs which are involved in activities with more complex risk profiles to maintain sufficient resources to meet the loss that would arise from the default of their two largest members in extreme but plausible market conditions.

(2) In the case of IRS and FX NDF, there is provision for LCH ultimately to allocate any further losses to members by writing down the value of members' in-the-money net positions. The FPC has previously flagged the importance for CCPs of introducing rules for allocating among their participants any losses that are not covered by margin, default fund and other financial resources. See pages 20-22 and 52-53 of the December 2011 *Report*.

Chart 1.17 Major UK banks' loan to deposit ratio^{(a)(b)}

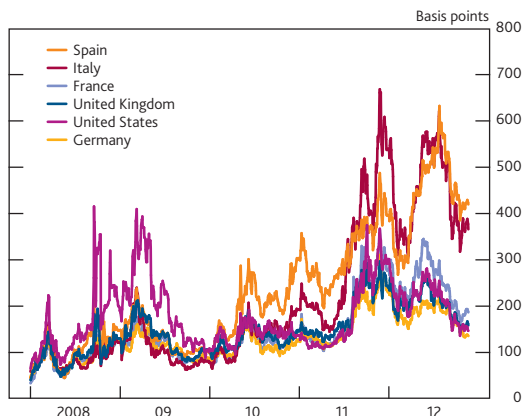
Sources: Bank of England, published accounts and Bank calculations.

- (a) Major UK banks' customer lending as a percentage of customer deposits, where customer refers to non-banks.
 (b) As Co-operative Banking Services and Nationwide have not reported their 2012 H1 results, their end-2011 results have been used.

Chart 1.18 Major banks' indicative senior unsecured bond spreads^(a) and UK retail funding spread

Sources: Bloomberg and Bank calculations.

- (a) The data show an unweighted average of the spread between euro-denominated senior unsecured bonds and equivalent-maturity swap rates for a selected bond issued by each of a selection of large banks in the region. The selected bonds have residual maturities of between two and six years.
 (b) Sterling only. Spread over the three-year swap rate. The three-year retail bond rate is a weighted average of rates from banks and building societies within the Bank of England's normal quoted rate sample with products meeting the specific criteria (see www.bankofengland.co.uk/statistics/Pages/iadb/notesiadb/household_int.aspx).

Chart 1.19 Cost of default protection for selected banking systems^(a)

Sources: SNL Financial, Thomson Reuters Datastream and Bank calculations.

- (a) Average five-year CDS premia from selected banks and large complex financial institutions, weighted by assets as at 2012 H1.

...amid continuing concerns about banking systems' resilience.

Regulatory capital ratios rose for most major European banking systems in 2012 H1 (**Chart 1.15**). In December 2011, the European Banking Authority recommended that European banks should raise their core Tier 1 ratio to 9%, in addition to setting aside a buffer against sovereign risk holdings.⁽¹⁾ Participating banks (excluding Greek banks and those being restructured) subsequently raised around €115 billion in core Tier 1 capital between September 2011 and June 2012. In combination with a reduction in risk-weighted assets, this resulted in an increase in banks' aggregate core Tier 1 ratio by around 160 basis points to 11.0%.

Despite this, concerns remained about the resilience of banking systems. Profitability remained subdued for European, as well as US and UK, banks. That mainly reflected a continuation of the declining trend in investment banking revenues observed in recent years. Profits were also affected at some banks by compensation payments for mis-selling and regulatory fines. Market contacts also remained concerned about prospects for future profits and banks' asset valuations more generally (Section 2).

Funding market conditions improved...

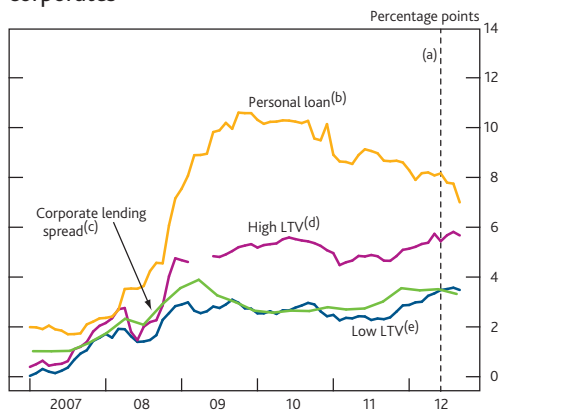
Despite continuing concerns about banks' resilience, wholesale funding market conditions improved. Euro-area banks reported an improvement in their access to retail and wholesale funding across most funding categories in 2012 Q3, according to the ECB's *Bank Lending Survey*. They also expected those trends to continue in Q4. Euro-area banks' issuance of term debt in public markets appeared on course to be lower in 2012 than in 2011, with a slight shift in composition from secured to unsecured issuance (**Chart 1.16**). Reports suggested that the higher proportion of unsecured issuance was linked to an improvement in investor sentiment. And, according to Fitch Ratings, US money market funds increased their exposure to euro-area banks by 16% during September, albeit from low levels.

In the United Kingdom, the major banks completed the majority of their planned public wholesale term debt issuance for 2012 in the first half of the year. They were able to raise further funding from private markets and through the ECB's longer-term refinancing operation. As a result, wholesale term issuance by the major UK banks fell significantly in 2012 H2. The FLS also reduced UK banks' need to issue wholesale term debt.⁽²⁾ Since the start of the financial crisis, UK banks have taken steps to decrease their reliance on wholesale funding. And the major UK banks have significantly reduced their customer funding gap — the difference between customer

(1) All participating UK banks had a core Tier 1 ratio of above 9% in December 2011.

(2) By 29 October, 30 lenders, accounting for about 80% of lending to the UK private sector, had signed up for the FLS. For further details, see the boxes on pages 14–15 of the August 2012 *Inflation Report* and pages 14–15 of the November 2012 *Inflation Report*.

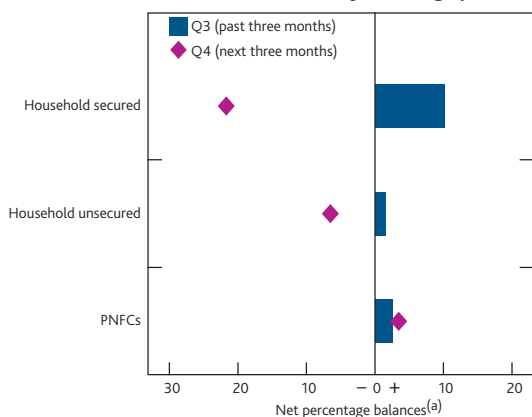
Chart 1.20 Spreads on lending to UK households and corporates



Sources: Bank of America Merrill Lynch, Bank of England, British Bankers' Association, Council of Mortgage Lenders, De Montfort University and Bank calculations.

- (a) June 2012 Report.
- (b) Spread between average quoted rates on £10,000 personal loans and Bank Rate.
- (c) The corporate lending spread is a weighted average of SME lending rates over Bank Rate; CRE lending rates over Libor; and as a proxy for the rate at which banks lend to large, non-CRE corporates, UK investment-grade corporate bond spreads over maturity-matched government bond yields (adjusted for any embedded option features such as convertibility into equity).
- (d) Spread between average quoted rates on two-year fixed-rate mortgages with a 90%–95% loan to value (LTV) ratio and two-year UK government bond yields. Gap in 2009 data due to small sample of reporting institutions.
- (e) Spread between average quoted rates on two-year fixed-rate mortgages with a 75% LTV ratio and two-year UK government bond yields.

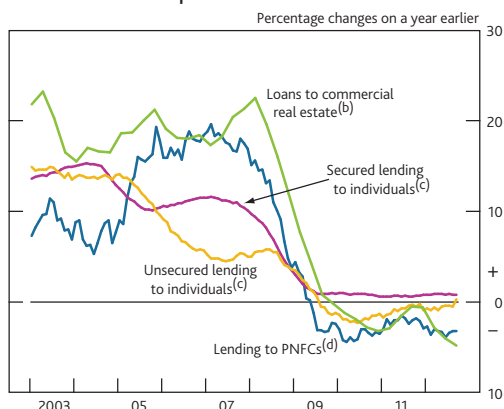
Chart 1.21 Credit Conditions Survey lending spreads



Source: Bank of England Credit Conditions Survey.

- (a) A positive balance indicates that spreads have risen such that, all else being equal, it is more expensive for households or PNFCS to borrow.

Chart 1.22 Sterling lending to UK private non-financial corporations and individuals^(a)



Source: Bank of England.

- (a) Twelve-month growth in the stock of lending. Data cover sterling lending and are seasonally adjusted unless otherwise stated.
- (b) Loans and reverse repos by UK-resident banks and building societies to companies undertaking development, buying, selling and renting of real estate, not seasonally adjusted.
- (c) Lending by UK-resident monetary financial institutions and other specialist lenders.
- (d) Lending by UK-resident monetary financial institutions, excluding the effects of securitisations.

loans and deposits — through both a reduction in loans and a rise in retail deposit funding. By the end of 2012 H1, the ratio of loans to deposits for major UK banks had fallen to around 105% from more than 130% at the start of the financial crisis (Chart 1.17). Retail deposits continued to increase in 2012 H2, rising by almost 2% in the three months to September.

...as reflected in lower funding costs.

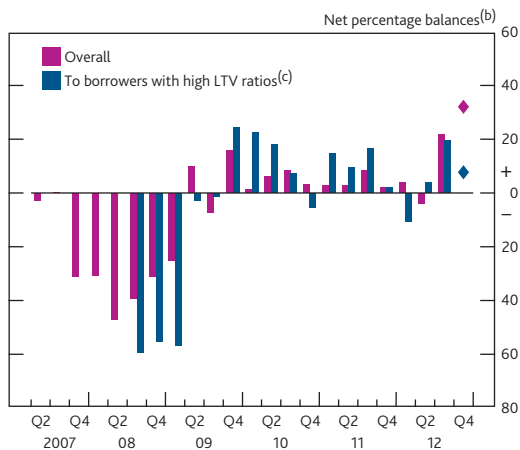
Banks' term funding costs fell significantly across the major economies as conditions in funding markets improved (Chart 1.18). For example, UK unsecured bank funding costs have fallen by about 100 basis points since June. Retail funding costs also fell, though to a lesser degree. There was also an improvement in short-term interbank funding markets, as three-month sterling, euro and dollar Libor spreads over overnight index swap rates narrowed to pre-crisis levels.

The cost of default protection on banks' unsecured bonds in the major economies fell on average by around a third since the June 2012 Report (Chart 1.19). Perceptions of bank risk were closely related to sovereign risk, which fell over the period as markets reacted to central bank policy measures, including the announcement of OMTs by the ECB. But the cost of default protection on banks' bonds was still substantially higher than before the crisis. UK policy measures that supported the fall in funding costs included the FLS and the Extended Collateral Term Repo Facility.

UK credit conditions showed some signs of improvement but remained tight...

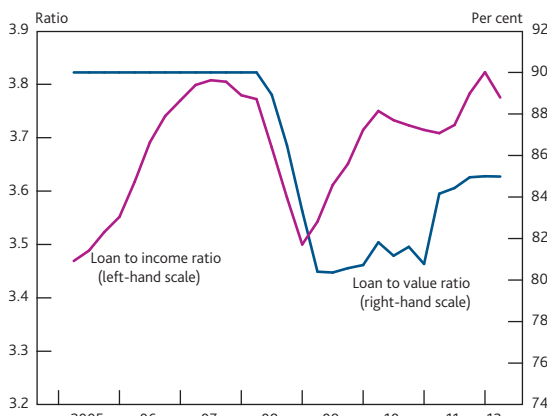
Since the financial crisis, spreads on lending to households and companies have remained high (Chart 1.20). As funding costs declined in recent months, there were some signs of pass-through to UK-quoted lending rates, with average rates on some fixed-rate mortgage products falling by around 20 basis points since the start of August. And some lenders had begun to make offers at lower interest rates to businesses. But the Bank's Agents reported that some business lenders appeared still to be tightening terms. While respondents to the Bank's Credit Conditions Survey reported that spreads increased in Q3 on secured lending rates to households (Chart 1.21) and on lending rates to medium-sized firms, the increases were smaller than previously expected. Lenders expected household lending spreads to narrow in Q4, particularly for household secured lending. But for businesses, spreads were expected to widen further in Q4.

UK lending growth remained weak. Annual household lending growth has averaged less than 1% over the past two years, reflecting further falls in unsecured lending and only small increases in secured lending. Lending to businesses has been even weaker, contracting by 3% a year over the same period (Chart 1.22). The Bank's Credit Conditions Survey provided some signs of improvement in UK credit availability. For households, mortgage availability was reported to have

Chart 1.23 UK household secured credit availability^(a)

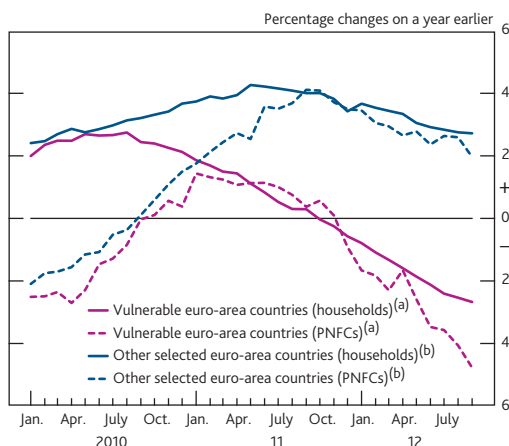
Source: Bank of England *Credit Conditions Survey*.

- (a) Net percentage balances are calculated by weighting together the responses of those lenders who answered the question. The blue and magenta bars show the responses over the previous three months. The corresponding diamonds show the expectations over the next three months.
 (b) A positive balance indicates that more secured credit is available.
 (c) This question was introduced in 2008 Q3. High LTV ratios are defined as being more than 75%.

Chart 1.24 Loan to value and loan to income on new UK mortgage lending: 75th percentile^{(a)(b)}

Sources: FSA and Bank calculations.

- (a) Shows data for borrowers at the 75th percentile (towards the higher end of the distribution) and excludes remortgaging.
 (b) *Mortgage Product Sales Data* includes regulated mortgage contracts only, therefore excludes other regulated home finance products such as home purchase plans and home reversions, and unregulated products such as second charge lending and buy-to-let mortgages. The figures in this Report may differ from those published in the *Mortgages Product Sales Data Trend Report* by the FSA, as the *Trend Report* excluded business loans.

Chart 1.25 Euro-area lending growth

Sources: ECB and Bank calculations.

- (a) Refers to Greece, Ireland, Italy, Portugal and Spain.
 (b) Refers to Austria, Belgium, Finland, France, Germany and the Netherlands.

increased markedly in Q3 and was expected to improve further in Q4 (**Chart 1.23**). The improvement in Q3 was reported to be concentrated on borrowers at higher loan to value (LTV) ratios (over 75%). This was consistent with announcements from some lenders that they were targeting higher LTV lending. In the year to June 2012, LTV ratios and loan to income ratios offered at the riskier end of the market in new UK mortgage lending were broadly unchanged (**Chart 1.24**).⁽¹⁾

There were fewer signs of improvement in corporate credit availability. For companies, the Bank's *Credit Conditions Survey* reported that loan availability was broadly unchanged in Q3 and was expected to remain unchanged in Q4 as well. Some lenders suggested this response in part reflected the fact that they did not expect to see an increase in companies' demand for credit, even at lower rates. And it could take longer for the FLS to feed through to corporate lending — for example, because mortgage products are more standardised than corporate loans, which tend to be tailored for each customer. Improved bond market conditions (**Chart 1.13**) suggested that larger companies could bypass the banks and access finance by tapping capital markets directly. That fitted with evidence from the *Deloitte CFO Survey* suggesting that low interest rates on corporate debt made corporate bonds more attractive as a form of finance for companies than at any time in the past five years, though many smaller companies cannot access bond markets.

...while in the euro area, credit conditions deteriorated further.

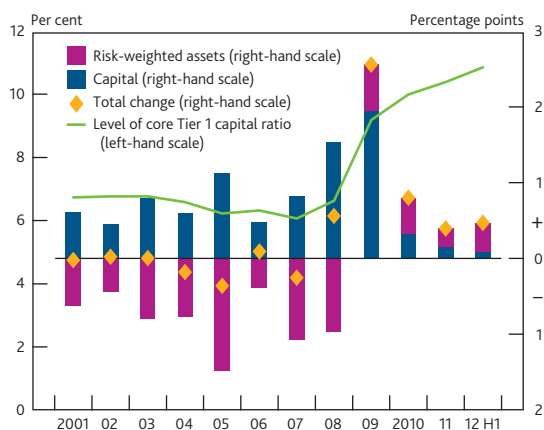
Euro-area lending growth remained weak, particularly in the vulnerable euro-area countries, where loans to households fell by 3% on average and loans to companies fell by 5% on average in the year to September 2012 (**Chart 1.25**). Credit conditions tightened further in the euro area as a result of bank deleveraging. The ECB's *Bank Lending Survey* suggested that euro-area banks tightened credit conditions again in Q3 and loan demand continued to fall. Credit conditions were expected to tighten further in Q4 and loan demand was expected to fall further. While there were some tentative signs of easing in credit conditions elsewhere — notably in the United States, where the Federal Reserve's *Senior Loan Officer Opinion Survey* indicated a small further easing in standards for business lending and some categories of consumer lending over the past three months — market contacts remained concerned that a further tightening of credit conditions in the euro area might pose financial stability risks across Europe, including in the United Kingdom. Section 2 examines short-term risks to financial stability, including those that could cause further weakness in credit supply.

(1) Refers to borrowers at the 75th percentile and excludes remortgaging.

2 Short-term risks to financial stability

The outlook for financial stability has improved a little since the previous *Report*. But UK banks remain highly sensitive to developments in the euro area. There are some signs of overvaluation of assets on UK banks' balance sheets. Prospects for building capital through retained earnings appear generally limited and capital issuance has been weak. This could undermine banks' capacity to supply credit effectively, which may aggravate credit risks currently contained by forbearance.

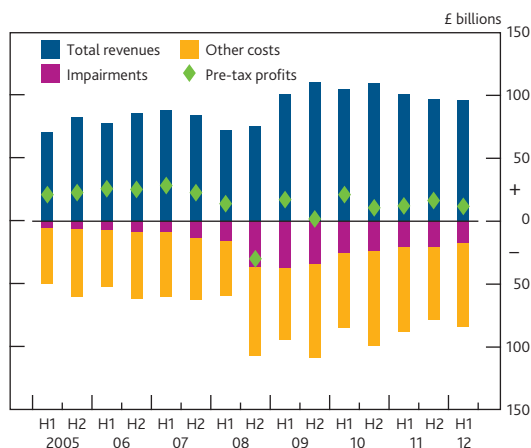
Chart 2.1 Contributions to the change in major UK banks' core Tier 1 capital ratios^(a)



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

(a) As Co-operative Banking Group, Nationwide and Virgin Money have not yet reported their 2012 H1 results, their end-2011 results have been used for 2012 H1.

Chart 2.2 Major UK banks' revenues, costs and profits^{(a)(b)}



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

(a) As Co-operative Banking Group, Nationwide and Virgin Money have not yet reported their 2012 H1 results, their end-2011 results have been used for 2012 H1.

(b) Costs related to the mis-selling of PPI are included within other costs.

Despite some improvement in financial market sentiment, short-term risks to financial stability remain significant. This section examines the resilience of the UK banking sector in the face of those risks and banks' response to stressed conditions.

2.1 Banks' resilience to stress

While some measures of resilience have continued to improve...

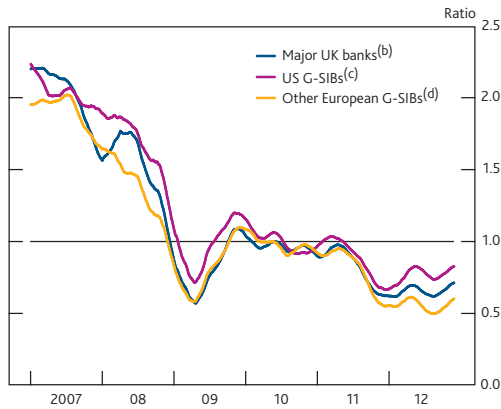
Some measures of major UK banks'⁽¹⁾ resilience have improved, although the pace of this improvement generally has slowed. The aggregate core Tier 1 capital ratio rose to 10.8% in the first half of the year, from 10.4% at end-2011 (Chart 2.1). This was due both to an increase in capital and a fall in risk-weighted assets. Leverage, a measure of resilience that does not use weights or models to calibrate risks, remained at its recent lower level. But leverage has not fallen significantly since 2009, when capital levels rose materially.

...profitability has been subdued...

The major UK banks reported pre-tax profits of around £12 billion in 2012 H1, an annual decrease of £0.4 billion (3%) (Chart 2.2). Profits were affected by low net interest margins, accounting adjustments on the value of own debt and costs for conduct redress. Net interest income was £48 billion in 2012 H1 — £2 billion less than 2011 H1. Banks reported that this reflected relatively high wholesale and retail funding costs, and subdued core lending growth. Net trading income fell by around £2.5 billion, driven by debt valuation adjustments. To date, the five largest UK banks have made provisions of £11.1 billion to cover expected compensation for mis-selling payment protection insurance (PPI) and £0.7 billion for mis-selling interest rate swaps to small and medium-sized enterprises (SMEs). Further provisions of around £1.2 billion have been made in relation to Libor issues and lapses in anti-money laundering controls.

(1) Unless otherwise noted, 'major UK banks' refers to: Banco Santander, Bank of Ireland, Barclays, Co-operative Banking Group, HSBC, Lloyds Banking Group (LBG), National Australia Bank, Nationwide, Royal Bank of Scotland (RBS) and Virgin Money.

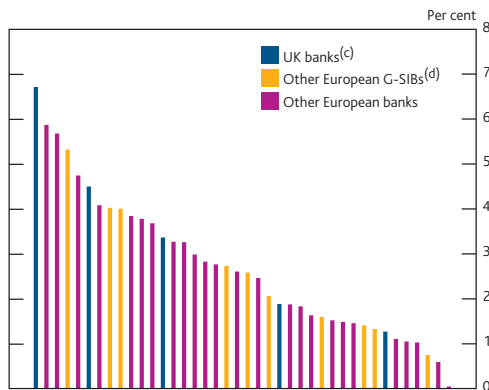
Chart 2.3 Major UK banks' and G-SIBs' price to book ratios^(a)



Sources: Thomson Reuters Datastream and Bank calculations.

- (a) Simple averages of the ratios in each peer group are used. The chart plots the three-month rolling average.
 (b) Excludes Britannia, Co-operative Banking Group, Nationwide and Northern Rock (from end-2007).
 (c) Bank of America, Bank of New York Mellon, Citigroup, Goldman Sachs, JPMorgan, Morgan Stanley, State Street and Wells Fargo.
 (d) BBVA, BNP Paribas, Credit Suisse Group, Deutsche Bank, Nordea Bank, Société Générale, UBS and UniCredit. For Groupe Cr dit Agricole and Groupe BPCE the traded entities Cr dit Agricole SA and Natixis are used respectively.

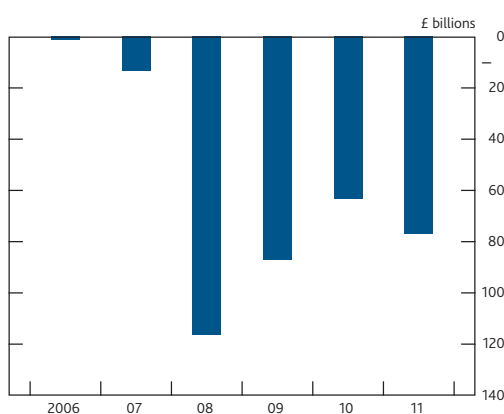
Chart 2.4 European banks' market-based capital ratios^{(a)(b)}



Sources: Bank of England, Bloomberg, SNL Financial, Thomson Reuters Datastream and Bank calculations.

- (a) Calculated as market capitalisation divided by total assets. Total assets data use the most recent period for which data are available.
 (b) Sample comprises the top 40 listed banks in Europe by total assets, excluding Allied Irish and ING Group.
 (c) Banco Santander, Barclays, HSBC, LBG and RBS.
 (d) See footnote (d) in Chart 2.3.

Chart 2.5 The difference between the book and fair value of customer loans over time^(a)



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

- (a) Barclays, HSBC, LBG and RBS.

Most recently, Barclays, LBG and RBS have used excess liquidity to repay term debt, which provided a small boost to margins and profits. Barclays bought back £1.6 billion of debt, LBG £8.5 billion and RBS £4.2 billion. Senior unsecured debt spreads fell as a result. As these spreads have continued to fall it has become more expensive for banks to repay their own debt, potentially limiting any future benefits from this source.

...and market prices suggest continued uncertainty over banks' book values...

The market value of major UK banks' shareholders' equity (their net assets) remains, on average, around two thirds of the book value (Chart 2.3). A similar picture exists across other European and US banks. Consistent with this, the market capitalisation of most European banks is low relative to their total assets (Chart 2.4). There may be several reasons for this (see Box 2 of the June 2012 Report). Investors may be uncertain about the value of banks' net assets and of underlying asset risks. Low market values may also reflect weak or uncertain future profits, or high equity risk premia (Section 1). The contribution of each factor is not entirely independent, and will vary by bank.

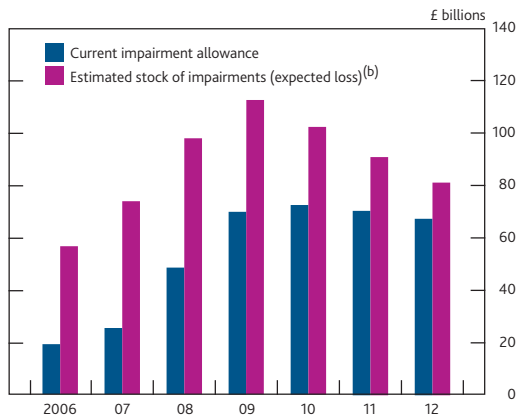
...possibly reflecting asset valuation concerns...

Overvalued assets explain part of this discount. In June 2012 the market value of the four largest UK banks' equity was around £90 billion less than the book value. This magnitude is similar to the difference between banks' own estimates of the fair value of their loans and their book value at end-2011 (Chart 2.5). Prior to the crisis, there was little difference between these values. But since 2007, the fair value of UK banks' loans has fallen significantly below the book value.

The fair value of loans should reflect the present value of expected cash flows. For example, expected credit losses, over and above current provisions or losses priced into loans, reduce the fair value of loans below their book value. Other factors, such as low policy rates, may reduce the economic profitability of loans. But banks disclose limited information about how they calculate these fair values. As such, the precise source of the low fair values for UK banks' loans is not entirely clear.

Expected future losses on loans may be underrecognised by current provisions. Incurred loss accounting rules mean that provisions can only be made where there is evidence that current or imminent impairment will reduce the present value of loans. As such, banks have limited ability to fully provision for expected losses. By delaying the recognition of losses, the incurred loss approach can lead to an overstatement of asset values. This overstatement may be especially large in the current environment, where low interest rates and forbearance practices have helped keep default rates low.

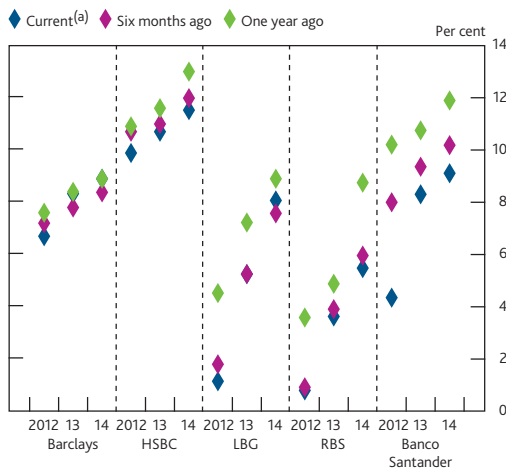
Chart 2.6 UK banks' provisions and estimated provisions under expected loss accounting^(a)



Sources: Bank of England, BBA Statistical Abstract, FSA regulatory returns, published accounts and Bank calculations.

(a) Bank of Scotland, Barclays, Halifax, HBOS, HSBC, LBG, Lloyds TSB, NatWest and RBS.
 (b) The estimated stock of impairments under expected loss accounting is assumed to be equal to expected losses over the residual maturity of banks' loan books. Expected losses are calculated based on the assumption that the annualised write-off rate observed at each year-end will trend back to historic norms (based on the 1990–2010 period) over the residual maturity of banks' loan books.

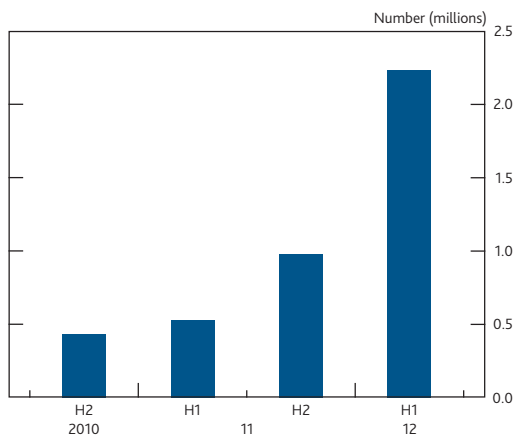
Chart 2.7 Analysts' consensus forecasts of major UK banks' return on equity



Sources: Bloomberg and Bank calculations.

(a) To ensure consistency, current estimates are as at the week commencing 12 November 2012.

Chart 2.8 Number of PPI-related complaints^(a)



Source: FSA.

(a) Financial services firms' reported number of complaints which were not resolved by the end of the business day following their receipt.

More forward-looking measures of expected losses deviate substantially from incurred loss provisions. **Chart 2.6** illustrates how provisions might have evolved under a very simple expected loss approach. In each year, banks are assumed to hold provisions for lifetime loan losses based on the assumption that write-off rates gradually return to their long-run rate. Expected loss provisions exceed the actual stock of provisions because they incorporate both backward and forward-looking elements. This simple experiment would have resulted in UK banks holding around £50 billion of extra provisions leading into the crisis and needing to increase provisions by less as the crisis broke.

There are other signs that expected future losses are greater than current provisions. For example, the ratio of provisions to forborne retail loans disclosed by UK banks are lower than coverage ratios — the ratio of provisions to non-performing loans — for UK banks' other loans. And UK banks' coverage ratios against some non-performing private sector loans in vulnerable euro-area countries are lower than those of some local banks. This variation may partly reflect differences in underlying loan quality between banks. But as an illustration, and assuming comparable loan quality, the four largest UK banks might require up to £15 billion of extra provisions to raise coverage ratios on these loans to more prudent levels. Large losses might also result from UK banks' commercial real estate (CRE) lending. The high LTV ratio of many of these loans, coupled with material refinancing needs, make these exposures susceptible to future losses.

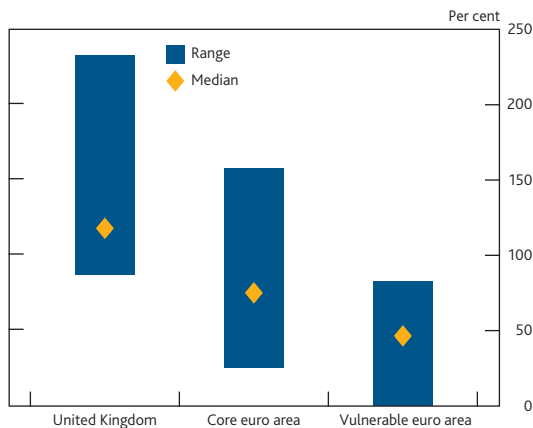
A further source of concern relates to the valuation of UK banks' fair-valued assets and liabilities, including in the trading book. These values could deviate significantly from the prudent value that might be realised if the assets were sold, particularly in times of stress. Moreover, evidence from the FSA's prudent valuation exercises indicate that approaches to the valuation of some trading book assets and liabilities vary greatly between banks.

...and poor prospects for future profitability...

Forecasts of the major UK banks' return on equity were revised down during 2012, particularly for banks with the lowest projected returns (**Chart 2.7**). Total revenues have fallen in each half-year period since 2010 H2 (**Chart 2.2**). In part, this reflects deleveraging by some banks. But revenues may be constrained further if weak global growth persists (Section 3).

Additional costs for conduct redress may also weaken profits. While UK banks have already made large provisions for conduct redress, further charges may be incurred if they have underestimated the scale of fines, claims and litigation costs, which can be difficult to quantify. For instance, since end-2011 the five largest UK banks have increased PPI-related provisions by 70%. And the number of new PPI-related complaints in

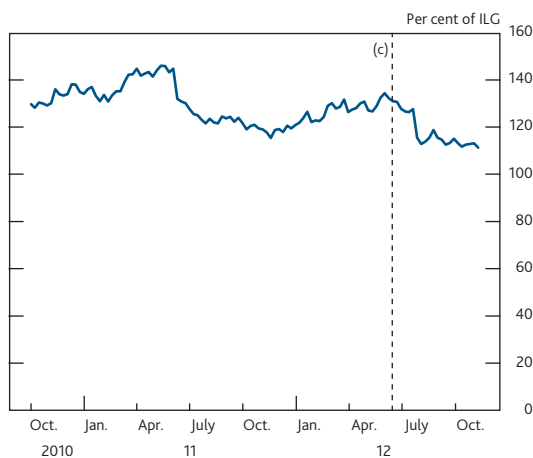
Chart 2.9 Liquid assets as a proportion of stressed outflows by banking sector^{(a)(b)(c)}



Sources: Liquidatum and Bank calculations.

- (a) Models a three-month market-wide stress, assuming severe, but plausible, retail, wholesale and bank deposit outflows and issuance.
 (b) Includes four UK banks, ten core euro-area banks and eleven other euro-area banks.
 (c) Estimated liquid assets are calculated by summing stable funding sources, which include unsecured bank and wholesale funding, retail deposits, debt in issue and equity, minus illiquid assets, which are defined as total assets less the sum of securities, cash, insurance assets, reverse repos and derivatives. The difference between these two is assumed to be funds invested in liquid assets.

Chart 2.10 Aggregate liquid asset holdings of UK banks as a percentage of FSA Individual Liquidity Guidance (ILG)^{(a)(b)}



Sources: FSA and Bank calculations.

- (a) UK 'defined liquidity groups' for Barclays, HSBC, LBG, Nationwide, RBS and Santander as designated by the FSA for liquidity regulation purposes.
 (b) Liquid asset holdings for this purpose exclude pre-positioned collateral at the Bank of England's Discount Window Facility in order for the data to be comparable across time.
 (c) June 2012 Report.

2012 H1 was more than double those received in 2011 H2 (**Chart 2.8**). Some external analysts have suggested that major UK banks may incur a further £4 billion to £10 billion of unrecognised PPI and Libor-related costs.

...though short-term funding risks have reduced.

The impact of Moody's review of banks with global capital markets operations was limited for UK banks. This was because downgrades were in some cases lower than expected. Guidance provided before the announcement also allowed UK banks to mitigate the impact.

At the time of the previous *Report*, major UK banks' holdings of highly liquid assets⁽¹⁾ were well in excess of regulatory guidance. Improved access to central bank facilities has reduced further the need to self-insure. The four largest UK banks appear well placed to withstand a liquidity shock relative to international peers, as illustrated by a simple stress-test experiment using data published by banks. The stress test models a three-month market wide stress, assuming severe, but plausible, retail, wholesale and bank deposit outflows and issuance. **Chart 2.9** suggests that some vulnerable euro-area banks may not have sufficient liquid assets in this scenario — although they may have access to central bank liquidity facilities, which this scenario does not take into account. By contrast, the major UK banks appear resilient to this stress. These results are broadly consistent with the April 2012 Basel III monitoring exercise, which found that 40% of banks had a Liquidity Coverage Ratio below 75%.

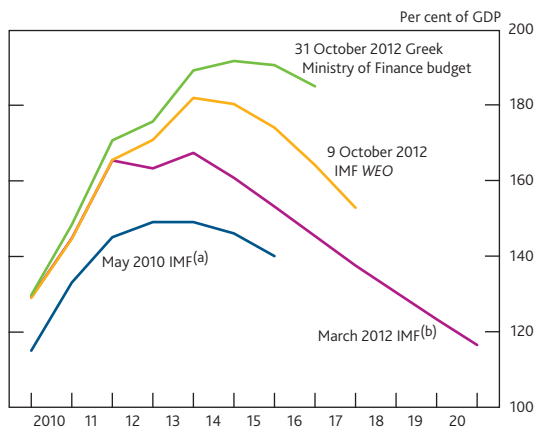
The largest six UK banks' holdings of highly liquid assets have fallen relative to FSA guidance since the previous *Report* (**Chart 2.10**). Recent regulatory changes, following an FPC recommendation in June, have reduced the need for banks to hold large liquid asset buffers. In particular, the FPC recommended that the FSA adjust its liquidity guidance and make clear to banks that they are free to use their liquid asset buffers in times of stress. This could allow banks to use funding that has been supporting liquid assets to boost lending to households and corporates.

2.2 Risks from the global environment

Risks from the euro area remain...

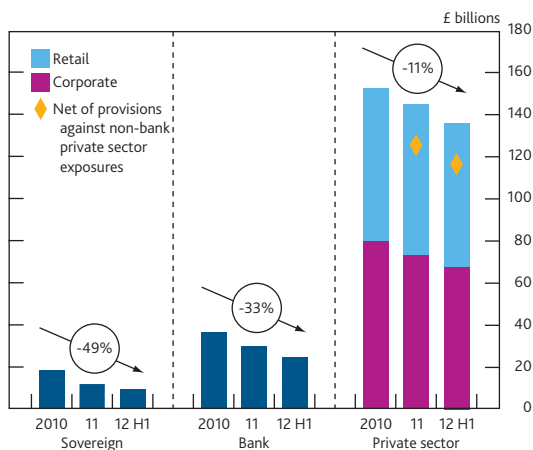
Despite recent policy actions, the euro-area sovereign debt crisis remains the most immediate and material risk to financial stability. Market contacts have cited a number of potential triggers that could escalate this risk. Forecasts for Greek public debt outturns have continued to worsen since the announcement of the IMF programme in 2010 — for instance, the most recent Greek budget contained a further upward

(1) Central bank reserves and unencumbered holdings of highly rated government securities. A more detailed definition can be found in the FSA Handbook, available at <http://fsahandbook.info/FSA/html/handbook/BIPRU/12/7>.

Chart 2.11 Forecasts of Greek public debt to GDP ratios

Sources: Greek Ministry of Finance budget and IMF.

- (a) Projections at the time of approval of the first Greek support programme.
 (b) Projections at the time of approval of the second Greek support programme.

Chart 2.12 Evolution of UK banks' gross exposures to vulnerable euro-area countries^{(a)(b)}

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

- (a) Barclays, HSBC, LBG and RBS.
 (b) Includes on balance sheet exposures as disclosed by banks according to counterparties' country of origin. Where possible exposures are gross of impairment provisions but net of collateral and netting arrangements.

revision compared to the October 2012 *World Economic Outlook (WEO)* (Chart 2.11). Social unrest in one or more vulnerable euro-area countries could jeopardise further fiscal austerity measures. And capital flight from vulnerable euro-area banks could undermine confidence in the viability of those banks (Box 1).

...despite reductions in exposures to vulnerable sovereigns and banks...

In common with international peers, UK-owned banks have continued to reduce their exposures to vulnerable euro-area countries (Chart 2.12 and Box 1). Gross exposures to vulnerable sovereigns declined to less than £10 billion at end-June 2012, from around £12 billion at end-2011 (Table 2.A). And exposures to banks in vulnerable euro-area countries fell from £30 billion to £25 billion over the same period.

...non-bank private sector exposures are material...

But in aggregate, the major UK banks retain material exposures to non-bank private sector borrowers, namely households and corporates, in these countries. Total exposures were around £135 billion (65% of core Tier 1 capital), mainly reflecting exposures in Ireland for LBG and RBS, and in Italy, Portugal and Spain for Barclays. The illiquid and long-term nature of many of these exposures mean they have fallen more slowly than those to sovereigns and banks (Chart 2.12).

The major UK banks are likely to remain highly exposed to the non-bank private sectors in these countries for some time, unless they sell loans or businesses. While that would provide more certainty about asset values, it would also crystallise any losses. Crédit Agricole's recent disposal of Emporiki Bank, its Greek subsidiary, is one illustration. Crédit Agricole is expected to take a €2 billion loss as a result, on top of €9 billion in write-downs, capital injections and acquisition costs over the past six years.

...and provisions made to date may not be adequate.

If banks retain these exposures, future losses will depend on the adequacy of current provisions. UK banks currently have provisions of £19 billion against private sector exposures in the most vulnerable euro-area countries, primarily Ireland (Table 2.A). But, as discussed above, in some cases coverage ratios are lower than some local banks. While that could reflect differences in underlying asset quality, it might also indicate a less prudent approach to provisioning.

Further losses on these portfolios are possible, for instance if corporates in vulnerable euro-area countries come under increasing stress. Profits are not sufficient to cover debt interest payments for an increasingly large proportion of companies in Spain and Italy. This measure of corporate health would worsen if profits are squeezed further. In September, the overall proportion of doubtful loans in Spain

Table 2.A UK banks' exposures to selected euro-area countries^{(a)(b)(c)}

£ billions (as at 2012 H1)

	Sovereigns	Banks	Non-bank private sector	Total	Provisions ^(d)	Per cent of core Tier 1 Total less provisions
Greece	0	0	4	4	0	2
Ireland	2	10	63	75	16	28
Italy	4	4	25	33	1	15
Spain	2	9	36	48	2	22
Portugal	1	1	9	11	1	5
Total vulnerable Europe	10	25	136	170	19	72
Belgium	6	4	2	12		
France	35	61	58	155		
Germany	117	28	45	190		
Netherlands	68	6	42	116		
Other European countries	227	100	147	474		

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

- (a) Barclays, HSBC, LBG and RBS.
 (b) For Greece, Ireland, Italy, Portugal and Spain data are from published accounts and include on balance sheet exposures as disclosed by banks according to counterparties' country of origin. Where possible exposures are gross of impairment provisions but net of collateral and netting arrangements.
 (c) For Belgium, France, Germany and the Netherlands data are from Bank of England, and include exposures on a consolidated banking group basis, gross of provisions. Exposures include balances with non-residents. Derivative exposures are not included.
 (d) Non-bank private sector provisions. Not available in aggregate for Belgium, France, Germany or the Netherlands.

increased to 10.7% and the unemployment rate rose above 25%.

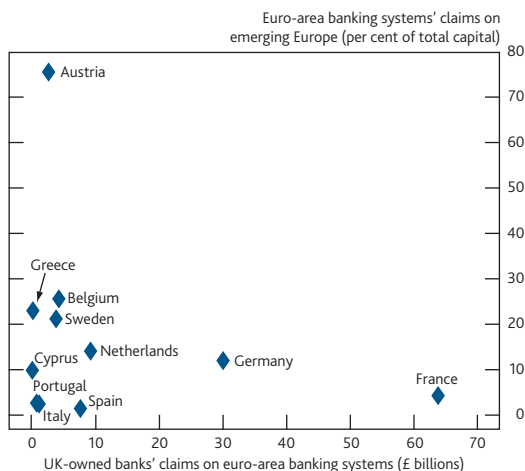
Further sources of risk arise from UK banks' exposures to core banking systems...

The major UK banks also remain exposed to banking systems with large exposures to vulnerable euro-area countries (Table 2.A). For example, French and German banking systems have gross exposures to vulnerable euro-area countries accounting for 160% and 105% of their aggregate tangible equity. UK banks' exposures to these systems have fallen by £28 billion and £6 billion respectively since end-June 2011, and potential losses from these sources are partly mitigated by collateral. Moreover, these include exposures to central counterparties. Nonetheless, there are potentially large indirect impacts through funding and wider financial markets that could occur should French or German banks come under stress.

...and the impact of any euro redenomination.

In addition to potential direct credit losses, the impact on the major UK banks would be larger if a country left the euro area and loans made in the exiting country were redenominated. The magnitude of losses would depend on the scale of the depreciation and whether loans were backed with local liabilities that were also subject to redenomination.

In order to manage this risk, UK and overseas banks have sought to match local assets and liabilities. For example, Barclays has sought to reduce its redenomination risk by attracting corporate deposits in Spain and reducing corporate lending in Spain and Portugal. But substantial mismatches remain for some banks. Some banks headquartered in Belgium, France and Germany look particularly exposed, based on end-2011 BIS data, as their local assets are not well hedged by local liabilities. Many banks are seeking to hedge these exposures further.

Chart 2.13 European banking systems' exposures to emerging Europe^{(a)(b)}

Sources: Bank of England, BIS, ECB and Bank calculations.

- (a) All data are as at end-June 2012. BIS data are converted from US dollars into sterling using the end-June exchange rate.
 (b) X-axis shows consolidated ultimate risk basis foreign claims by UK-owned banks on the banking systems of selected euro-area countries. Y-axis shows cross-border claims by selected euro-area banking systems on all sectors of Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia as a percentage of euro-area banking systems' capital and reserves.

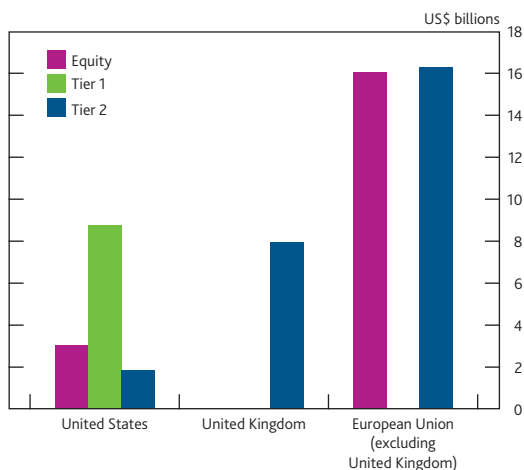
Risks from the spillover to emerging Europe...

UK banks could also be affected by an escalation of the crisis to include emerging Europe. The region has close trade links to the euro area and is highly dependent on credit provided by some euro-area banks. Direct exposures of the major UK banks to emerging European countries are negligible at 0.5% of major UK banks' total assets. And exposures to those banking systems that are heavily exposed to the region, such as those of Austria and Greece, are also small (Chart 2.13). Nevertheless, a crisis in emerging Europe might trigger broader contagion effects involving an increase in risk aversion.

...and from other advanced economies appear to be contained for now.

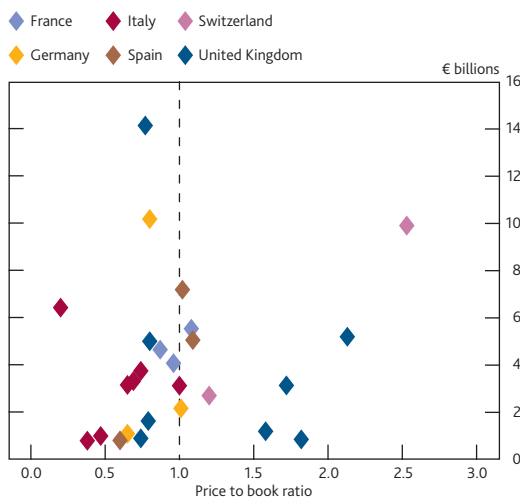
Risks from the US financial sector, to which the major UK banks are heavily exposed, appear to have reduced. US banks' CDS premia have fallen, reflecting increased

Chart 2.14 Gross capital issuance by banking sector in 2012



Sources: Dealogic and Bank calculations.

Chart 2.15 European banks' equity issuance since 2008(a)(b)



Sources: Dealogic, Thomson Reuters Datastream and Bank calculations.

(a) Data show the deal value of selected equity issuances by European banks, and the price to book ratio at the time of announcement.

(b) Data exclude equity issuance with a deal value below €500 million, and those involving government intervention on a best-efforts basis.

resilience and a continued improvement in banks' balance sheets. Property prices have also recovered with the S&P/Case-Shiller price index for September showing a modest annual rise. And delinquency rates on residential mortgages have fallen, but remain sufficiently high (at 10%) that an economic slowdown could have severe consequences for the banking sector.

A shock to the nascent US recovery could stem from failure by the US Congress to agree remedial action to tackle the 'fiscal cliff' — tax increases and spending cuts worth US\$600 billion, or 4% of GDP, that are scheduled to take effect automatically in 2013. According to estimates by the US Congressional Budget Office, the resulting fiscal tightening would put the US economy back into recession. Section 3 discusses the medium-term risks posed to the major UK banks by developments in Asia and other advanced economies.

2.3 Banks' response to stress

This section discusses major UK banks' responses to stress and how these might affect financial stability through their influence on different sectors of the economy.

The major UK banks have not sought external capital...

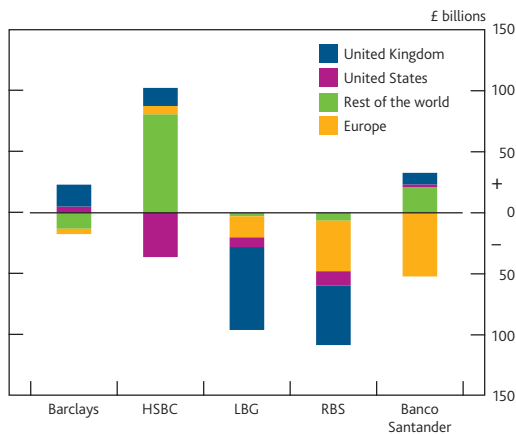
With subdued prospects for profitability, banks are unlikely to build resilience through retaining earnings. They could instead raise external capital. In practice, however, the major UK banks have raised little capital so far in 2012 (Chart 2.14). In November 2012 however, Barclays issued a US\$3 billion contingent capital note, which would trigger a full and permanent write-down in the event that Barclays' transitional common equity Tier 1 capital ratio fell below 7%. This was the first contingent capital issuance by a UK bank since 2009.

In contrast, other banks in Europe and in the United States have raised large amounts of capital in 2012. In Europe, this was driven by the European Banking Authority's (EBA) 2012 bank recapitalisation exercise (Section 1). The UK banks already had core Tier 1 capital ratios above the 9% ratio in this exercise, so were not required to raise capital.

Since the early stages of the financial crisis, large amounts of equity have been issued by banks. In many instances this took place when market values were below book values (Chart 2.15). For instance, in March 2009 HSBC undertook a record £12.5 billion rights issue and in October 2010 Deutsche Bank raised €10.2 billion, both at a price to book ratio of around 0.8. This suggests low bank valuations are not of themselves an obstacle to issuing equity.

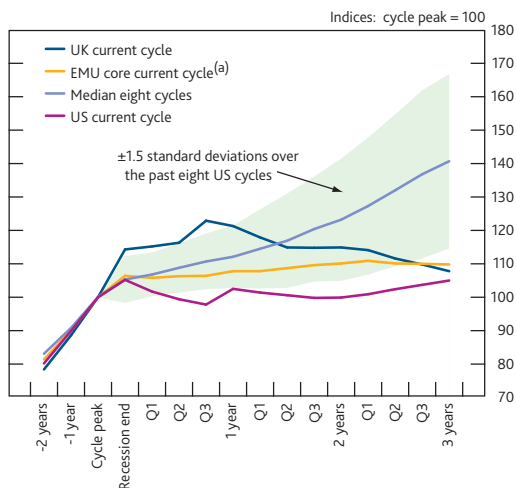
...instead relying on deleveraging...

Recent increases in UK banks' capital ratios have instead relied heavily on reductions in risk-weighted assets, especially for less

Chart 2.16 Change in loans by region since 2009^(a)

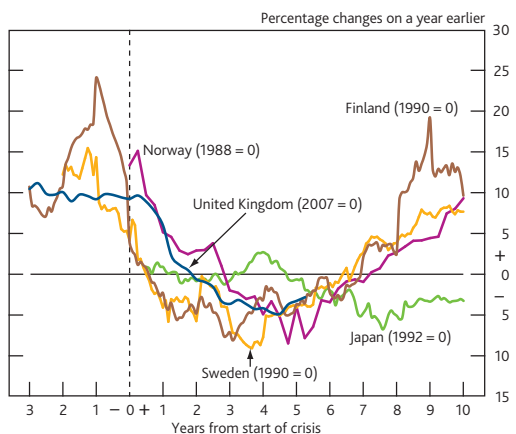
Sources: Published accounts and Bank calculations.

(a) Chart shows the change in lending to households and PNFCs between end-2009 and June 2012. Changes include write-offs, impairments, loan sales and acquisitions and the effect of exchange rate movements and so are not directly comparable to net lending data.

Chart 2.17 Credit growth in previous cycles

Source: IMF Global Financial Stability Report (October 2012).

(a) Includes Austria, Belgium, Finland, France, Germany and the Netherlands.

Chart 2.18 Real lending growth rates^{(a)(b)}

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

(a) Finland and Japan series represent bank lending, UK series represents monetary financial institution lending and all other series represent financial institution lending.
 (b) Lending to households and PNFCs except for Sweden which covers lending to households only.

resilient banks (Chart 2.1). For instance, the non-core disposal plans of LBG and RBS are ahead of schedule and targets for 2012 have been raised. Since 2008, these banks have shed £383 billion of assets. Though remaining planned asset sales may be more difficult, market contacts suggest that strong demand from hedge funds and private equity buyers should support further progress.

Further deleveraging of core portfolios could weigh on credit growth (Chart 2.16). According to the IMF, credit growth in the United Kingdom, the United States and core euro-area countries has been weaker than in the past eight US credit cycles (Chart 2.17).

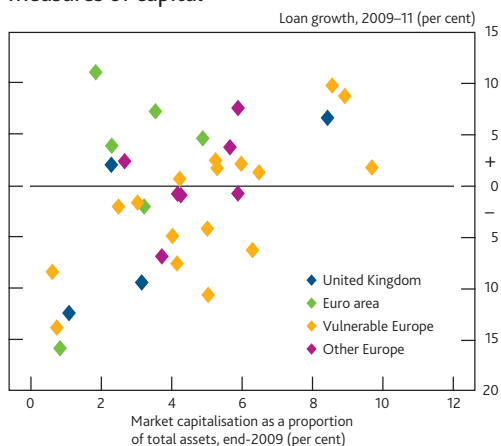
...and continue to forbear in the hope that conditions improve...

The low interest rate environment, combined with weak growth and high household and corporate debt levels, creates incentives for banks to forbear on loans, by temporarily providing borrowers with flexibility to meet their obligations during periods of distress. If provisioned for prudently, forbearance can be positive for financial stability and economic activity. For example, by reducing foreclosures, forbearance can benefit both banks and customers, preventing sales of assets that might otherwise depress prices. But inadequate and opaque provisioning of loans may mask underlying risks and heighten uncertainty about profit and capital positions. It may also impair the flow of new lending by misallocating capital to unprofitable lending and deferring necessary restructuring. As Japan's experience illustrates, over the medium term this can weigh on economic growth and, in turn, banks' resilience. Box 2 explores what lessons can be drawn from Japan in more detail.

Prolonged low growth and policy rates could strengthen banks' incentives to forbear to avoid realising losses, and make forbearance strategies less successful. Chart 2.18 highlights the difference in recovery of credit in Sweden, where banks were recapitalised and disclosed losses, and Japan, where forbearance was widespread and lasting. Sweden was also boosted by positive external factors, and returned to positive real credit growth six years after its crisis, whereas credit was still falling in Japan a decade after its crisis.

EU supervisors have identified signs of widespread forbearance throughout Europe. The EBA has tried to gauge its nature and extent, though this has proved challenging in the absence of common definitions. The EBA's initial analysis highlighted the limited rise in arrears on CRE loans, in spite of their sensitivity to the economic cycle, as an indication that this sector might have been subject to significant forbearance by European banks. The EBA also found evidence of forbearance on residential mortgages, where average provisioning levels did not increase significantly in the two years to 2011, despite rising arrears.

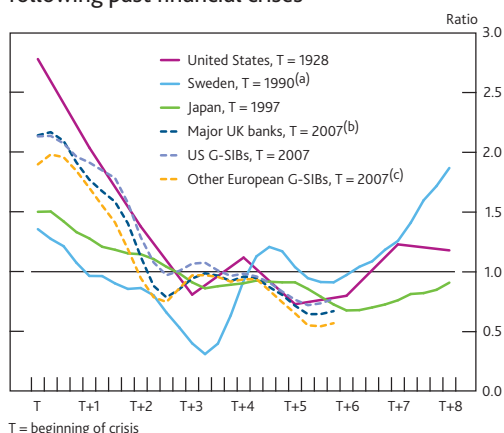
Chart 2.19 Bank loan growth versus market-based measures of capital^(a)



Sources: Bank of England, Bloomberg, SNL Financial, Thomson Reuters Datastream and Bank calculations.

(a) Sample comprises of the largest listed banks in Europe by total assets, excluding those banks that underwent a takeover during the period.

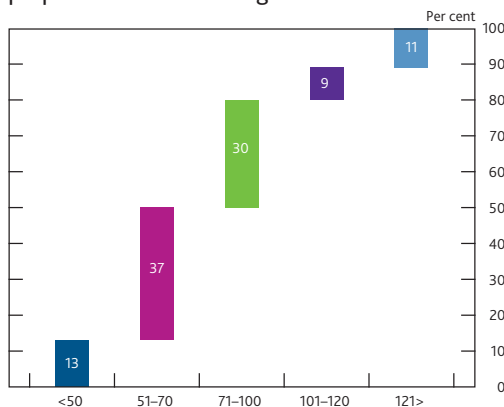
Chart 2.20 Price to book ratios of banking sectors following past financial crises



Sources: Calomiris, C W and Wilson, B (2004), 'Bank capital and portfolio management: the 1930s 'capital crunch' and the scramble to shed risk', *Journal of Business*, Vol. 77, No. 3, pages 421-55, Thomson Reuters Datastream and Bank calculations.

(a) Svenska Handelsbanken and SEB.
 (b) Excludes Britannia, Co-operative Banking Group, Nationwide and Northern Rock (from end-2007).
 (c) See footnote (d) in Chart 2.3.

Chart 2.21 Loan to value ratios of UK CRE exposures by proportion of outstanding debt^{(a)(b)}



Sources: De Montfort University and Bank calculations.

(a) Responses were received from organisations holding approximately £190 billion of outstanding debt.
 (b) The chart shows an estimation of the proportion of the outstanding debt that had a current loan to value ratio falling within the brackets given.

...which could ultimately lead to renewed weakness in credit supply...

Perceptions of widespread forbearance may have contributed to doubts about the valuation of assets, as reflected in banks' low market capitalisation. Banks with the lowest market-based measures of capital have tended to be those with lower loan growth (Chart 2.19). Past financial crises also support this view. For example, following Sweden's financial crisis in 1990 the banking sector's price to book ratio fell below 0.4 but rebounded relatively quickly (Chart 2.20). Eight years after the start of its crisis, the Japanese banking sector's price to book ratio was below one.

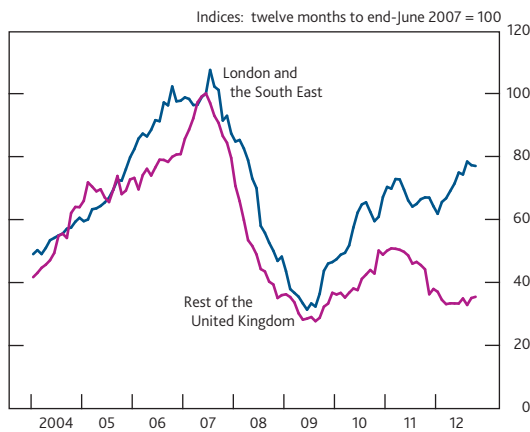
...adding pressure to sectoral balance sheets such as commercial real estate lending...

A further tightening in credit conditions could lead to a deterioration in the more vulnerable parts of major UK banks' loan books, such as CRE. These loans represent just under a half of all UK corporate lending and accounted for a large proportion of the major UK banks' losses on UK lending during the crisis. And these loans remain susceptible to further losses, given high LTV ratios and the large quantity of loans due to be refinanced (Chart 2.21). Furthermore, as individual exposures can be very large, deterioration in credit quality could affect significantly the resilience of smaller institutions such as building societies, some of which have been active in this market.

An FSA study indicated that around a third of British CRE loans by value have been subject to forbearance. The UK market provides contrasting evidence of the effectiveness of this strategy. The market has broadly separated into a liquid market for 'prime' property, the majority of which is located in London and the South East, and an illiquid market for 'secondary' property (Chart 2.22). While forbearance on loans secured on prime property has been vindicated by the recovery in market prices, forbearance on loans secured on secondary property has so far not. Yields are high and rising (Chart 2.23). And the lack of credit availability and concerns about a structural reduction in demand for some commercial property may restrict any recovery in secondary property prices.

Forbearance and low interest rates may also help explain why corporate insolvencies have been so low in the United Kingdom. The corporate insolvencies rate was around 0.9% at end-2012 Q3, compared with a peak of 3.6% in the early 1990s (Chart 2.24). Given the large build-up of debt before the financial crisis (Chart 2.25), a larger rise in insolvencies might have been expected. Furthermore, data from companies' accounts suggest that the proportion of companies making a loss has picked up sharply, from around 20% in the early 2000s to around 30% at the height of the crisis, before moderating slightly since. Recent survey evidence from R3, a trade body of insolvency practitioners,

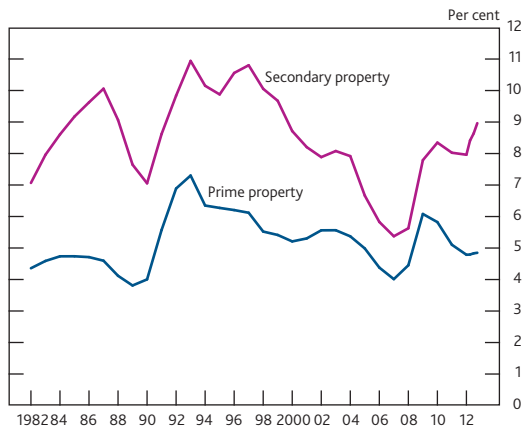
Chart 2.22 UK commercial real estate transaction volumes^{(a)(b)}



Sources: The Property Archive and Bank calculations.

- (a) Calculated on a rolling twelve-month basis.
 (b) The figures are subject to rounding and future amendments.

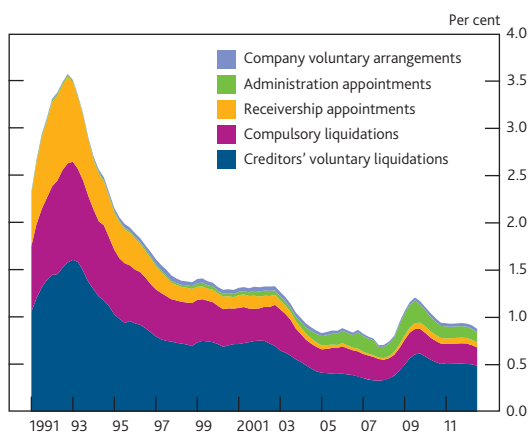
Chart 2.23 Commercial real estate yields^(a)



Sources: Investment Property Databank and Bank calculations.

- (a) Prime and secondary property yields shown are the top and bottom quartiles of commercial real estate yields respectively.

Chart 2.24 Corporate insolvency rates for England and Wales^{(a)(b)(c)}



Sources: The Insolvency Service and Bank calculations.

- (a) Rate is the number of corporate insolvency proceedings in England and Wales over the past four quarters divided by the average number of UK companies in England and Wales on the Companies' House Active Register over that period.
 (b) A single company may be subject to more than one type of insolvency proceeding.
 (c) The Enterprise Act 2002 introduced revisions to corporate administration procedures and came into force on 15 September 2003. Since then a number of administrations have been converted into creditors' voluntary liquidations. The data in the chart are not adjusted for this as they do not represent a new company entering an insolvency procedure for the first time.

found that 8% of UK companies 'are only able to pay the interest on their debts but not reduce the debt itself' and 'in the event of a rise in interest rates, they would be unable to afford to repay their debts at all'.

Data available on corporate loan forbearance outside the CRE sector are limited. Around a third of leveraged loans — mainly debt associated with private equity deals — have been subject to forbearance. Survey evidence from R3 showed that 2% of large businesses were entering into negotiations with creditors, though the figure for small firms was far greater, at around 8%–10%. Drawing firm conclusions from this survey is difficult due to the small sample size and single data point.

Forbearance can help more viable companies recover from a temporary period of weak demand. But the longer it continues, the more likely it is to be concentrated on weaker companies with less ability to invest and innovate. This might divert credit from potentially more productive companies, for example new business start-ups. The number of company births dropped in 2009 and remained low in 2010, according to data from the Inter-Departmental Business Register.

...and while there are fewer obvious indicators of distress in household lending...

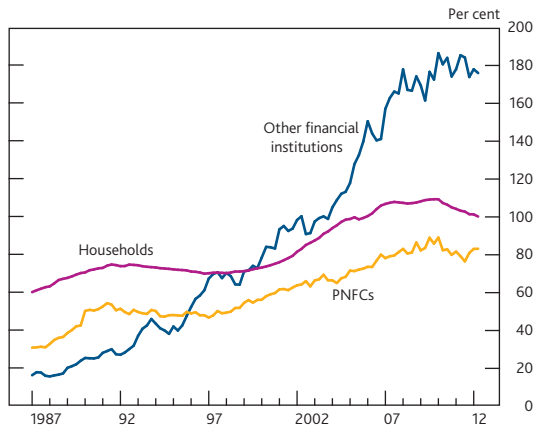
On the surface, indicators of distress in the UK residential mortgage market have been modest. Write-off, repossession and arrears rates have continued to fall from crisis highs. But market contacts suggest a continued distrust of risk-weighted assets, as discussed in more detail in Section 3. Some contacts have noted that very low risk weights have been assigned to some UK banks' residential mortgage exposures. If conditions were to worsen and expose latent distress among households, then banks may take losses over and above the capital allocated to absorb unexpected losses.

...some areas of vulnerability remain.

The 2012 survey carried out for the Bank by NMG Consulting provides evidence that some households may struggle to make debt payments in the future. Around two in five households have become more uncertain about their future incomes over the past year. And over one tenth reported feeling 'very concerned' about their debt levels, with a further third 'somewhat concerned' (Chart 2.26). The proportion of households reporting that they have entered a debt solution (other than insolvency) to resolve financial difficulties increased from 3.3% to 5.1% over the past survey year. Furthermore, around 6% of households had sought help from family or relatives and 14% reported using savings or other assets to help meet their financial commitments.

There is some evidence that, despite these efforts, repayment problems are simply being deferred. The FSA has calculated that more than 40% of the United Kingdom's outstanding residential mortgages are interest-only. Moody's estimates

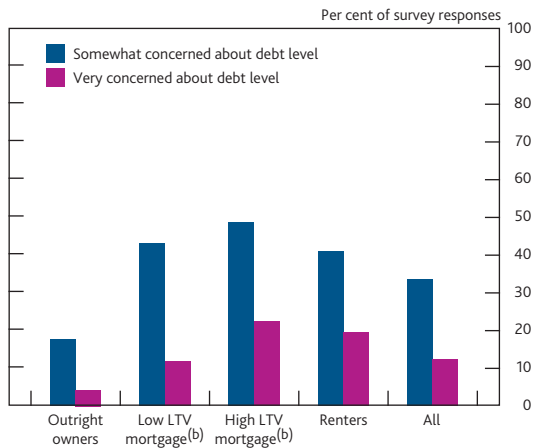
Chart 2.25 Sectoral debt to GDP ratios in the United Kingdom^(a)



Sources: ONS and Bank calculations.

(a) Sectoral gross debt as a percentage of four-quarter moving average of GDP.

Chart 2.26 Households' concerns about debt^(a)



Sources: NMG Consulting and Bank calculations.

(a) Responses to the question 'How concerned are you about your current level of debt?'.
 (b) High and low LTV mortgagors are defined here as households with a mortgage above or below a 75% LTV ratio, respectively.

that in some regions the proportion is more than half. Risks from interest-only mortgages typically crystallise when the capital element has to be repaid, many years after the mortgage has been taken out. The rating agency has estimated that an interest-only mortgage is about 1.5 times more likely to fall into arrears than a loan where the principal is being repaid. According to the FSA's *Mortgage Market Review*, interest-only mortgages at higher LTV bands perform worse than repayment mortgages, as borrowers are more likely to have opted for an interest-only mortgage for affordability reasons. The FSA considers that as many as 75% of interest-only mortgages made when house prices reached their peak in 2007 had no repayment strategy other than the sale of the home.

An FSA study found that 5% to 8% of UK mortgages are subject to forbearance. One form of this is the conversion of repayment mortgages to interest-only mortgages, either permanently or temporarily. This accounted for around a third of forbearance. Section 3 considers the prospects for household debt and house prices in the medium term.

Box 2

Financial policy in Japan's 'lost decade'

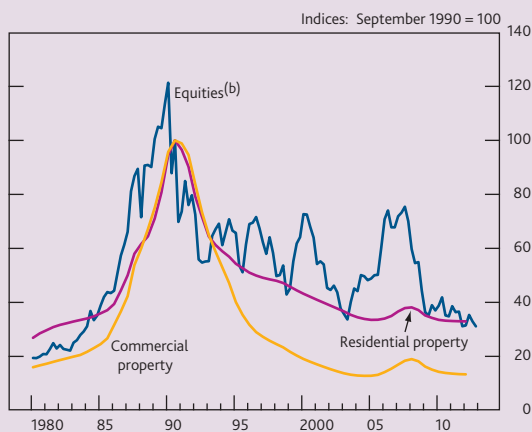
Japan underwent a period of financial sector distress in the early 1990s, followed by a full-blown banking crisis in 1997. This box examines the events that led to the Japanese crisis and its subsequent 'lost decade', the measures taken by the Japanese authorities in response and the lessons that can be drawn for the current financial crisis.

The Japanese financial crisis

Pre-crisis environment

During the second half of the 1980s, Japan experienced a macroeconomic boom on the back of expansionary monetary policy. At the same time, the gradual liberalisation of capital markets increased competition in corporate loan markets, squeezing banks' profit margins. As a result, banks started expanding lending to SMEs and to the real estate sector, while increasing their exposures to equity markets, helping to fuel property and equity price booms (Chart A). During the 1980s, bank lending to small and medium-sized firms in the non-financial corporate sector reached post-1950s' highs (Chart B).⁽¹⁾

Chart A Japanese asset prices^(a)



Sources: Thomson Reuters Datastream and Bank calculations.

- (a) Property price indices reflect values in six largest cities.
(b) TOPIX.

Crash, *jusen* problems, and crisis

In 1990, the stock market collapsed. This was followed by a period of falling property prices, which fell by between 60% and 80% in the subsequent decade (Chart A). This plunged the *jusen* — private non-bank financial firms dedicated to mortgage and real estate lending — into severe financial difficulty.

In 1991, around 40% of the *jusen*'s outstanding loans were estimated to be non-performing. Four years later, after limited deleveraging, this was estimated to have risen to around 75%.

Chart B Bank loans relative to total assets in non-financial corporate sector by firm size^(a)



Sources: Japanese Ministry of Finance and Bank calculations.

- (a) Non-financial corporate sector excludes financial and insurance sectors. Large, medium and small refer to firms with shareholder capital of at least ¥1 billion, ¥100 million–¥1 billion, and ¥10 million–¥100 million respectively.

The *jusen* were eventually liquidated in 1995. The resulting losses were mostly absorbed by the banks and agricultural co-operatives that had provided funding to the *jusen*, but some of them were borne by taxpayers.⁽²⁾ The earlier failed attempts at restructuring the *jusen* based on optimistic forecasts of land prices depleted the public's goodwill towards large taxpayer-funded rescues, however, making publicly funded recapitalisation of banks in subsequent years politically difficult for successive governments.⁽³⁾

The crisis became systemic in the autumn of 1997, with the failure of a securities firm, Sanyo Securities. That triggered a period of severe disruption in the interbank market, which in turn generated the first major bank failure in post-war Japan when Hokkaido Tokushoku was shut out of interbank markets. Further failures followed, including one of the four major broker-dealers after rumours of large off balance sheet losses.

The Japanese authorities' policy responses

The policy responses of the official sector to the prolonged banking crisis varied through time, both as the nature of the problem changed and as political circumstances shifted the appetite for public intervention.

Regulatory forbearance

The early phases of the crisis were met with regulatory forbearance. Troubled *jusen* were initially given a ten-year window to work out their problems. Banks did not disclose any information about non-performing loans (NPLs) prior to 1993 and the regulatory definition of NPLs before 1998 was lax. This allowed banks to continue rolling over loans to weak firms — known as 'evergreening' — in order to avoid recognising losses. As a result, in the run-up to the systemic phase of the banking crisis, large-scale underprovisioning against future losses was suspected among the commercial

banks. Estimates suggest that loan-loss reserves remained at between 40% and 60% of NPLs between 1992 and 1999.⁽⁴⁾

Although the regulatory definition of NPLs was tightened in 1998, the government also changed accounting rules to allow banks to choose whether to value their corporate equity and real estate holdings at market or book values. This allowed banks to choose the valuation method which most flattered their balance sheets.

Capital levels were also overstated in other ways. The use of deferred tax assets — tax deductions arising from past losses that could be offset against future profits — boosted banks' solvency positions after 1999. By 2002, around one third of reported bank capital was held in deferred tax assets. Banks and life insurance companies also provided each other with capital — a practice called 'double gearing' — weakening the solvency positions of each type of institution and increasing systemic risk.

The failure to deal with these problems in the early phases of the crisis ultimately contributed to a growing problem of credit misallocation. Private incentives for forbearance were also exacerbated by the low interest rate environment. Firms in the worst financial condition were more likely to receive additional bank credit to prevent banks from having to crystallise losses. And this 'evergreening' was most prevalent among the banks with weak capital positions that could least afford to take these losses.⁽⁵⁾ This eventually led to larger losses for banks and taxpayers as bad debts mounted. Research also suggests that the continued operation of weak firms had a negative effect on healthy firms, reducing their profit, likelihood of entry into new markets and levels of investment.⁽⁶⁾

Capital injections and nationalisation

In the early phase of the crisis, the government tried to resolve troubled institutions by encouraging healthy financial institutions to bail them out, avoiding outright failure and the use of public funds.⁽⁷⁾ The growing severity of the crisis following the autumn of 1997 led the government to decide that an injection of public capital would be necessary.

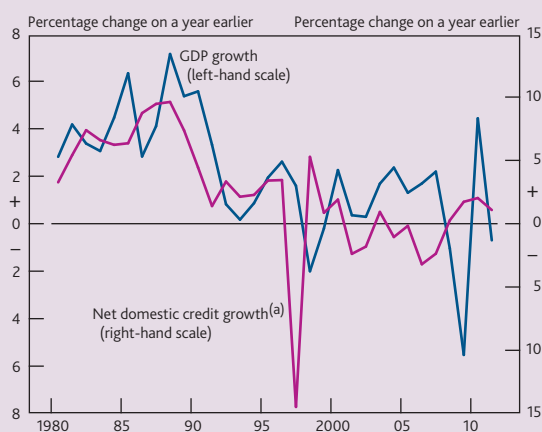
The Financial Function Stabilisation Act was passed in early 1998, making ¥30 trillion available for deposit protection and bank recapitalisation. Of this, ¥1.8 trillion was used for an initial recapitalisation. But capital was distributed without regard to asset quality, in part to reduce banks' perceived stigma from accepting public funds. The failure to gauge the size of the NPL problem meant that two major banks in receipt of public capital failed and had to be nationalised by the end of 1998.

A second recapitalisation followed in March 1999. At the time, some viewed this as a turning point. But the bad loan problem persisted and a capital shortfall soon re-emerged. Estimates suggest that the 1999 recapitalisation was at most half the size of that required to tackle banks' capital shortfalls, which would have required an additional bailout equivalent to 3% of GDP to resolve fully.

Policies to support credit

Japan did not experience a collapse in bank credit until 1997, with firms reporting easy access to bank credit during 1993–97. Evidence of a credit crunch emerged only in 1997, after the crisis became systemic (Chart C).

Chart C Japanese real GDP and domestic credit



Sources: The World Bank: World Development Indicators and Global Development Finance and Bank calculations.

(a) Deflated by the consumer prices index.

To increase credit availability the government took additional policy measures. First, the government set targets for lending to SMEs for each bank that received public funds in 1999. Second, the government introduced the Special Credit Guarantee Programme, under which the government-backed Credit Guarantee System (CGS) guaranteed 100% of bank loans to SMEs. Since approval standards were very generous,⁽⁸⁾ 43.5% of SMEs were using the CGS guarantee as of 2001, with 11.7% of outstanding SME loans being guaranteed.⁽⁹⁾ Third, the Japanese FSA clarified loan classification standards for SME loans in 2002 in order to prevent further tightening of credit conditions.⁽¹⁰⁾

While all these measures helped to support credit, research suggests that they may have delayed the resolution of banking sector problems and led to misallocation of credit. The dependence of SMEs on public loans rose sharply after 1998 and continued for a prolonged period thereafter. Together with publicly guaranteed loans, lending by public financial institutions still constituted 26% of total loans to SMEs as of 2011.⁽¹¹⁾

Lessons from the Japanese experience

A number of lessons can be drawn from the Japanese experience. The following appear particularly relevant at the current juncture:

- *The risks around forbearance* — by both banks and regulators. Periods of forbearance by banks can help to smooth the economy's response to shocks and avoid waves of costly liquidation (Box 2 of the June 2011 Report). But extended periods of forbearance, including the relaxation of regulatory discipline, can result in a worsening of credit misallocation problems, increasing eventual losses at banks.
- *The importance of resolving valuation uncertainty and prompt recapitalisation*. Detailed balance sheet inspection can help

to ensure that banks are valuing their assets accurately and are provisioning against expected losses in a timely fashion. It can also help identify where banks have insufficient capital to absorb losses and where prompt recapitalisation is needed. Sweden took this strategy, which along with a buoyant external environment, helped it to achieve a successful resolution to its banking crisis in the early 1990s (Box 3 of the June 2009 Report).

- *Credit support measures extending over long periods risk exacerbating imbalances*. Regulatory policies aimed at maintaining the flow of credit can potentially exacerbate the misallocation of capital in the economy. Such measures might smooth adjustment in the short run, but might not provide long-term solutions to the problem of rebalancing.

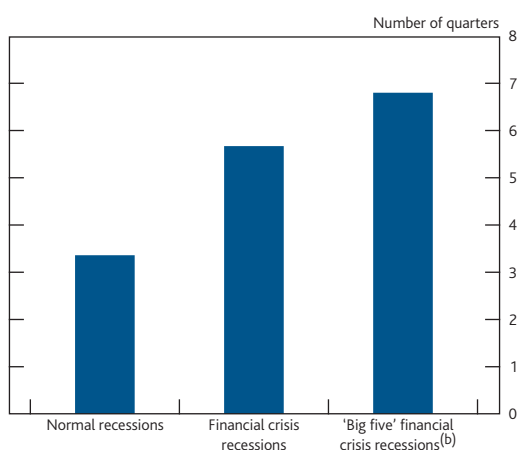
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- (1) See Kuttner, K and Posen, A (2001), 'The great recession: lessons for macroeconomic policy from Japan', *Brookings Papers on Economic Activity*, No. 2, pages 93–160.
 - (2) Nakaso, H (2001), 'The financial crisis in Japan during the 1990s: how the Bank of Japan responded and lessons learnt', *BIS Paper No. 6*, Bank for International Settlements.
 - (3) Hoshi, T and Kashyap, A K (2010), 'Will the US bank recapitalisation succeed? Eight lessons from Japan', *Journal of Financial Economics*, No. 97, pages 398–417; and Hoshi, T and Patrick, H (2000), 'Crisis and change in the Japanese financial system', Kluwer Academic Publishers, page 13.
 - (4) Figure 2 in Fukao, M (2002), 'Financial sector profitability and double-gearing', *NBER Working Paper No. 9368*, December.
 - (5) Peek, J and Rosengren, E (2005), 'Unnatural selection: perverse incentives and the misallocation of credit in Japan', *American Economic Review*, No. 95(4), pages 1,144–66.
 - (6) Caballero, R, Hoshi, T and Kashyap, A (2008), 'Zombie lending and depressed restructuring in Japan', *American Economic Review*, No. 98(5), pages 1,943–77.
 - (7) See page 46 in Cargill, T, Hutchison, M and Ito, T (2000), *Financial policy and central banking in Japan*, MIT Press.
 - (8) SMEs' applications for loan guarantees were approved unless they had significant negative net worth, tax delinquency, were already in default or were window-dressing balance sheets. The total guarantee limit was ¥20 trillion which was increased to ¥30 trillion in 1999 — equivalent to 6% of GDP at the time. This scheme expired in 2001 but Japan reintroduced another credit guarantee scheme in October 2008 (which was due to expire in March 2010 but was replaced by a similar successor scheme which expired a year later). Based on lessons from the past experience, approval standards were tightened under this scheme.
 - (9) National Federation of Credit Guarantee Corporations (2006), 'Credit Guarantee System in Japan 2006'.
 - (10) The SME loan classification was relaxed in November 2008, stating that restructured SME loans need not be classified as 'requiring special attention' if borrowing firms have reasonable and feasible restructuring programmes. This was further relaxed in December 2009: loans to SME borrowers that satisfied certain conditions are not treated as 'restructured loans' during the first year of restructuring.
 - (11) Bank of Japan (2012), *Financial System Report*, April.

3 Medium-term risks to financial stability

Concerns about the persistence of weak global growth have increased and interest rates in advanced economies are expected to remain low for longer. A search for yield could contribute to an underpricing of risk in some markets, storing up problems should there be a shock to global interest rates — for example, in response to rising sovereign indebtedness.

Alongside these risks, structural vulnerabilities persist. In particular, increases in collateralised transactions may leave the financial system more vulnerable to procyclical fluctuations in asset prices. And questions over the reliability of measures of capital adequacy may contribute to uncertainty over banks' capital position.

Chart 3.1 Average duration of recessions^(a)



Source: IMF *World Economic Outlook* (April 2009).

(a) From peak to trough in output levels. Sample includes recessions in 21 advanced economies since 1960.

(b) 'Big five' includes Finland (1990–93), Japan (1993), Norway (1988), Spain (1978–79) and Sweden (1990–93).

3.1 Medium-term risks from global financial developments

Weak growth may persist...

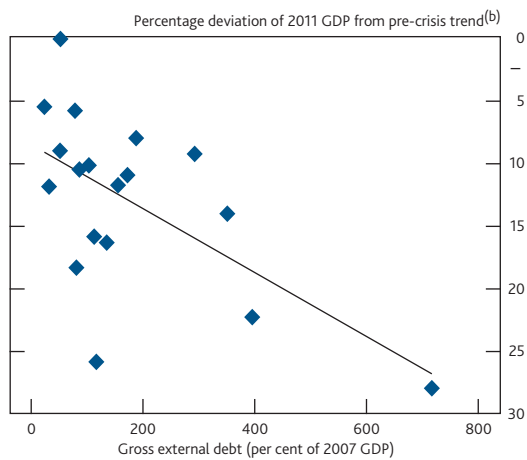
Recessions associated with financial crises typically last longer than others (Chart 3.1). That reflects the greater time it takes for economies to work through the imbalances that built up before the crises. Countries that went into the 2007–09 global financial crisis with high levels of gross external debt have tended to experience larger declines in output (Chart 3.2). And while current account imbalances have diminished significantly since 2008, there is uncertainty about the extent to which this reflects cyclically weak demand in debtor countries rather than more permanent structural factors. The IMF estimates that underlying current account imbalances are still greater than their desired levels. If attempts by countries to reduce their debt levels by constraining spending are not alleviated by greater spending in surplus countries, then there is a risk of persistently weak global growth.

...as public debt burdens rise...

Another channel through which financial crises may lead to persistently weak growth is through the accumulation of public debt. In advanced economies, public debt as a percentage of GDP has risen to its highest level since World War II (Chart 3.3); it exceeds 100% of GDP in Japan, the United States and several European countries. That level of public debt has historically been followed by periods of subdued economic growth.⁽¹⁾ Large refinancing needs can raise concerns about sovereign risk and hence borrowing costs, thereby constraining growth.

(1) Reinhart, C, Reinhart, V and Rogoff, K (2012), 'Debt overhangs: past and present', NBER Working Paper No. 18015.

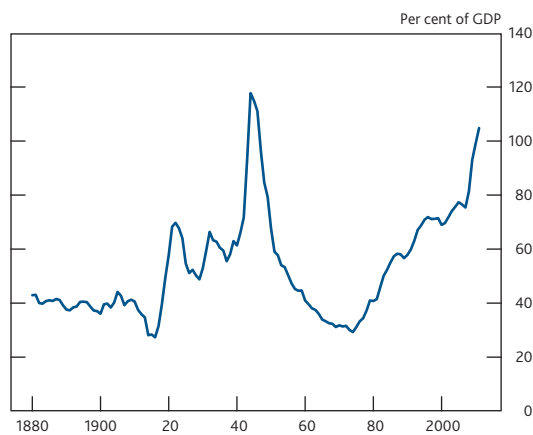
Chart 3.2 Declines in output and gross external debt positions^(a)



Sources: IMF *World Economic Outlook* (October 2012), updated and extended version of 'External wealth of nations' data set constructed by Lane and Milesi-Ferretti (2007), World Bank and Bank calculations.

- (a) For countries with negative net foreign assets at the beginning of the crisis in 2007. The 'line of best fit' shown indicates the relationship between gross external debt and the decline in GDP.
 (b) GDP at constant prices. Pre-crisis trend is measured using growth between 1997 and 2007.

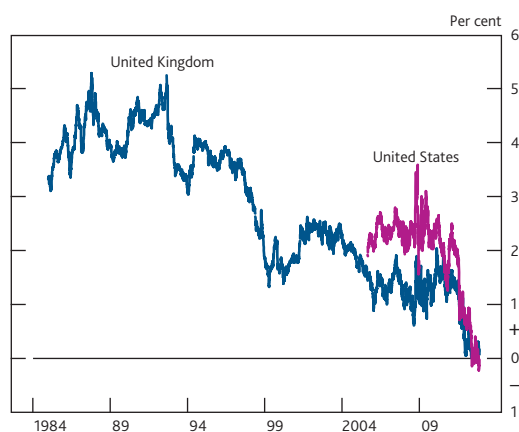
Chart 3.3 Gross public debt in advanced economies^(a)



Source: IMF *World Economic Outlook* (October 2012).

- (a) 2011 US dollar GDP-weighted average.

Chart 3.4 Real yields on UK and US government bonds^(a)



Sources: Bloomberg and Bank calculations.

- (a) Five-year real interest rates five years forward. Derived from index-linked government liabilities.

... currently eased by exceptionally low interest rates...

At present, growth is being supported, and the burden of public debt eased, by exceptionally low long-term interest rates (**Chart 3.4**). The likelihood of a prolonged low interest rate environment has increased since the June 2012 *Report*. The US Federal Reserve has now signalled that it is likely to maintain its exceptionally accommodative monetary policy stance until at least mid-2015. More generally, central banks have continued to engage in asset purchases to reduce yields on relatively safe assets and encourage investors to substitute into riskier assets with a higher return.

... potentially storing up problems further ahead...

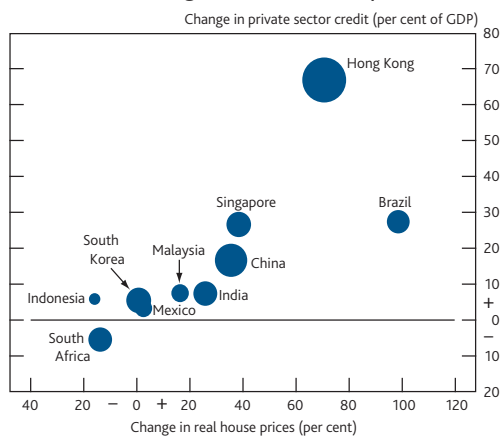
Section 1 pointed to renewed capital flows into risky assets — for example, emerging market economy (EME) assets and US high-yield bonds — following the latest announcement by the US Federal Reserve. While these capital flows help support growth, persistently low interest rates could be influencing financial market behaviour in a way that is storing up problems further ahead. In searching for higher absolute returns, investors may invest in assets without fully appreciating, and appropriately pricing, the associated risks. If leveraged, that could expose them to significant losses — for example, if interest rates rose unexpectedly in response to concerns about rising sovereign debt levels.

Some financial institutions may be under pressure to invest in riskier assets to match contractual commitments made during the previous higher interest rate environment. For example, pension funds and insurance companies need to match the yield they promised on their liabilities. As noted in Section 1, market contacts report that some insurance companies have increased allocations to corporate bonds and infrastructure investment in a search for yield. Nominal rate of return targets may also be 'sticky' if fund manager compensation schemes are linked to returns.

... for example in property markets...

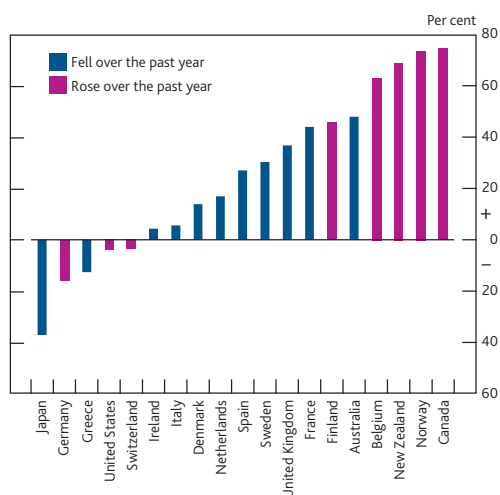
Surveys of global fund managers indicate that their portfolios are currently most overweight, relative to their typical pattern, in real estate assets. In several EMEs, rapid credit growth in recent years has already been associated with high property price inflation (**Chart 3.5**). But weaker near-term prospects for growth in EMEs pose downside risks to property valuations. Among advanced economies, the UK banking system is the most exposed to Asia, in particular Hong Kong (**Chart 3.5**), where lending has increased rapidly since 2008.

House prices are also relatively high in some advanced economies, with price to rent ratios well above their long-run averages in Australia, Canada, the United Kingdom and some other European countries (**Chart 3.6**). Relatively high house prices are matched by high levels of household debt relative to disposable income, which, in many countries, have fallen little since the onset of the crisis (**Chart 3.7**). While very

Chart 3.5 Credit growth and house prices in EMEs^{(a)(b)}

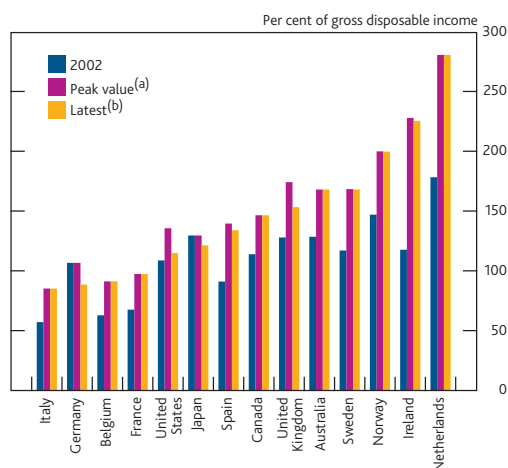
Sources: Bank of England and IMF *Global Financial Stability Report* (October 2012).

- (a) Cumulative changes in credit and house prices between 2006 and 2011.
 (b) The size of the data points is proportional to UK-owned MFIs' consolidated exposures as of end-June 2012.

Chart 3.6 Deviations of house price to rent ratios from historical averages^(a)

Sources: OECD *Economic Outlook* database and Bank calculations.

- (a) The latest observation is 2012 Q1 for Italy and Japan, 2012 Q2 for Belgium, Denmark, France, Greece, New Zealand and the United States, and 2012 Q3 for other countries.

Chart 3.7 Household debt

Sources: OECD.Stat Extracts and Bank calculations.

- (a) The highest value between 2002 and the latest value.
 (b) End-2011 for Belgium, France, Germany, Italy, the Netherlands, Norway, Spain, Sweden, the United Kingdom and the United States. End-2010 for Australia, Canada, Ireland and Japan.

low levels of long-term interest rates help to sustain high house prices and debt levels, an unexpected rise in interest rates would increase debt-servicing burdens and might induce a fall in property prices. That would pose credit risks to banks.

...should interest rates 'snap back' as sovereign risk is repriced...

A 'snap back' in global interest rates could be provoked by a reassessment of sovereign risk. For example, the United States and Japan have high government debt financing needs, which in Japan are largely met by the domestic banking system (Chart 3.8). These risks may not be adequately reflected in current market prices. One indication of this is the sovereign CDS premia for the United States and Japan (Chart 3.8), which remain extremely low. The United States and Japan account for around half of global sovereign debt, so a shift in their risk premia could have a significant impact on global sovereign risk premia.

Higher sovereign risk premia could affect interest rates faced by the private sector through their impact on the balance sheets of financial institutions. For example, Chart 3.9 illustrates that advanced-economy banking systems' holdings of sovereign debt are large relative to their capital, exposing them to potential losses. For Japanese banks, simple, partial estimates indicate that mark-to-market losses on domestic bond holdings from a 100 basis point increase in yields could be around 15% of Tier 1 capital.⁽¹⁾

Losses on sovereign bond holdings could constrain banks' ability to lend to the real economy and raise banks' funding costs. During the financial crisis, perceptions about sovereign and bank risk have become more interlinked. For example, over the past four years, correlations between CDS premia for banks and sovereigns have tended to increase (Chart 3.10). Higher bank funding costs, if passed through to lending rates, could place strains on household and corporate balance sheets, in turn posing credit risks to banks.

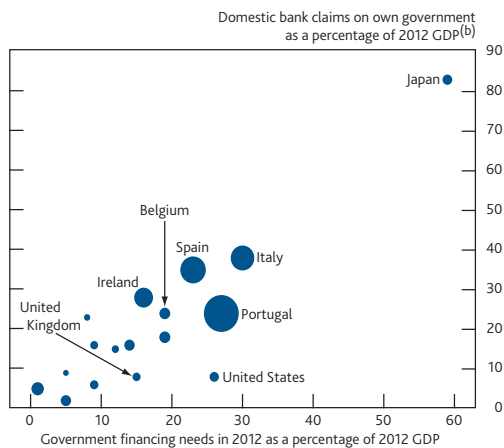
Shocks to sovereign bond yields could also be transmitted to the corporate sector via the corporate bond market. In vulnerable euro-area countries, credit ratings for companies have tended to fall as sovereigns have been downgraded, raising corporate borrowing costs. And since the crisis, larger companies have become more dependent on bond markets as a source of finance, following the restriction in credit provided by the banking system.

...and the dollar's reserve currency status is questioned.

Shifts in perceptions of sovereign risk could also have more wide-ranging effects were they to trigger a fundamental reappraisal of US Treasuries as the key global 'safe' asset. 'Safe' financial assets are important to the global financial

(1) Bank of Japan *Financial System Report*, October 2012.

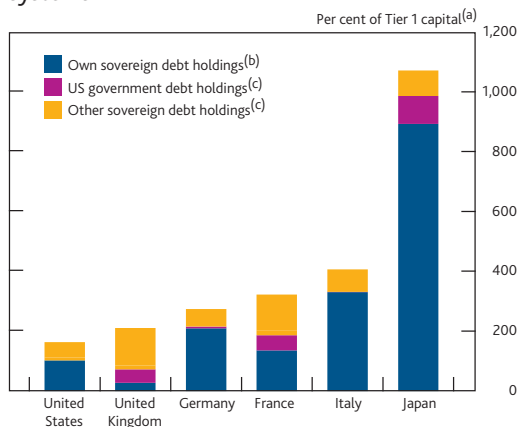
Chart 3.8 Government financing needs and domestic bank claims on government^(a)



Sources: IMF *Global Financial Stability Report* (October 2012), Thomson Reuters Datastream and Bank calculations.

- (a) The size of the data points is proportional to five-year sovereign CDS premia.
 (b) Domestic depository institutions' (excluding the central bank) claims on their own general government (central government for New Zealand and public sector for the United Kingdom).

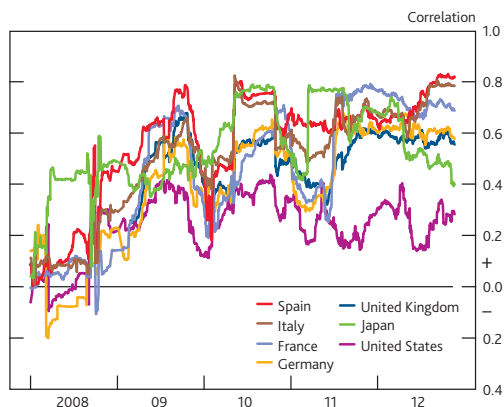
Chart 3.9 Sovereign debt holdings by selected banking systems



Sources: BIS, ECB, IMF and Bank calculations.

- (a) Except for Germany which is tangible equity.
 (b) End-2011 claims on general government for France, Germany and Italy, on central, state and local governments for Japan and the United States, and on central government and official entities for the United Kingdom.
 (c) End-June 2012 claims on public entities on an ultimate risk basis.

Chart 3.10 Correlation of risk between selected sovereigns and their domestic banking systems^(a)



Sources: Bloomberg, Markit Group Limited and Bank calculations.

- (a) Average six-month rolling-window correlation between daily changes in five-year sovereign CDS premia and five-year senior unsecured CDS premia for major banks.

system as they are used as collateral in financial transactions. US government securities are used widely as collateral in global wholesale funding markets. Ratings downgrades and the associated greater volatility and lower liquidity in US securities markets would increase the haircuts applied by transacting counterparties, constraining the availability of secured financing. For example, in bilateral OTC derivatives markets, estimates suggest that about US\$850 million of additional collateral might be required for every 50 basis point increase in haircuts on US-backed collateral. And dollar securities are estimated to account for around two thirds of global sovereign reserves. The search for alternative global 'safe' assets could cause a destabilising round of portfolio rebalancing and higher margin requirements on transactions. These effects could be amplified by the structural shift to secured transactions in derivatives markets, discussed in the next subsection.

Nearly 40% of UK-resident banks' external assets and liabilities are denominated in dollars, and these gross exposures are very large relative to bank capital (Chart 3.11). In part that reflects the cross-border activities of foreign large complex financial institutions operating in London. So any disruptions in US dollar markets would have a direct impact on UK financial stability via the banking system, through lower asset values and disruptions to dollar funding markets.

Global bond yields might also rise because of a more optimistic outlook for economic growth, rather than in response to concerns about sovereign risk. That would likely have more benign implications for financial stability.

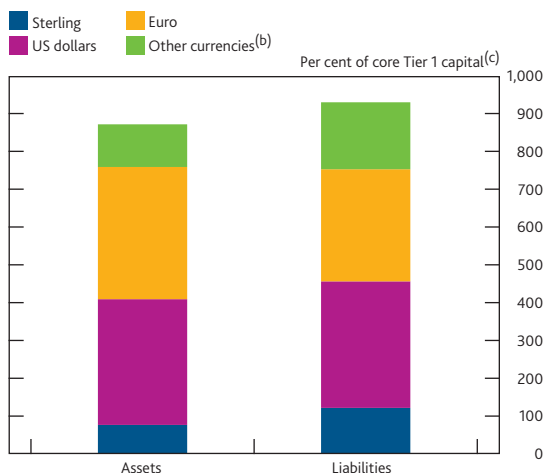
3.2 Structural vulnerabilities

An increase in collateralised transactions may strengthen procyclicality.

The impact of a snap back of interest rates could be amplified through changes to the price of assets used as collateral. Were assets to fall in value, then lenders who hold these assets as collateral might demand additional collateral. Secured borrowers might have to sell other assets to meet these demands, leading to further price falls and further losses. Other lenders may choose to withdraw funding altogether, rather than lend against risky or illiquid collateral.

The scale of any procyclical rise in collateral demand would depend on the overall use of collateral in the system and on the level at which haircuts are set. Reforms in OTC derivatives markets are expected to require the provision of collateral to cover counterparty exposures in certain classes of transactions between financial firms, and also for standardised trades subject to central clearing obligations. This is one factor expected to increase the reliance upon collateralised transactions. The reduction in system-wide counterparty

Chart 3.11 Currency breakdown of UK-resident banks' external assets and liabilities^(a)



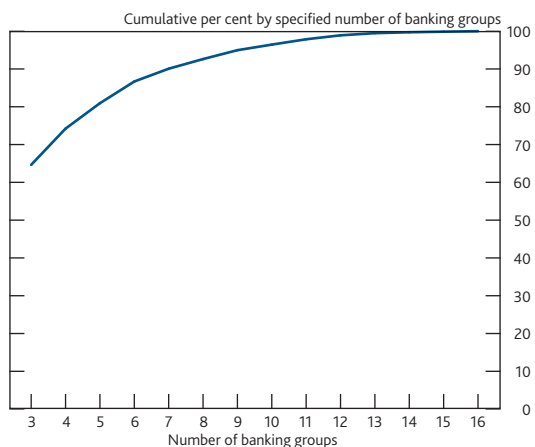
Sources: Bank of England, FSA regulatory returns and Bank calculations.

(a) As of 2012 Q2.

(b) Includes amounts unallocated by currency.

(c) End-June 2012 data where available, otherwise end-2011.

Chart 3.12 Concentration of UK-resident MFIs' repo activity at end-2011^{(a)(b)(c)}



Sources: Bank of England and Bank calculations.

(a) Cumulative repo activity as a proportion of total repo activity for a sample of 16 banking groups.

(b) The sample of banking groups covers 80% of repo activity (excluding UK-resident intragroup repo activity) reported to the Bank of England.

(c) Repo activity is defined as the sum of outstanding reverse repo lending and repo borrowing at 31 December 2011. Excludes UK-resident intragroup activity. MFIs are all financial institutions (except for the Bank of England) recognised by the Bank of England as UK monetary financial institutions for statistical purposes (www.bankofengland.co.uk/statistics/Pages/iadb/notesiadb/mfis_exlcb.aspx).

credit risk due to these reforms may be accompanied by increased system-wide liquidity risk unless institutions have ready access to sufficient liquid collateral assets. If such access is insufficient, and these counterparties are obliged to sell other assets to meet margin calls, this may depress asset prices further, creating an adverse feedback effect. These effects will be more pronounced if haircuts also respond procyclically, as they did during the crisis. The Financial Stability Board's (FSB's) recommendations for strengthened oversight and regulation of shadow banks published recently include minimum standards for haircut practices which may limit the build-up of procyclicality.⁽¹⁾ Box 3 sets out some of the challenges in the reform of the OTC derivatives market.

Reliance on collateral may also be influenced by other factors, such as the proportion of financial institutions' balance sheets that is funded on a secured basis. As the FSB has noted, the so-called shadow banking sector — entities involved in credit intermediation outside the regular banking system — can use sources of collateralised funding, such as repurchase agreements (repo), to increase leverage.⁽²⁾ Should activity shift from the banking sector to (non-deposit funded) shadow banks as prudential standards for banks tighten, the stock of such transactions could increase.

Market structure may play a role in the degree of amplification of shocks. Some segments of the secured financing markets are concentrated. For example, a handful of UK-resident monetary financial institutions (MFIs) account for the majority of all repo transactions of UK MFIs with other counterparties (**Chart 3.12**). The response of those firms to shocks could therefore have a particularly significant effect on broader market stability. Non-banks, such as money market funds (MMFs), together with other banks, are key counterparties for UK banks. More generally, repos to banks are an important part of MMFs' portfolios, representing around 16% of assets under management for the largest MMFs (**Chart 3.13**). And US MMFs account for 35% of total trading volume in the US tri-party repo market — a market for borrowing against securities through which about one third of all US repo transactions are cleared.

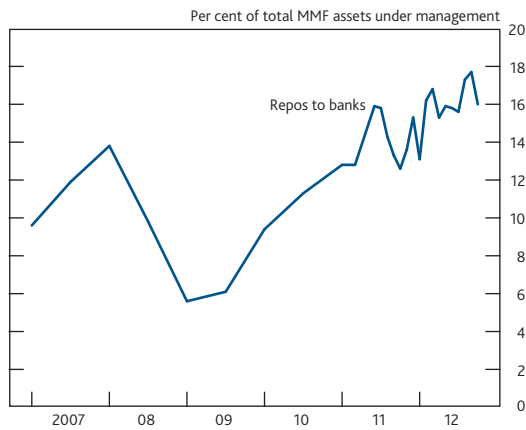
Money market funds are a source of risk...

Dependence on MMF funding may exacerbate procyclicality risk. Some MMFs accept some types of collateral which they would not be permitted to own outright, increasing the risk of fire sales of assets in the event of counterparty failure. More broadly, MMFs also face risks from maturity mismatch themselves, often offering investors same-day access, but investing in longer-term securities. This makes them

(1) 'Strengthening oversight and regulation of shadow banking', consultative documents by the Financial Stability Board, November 2012.

(2) 'Shadow banking: strengthening oversight and regulation, recommendations of the Financial Stability Board', October 2011. 'Securities lending and repos: market overview and financial stability issues', Financial Stability Board, April 2012.

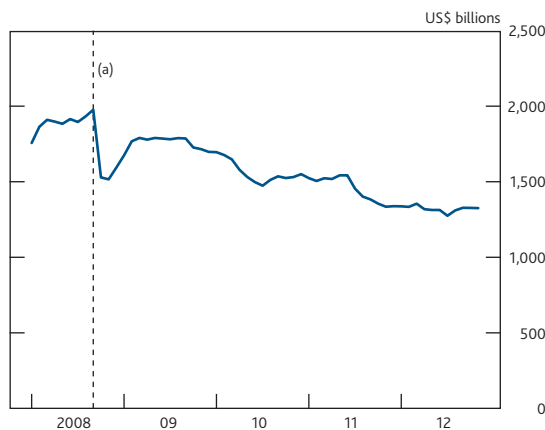
Chart 3.13 Global bank repo lending by top ten US prime MMFs^{(a)(b)}



Sources: Fitch Ratings and Bank calculations.

- (a) Data are based on a sample comprising the ten largest US prime MMFs representing about 45% of all US prime MMFs by assets under management as of 30 September 2012.
 (b) Data are semi-annual until January 2011, and monthly thereafter (absent data points for January 2011 and March–April 2011).

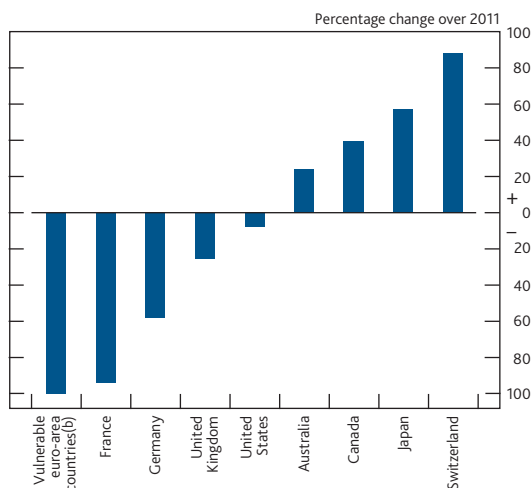
Chart 3.14 US prime MMFs' assets under management



Sources: Crane data and Bank calculations.

- (a) Lehman Brothers Holdings files for Chapter 11 bankruptcy protection.

Chart 3.15 Changes in US prime MMFs' exposures to international banking systems over 2011^(a)



Sources: Fitch Ratings and Bank calculations.

- (a) Data are based on a sample comprising the ten largest MMFs, representing about 45% of all US prime MMFs by assets under management as of 30 September 2012.
 (b) Refers to Ireland, Italy, Portugal and Spain. There were no exposures to Greece reported in the MMF sample.

vulnerable to flight risk, and potentially a source of run risk to others in turn. This is exacerbated by accounting practices that do not mark-to-market some assets — in stressed circumstances, this may give early redeemers a first-mover advantage as they can get a larger share of the remaining assets.

Risks from maturity mismatch are particularly pronounced for constant net asset value (CNAV) funds. These offer deposit-like contracts to their investors, promising to return the full value of the deposit. US regulations permit such funds to use 'penny rounding', which means that the fund can continue to report full value until their asset value falls below 99.5%, increasing first-mover advantage. Flight risk became evident in 2008 when US MMFs' assets under management declined rapidly after Lehman Brothers filed for Chapter 11 bankruptcy protection (**Chart 3.14**). Their response was to reduce their own investments in short-term paper, exacerbating banking system fragility.

MMF funding to euro-area banking systems and, to a lesser degree, in the United Kingdom, fell sharply in 2011 (**Chart 3.15**). And the composition of funding shifted towards collateralised transactions — for UK banks, repos now represent around half of the total funding by the largest US MMFs (**Chart 3.16**). These changes appear to reflect high sensitivity to risk. More recently, improvements in market conditions in the euro area have led US MMFs to increase investment and reduce their reliance on collateral.

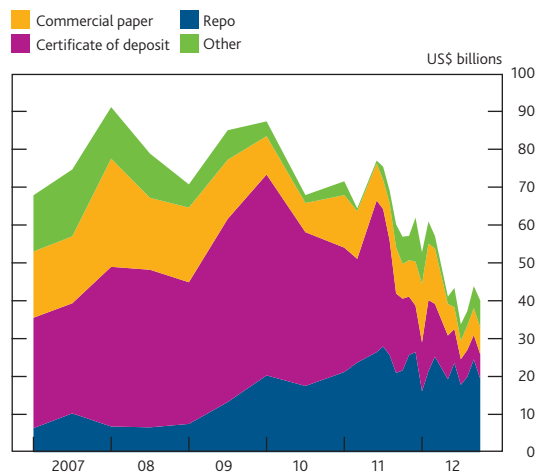
...reflected in proposals to strengthen their oversight and regulation.

Strengthened prudential requirements for liquidity will reduce banks' vulnerability to unstable sources of funding. Reforms to improve MMFs' oversight and regulation are being considered as well. The International Organization of Securities Commissions (IOSCO) recently recommended potential policy measures. These included prudential requirements and conversion to floating net asset value, where workable. For funds which continue to promise constant net asset value, safeguards such as capital buffers are also being considered. The majority of the Commissioners of the US Securities and Exchange Commission, which is responsible for regulation of around 60% of the global market by assets under management, did not support the publication of the IOSCO report. Since then, the US Financial Stability Oversight Council has published recommendations for structural reform of MMFs for consultation. Options include conversion to floating net asset value and capital buffers for CNAV funds.

Concerns over the adequacy of capital persist due to inadequate accounting for provisions...

In parallel to reforms to mitigate funding vulnerabilities, concern over banks' resilience has prompted a number of initiatives. Since the onset of the crisis, many banks have increased their equity buffers and reduced leverage. But, as set

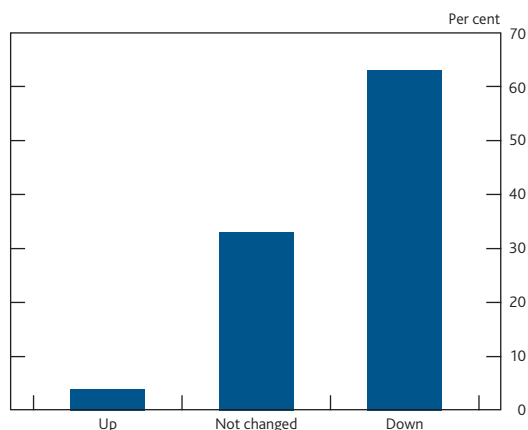
Chart 3.16 Decomposition of US prime MMFs' funding to UK banks^{(a)(b)}



Sources: Fitch Ratings and Bank calculations.

- (a) Data are based on a sample comprising the ten largest US prime MMFs, representing about 45% of all US prime MMFs by assets under management as of 30 September 2012.
 (b) Data are semi-annual until January 2011, and monthly thereafter (absent data points for January 2011, March-April 2011 and March 2012).

Chart 3.17 Investor perceptions: has your confidence in risk-weighted assets gone up or down?^(a)



Source: Barclays Research.

- (a) Based on survey responses of over 130 investors carried out in 2012 H1, of perceptions over the past year.

out in Section 2, the current accounting regime may prevent banks from provisioning in a timely manner against losses that they expect to suffer. And as the experience of Japan shows (Box 2), slow recognition of provisions could be associated with credit misallocation problems.

The need to move to an international accounting regime that uses forward-looking provisioning on an expected loss basis has been recognised internationally for some time.⁽¹⁾ But progress towards convergence on an agreed forward-looking framework between the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) has been much slower than requested by G20 leaders. New proposals are expected to be introduced shortly. But, even if agreed, implementation would come later, so problems will persist in the short term. The impact of this fault line may be particularly acute in the current low interest rate environment, should forbearance be high. Forborne loans may not incur a measurable loss or evidence of impairment and thus may not be provisioned for under the 'incurred loss' framework. This could increase uncertainty over UK banks' capital positions (Section 2) and act as a drag on lending.

...and opacity and variability of model-based estimates of capital adequacy.

The treatment of unexpected losses is an additional source of uncertainty over banks' capital adequacy positions. Banks' loss-absorbing capital requirements against credit risk are calculated on the basis of estimated risk weights attached to each asset. These in turn depend on estimates of probability of default and loss given default. Under the current system, larger banks can use their own models to estimate these default risk parameters.

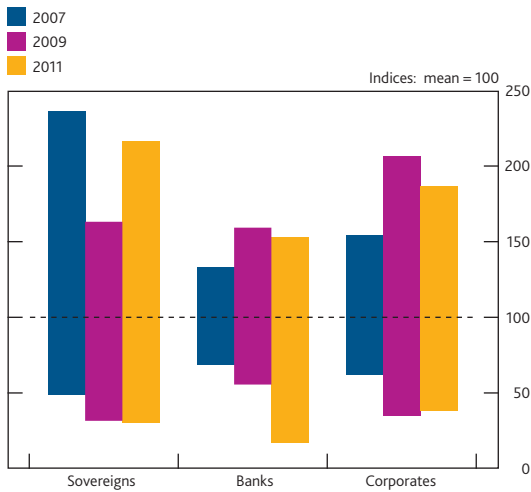
There is increasing doubt among investors over the robustness of these estimates due to their complexity and opacity. Investors find risk-weight calculations particularly difficult to scrutinise and appear to be losing confidence in the accuracy of risk-weighted assets (RWAs) as a result (Chart 3.17).

Portfolio exercises appear to justify market concern as they show a high degree of variability between banks...

Part of the difficulty in assessing banks' RWA calculations is distinguishing between differences that arise from portfolio risk and asset quality and those that arise from differences in models. To identify differences between banks' internal models, regulators have undertaken a number of exercises in which banks applied internal models to estimate key risk-weight parameters for a hypothetical portfolio of assets. This ensures that differences in calculated risk weights are down to differences in banks' modelling approaches, rather than differences in the risk of the portfolios being assessed. In

(1) G20 leaders communiqué of 2 April 2009 and 'Overview of progress in the implementation of the G20 recommendations for strengthening financial stability: report of the Financial Stability Board to G20 leaders', 18 June 2010.

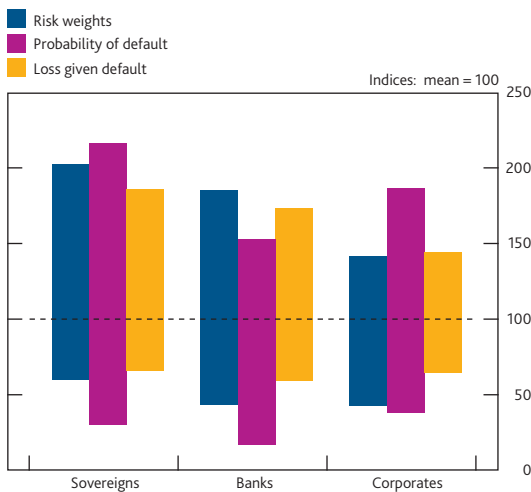
Chart 3.18 Variability of probability of default estimates from 2007–11^{(a)(b)(c)(d)}



Sources: FSA and Bank calculations.

- (a) Based on the results of the FSA's hypothetical portfolio exercises for 2007, 2009 and 2011.
 (b) Results are based on portfolios comprising assets rated by all respondents in the sample (co-rated).
 (c) Portfolios differ between the exercises in 2007, 2009 and 2011. Results have been normalised to mean = 100 to improve comparability between years and categories. Chart shows minimum-maximum ranges.
 (d) Sample sizes (of respondents) differ: six to twelve in 2007; seven to thirteen in 2009, depending on portfolio; and eight in 2011.

Chart 3.19 Variability of overall risk weights, probability of default and loss given default estimates in 2011^{(a)(b)(c)(d)}



Sources: FSA and Bank calculations.

- (a) Based on the results of the FSA's hypothetical portfolio exercise for 2011. 'Risk weights' are estimated proxy risk-weighted asset statistics.
 (b) Within a category (sovereigns, banks, corporates), portfolios for each of the metrics (risk weights (RW), probability of default (PD) and loss given default (LGD)) differ. Portfolios for each metric in each category comprise only co-rated assets.
 (c) Results have been normalised to mean = 100. Chart shows minimum-maximum ranges.
 (d) Sample sizes (of respondents) differ by metric: eight for PD, six for LGD and RW.

all three hypothetical portfolio exercises (HPE) undertaken to date by the FSA, variability of probability of default estimates has been very high (Chart 3.18). For example, the estimated probability of default for the sovereign portfolio at the most prudent bank was around seven times higher than that of the most aggressive in 2011. The 2011 HPE also revealed high levels of variability for estimates of loss given default. Overall risk-weighted assets calculated using the HPE data showed very high variation (Chart 3.19), with estimated capital requirements for the most prudent banks that were well over three times as high as those of the most aggressive banks for the same portfolios of exposures. This could imply that banks are financing portfolios of similar risk with widely varying amounts of equity capital.

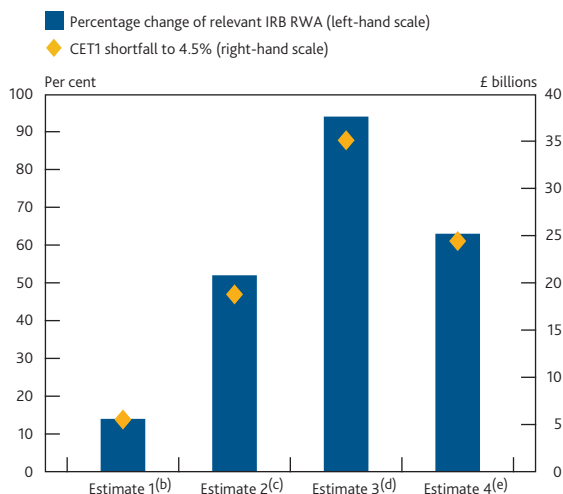
There is also some evidence that certain banks may assign systematically lower risk weights across portfolios relative to their peers. This could indicate a less conservative approach to assessing risk for these portfolios. Should this be indicative of risk-weight calculations for their own portfolios, there is a risk that these banks' capital positions are overstated. Variability in RWA calculations that is not due to differences in portfolio risk is also likely to increase market participants' uncertainty over banks' capacity to absorb losses. More generally, even if banks and regulators agree on the appropriate calculation of risk, that might still understate the true level of risk.

...potentially contributing to overstated capital ratios.

There are practical and conceptual difficulties in estimating the degree to which capital ratios may be overstated through inconsistencies in risk weights. First, the information available through exercises such as the HPE offers comparisons between banks rather than an absolute view on the true level of risk. Second, comparative information is only available for the hypothetical portfolios included in the exercise, and thus captures a limited proportion of banks' balance sheets. Nevertheless, some illustrative experiments drawing on the portfolio information available can be useful in illustrating the impact of an understatement of RWAs on capital ratios. Chart 3.20 summarises the results of such an exercise, based on replacing banks' own RWA estimates with alternative approaches.

The first estimate draws on data submitted to the FSA's 2011 HPE. This controls for portfolio risks, but only covers a proportion of balance sheets, excluding important exposures such as mortgage books. The second approach identifies the most conservative risk weights for internally rated portfolios based on banks' actual average risk weights across those portfolios, but does not control for portfolio variation. And finally, estimates are presented for regulatory-specified risk weights (Basel I and Basel II standardised risk weights). These latter two estimates relate more directly to the actual portfolios than the first approach, and control for portfolio risk to some degree, but are based on strong assumptions.

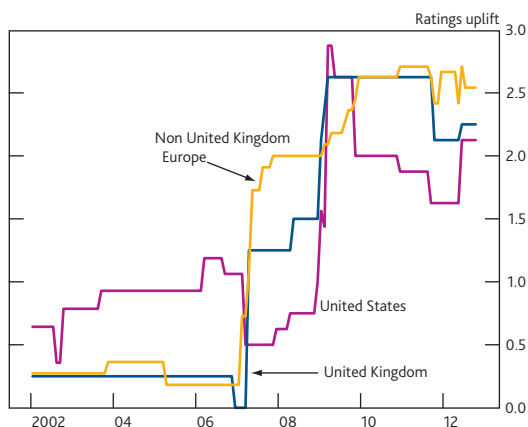
Chart 3.20 Capital increases required for alternative assessments of risk weights^(a)



Sources: FSA hypothetical portfolio exercise (HPE) 2011, FSA regulatory returns, published accounts and Bank calculations.

- (a) Experiments cover Barclays, HSBC, LBG and RBS. Trading book assets are excluded from the experiment.
 (b) This estimate uses the FSA's HPE to scale up banks' own risk weights to that of the most conservative bank in the sample of four banks.
 (c) This estimate uses actual average risk weights of banks across portfolios, replacing their risk weights with the most conservative estimate for each portfolio.
 (d) This estimate applies Basel I risk weights to banks' internal ratings-based (IRB) portfolios.
 (e) This estimate applies Basel II standardised risk weights to banks' IRB portfolios.

Chart 3.21 Average 'ratings uplift' for US, UK and European global systemically important banks^{(a)(b)(c)}



Sources: Financial Stability Board, Moody's and Bank calculations.

- (a) Ratings uplift for all banks is calculated as the number of rating notches equivalent to Senior Unsecured (Domestic) debt rating minus Banks' Financial Strength.
 (b) Where these indicators are not available, where possible, alternatives have been used such as Senior Unsecured (Foreign) or Senior Unsecured MTN (Foreign).
 (c) Where a merger has taken place, the ratings for the largest constituent bank involved were used for the period prior to the merger.

Underestimated risk weights due to miscalibration of trading book risks would add to these results. Nevertheless, relative to a 4.5% common equity target, these alternative scenarios suggest that capital ratios for the largest banks in the United Kingdom could be overstated by the equivalent in capital terms of between £5 billion and £35 billion.

Shortcomings of the current resilience framework may impede banks' access to capital markets.

Uncertainty over banks' solvency positions due to backward-looking provisioning methodologies and opaque risk-weighting practices may be a factor explaining banks' low market valuations and may impair their ability to raise capital.

In addition to work by the IASB and FASB on improvements to provisioning, a number of other international initiatives to mitigate these issues are also under way. The Enhanced Disclosure Task Force, a private sector group initiated by the FSB, has published a comprehensive report that sets out measures to improve the disclosure of risks by banks and other financial institutions. And the Basel Committee is carrying out a detailed review of the calculation of risk-weighted assets, which is expected to finish shortly. The recent Liikanen Group report has also encouraged further investigation, and the EBA is also considering this issue.

Rating agencies continue to include potential for government solvency support in bank ratings...

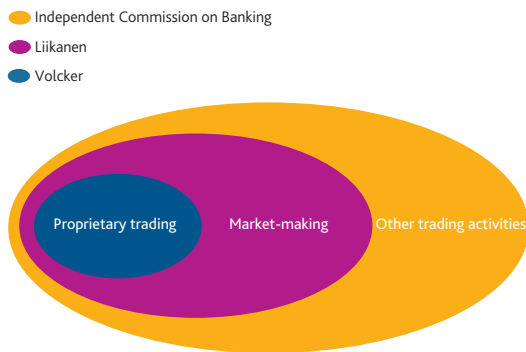
The existence of systemically important banks raises a number of policy concerns that cannot be mitigated through improvements to capital and funding frameworks alone. As discussed in the December 2010 *Report*, these are institutions whose size, interconnectedness, complexity, lack of substitutability or global scope makes them difficult to resolve. Credit rating agency commentary indicates that the possibility of solvency support is still being factored in for many of these banks. And the difference between 'stand-alone' and overall ratings including public support remains higher than before the crisis. **Chart 3.21** shows this for a set of global systemically important banks as recently listed by the FSB. Some rating agencies have reduced the ratings uplift for UK banks, reflecting reforms under way. But larger banks still benefit from higher overall ratings, reflecting a possibility of future solvency support.

...but reforms are under way.

Initiatives are under way to tackle the problem of banks being considered too important to fail. The FSB, as part of its work for G20 Leaders, developed a set of 'Key attributes of effective resolution regimes for financial institutions'. These aim to make the resolution of banks feasible, without severe systemic disruption and without exposing taxpayers to loss.

Complementary to this, proposals to change banks' structure have been developed. While they differ in design and intent, a

Chart 3.22 Comparison of activities prohibited for deposit-taking entities under different structural reform proposals^(a)



Sources: Bank of England, High-level Expert Group on reforming the structure of the EU banking sector, Dodd-Frank Wall Street Reform and Consumer Protection Act and Independent Commission on Banking (2011), *Final Report: Recommendations*.

(a) This diagram illustrates trading activities that would typically be prohibited from being undertaken by a deposit-taking entity, though they may be permissible in other parts of banking groups, or where required for the efficient provision of services permitted to the deposit-taking entity. It does not reflect geographical restrictions.

common feature is ring-fencing or separation of activities to reduce risk transmission from investment banking to deposit-taking activities. The main proposals in this area are: the Volcker rule, which prohibits banking entities from engaging in proprietary trading; the recommendations of the Independent Commission on Banking in the United Kingdom, which require legal, economic and financial separation of deposit-taking activities,⁽¹⁾ and for which draft legislation has entered into pre-legislative scrutiny; and, more recently, the Liikanen Group report, which proposes that trading activities be placed in a separate legal entity within the same European banking group. **Chart 3.22** illustrates the relationship between these sets of proposals.

Measures to deal with non-banks of potential systemic importance are also being developed.

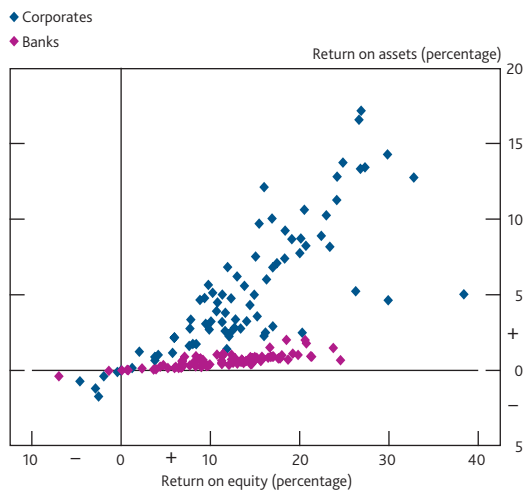
Looking beyond banks, other entities, such as insurers and central counterparties (CCPs), have potential to be systemically important. This is reflected in work by the International Association of Insurance Supervisors, under the purview of the FSB, to identify global systemically important insurers and develop policy recommendations. The Committee on Payment and Settlement Systems, together with IOSCO, has recently published its 'Principles for financial market infrastructures' that raise resilience standards for CCPs.

In the United Kingdom, HM Treasury has introduced draft legislation to extend resolution powers to CCPs, as well as certain other non-banks. And the European Commission has issued a consultation paper on a possible framework for the recovery and resolution of non-bank financial institutions, including CCPs and insurers, drawing on the FSB 'Key attributes of effective resolution regimes for financial institutions'.

Some limited progress on performance metrics has improved incentives, but distortions remain.

As noted in the June 2012 *Report*, banks may face other incentive distortions through flawed performance targets, potentially inducing them to make decisions without considering the full implications for long-term business performance. Common issues are a lack of risk adjustment and overly short time periods over which performance is judged. For example, over the 2000–11 period, banks pursued return on equity targets by taking risk through high leverage given a low return on assets (**Chart 3.23**). Such distortions are also reflected in some remuneration contracts. For example, variable pay can sometimes be contingent on non risk-adjusted performance measures, such as return on equity or earnings per share, skewing incentives towards excessive risk-taking. And deferral periods may be short relative to the impact of decisions taken, making it difficult to evaluate performance correctly. This can be exacerbated by poor malus arrangements, where they are not robust enough

Chart 3.23 Historical return on equity and return on assets for banks and non-bank corporates^(a)



Sources: Bloomberg and Bank calculations.

(a) This shows return on assets and return on equity over the period 2000–11 for a global sample of the largest 80 banks and 80 non-bank corporate institutions by assets for which data were available.

(1) *Financial Stability Report*, December 2011, page 54.

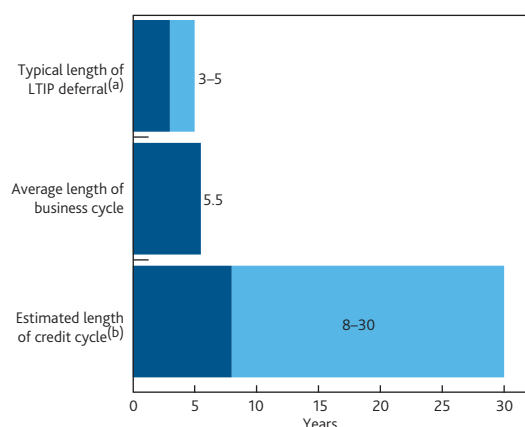
to ensure that pay can be reduced retrospectively. Incentive distortions may also arise as a consequence of the composition of pay — that is, the proportion of pay paid in cash and in non-cash instruments such as shares, share-linked instruments or debt.

Some of the shortcomings of current performance metrics may be due to short-termism, where managers, shareholders and investors prioritise short-term gain to the detriment of longer-term performance. A typical example is banks' treatment of earnings, where short-term action to avoid a negative return may be at the expense of longer-term investment. Research suggests a number of factors driving such actions.⁽¹⁾ One of these is pressure by capital markets to meet specific short-term performance benchmarks.

Recently, certain banks have announced changes to performance metrics, and remuneration contracts in particular, which lean against short-termism — for example, longer deferral periods, restrictions on selling stock awarded as pay, and greater power to apply malus. It is an open question whether these improvements are a reflection of the current economic environment and low bank profitability or a structural shift to a longer-term, more risk-sensitive approach. Short-termist approaches remain an issue despite these improvements. For example, as **Chart 3.24** shows, the typical assessment periods for long-term incentive plans remain shorter than the period over which the full impact of decisions and transactions might be identified. The mean business cycle — fluctuations in investment, spending and output across an economy — has been estimated at five and a half years. And the medium-term credit cycle — fluctuations in lending and other types of credit provision across an economy — has been estimated to last between eight and 30 years.

Internationally, the FSB has developed 'Principles and standards for sound compensation practices' designed to align compensation with prudent risk-taking. This has been reflected in the United Kingdom through a remuneration code transposing EU legislation covering remuneration practices at banks. The recent report by the High-level Expert Group on reforming the structure of the EU banking sector also discusses remuneration structures, proposing that debt instruments that could be written down and/or converted in a bank resolution should form part of top management remuneration.

Chart 3.24 Typical length of deferral in long-term incentive plans (LTIPs) relative to cycles



Sources: Drehmann, M, Borio, C and Tsatsaronis, K (2012), 'Characterising the financial cycle: don't lose sight of the medium term!', *BIS Working Paper No. 380*, NBER, published accounts and Bank calculations.

- (a) LTIPs paid to executive directors at the following UK banking groups: Barclays, HSBC, LBG and RBS. The range of deferral length is shown by the light blue bar.
 (b) The minimum and maximum estimates for the length of the medium-term credit cycle are represented by the light blue bar.

(1) Graham, J R, Harvey, C R and Raigopal, S (2005), 'The economic implications of corporate financial reporting', *Journal of Accounting and Economics*, Vol. 40, pages 3–73; Bhojraj, S, Hribar, P, Picconi, M and McInnis, J (2009), 'Making sense of cents: an examination of firms that marginally miss or beat analyst forecasts', *Journal of Finance*, Vol. 64, pages 2,360–88; Burgstahler, D and Dichev, I (1997), 'Earnings management to avoid earnings decreases and losses', *Journal of Accounting and Economics*, Vol. 24, pages 99–126; and DeGeorge, F, Patel, J and Zeckhauser, R (1999), 'Earnings management to exceed thresholds', *Journal of Business*, Vol. 72, No. 1, pages 1–33.

Box 3 Implementation of reforms to OTC derivatives markets

In 2009, G20 leaders agreed a number of improvements to over-the-counter derivatives (OTCD) markets. These included a requirement that standardised products be traded on exchanges or electronic platforms where appropriate, and cleared through central counterparties (CCPs), as well as a requirement that transactions be reported to trade repositories. These reforms should help to mitigate systemic risk in OTCD markets by improving risk management, reducing interconnectedness and improving transparency. Legislation to underpin many of these measures has now been passed in major jurisdictions and they are beginning to be implemented.⁽¹⁾

This box examines some of the key remaining challenges to be tackled in the reform of OTCD markets. It discusses margin requirements for non-centrally cleared OTCD; challenges from the expansion of central clearing; requirements to use trading platforms for OTCD, where legislative reforms are yet to be completed; and the cross-border application of the reforms.

Margin requirements for non-centrally cleared derivatives

Not all OTCD transactions will be sufficiently standardised to be centrally cleared. Exposures between market participants arising from these non-centrally cleared transactions may act as a source of systemic risk. In addition, non-standardised contracts might be used to evade central clearing mandates.

To mitigate these risks, the Basel Committee on Banking Supervision (BCBS) and the International Organization of Securities Commissions (IOSCO) have proposed margin requirements for OTCD that are not cleared by CCPs. BCBS and IOSCO released a consultative report in July.⁽²⁾ This proposed that, for all non-centrally cleared OTCD, both 'variation' and 'initial' margin should be exchanged on a two-way basis between all financial firms and certain non-financial firms.⁽³⁾ Variation margin secures the gains on one party's positions as they arise. Initial margin is held to protect a party against the potential future exposures it faces following the default of its counterparty.

Although the exchange of variation margin between market participants is already common, the proposal to require universal two-way exchange of initial margin is a substantial change from current market practice.

The aggregate amount of collateral needed to meet these requirements may be significant. The June 2012 *Report*

presented a Bank staff estimate of an additional collateral requirement of between US\$50 billion and US\$200 billion for non-centrally cleared interest rate swaps (IRS) and credit default swaps (CDS) under certain assumptions.⁽⁴⁾ But in this and other studies, significantly higher numbers are obtained when different assumptions are used, in particular about the degree to which positions can be netted.

The key financial stability benefit of imposing margin requirements on these transactions is that it lowers the probability that losses will spill over to the defaulter's surviving counterparties and to the broader financial system. Posting collateral will also increase the cost of transacting in non-centrally cleared OTCD markets, helping to correct the mispricing of risk that was evident during the 2007/08 crisis. This may encourage market participants to reduce activity in these markets. To the extent that this limits the build-up of leverage through OTCD positions and reduces intra-financial sector interdependencies, this should have financial stability benefits.⁽⁵⁾

The shift to securing these exposures with collateral may, however, have implications for other sources of risk.

As discussed in Section 3.2, relying on collateral can introduce new risks, replacing counterparty credit risk with liquidity and credit risk on the collateral. Falls in collateral value may trigger additional margin calls in a procyclical way, potentially forcing market participants to sell assets to meet these calls and exacerbating market stress. This risk may be greater if collateral holdings are concentrated in a narrow range of assets. Setting margin and haircut requirements prudently can help to reduce this risk.

Greater collateralisation may also lead to new interconnections being created — for example, as counterparties without ready access to eligible collateral source such collateral from elsewhere in the system. These 'collateral upgrade' trades may increase financial system opacity.⁽⁶⁾ In addition, greater reliance on collateral may reduce the overall level of capital requirements in the system and increase asset encumbrance, as discussed in the June 2012 *Report*.

Some of these issues were recognised in BCBS-IOSCO's consultative report. For example, comment was sought on the use of an exposure threshold before initial margin is required to be called, which might mitigate the collateral impact of the proposals while still achieving the key financial stability benefits. BCBS and IOSCO are now working to finalise the requirements.

Expansion of central clearing

Mandatory central clearing is beginning to be introduced in some jurisdictions.⁽⁷⁾ As well as expanding the scope and volume of transactions cleared through CCPs, clearing mandates will also require 'buy-side' firms (eg asset managers, hedge funds, insurers, non-exempt non-financial firms) that have not traditionally participated in central clearing of OTC products to begin doing so. These firms are not generally expected to join CCPs directly. Rather, they will most likely access CCPs as clients of clearing members.

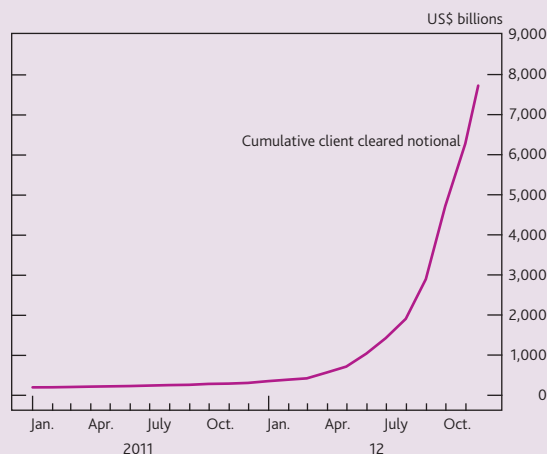
CCP clearing increases the scope for multilateral netting, whereby networks of bilateral exposures are replaced by single exposures to the CCP. Client clearing also allows buy-side firms to benefit from the risk management practices of CCPs. But it may also give rise to risks. Market contacts suggest that client clearing may become concentrated among a small number of direct clearing members, increasing the risk of disruption should such a clearing member fail. Further, some client positions may be large. If these large positions become more concentrated in a few clearing members, this may increase risks to those clearing members and to the CCP if the viability of a clearing member is threatened.

In anticipation of rules mandating the central clearing of certain OTCD in the United States and the EU becoming effective from 2013, volumes of trades submitted for clearing by clearing members on behalf of their clients have increased (**Chart A**). But client clearing volume in OTCD such as IRS and CDS generally remains low in absolute terms. The outstanding size of inter-dealer trades cleared by LCH.Clearnet Ltd, the largest IRS CCP, is more than 100 times higher than client transactions cleared. Some commentators have expressed concern about the readiness of many clients for the start of mandatory clearing; and about the operational capacity of clearing members to accept all clients that require access to central clearing.

Anticipation of mandatory clearing obligations, and of lower capital charges for trades that are centrally cleared, may also be contributing to changes in the structure of the clearing industry. There is evidence of an increase in the number of CCPs clearing or preparing to clear the same OTCD products, particularly IRS and CDS. Some CCPs have been designed to serve a particular market; others will operate globally. An increase in the number of CCPs serving a market may lead to a loss of netting benefits. Competition between CCPs could also create an incentive for a weakening of risk controls over time, as they compete for business. However, the presence of multiple CCPs may mitigate single point of failure risk.

Regulators have recognised that the G20 commitments may concentrate risks in CCPs, thereby increasing reliance on the

Chart A LCH.Clearnet Ltd IRS client clearing volumes^(a)



Source: LCH.Clearnet Ltd.

(a) Monthly cumulative cleared notional.

safe functioning of these infrastructures. In January 2012, the FSB identified four 'safeguards' for a resilient and efficient global framework for central clearing: (i) fair and open access by market participants to CCPs, based on transparent and objective criteria; (ii) co-operative oversight arrangements between all relevant authorities, both domestically and internationally, that result in robust and consistently applied regulation and oversight of global CCPs; (iii) resolution and recovery regimes that ensure the core functions of CCPs are maintained during times of crisis and that consider the interests of all jurisdictions where the CCP is systemically important; and (iv) appropriate liquidity arrangements for CCPs in the currencies they clear.⁽⁸⁾

Trading platforms

As part of the G20 reforms, many OTCD will have to be traded on exchanges or electronic trading platforms. Legislation specifying the scope of the trading obligation as well as the set of eligible trading venues is currently being developed. A key challenge is to achieve this migration to electronic trading platforms without impairing market liquidity. A wide range of trading models currently exists to trade OTCD, thus offering market participants a choice both in trade execution and transparency. This choice is often most valuable during periods of episodic illiquidity.⁽⁹⁾

Cross-border implementation

The OTCD market is global in nature. Inconsistencies in national regulatory regimes therefore have the potential to disrupt the effectiveness of the market by prompting fragmentation and, in the extreme, by making some cross-border trades impossible. There are, for example, reports that some market participants are reluctant to execute OTCD with US-based entities to avoid falling under certain requirements of the Dodd-Frank Act. Differences in regulatory

approach across jurisdictions also risk regulatory arbitrage, which may frustrate the achievement of the G20 objectives. In its latest report on the implementation of the OTCD market reforms, the FSB called for greater co-ordination regarding the cross-border application of national regulations.⁽¹⁰⁾

- (1) For example, in the United States, the Dodd-Frank Act was enacted in July 2010. The EU Regulation on OTC Derivatives, Central Counterparties and Trade Repositories (EMIR) came into effect in August 2012. The 2012 FSB report 'OTC derivatives market reforms: fourth progress report on implementation' describes progress made by the G20 jurisdictions to implement the reforms.
- (2) BCBS and IOSCO (2012), *Margin requirements for non-centrally-cleared derivatives*.
- (3) Comment was sought on the case for exempting FX swaps and forwards.
- (4) Sidanius, C and Zikes, F (2012), 'OTC derivatives reform and collateral demand impact', *Bank of England Financial Stability Paper No. 18*.
- (5) But, to the extent that increased costs discourage end-users from using OTCD to hedge risks, or incentivise them to use standardised derivatives that offer less perfect hedges, these entities may be more exposed to financial risk.
- (6) *Bank of England Financial Stability Report*, June 2012.
- (7) In Japan, mandatory central clearing for index-based CDS and certain plain vanilla yen-denominated IRS came into effect on 1 November 2012. And in a recent speech, the CFTC indicated that clearing obligations may start to become effective in the United States as early as February 2013 (Gensler, G (2012), 'The new era of swaps market reform', 10 October). FSB (2012), 'Jurisdictions' declared approaches to central clearing of OTC derivatives', provides further information.
- (8) FSB (2012), 'OTC derivatives market reforms: third progress report on implementation'.
- (9) Smyth, N and Wetherilt, A (2011), 'Trading models and liquidity provision in OTC derivatives markets', *Bank of England Quarterly Bulletin*, Vol. 51, No. 4, pages 331–40.
- (10) FSB (2012), 'OTC derivatives market reforms: fourth progress report on implementation'.

4 Macroprudential policy since the June 2012 Report

The Committee has held two policy meetings and issued one additional recommendation since the June 2012 Report. During its September meeting, the Committee discussed how it intended to draft policy statements to support the use of powers of Direction by the statutory FPC. During both its September and November meetings, the Committee reviewed progress against its previous recommendations. One previous recommendation has now been implemented and action is under way to implement the remaining recommendations.

This section describes the activity of the Committee and the progress made in implementing its recommendations over the past six months. Each recommendation has been given an identifier to ensure consistent referencing of recommendations within and between *Financial Stability Reports*. An identifier 11/Q3/3 refers to the third recommendation made following the 2011 Q3 FPC meeting, and so on.

4.1 Activity of the Committee

The Committee has held two policy meetings and issued one additional recommendation since the publication of the June 2012 Report. A full account of these meetings will be made available in the published Records. The latest recommendation and the conclusions of the Committee's November meeting are outlined in Section 5 of this Report.

In September, the Committee discussed how it would approach the drafting of a statement outlining the general policy that the statutory FPC could be expected to follow for each of its powers of Direction. This policy statement would need to consider the circumstances in which those powers might be used and how they might work, with reference to historical examples. It would also need to balance the desire to provide specificity about when the powers would be used — in order that the Committee could be held to account — with the importance of retaining sufficient flexibility to enable policy to respond to a range of risks and uncertainties. The Committee intends to publish a draft of this statement early next year, to assist Parliament's scrutiny of the draft secondary legislation that will provide the statutory FPC with powers of Direction.

In September, the Committee also reviewed progress in implementing its recommendations. It agreed not to change its existing recommendations given that risks to financial stability remained elevated.

4.2 Progress made in implementing recommendations

At its November 2012 policy meeting, the Committee again considered the progress made in implementing each of its previous recommendations, as summarised in Table 4.A. The rest of this section describes this progress in more detail and considers the extent to which it has delivered on the Committee's objectives.

Table 4.A Summary of recommendations

Identifier	Short title	Lead	Status ^(a)
11/Q3/3	Flexibility in EU legislation to enable national discretion	HMT	Action under way
11/Q4/3	Disclosure of leverage ratios	FSA	Action under way
12/Q2/1	Build a sufficient cushion of loss-absorbing capital against current risks	FSA	Superseded by 12/Q4/1
12/Q2/2	Improve balance sheet resilience, including through prudent valuation	FSA	Superseded by 12/Q4/1
12/Q2/3	Manage and mitigate balance sheet risks from euro-area stress	UK banks	Action under way
12/Q2/4	Clarify usability of regulatory liquid asset buffers in liquidity stress	FSA	Implemented
12/Q2/5	Work towards consistent and comparable Pillar 3 disclosures	UK banks, FSA and BBA	Action under way
12/Q4/1	Ensure capital position reflects prudence in asset valuations, conduct cost estimates and risk-weight calculations	FSA	New

(a) The status of each recommendation is described as one of: 'New', 'Not implemented', 'Plan agreed', 'Action under way', 'Implemented' or 'Superseded'.

Recommendation 11/Q3/3

'The Committee urged HM Treasury to continue its efforts to ensure that developments in European legislation did not provide an impediment to the ability of the Committee to use macroprudential policy instruments in the interests of financial stability in the United Kingdom, as envisaged in the consultation documents proposing the establishment of the Financial Policy Committee.'

HM Treasury has continued to work with Member States and EU legislative bodies on the proposed Capital Requirements Directive and Regulation (CRD4/CRR) and the European Market Infrastructure Regulation (EMIR).

CRD4/CRR seeks to implement the Basel III agreement in the European Union. 'Trilogue' negotiations between the European Parliament, Commission and the Council to agree the final texts extended into the autumn. At the time of writing, the draft texts provide for some national discretion in the use of macroprudential policy instruments, but the final scope for such discretion has yet to be agreed.

EMIR formally entered into force in August, although many of its provisions will not take effect until supporting technical standards are adopted in early 2013. Among other things, EMIR establishes prudential standards for the calculation of margin requirements by CCPs. But it does not provide scope for national macroprudential authorities to vary minimum margin requirements through the cycle as previously considered by the FPC (see the March 2012 Record). A European Commission review (also involving the European Securities and Markets Authority and the European Systemic Risk Board) to revisit the need for additional measures to reduce procyclicality in margin requirements for CCPs is scheduled for 2015.

Status: Action under way

The timetable for implementing CRD4/CRR remains subject to considerable uncertainty, not least due to the recent move towards a banking union and the creation of a single supervisory mechanism across the euro area. HM Treasury will continue its efforts to ensure that the final legislation gives the FPC sufficient flexibility to use its macroprudential policy instruments effectively.

Recommendation 11/Q4/3

'The Committee recommended that the FSA encourages banks to disclose their leverage ratios, as defined in the Basel III agreements, as part of their regular reporting not later than the beginning of 2013.'

The FSA has continued to engage with chief financial officers of the major UK banks and building societies to ensure effective implementation of this recommendation. During these discussions, a number of firms expressed concern that disclosure of leverage ratios in advance of regulatory requirements to comply with minimum standards could have unintended consequences. For example, if investors were to misinterpret the FPC's recommendation and demand immediate compliance with the minimum standards, that could encourage firms to reduce lending to households and businesses.

As noted in the June 2012 Report and in the Record of the September 2012 FPC meeting, the Committee is clear that it is not recommending that UK banks and building societies must be compliant with expected future leverage ratio minimum requirements in advance of their coming into force (expected to be in 2018 according to the Basel III timetable). To reinforce this message, the Committee saw merit in firms disclosing leverage ratios using both Basel III end-point and transitional definitions of Tier 1 capital. The FSA has taken this forward in discussions with firms.

Status: Action under way

UK banks and building societies are on track to meet this recommendation with effect from their end-2012 annual reports. This would represent an important first step in helping to reduce investors' uncertainty about firms' resilience, given market concerns about inconsistencies in risk-weighted asset calculations. The Committee's approach to improving disclosure of such calculations is discussed in Section 5 of this Report.

Recommendation 12/Q2/1

'The Committee recommended that, taking into account each institution's risk profile, the FSA works with banks to ensure they build a sufficient cushion of loss-absorbing capital in order to help to protect against the currently heightened risk of losses. That cushion may temporarily be above that implied by the official transition path to Basel III standards and would support additional lending to the real economy, including via the planned 'funding for lending' scheme. Banks should continue to restrain cash dividends and compensation in order to maximise the ability to build equity through retained earnings.'

The aggregate core Tier 1 capital ratio of the major UK banks has increased by over 50 basis points since the Committee first encouraged banks to build capital in 2011. But over the same period, the aggregate level of core Tier 1 capital of the major UK banks has increased only marginally, and that is more than accounted for by the retained profits of a single bank. And the outlook for internal capital generation through retained profits remains challenging (as discussed in Section 2).

Against this backdrop, the FSA wrote to the major UK banks in August asking them to provide quantitative estimates of all feasible options for increasing capital levels further or restructuring their business models. Recent supervisory discussions have focused on banks' responses to this letter and actions are being taken as a result of these discussions. These include ensuring that banks' proposals for variable remuneration and dividends are consistent with building capital levels.

In September, the FSA clarified changes to its capital regime intended to support the Funding for Lending Scheme,

introduced by the Bank of England and HM Treasury in July 2012. The FSA will make an allowance for the increase in Pillar 1 capital requirements as a result of new lending to households and non-financial companies by reducing Pillar 2 capital planning buffer requirements. The precise amount of this offset will be determined in FSA discussions with banks on their capital adequacy and forward-looking capital plans.

Status: Superseded

The Committee noted the progress made by the FSA in its discussions with banks and the recent steps taken by one bank towards raising external capital.

During its November meeting, the Committee agreed to bring together its existing recommendations to increase the resilience of the UK banking system into a single, new recommendation which is discussed in detail in Section 5 of this *Report*.

Recommendation 12/Q2/2

'In addition, the Committee reiterated its recommendation to the FSA to encourage banks to improve the resilience of their balance sheets, including through prudent valuations, without exacerbating market fragility or reducing lending to the real economy.'

The FSA has continued to take forward this recommendation as part of its ongoing supervisory dialogue with firms. Non-core asset run-off plans are ahead of schedule, with LBC and RBS having shed almost £400 billion of assets since 2008. Market contacts suggest that strong demand from hedge funds and private equity buyers should support further disposals. Intra-financial system exposures have also reduced as firms have begun to narrow the focus of investment banking operations.

The FSA is also heavily involved in the drafting of Binding Technical Standards on Prudent Valuation on behalf of the European Banking Authority (EBA). These Standards, which will seek to define the way in which firms should quantify the inherent uncertainty around point estimates of fair-valued assets and liabilities, are expected to be implemented in January 2014. In the interim, firms have submitted initial Prudent Valuation returns to the FSA. These returns show considerable variation between firms' methodologies. The FSA is therefore considering the need for a programme of work to ensure greater consistency and robustness of these measures.

Status: Superseded

The Committee noted the progress made against this recommendation and supported the FSA's continuing work programme. But it believed that banks could do more to promote confidence in the resilience of the UK banking system by adopting a more conservative approach to the valuation

and risk weighting of assets. The Committee's new recommendation, discussed in detail in Section 5 of this *Report*, is intended, in part, to achieve this outcome.

Recommendation 12/Q2/3

'The Committee recommended that banks work to assess, manage and mitigate specific risks to their balance sheets stemming from current and future potential stress in the euro area.'

The major UK banks have taken a number of steps to meet this recommendation, as part of their contingency planning arrangements. As discussed in Section 2, balance sheets have been adjusted to match local assets more closely with local liabilities to mitigate potential currency risk. Direct exposures to vulnerable euro-area countries have been reduced across all sectors. Exposures to households and businesses in Ireland, Italy and Spain remain significant, however, with household exposures generally slower to change due to the long-term nature of mortgage lending.

While indirect exposures — for example, to other euro-area countries that in turn have exposure to vulnerable euro-area countries — remain significant, these have also been reduced. Many of these exposures arise via core European banks and are at least partially mitigated by collateral.

Status: Action under way

While noting the steps taken by banks to reduce the risk posed by their exposures, the Committee remained concerned about the resilience of the UK banking system in the event of the crystallisation of a stress scenario in the euro area. As such, it encouraged banks to continue their efforts to manage and mitigate this risk.

Recommendation 12/Q2/4

'The Committee recommended that the FSA makes clearer to banks that they are free to use their regulatory liquid asset buffers in the event of a liquidity stress. The ability to do so is enhanced by additional contingent liquidity made available to banks by the Bank. The Committee also recommends that the FSA considers whether adjustments to microprudential liquidity guidance are appropriate, taking some account of this additional liquidity insurance.'

The FSA wrote to the major UK banks and building societies in August outlining a number of changes to its liquidity regime. These changes were intended to increase firms' willingness to use their liquidity buffers. They included: some explicit recognition of firms' collateral pre-positioned at the Bank of England; tiering of liquidity guidance intended to increase the usability of the top-tier buffer; and a commitment not to introduce any future industry-wide increases in liquidity guidance prior to the introduction of the Basel III Liquidity Coverage Ratio in 2015. The FSA also emphasised that firms

would be given reasonable time to rebuild their buffers after having run them down.

Status: Implemented

Liquid asset holdings of the major UK banks and building societies have fallen by £31 billion since the Committee issued its recommendation and now represent 111% of the FSA's liquidity guidance (Chart 4.1). This initial reaction reflects the aggregate impact of a range of individual-firm responses. Most firms have reduced their liquid asset holdings, some while reducing their balance sheet size and reliance on wholesale funding. Firms' reactions have also been driven by considerations of internal risk appetite, market perception and expectations of rating agency activity.

Chart 4.1 Aggregate liquid asset holdings of UK banks as a percentage of FSA Individual Liquidity Guidance (ILG)^{(a)(b)}



Sources: FSA and Bank calculations.

(a) UK 'defined liquidity groups' for Barclays, HSBC, LBG, Nationwide, RBS and Santander as designated by the FSA for liquidity regulation purposes.

(b) Liquid asset holdings for this purpose exclude pre-positioned collateral at the Bank of England's Discount Window Facility in order for the data to be comparable across time periods.

(c) June 2012 Report.

Replacing liquid asset holdings with real-economy loans could directly support the supply of credit and thus economic growth. Alternatively, selling liquid assets to buy back expensive debt could boost profits and thus internal capital generation to support resilience and future lending. It is too early to judge the impact of either of these potential responses on the FPC's objectives.

Recommendation 12/Q2/5

'The Committee recommended that UK banks work with the FSA and British Bankers' Association (BBA) to ensure greater consistency and comparability of their Pillar 3 disclosures, including reconciliation of accounting and regulatory measures of capital, beginning with the accounts for the current year.'

Pillar 3 disclosures require banks to disclose key information on capital, risk exposures and risk assessment processes on at least an annual basis to enable market participants to assess banks' risk profile and capital adequacy. The FSA and the BBA have together identified specific areas for improvement in these disclosures — including additional comparative metrics and clearer narratives — and have discussed these in meetings with the major UK banks. The banks generally support the proposed improvements and have considered how to take them forward under the BBA's Code for Financial Reporting Disclosure, together with the disclosure recommendations of the Financial Stability Board's Enhanced Disclosure Task Force and the EBA.

Status: Action under way

The BBA is developing an action plan to deliver the proposed improvements and will meet with the FSA before the year-end to discuss progress made against this plan. Some improvements — including a reconciliation of accounting and regulatory measures of capital under Basel III — will be achievable for the 2012 year-end. Others will take longer to implement due to operational challenges.

5 Prospects for financial stability

The outlook for financial stability has improved a little. Global growth and financial conditions, however, remain weak. Risks from the euro area wax and wane in intensity, but are still considerable. In the United Kingdom, progress by banks in raising capital levels has slowed and investor confidence remains low, partly reflecting concerns about likely future losses.

The Committee recommends a series of actions to reinforce the resilience of the UK banking system and so put it in a better position to expand lending to support the real economy. Implementation of these recommendations by the FSA should provide greater clarity to the banks about the capital needed to support their business.

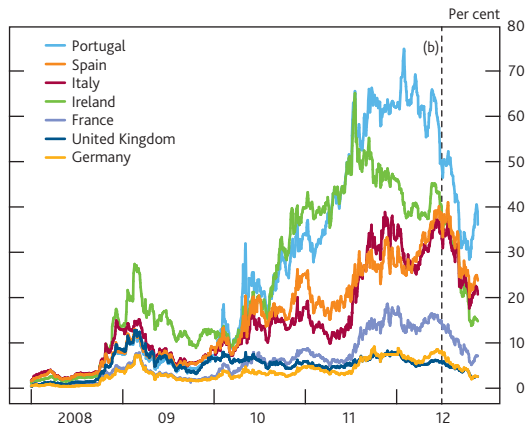
The Committee has examined a number of factors affecting the capital adequacy of the UK banking system. These include: the extent of banks' provisions against expected future losses and costs of redress for past conduct; potential inadequacies in banks' risk-weighting methodologies; and the possible impact of crystallisation of risks in the world economy, including those stemming from the euro area. The Committee had previously discussed these factors and their potential significance. While their significance varies across banks, the Committee judges that, together, they are likely to have material implications for the overall resilience of the UK banking system and its ability to support a sustained economic recovery.

- The Committee recommends that the FSA takes action to ensure that the capital of UK banks and building societies reflects a proper valuation of their assets, a realistic assessment of future conduct costs and prudent calculation of risk weights. Where such action reveals that capital buffers need to be strengthened to absorb losses and sustain credit availability in the event of stress, the FSA should ensure that firms either raise capital or take steps to restructure their business and balance sheets in ways that do not hinder lending to the real economy.

This recommendation replaces previous recommendations in respect of capital raising and is the approach that the Committee has asked the FSA (and subsequently the Prudential Regulation Authority (PRA)) to follow for the foreseeable future. The Committee asks the FSA to report back on actions taken in response to this recommendation in advance of its March meeting and subsequently provide updates on progress as part of its quarterly microprudential supervisory update to the Committee.

Sections 1–3 of this *Report* outline developments in the global financial environment and short and medium-term risks to financial stability. Section 4 describes the activity of the Committee and the progress made in implementing its past recommendations. This section sets out the decisions taken by the Committee at its November 2012 meeting, in light of its conclusions about the outlook for financial stability. This section also includes a box explaining a proposed role for the statutory FPC in making recommendations to HM Treasury regarding the boundary between regulated and non-regulated sectors of the UK financial system.

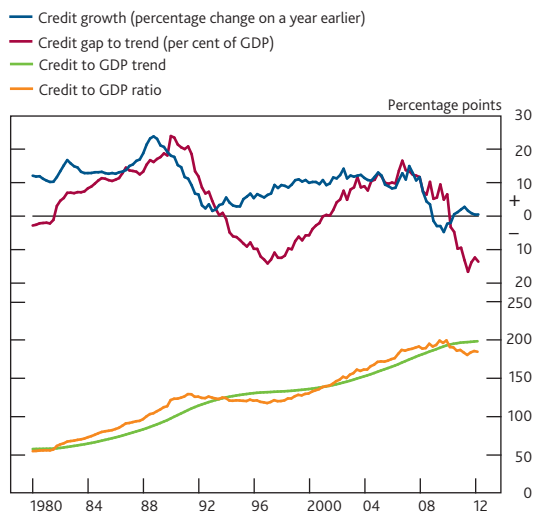
Chart 5.1 Market-implied default probabilities over the next five years for selected sovereign debt^(a)



Sources: Markit Group Limited and Bank calculations.

- (a) Probability of default, derived from CDS premia, from the perspective of a so-called 'risk-neutral' investor that is indifferent between a pay-off with certainty and an uncertain pay-off with the same expected value. If market participants are risk-averse, these measures may overstate actual probabilities of default. A loss given default of 60% is assumed.
- (b) June 2012 *Report*.

Chart 5.2 UK credit gap and credit growth^{(a)(b)}



Sources: Bank of England, ONS and Bank calculations.

- (a) Credit is defined here as debt claims on the UK private non-financial sector. This includes all household liabilities and private non-financial corporations' loans and debt securities excluding derivatives, direct investment loans and loans secured on dwellings. The credit to GDP gap is calculated as the percentage point difference between the credit to GDP ratio and its long-term trend, where the trend is based on a one-sided HP filter with a smoothing parameter of 400,000. Latest value is for 2012 Q2.
- (b) Twelve-month growth rate of nominal credit. Credit is defined as above. Latest value is for 2012 Q2.

5.1 Recent developments

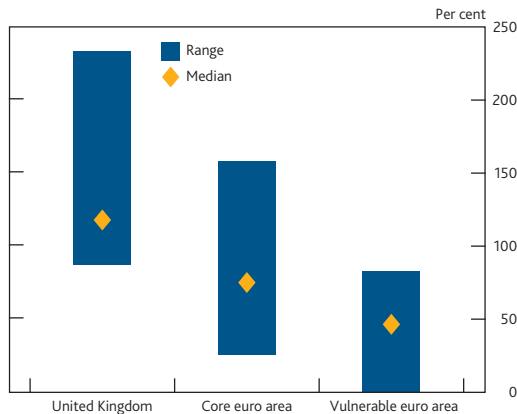
The outlook for financial stability has improved a little since the previous *Report*. Global growth and financial conditions, however, remain weak. Risks from the euro area wax and wane in intensity, but are still considerable.

Market concerns about severe near-term stresses in the euro area have reduced significantly following a period of heightened concern over the summer (**Chart 5.1**). In part, this reflects further policy initiatives by the ECB, including the announcement of a prospective programme of Outright Monetary Transactions. While that has reduced the immediate threat of countries exiting the euro area, the fragmentation of euro-area credit flows, and economic headwinds, have persisted. And imbalances within the euro area remain substantial, with ongoing uncertainty about how they will be resolved in the medium term.

UK credit growth has remained weak since the previous *Report* (**Chart 5.2**). There are some signs of improvement in credit conditions looking ahead. The Funding for Lending Scheme has contributed to a significant reduction in UK banks' marginal funding costs, which have been partially passed through to some lending rates. That is consistent with some of the results in the Bank's latest *Credit Conditions Survey*, which reported that mortgage availability had increased in the third quarter and was expected to improve further in the fourth quarter. But the survey gave fewer signs yet of an improvement in corporate credit conditions.

As discussed in Section 4 of this *Report*, following the Committee's June 2012 recommendation, the FSA made a number of changes to its liquidity guidance to banks to reduce their incentives to hold excessive buffers of liquid assets. This recommendation reflected evidence that the largest UK banks' holdings of liquid assets were more than sufficient to cover severe, but plausible, liquidity stresses; were well above levels held by international peers (**Chart 5.3**); and that banks had significant amounts of collateral pre-positioned at the Bank of England for use in liquidity stresses. Holdings of cash and liquid asset buffer securities have fallen slightly in the second half of 2012, though this has

Chart 5.3 Liquid assets as a proportion of stressed outflows by banking sector^{(a)(b)(c)}

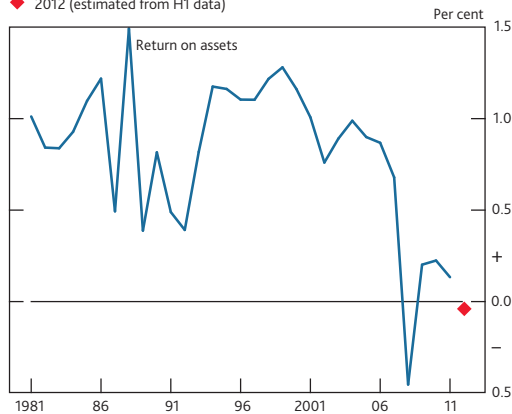


Sources: Liquidatum and Bank calculations.

- (a) Models a three-month market-wide stress, assuming severe, but plausible, retail, wholesale and bank deposit outflows and issuance.
 (b) Includes four UK banks, ten core euro-area banks and eleven other euro-area banks.
 (c) Estimated liquid assets are calculated by summing stable funding sources, which include unsecured bank and wholesale funding, retail deposits, debt in issue and equity, minus illiquid assets, which are defined as total assets less the sum of securities, cash, insurance assets, reverse repos and derivatives. The difference between these two is assumed to be funds invested in liquid assets.

Chart 5.4 Banks' return on assets before tax^(a)

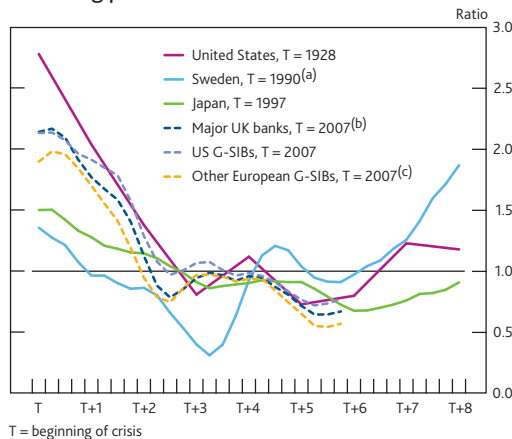
◆ 2012 (estimated from H1 data)



Sources: Published accounts and Bank calculations.

- (a) Calculated as major UK banks' net income (excluding tax) as a proportion of assets averaged over the current and previous year.

Chart 5.5 Price to book ratios of banking sectors following past financial crises



T = beginning of crisis

Sources: Calomiris, C W and Wilson, B (2004), 'Bank capital and portfolio management: the 1930s 'capital crunch' and the scramble to shed risk', *Journal of Business*, Vol. 77, No. 3, pages 421-55, Thomson Reuters Datastream and Bank calculations.

- (a) Svenska Handelsbanken and SEB.
 (b) Excludes Britannia, Co-operative Banking Group, Nationwide and Northern Rock (from end-2007).
 (c) See footnote (d) in Chart 2.3.

tended to be used to repay debt rather than provide direct support to credit growth.

5.2 Improving the resilience of the financial system

In recent years, the UK banking system has faced large losses on loans and trading assets. Banks have made adjustments to their balance sheets and raised capital in response. But as described in Section 2 of this *Report*, progress in raising capital has slowed, partly reflecting the weakness in UK bank profitability (Chart 5.4). This has limited the scope for internal capital generation. Investor confidence in banks remains low: the market value of major UK banks' shareholder equity (their net assets) has fallen on average to around two thirds of the book value.

As discussed in Box 2 of this *Report* on the Japanese experience, slow progress in tackling balance sheet problems can impede the recovery of banking systems and, in turn, the wider economy. A large legacy of poor lending decisions and the perception that banks may be inadequately provisioning, including against loans subject to forbearance, can create uncertainty about bank capital adequacy. This may both undermine investor confidence (Chart 5.5) and inhibit the ability of banks to extend new loans to the real economy.

At its November meeting, the Committee examined a number of factors affecting the capital adequacy of the UK banking system.

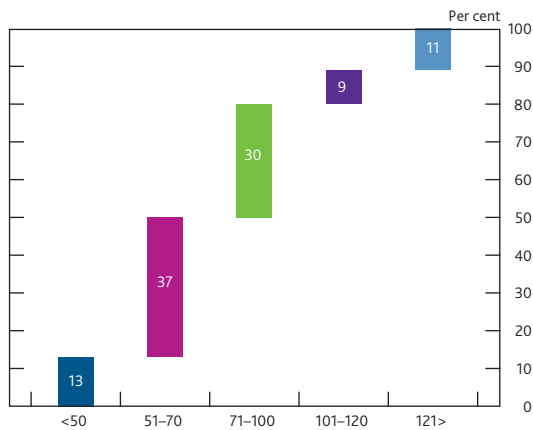
Expected losses and prudent valuation

Factors which may make the stated levels of capital misleading include the underrecognition of expected future losses on loans and inadequate provisioning for future costs of redress for past conduct. Fuller recognition of these expected losses and costs would imply weaker profits in the short term and erosion of current capital buffers.

Information from supervisory intelligence and banks' own public disclosures paint a consistent picture. They suggest that expected losses on loans are in some cases greater than current provisions and regulatory capital deductions for UK banks' expected losses.

For example, provisioning coverage ratios on portfolios of non-performing loans vary considerably across banks. Based on banks' own disclosures, there are material differences between current provisions and what would be implied by the most conservative approach adopted by peer group banks. This variation may partly reflect different underlying loan quality between banks; but the potential for more losses is consistent with analysis of specific loan portfolios shown to the Committee. Concerns are especially apparent for some

Chart 5.6 Loan to value ratios of UK CRE exposures by proportion of outstanding debt^{(a)(b)}



Sources: De Montfort University and Bank calculations.

- (a) Responses were received from organisations holding approximately £190 billion of outstanding debt.
 (b) The chart shows an estimation of the proportion of the outstanding debt that had a current loan to value ratio falling within the brackets given.

portfolios in vulnerable euro-area economies and on UK commercial real estate (CRE) lending, where a substantial proportion of loans are at loan to value ratios that, if current market conditions persist, will make loans hard to refinance (**Chart 5.6**).

Top-down estimates from UK banks' own disclosures of the fair value of their banking book assets, discussed in Section 2 of this *Report*, also support the view that in some cases future expected losses will be greater than current provisions and capital deductions. But with little information about how banks calculate these values, the Committee is cautious in taking the full extent of these headline fair-value figures too literally.

In recent years, UK banks have also underestimated and underprovisioned for costs for conduct redress, notably for payment protection insurance (PPI) mis-selling. In 2012, the number of identified conduct issues has grown, including for interest rate swap mis-selling and Libor manipulation. Some external analysts have suggested a range of £4 billion to £10 billion for further unrecognised PPI and Libor-related costs alone for major UK banks. It seems likely that banks could face further sizable costs for other conduct redress and potential future legal challenges.

Risk weighting of assets

Banks' capital positions could also be overstated because of aggressive application of risk weights, as discussed in Section 3 of this *Report*.

Chart 5.7 Variability of overall risk-weight estimates in 2011^{(a)(b)}



Sources: FSA and Bank calculations.

- (a) Chart shows minimum-maximum ranges. Results have been normalised to mean = 100.
 (b) Based on the results of the FSA's hypothetical portfolio exercise for 2011. 'Risk weights' are estimated proxy risk-weighted asset statistics. Sample of six firms' data.

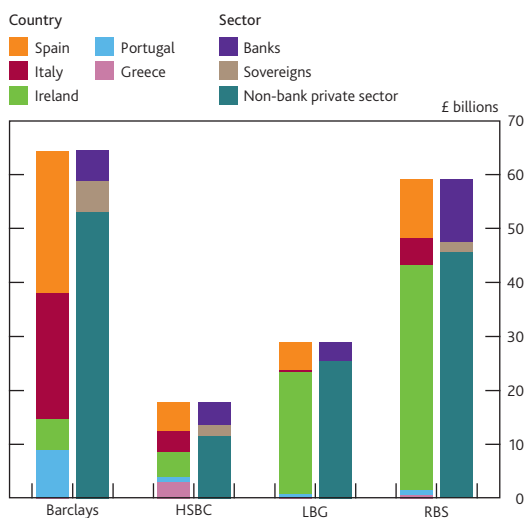
Quantifying the magnitude of any implied overstatement is challenging as it is difficult to assess the extent to which the differences in risk weights reflect variation in underlying asset quality. But hypothetical portfolio exercises recently conducted by the FSA, which ask banks to calculate risk weights for an identical hypothetical portfolio, confirm that this is likely to be significant. For example, in these exercises, the most prudent banks' calculations implied that well over twice as much capital would have been held than implied by the most aggressive banks' calculations for the same portfolios of exposures (**Chart 5.7**). As discussed in Section 3 of this *Report*, other simple exercises comparing UK banks' actual average risk weights with the most conservative in the group or applying Basel II standardised risk weights can imply an even more substantial overstatement of capital ratios.

Capital buffers for stress scenarios

In combination, these factors would imply that UK banks' capital buffers, available to cushion losses and maintain the supply of credit following realisation of a stress scenario, may not be as great as headline regulatory capital ratios imply.

As has been emphasised in previous Committee recommendations, the Committee assesses the threat of

Chart 5.8 UK banks' exposures to vulnerable euro-area economies — country and sector split^(a)



Sources: Published accounts and Bank calculations.

(a) All data are as at 2012 H1, gross of provisions.

severe stress arising from risks in the euro area to be considerable. While the immediate risks have reduced, there remains a possibility of disorderly outcomes, which if they occurred would have major implications for UK financial stability. But it is impossible to determine in advance exactly how risks may crystallise or the precise impact that they would have on the UK banking system. While UK banks have significantly reduced their direct exposures to sovereigns and banks in vulnerable euro-area economies, exposures remain sizable (Chart 5.8). And, as discussed in Section 2 of this Report, the major UK banks' exposures to non-bank private sectors in these countries are likely to remain significant for some time, unless they sell loans or businesses. It is essential that UK banks maintain a capital buffer sufficient to absorb losses and maintain the supply of credit in the event of a stress, in particular if euro-area risks crystallise.

Summary and the policy recommendation

While their significance varies across banks, the Committee judges that, together, the factors discussed above are likely to have material implications for the overall resilience of the UK banking system and its ability to support a sustained economic recovery. These uncertainties about capital adequacy are likely to account in part for the weak market valuation of some banks in the current environment.

It is possible that these uncertainties may lift over time and that gradual adjustment of balance sheets will slowly return UK banks to a position which would enable them better to support the economy. But where necessary, taking decisive action to tackle problems in banks' legacy portfolios could help to rebuild confidence and so enable banks to expand their balance sheets more quickly to support new lending and the wider economic recovery. Such action would also allow banks to take advantage of improved market conditions and other policy initiatives aimed at supporting lending.

Recommendation 1

The Committee recommends that the FSA takes action to ensure that the capital of UK banks and building societies reflects a proper valuation of their assets, a realistic assessment of future conduct costs and prudent calculation of risk weights. Where such action reveals that capital buffers need to be strengthened to absorb losses and sustain credit availability in the event of stress, the FSA should ensure that firms either raise capital or take steps to restructure their business and balance sheets in ways that do not hinder lending to the real economy.

This recommendation replaces previous recommendations in respect of capital raising and is the approach that the Committee has asked the FSA (and subsequently the PRA) to follow for the foreseeable future. The Committee asks the FSA to report back on actions taken in response to this recommendation in advance of its March 2013 meeting and

subsequently provide updates on progress as part of its quarterly microprudential supervisory update to the Committee.

There are a number of possible ways to strengthen resilience. For example, banks could increase current core Tier 1 capital directly — either through external issuance or liability management exercises, as well as through continued restraint on distributions and compensation. Or banks could issue contingent capital instruments with high triggers to ensure that they have sufficient capital buffers in stressed circumstances. Or disposal of non-core assets or businesses could be an effective way for a bank to build its resilience, if done in a way that does not hinder lending to the economy.

5.3 Structural issues affecting financial stability

Risk-weighted asset disclosures

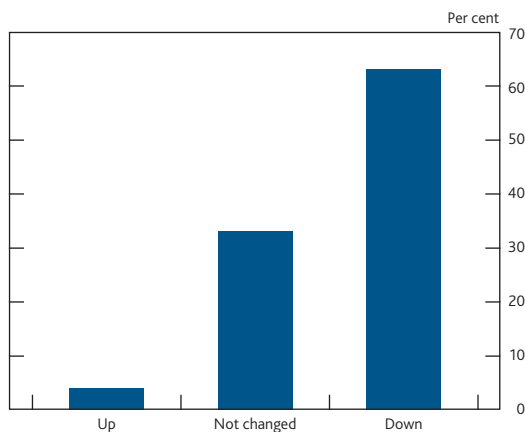
The Committee's Recommendation 1 calls for the FSA to ensure that banks develop more prudent approaches to the calculation of risk weights used in determining regulatory capital adequacy metrics. The current framework is complex and opaque, often relying on thousands of estimated and calibrated parameters. This may have undermined investor confidence in the application of the capital adequacy regime (Chart 5.9).

In order to provide market participants with an alternative measure of solvency that does not rely on risk-weight calculations, the Committee previously recommended in December 2011 that UK banks disclose their leverage ratios, as defined in the Basel III agreement, not later than the beginning of 2013. In June 2012, the Committee recommended that the FSA ensure greater consistency and comparability of UK banks' Pillar 3 disclosures, in part to help investors to reconcile accounting and regulatory measures of capital more easily.

The Committee supports a number of other initiatives under way domestically and internationally to improve the calculation of risk weights. In the United Kingdom, the FSA has introduced floors to banks' estimates of some parameters in the calculation of risk weights which should guard against the most imprudent behaviour. And internationally, the Basel Committee has embarked upon a detailed review of risk-weighted asset calculations for large, internationally active banks that will conclude in 2013, and will consider recommendations and options for ongoing monitoring and supervisory activities to foster risk-weighted asset consistency.

Furthermore, the Committee welcomes the recommendations of the Enhanced Disclosure Task Force (EDTF) — a collaboration of private sector stakeholders established by the Financial Stability Board — which develops principles and

Chart 5.9 Investor perceptions: has your confidence in risk-weighted assets gone up or down?^(a)



Source: Barclays Research.

(a) Based on survey responses of over 130 investors carried out in 2012 H1, of perceptions over the past year.

recommendations for strengthening banks' disclosures.⁽¹⁾ The EDTF's recommendations in the areas of capital and risk-weighted assets are aimed at providing investors with more granular information to help them understand risk-weighted asset calculations across banks and through time. Swift implementation of these recommendations could significantly help reduce the extent of investor uncertainty about these calculations.

The Committee recognises that some authorities have recommended alternative approaches to increase confidence in this area. For example, the Swiss National Bank has recommended that the largest Swiss banks should calculate and disclose risk-weighted assets calculated on a standardised approach, in addition to the model-derived reports already in place.

The Committee intends to consider further the issues raised by the current risk-weighting framework, and will encourage work in international fora to achieve improvements in the future.

The structure of remuneration contracts

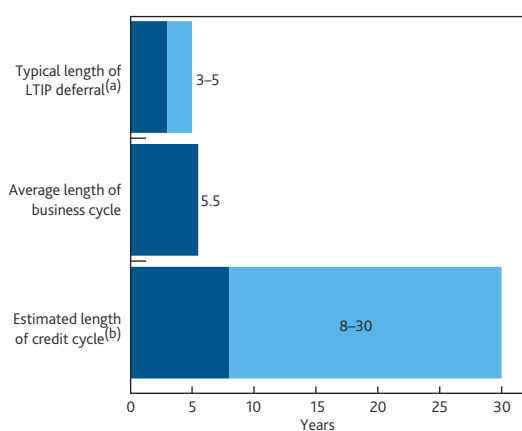
Inappropriately structured remuneration contracts for bank executives can lead to risks being mismanaged. Steps could be taken to ensure that the structures of bank executives' remuneration contracts provide sufficient incentives to consider the full implications for long-term business performance, which would be desirable from the perspective of systemic stability. There are three factors of particular concern.

First, elements of remuneration can be tied to short-term targets unadjusted for risk, such as return on equity. Without appropriate risk adjustment, such targets can be achieved by increasing leverage, as banks did in the decade before 2007. There is evidence to suggest that a number of banks have reduced somewhat their reliance on such metrics over recent years. But there is further to go and there is a risk that this progress could be easily reversed in future, particularly when external conditions improve.

Second, the period over which executives' decisions will have an impact on the bank's performance is typically much longer than the period used to judge management performance as reflected in remuneration. In particular, deferral of the long-term incentive component of variable remuneration is typically just three years for the major UK banks' executives, far shorter than the length of the typical business or credit cycle (Chart 5.10).

Third, remuneration contracts could be better structured to expose executives to the potential downside outcomes over the longer term of the risks they take. The major components

Chart 5.10 Typical length of deferral in long-term incentive plans (LTIPs) relative to cycles



Sources: Drehmann, M, Borio, C and Tsatsaronis, K (2012), 'Characterising the financial cycle: don't lose sight of the medium term!', *BIS Working Paper No. 380*, NBER, published accounts and Bank calculations.

(a) LTIPs paid to executive directors at the following UK banking groups: Barclays, HSBC, LBG and RBS. The range of deferral length is shown by the light blue bar.

(b) The minimum and maximum estimates for the length of the medium-term credit cycle are represented by the light blue bar.

(1) www.financialstabilityboard.org/publications/r_121029.pdf.

of UK banks' executive remuneration are cash and shares. But the Committee notes that incentives could be better aligned to longer-term outcomes if compensation packages were able to include a greater proportion of suitable debt instruments, for example subordinated debt instruments, or debt instruments which carry the potential for bail-in, as recently suggested by the Liikanen Group report.⁽¹⁾

The Committee would encourage and welcome actions by the appropriate international authorities — the European Commission, the European Systemic Risk Board and the Financial Stability Board — to consider these issues in further developments of the remuneration codes and emphasises the importance of these concerns for UK banks' current remuneration round.⁽²⁾

(1) http://ec.europa.eu/internal_market/bank/docs/high-level_expert_group/report_en.pdf.

(2) The Financial Stability Board has developed 'Principles and standards for sound compensation practices'. See www.financialstabilityboard.org/activities/compensation/index.htm.

Box 4 Regulatory perimeter

The Financial Services Bill proposes to give the Financial Policy Committee (FPC) the ability to make recommendations to HM Treasury regarding the boundary between regulated and non-regulated sectors of the UK financial system — the regulatory perimeter. In particular, the FPC may recommend: (i) what is a regulated activity under the Financial Services and Markets Act 2000 (FSMA); and (ii) which particular activities are prudentially regulated by the Prudential Regulation Authority (PRA). The FPC will do so in support of its objective of removing or reducing systemic risks with a view to protecting and enhancing the resilience of the UK financial system. Note that the UK regulatory perimeter under FSMA is defined in terms of activities (eg deposit-taking, effecting or carrying out contracts of insurance) rather than institutions.⁽¹⁾ This box describes how systemic risk can arise outside the current regulated sector and how the FPC might exercise its powers in relation to the regulatory perimeter to mitigate these risks.

Systemic risk in the financial system

Systemic risk can arise when there is a material disruption to the provision of financial services that are critical to the real economy or to the functioning of the financial system. Critical financial services to the real economy include: credit intermediation; risk management and insurance; and payment services.⁽²⁾ Financial activities that support the provision of these critical services to the real economy include: the provision of capital and funding to financial institutions; market liquidity services such as market-making and securities lending and repo transactions; risk management and insurance services; infrastructure provision, including payments and clearing; and institutional design features, such as accounting standards and credit ratings.

The vast majority of these activities will pose no systemic risk to the financial system. Of those that do, many will already be subject to regulatory oversight. But some unregulated activities could prospectively pose risks to the financial system — either in and of themselves or via links with regulated entities, such as banks. Indeed, some activities may be undertaken purely in order to avoid financial regulation.

Over the next few years, the global financial system is likely to evolve rapidly, as the new regulatory framework begins to take effect. In such an environment, it will be essential to ensure that systemic risk is not simply transferred from the regulated to unregulated sectors, exposing the system unnecessarily to the possibility of further financial crises.

The FPC's proposed role in policing the regulatory perimeter is intended to guard against this risk. In doing so, there are two

key dimensions that the FPC will need to consider when determining whether or not an activity poses a systemic risk to the financial system. First, is the activity systemically important? Second, is the activity inherently fragile?

The FPC's deliberations on whether an activity is systemically important are likely to be guided by a set of standard criteria, that have been developed by the Financial Stability Board (FSB), including:

- **Size:** how important the activity is in terms of the service it provides, either directly to the real economy or to other financial institutions that support the real economy.
- **Complexity:** how difficult it is to understand the risk posed by an activity.
- **Interconnectedness:** how long, strong and complex are the intermediation chains between financial institutions.

Indicators of fragility, meanwhile, may vary according to whether or not an activity is undertaken by a particular set of institutions or within financial markets.

- For **institutions**, fragility relates to those factors that increase the likelihood and impact of failure. In general, institutional fragility is an increasing function of both leverage and maturity transformation. In cases where liquidity or capital can be withdrawn or capital is not truly loss-absorbing, fragility may also be much greater than would otherwise be the case. Banks are fragile as they take significant leverage and engage in maturity transformation. Money market funds, meanwhile, are susceptible to 'runs' on liquidity.
- For **financial markets**, fragility relates to their propensity to close or become severely disrupted. This can occur as a result of poor infrastructure or because the actions of participants drain liquidity and other services essential to the smooth functioning of markets. For example, where a significant proportion of market liquidity is supplied by institutions that are themselves levered, the market might be considered inherently fragile. Pre-crisis, this applied to the UK residential mortgage-backed securities market, for which the majority of the investor base was represented by leveraged and maturity-mismatched institutions.

Exercising the FPC's powers

Whether the FPC will recommend that an activity is brought within the regulatory perimeter will depend not only on whether the risk posed by the activity is systemic, but also on whether regulation of the activity can help to mitigate this systemic risk. Underlying this judgement will be an analysis of

the different types of regulatory intervention that could be used to address the risk.

- **Prudential regulation:** designed to promote the safety and soundness of individual institutions.
- **Conduct of business regulation:** designed to establish rules and guidance about appropriate behaviour and business practices.
- **Product regulation:** one element of conduct of business regulation involving limiting or banning particular financial products.
- **Resolution and/or consumer compensation arrangements (eg depositor protection):** may help where the systemic risk arises as a result of disorderly failure and normal insolvency arrangements will not suffice.
- **Indirect regulation:** limiting or monitoring the exposure of the regulated sector to the activity. This form of regulation may be of particular benefit where the activity takes place outside the United Kingdom.

The PRA will be responsible for the prudential regulation of deposit-takers, insurers and designated investment firms. The FPC may be likely to recommend prudential supervision by the PRA when it is best placed to carry this out given its objectives and capabilities. For example, the largest broker-dealers take principal risk on their balance sheets and the PRA has the relevant expertise for prudentially supervising firms that take such risks.

The process of recommending whether or not an activity should lie within the regulatory perimeter will not necessarily be a one-way process. For example, the FPC could judge that the costs of regulating certain activities are not justified on systemic risk grounds. In this case, it could recommend to HM Treasury that the activity is excluded from regulation. Whether HM Treasury chose to accept such a recommendation would depend on whether it considered there were other grounds for regulating the activity beyond systemic risk.

The FPC will also need to be mindful of other initiatives, both domestically and globally, that may affect the perimeter. For example, many activities presenting a systemic risk that are currently unregulated take place within the so-called 'shadow banking' sector. This is broadly characterised by firms that are leveraged and conduct maturity transformation, both of which serve to instil fragility into the financial system.⁽³⁾ On 18 November 2012, the FSB published its report on strengthening oversight and regulation of shadow banking.⁽⁴⁾

And the European Commission published a green paper on shadow banking earlier this year.⁽⁵⁾

In some cases, legal constraints may further limit HM Treasury's ability to effect any FPC recommendations. For example, HM Treasury does not have jurisdiction to amend the perimeter where a regulated activity is undertaken outside the United Kingdom by an overseas firm. Furthermore, where regulation of particular activities or institutions is required under EU law, HM Treasury may be constrained from making changes that would alter the scope of the perimeter.

To deliver its responsibilities in this area, the FPC will discuss regulatory perimeter issues on a periodic basis. As part of these discussions, the FPC will consider the costs and benefits of making any change. Following these discussions, the FPC may choose to set out analysis in future *Financial Stability Reports* or make recommendations to HM Treasury in respect of amending the perimeter.

Where the FPC decides to recommend to HM Treasury a change in the regulatory perimeter, this will be published in the formal record of the FPC's meetings (unless publication is against the public interest). HM Treasury would decide whether to accept any recommendation and, if it did, it would consult as appropriate.

(1) That is because institutions may change the activities that they carry out over time.
 (2) See Bank of England *Annual Report 2010*, page 26.
 (3) See Financial Stability Board 'Shadow banking: scoping the issues', April 2011. See also Tucker, P (2010), 'Shadow banking, financing markets and financial stability', available at www.bankofengland.co.uk/publications/Documents/speeches/2010/speech420.pdf.
 (4) See www.financialstabilityboard.org/publications/r_121118.pdf.
 (5) European Commission, 'Green paper: shadow banking', March 2012.

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Glossary and other information

Glossary of selected data and instruments

CDS – credit default swap.

FX NDF – foreign exchange non-deliverable forward.

GDP – gross domestic product.

IRS – interest rate swap.

Libor – London interbank offered rate.

MTN – medium-term note.

Abbreviations

BBA – British Bankers' Association.

BCBS – Basel Committee on Banking Supervision.

BIS – Bank for International Settlements.

CCP – central counterparty.

CET1 – common equity Tier 1.

CFO – chief financial officer.

CFTC – Commodity Futures Trading Commission.

CGS – Credit Guarantee System.

CNAV – constant net asset value.

COFER – Currency Composition of Official Foreign Exchange Reserves.

CRD4/CRR – Capital Requirements Directive and Regulation.

CRE – commercial real estate.

EBA – European Banking Authority.

ECB – European Central Bank.

EDTF – Enhanced Disclosure Task Force.

EFSF – European Financial Stability Facility.

EFSM – European Financial Stabilisation Mechanism.

EME – emerging market economy.

EMIR – European Market Infrastructure Regulation.

ESM – European Stability Mechanism.

EU – European Union.

FASB – Financial Accounting Standards Board.

FLS – Funding for Lending Scheme.

FPC – Financial Policy Committee.

FSA – Financial Services Authority.

FSB – Financial Stability Board.

FSMA – Financial Services and Markets Act 2000.

FTSE – Financial Times Stock Exchange.

FX – foreign exchange.

G20 – The Group of Twenty Finance Ministers and Central Bank Governors.

GAAP – generally accepted accounting principles.

G-SIB – global systemically important bank.

HMT – Her Majesty's Treasury.

HPE – hypothetical portfolio exercise.

IASB – International Accounting Standards Board.

IFRS – International Financial Reporting Standard.

ILG – Individual Liquidity Guidance.

IMF – International Monetary Fund.

IOSCO – International Organization of Securities Commissions.

IRB – internal ratings based.

LBG – Lloyds Banking Group.

LCH – LCH.Clearnet Ltd.

LGD – loss given default.

LTIP – long-term incentive plan.

LTRO – longer-term refinancing operation.

LTV – loan to value.

MFI – monetary financial institution.

MMF – money market fund.

NBER – National Bureau of Economic Research.

NPL – non-performing loan.

OECD – Organisation for Economic Co-operation and Development.

OMT – Outright Monetary Transaction.

ONS – Office for National Statistics.

OTC – over the counter.

OTCD – over-the-counter derivatives.

PD – probability of default.

PIK – payment in kind.

PNFC – private non-financial corporation.

PPI – payment protection insurance.

PRA – Prudential Regulation Authority.

RBS – Royal Bank of Scotland.

REIT – real estate investment trust.

RWA – risk-weighted asset.

SME – small and medium-sized enterprise.

SWIFT – Society for Worldwide Interbank Financial Telecommunication.

S&P – Standard & Poor's.

TARGET – Trans-European Automated Real-Time Gross Settlement Express Transfer System.

WEO – IMF *World Economic Outlook*.

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