

Financial Stability Report

December 2014 | Issue No. 36



BANK OF ENGLAND





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Financial Stability Report

Presented to Parliament pursuant to Section 9W(10) of the Bank of England Act 1998
as amended by the Financial Services Act 2012.

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The Financial Policy Committee (FPC) was established under the Bank of England Act 1998, through amendments made in the Financial Services Act 2012. The legislation establishing the FPC came into force on 1 April 2013. The objectives of the Committee are to exercise its functions with a view to contributing to the achievement by the Bank of England of its Financial Stability Objective and, subject to that, supporting the economic policy of Her Majesty's Government, including its objectives for growth and employment. The responsibility of the Committee, with regard to the Financial Stability Objective, relates 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.

The FPC is established as a sub-committee of the Bank of England's Court of Directors. An interim FPC operated from 2011 until March 2013, holding its first policy meeting in June 2011, with the aim of shadowing as far as possible the future statutory FPC's macroprudential role.

The legislation requires the FPC to prepare and publish a *Financial Stability Report* twice per calendar year. The *Report* covers the Committee's view of the current stability of the UK financial system at the time of preparation of the *Report* and an assessment of developments that have influenced this view; an assessment of the strengths and weaknesses of the system and the risks to stability; and the Committee's view on the outlook for the stability of the UK financial system. The *Report* also summarises the activities of the Committee over the reporting period and the extent to which policy actions taken have succeeded in meeting the Committee's objectives.

The Committee has a number of duties, as specified under the Bank of England Act 1998. In taking decisions, the Committee is required to set out an explanation of its reasons for deciding to use its powers in the way they are being exercised and why it considers that to be compatible with such duties. Section 5 of this *Report* sets out the decisions taken by the Committee in the light of its assessment of the outlook for financial stability.

The Financial Policy Committee:

Mark Carney, Governor

Jon Cunliffe, Deputy Governor responsible for financial stability

Andrew Bailey, Deputy Governor responsible for prudential regulation

Ben Broadbent, Deputy Governor responsible for monetary policy

Martin Wheatley, Chief Executive of the Financial Conduct Authority

Clara Furse

Donald Kohn

Richard Sharp

Martin Taylor

Charles Roxburgh attends as the Treasury member in a non-voting capacity.

This document was delivered to the printers on 15 December 2014 and, unless otherwise stated, uses data available as at 3 December 2014.

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

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Executive summary

The global economic outlook has weakened since the June 2014 *Report* and market concerns over persistent weak nominal growth and geopolitical risk have increased. These developments could affect the outlook for financial stability in the United Kingdom if concerns about persistent low growth lead to a sudden reappraisal of underlying vulnerabilities in highly indebted economies, or if a shift in global risk appetite triggers sharp adjustments in financial markets and undermines business and household confidence. The recent sharp fall in the oil price should support global and UK growth, but it also entails some risk to financial stability. Adjustments will be more disruptive if investors' pricing of liquidity risk does not fully reflect structural changes in market liquidity. Such developments could lead to stress in funding markets for banks and corporates. In the Committee's view, these global risks to the outlook for financial stability have increased since June.

Domestically, the Committee was concerned in June about a further increase in risk to financial stability from the housing market. This increase has not so far occurred; but debt levels in the UK household sector remain high relative to incomes and the insurance provided by the FPC's June Recommendations therefore remains warranted.

UK banks are on a transition path towards greater resilience, in advance of regulatory requirements, and have significantly increased their capital over the last year. Since June, there have been two further important milestones in the development of a more robust prudential regulatory framework: agreement on total loss-absorbing capacity requirements internationally and the publication of the *Review of the Leverage Ratio* domestically. The overall design of the prudential regulatory framework has now largely been set out.

The recent stress tests provide a check on the banking system's capital adequacy. The Committee judges that no system-wide, macroprudential actions on bank capital are needed given the results of those tests, the capital plans agreed by banks with the PRA Board, and given that the banking system is on the transition path to meet higher standards of loss absorbing capacity.

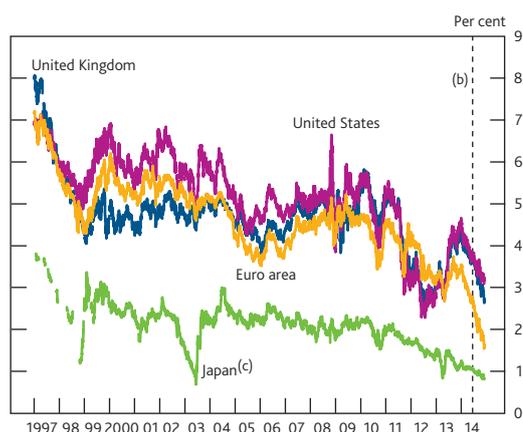
But recent misconduct and other operational failings have highlighted that rebuilding confidence in the banking system requires more than financial resilience. That, and changes to banks' business models in response to commercial and regulatory developments, make it important for banks to continue to enhance the effectiveness of their governance arrangements. Further, the FPC judges that there is a need for core firms and financial market infrastructures to conduct vulnerability testing as soon as practicable to enhance the resilience of the financial system to cyber threats, in line with its June 2013 Recommendation.

In the light of its assessment of the outlook for financial stability, including the outcome of the stress tests, the FPC decided at its December meeting to set the countercyclical capital buffer rate for UK exposures at 0%.

1 Global financial environment

During the period since the *June Report*, government bond yields across many advanced economies continued to decline, alongside expectations for global growth and inflation. There were periods of heightened volatility, albeit short-lived, with associated falls in risky asset prices. Survey evidence suggested some rise in market participants' perceived probability of a high-impact event in the UK financial system, as well as increased focus on geopolitical risks. But confidence in the stability of the UK financial system appeared to have increased. In addition, the FPC judged that recent stress-test results and banks' capital plans, taken together, suggested that the banking system would have the capacity to maintain its core functions in a stress scenario.

Chart 1.1 Medium-term interest rates fell internationally
Five-year, five-year forward nominal interest rates^(a)



Sources: Bloomberg and Bank calculations.

- (a) Derived from the Bank's government liability curves. Euro-area rates are estimated from French and German government bonds.
(b) June 2014 *Report*.
(c) Japan series based on partial data to 1999.

1.1 Macroeconomic and financial developments

Interest rates fell further...

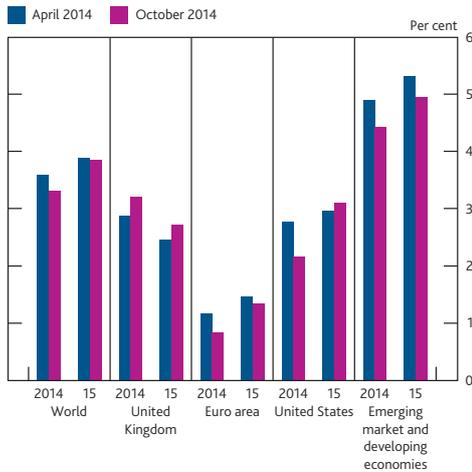
Government bond yields across many advanced economies continued on the downward trend that resumed at the start of 2014, ending the period near historically low levels. Market expectations of medium-term interest rates — as implied by the cost of UK and US government borrowing for five years, five years ahead — fell by around 100 basis points and 60 basis points respectively. In the euro area, medium-term expectations for government bond yields, estimated using German and French bonds, fell by over 100 basis points (**Chart 1.1**).

As set out in the box on page 11 of the November 2014 *Inflation Report*, the falls in medium-term interest rates since both June and the beginning of the year most likely reflected a number of factors. These include a weaker outlook for longer-term global growth and inflation prospects and expectations by market participants that this would be associated with lower policy rates. Discussions with market contacts suggest that they placed significant weight on this explanation, with the euro area seen as a key contributor.

...as growth prospects deteriorated...

During the period since the June 2014 *Report*, global growth disappointed and prospects deteriorated. In October, the International Monetary Fund (IMF) revised down its forecast for purchasing power parity (PPP)-weighted GDP growth in 2014 and 2015 to 3.3% and 3.8% respectively (**Chart 1.2**). The divergence between the United Kingdom, the United States and the euro area remained marked. The UK and US economies expanded at a healthy pace. But in the euro area, activity disappointed in the first half of this year

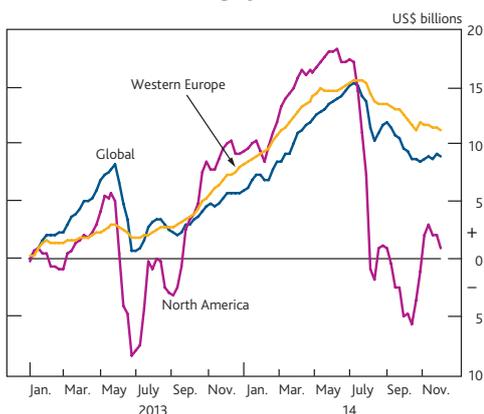
Chart 1.2 Global growth projections were revised down
International annual GDP growth projections^{(a)(b)}



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

- (a) April 2014 and October 2014 WEO projections.
 (b) The PPP weights underlying this chart were updated between the April 2014 WEO and October 2014 WEO. The IMF report that the forecast for global growth for 2015 in the April 2014 WEO would have been 0.1 percentage points higher if calculated using the revised weights.

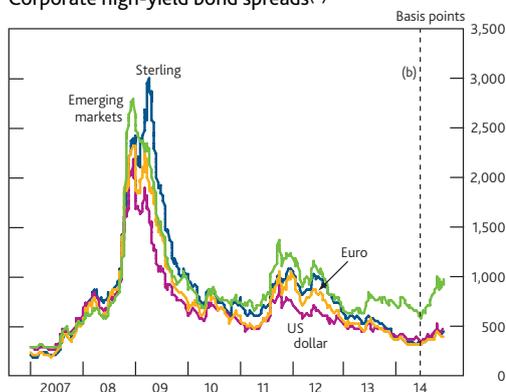
Chart 1.3 There were sharp outflows from high-yield bond funds
Cumulative flows into high-yield bond funds^(a)



Sources: EPFR Global and Bank calculations.

- (a) Cumulative weekly net flows into funds that invest in high-yield bonds. Net flows are calculated as investor contributions less redemptions, excluding portfolio revaluations.

Chart 1.4 Spreads on high-yield bonds increased
Corporate high-yield bond spreads^(a)



Source: BofA Merrill Lynch Global Research.

- (a) Option-adjusted spreads. The US dollar series refers to US dollar-denominated bonds issued in the US domestic market, while the sterling and euro series refer to bonds issued in domestic or eurobond markets in the respective currencies. The emerging markets series refers to bonds that are euro or US dollar-denominated and issued in the eurobond or US domestic markets.
 (b) June 2014 Report.

and remained subdued in Q3. In Japan, the economy fell unexpectedly into recession in 2014 Q3, after output contracted by 0.4%.

Growth also slowed a little in some emerging economies, including in China. As set out in the November 2014 *Inflation Report*, a gradual increase in growth during 2015 is still anticipated as lower oil prices support demand in several of these economies and the drag from previous policy tightening wanes. But expectations about longer-term growth rates in these economies have been revised down materially since mid-2012.

...and inflation fell...

Inflation fell further below central bank policy targets in many major economies, partly reflecting lower commodity prices, with the price of Brent crude oil around 40% lower in dollar terms since the June Report. Section 2.1 discusses the financial stability implications of lower oil prices.

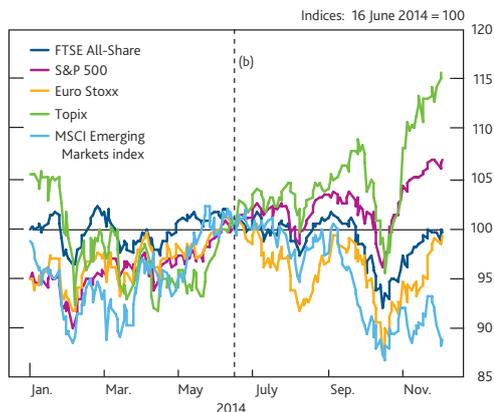
In the euro area, inflation fell below 0.5%, and indicators of inflation expectations in the medium to longer term also fell. In Japan, excluding the impact of the consumption tax rise, core inflation fell to around 1%. A combination of persistently weak inflation and low growth would make it more difficult for highly indebted economies, including the more vulnerable euro-area countries, to put public and external debt levels on a downward path. Section 2.1 discusses in more detail the channels through which weakness in nominal demand, particularly in highly indebted economies, could threaten financial stability.

...prompting additional policy support.

Against this backdrop, some central banks loosened policy further. The European Central Bank (ECB) announced a further 10 basis point cut in its benchmark interest rates, as well as a programme to purchase asset-backed securities and covered bonds. The ECB also held its first targeted longer-term refinancing operation. The Bank of Japan announced an increase in the pace of its government bond, exchange-traded funds and real estate investment trust purchases. And in China, the central bank cut its benchmark interest rates for the first time since 2012.

Market expectations of UK and US policy rates over the next few years also eased. The US Federal Reserve, which concluded its programme of asset purchases at its October meeting, maintained its holdings of longer-term securities at sizable levels. It also reiterated its guidance that it would probably remain appropriate to maintain the current target range for the federal funds rate for a considerable period of time. In the United Kingdom, the Monetary Policy Committee maintained Bank Rate at 0.5% and kept the stock of purchased assets unchanged. The Committee continued to

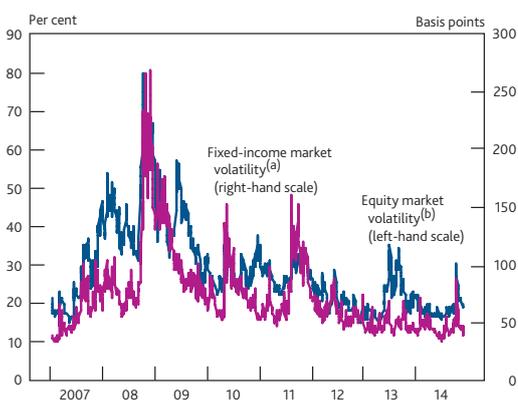
Chart 1.5 Advanced-economy equity prices fell temporarily as growth concerns increased
International equity indices^(a)



Sources: Thomson Reuters Datastream and Bank calculations.

- (a) Denominated in units of local currency except for MSCI Emerging Markets index, which is denominated in US dollars.
(b) June 2014 Report.

Chart 1.6 There was a short-lived increase in volatility
Measures of fixed-income and equity market volatility

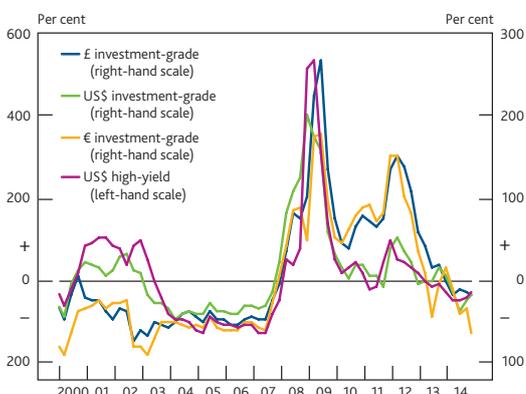


Source: Bloomberg.

- (a) Merrill Option Volatility Estimate (MOVE) Index, a yield curve weighted index of the normalised implied volatility on one-month Treasury options.
(b) VIX measure of market expectations of 30-day volatility as conveyed by S&P 500 stock index option prices.

Chart 1.7 Model-based measures of liquidity risk premia remained low

Deviations of estimated corporate bond liquidity risk premia from historical averages^{(a)(b)(c)}



Sources: Bloomberg, BofA Merrill Lynch Global Research, Thomson Reuters Datastream and Bank calculations.

- (a) Implied liquidity risk premia are estimated using a Merton model as in Leland, H and Toft, K (1996), 'Optimal capital structure, endogenous bankruptcy, and the term structure of credit spreads', *Journal of Finance*, Vol. 51, pages 987–1,019, by decomposing corporate bond spreads.
(b) Quarterly averages of deviations of implied liquidity risk premia from sample averages.
(c) Sample averages are from 1999 Q4 for € investment-grade and 1997 Q1 for £ investment-grade, US\$ investment-grade and US\$ high-yield.

expect that, when Bank Rate did begin to rise, it would do so only gradually and to a level below historical averages.

As capital flowed away from high-yield bond funds...

In a low interest rate environment, investors may seek higher yields by investing in riskier assets. But if investors 'search for yield' while misjudging the underlying risk, that can also be a potential source of financial instability. As set out in the previous Report, some of the strongest signs of search for yield have been in credit markets.

Over the summer investors appeared to demand greater compensation for holding riskier corporate bonds. The change in sentiment followed comments by the Chair of the US Federal Reserve, Janet Yellen, suggesting that valuations in some sectors looked 'stretched'. Outflows were most pronounced in the US high-yield corporate bond market, amounting to around 6% of total net assets during July and the beginning of August, with smaller outflows from the European market (Chart 1.3).

...corporate high-yield bond spreads increased...

The sell-off over the summer was concentrated in a subset of markets and did not lead to a widespread rise in volatility nor forced asset sales. While spreads on investment-grade bonds were little changed, spreads on high-yield bonds — which in some cases had reached the lowest levels since 2007 — ended the period over 100 basis points higher for sterling and dollar-denominated bonds and around 70 basis points higher for euro-denominated bonds than at the time of the June Report (Chart 1.4). The increase in spreads was more pronounced for emerging market high-yield bonds.

...and equity prices fell before recovering.

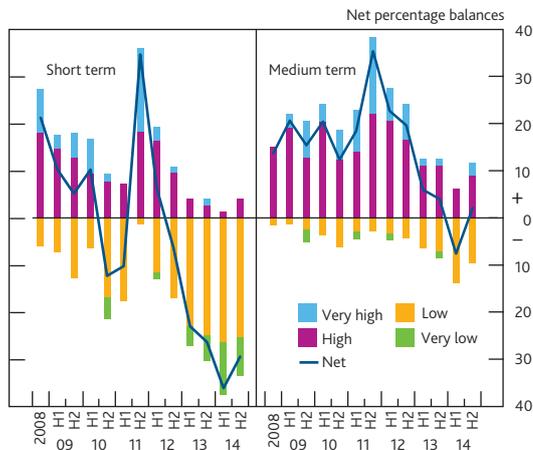
International equity prices also fell in October, although much of the falls subsequently unwound (Chart 1.5), with the FTSE All-Share and Euro Stoxx ending the period broadly at the same level as the June Report. Emerging markets equity indices ended the period 6% lower than June, which may in part have reflected concerns about growth in emerging market economies following weak data from China. The S&P 500 reached an all-time nominal high, consistent with the more positive economic outlook in the United States compared with other parts of the world. In Japan, the Topix reached its highest level since 2008, following the stimulus measures announced by the Bank of Japan and the delay in the scheduled consumption tax increase.

There was a short-lived increase in volatility, most notably in US fixed-income markets...

Market volatility also increased across some asset classes, albeit from historically low levels (Chart 1.6). In mid-October, sharp moves in prices were observed across a number of markets, most notably US fixed-income. Yields on ten-year US Treasuries fell by almost 30 basis points in the space of just

Chart 1.8 Perceived probability of a high-impact event in the UK financial system edged higher

Systemic Risk Survey: probability of a high-impact event in the UK financial system^(a)

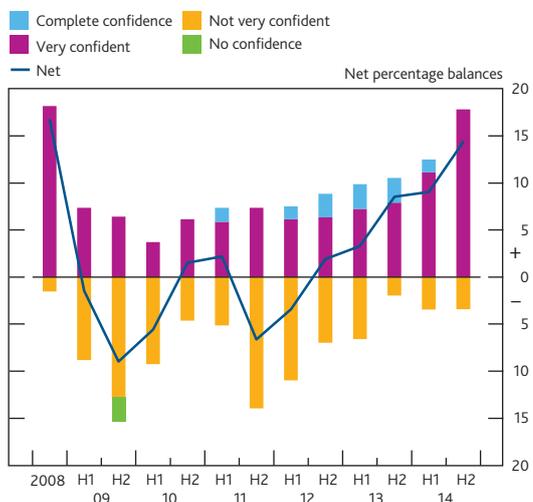


Sources: Bank of England *Systemic Risk Surveys* and Bank calculations.

(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 1.9 Confidence in the stability of the UK financial system increased

Systemic Risk Survey: confidence in the stability of the UK financial system as a whole over the next three years^(a)



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

(a) Respondents were asked how much confidence they had in the stability of the UK financial system as a whole over the next three years. The net percentage balance is calculated by weighting responses as follows: complete confidence (1), very confident (0.5), fairly confident (0), not very confident (-0.5) and no confidence (-1). Bars show the contribution of each component to the net percentage balance.

over an hour before retracing most of the moves by the end of the day. The compensation that investors require for bearing liquidity risk in some corporate bond markets also increased but remained below long-term averages (Chart 1.7).⁽¹⁾

During the disruption in the US Treasury market on 15 October, contacts described market functioning as similar to previous crisis periods, with order flows of any significant size being sufficient to move market prices, in what is generally considered the most liquid market in the world. Market functioning returned to more normal conditions the following week with most of the increase in implied volatilities unwinding (Chart 1.6).

The increase in market volatility in mid-October reflected, in part, a widespread reappraisal of global growth and inflation prospects. The episode demonstrated that markets can become impaired in the face of relatively modest shocks.

...alongside an increase in the perceived probability of a high-impact event in the UK financial system...

Based on the Bank's 2014 H2 *Systemic Risk Survey*, the perceived probability of a high-impact event in the UK financial system over both the short and the medium term appeared to edge higher, ending the downward trend seen since 2011 H2 (Chart 1.8). The main risks to the UK financial system remained geopolitical risk and the risk of an economic downturn, with the former now the most cited risk. Both risks could undermine the stability of the financial system especially if accompanied by a loss of confidence (Section 2.1). UK political risks also increased in prominence, being cited by around a quarter of respondents. Earlier in the period, there had been intense focus on the referendum in Scotland.

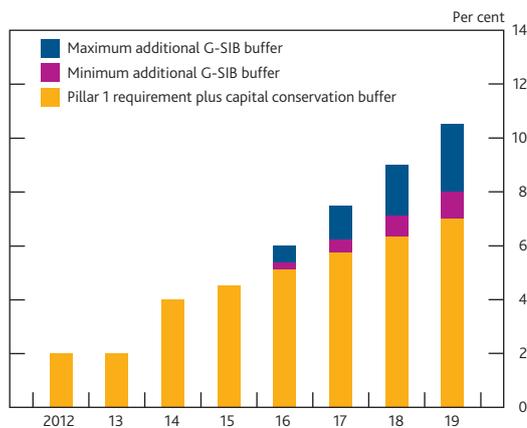
...but confidence in the stability of the UK financial system remained high.

Nevertheless, confidence in the stability of the UK financial system was reported to have increased since the previous *Report*, reaching the highest level since 2008 (Chart 1.9). This confidence, set alongside perceptions of an increase in the probability of a high-impact event in the United Kingdom, might reflect a view among respondents that the United Kingdom is well equipped to deal with shocks. Section 2.1 discusses potential near-term threats to the stability of the UK financial system.

(1) For more details see Box 1 of the June 2014 *Financial Stability Report*, pages 13–14, available at www.bankofengland.co.uk/publications/Documents/fsr/2014/fsrfull1406.pdf.

Chart 1.10 Global banks' capital requirements will rise during the next five years

Internationally agreed common equity Tier 1 requirements^{(a)(b)}

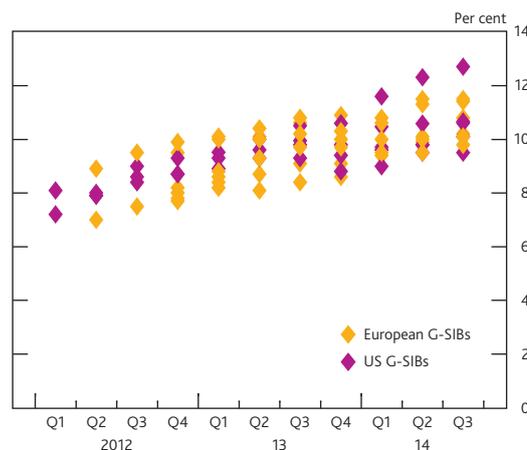


Source: Bank of England.

- (a) Before 2014, the Pillar 1 requirement shown is the implicit Basel II minimum core Tier 1 capital requirement of 2% of risk-weighted assets. From 2014, the chart shows the Basel III Pillar 1 common equity Tier 1 requirement, which uses a stricter definition of capital and risk-weighted assets.
- (b) Capital buffers are phased in from 2016 until 2019 and comprise the capital conservation buffer (2.5%) and G-SIB buffer (1%–3.5%).

Chart 1.11 Global banks' capital ratios rose

Self-reported 'fully loaded' Basel III CET1 ratios^{(a)(b)}



Sources: SNL Financial, published accounts and Bank calculations.

- (a) Self-reported Basel III 'fully loaded' CET1 ratios for European and US G-SIBs in buckets 2 to 5 (excluding firms in bucket 1) as per the Financial Stability Board's November 2014 list of G-SIBs.
- (b) 'Fully loaded' means based on the rules that will apply at the end of the transition period in 2019.

1.2 Financial system resilience

Global banks continued to transition towards higher regulatory standards...

During the period since the *June Report*, further important elements of the prudential regulatory framework for banks were confirmed. That included agreement on total loss-absorbing capacity (TLAC) requirements internationally and the publication of the *Review of the Leverage Ratio* domestically (Section 3). In line with these requirements, banks continued to transition towards improved standards of resilience. For example, most UK banks remained well placed to meet the final standards for the liquidity coverage ratio, which are due to come into effect in 2015. That partly reflected reductions to major UK banks⁽¹⁾ short-term wholesale funding, which fell to less than 60% of the end-2010 level.

Banks also continued to transition towards higher capital standards ahead of regulatory requirements. European and US G-SIBs' reported common equity Tier 1 (CET1) ratios remained significantly higher than current requirements — though these requirements will rise by at least 3.5 percentage points during the next five years (**Chart 1.10**). The average CET1 ratio reported by US and European banks rose by 1 percentage point, to 11%, during the year to June 2014 (**Chart 1.11**). And UK banks' CET1 ratios rose by 2 percentage points. Global banks' leverage ratios also improved, in anticipation of leverage ratio disclosure requirements which will come into effect in 2015.

...partly through capital issuance...

Part of the improvement in European banks' capital ratios reflected capital issuance. By early December, European banks had raised £74 billion of capital in 2014, including £38 billion of equity, mainly by banks in the euro-area periphery. Most of the remaining capital raised was in the form of additional Tier 1 (AT1) capital instruments — the market for which has grown rapidly. During the same period, European banks issued over £32 billion of AT1 capital (**Chart 1.12**). Within this, UK banks accounted for around 40% of issuance, all of which was of high-trigger instruments.

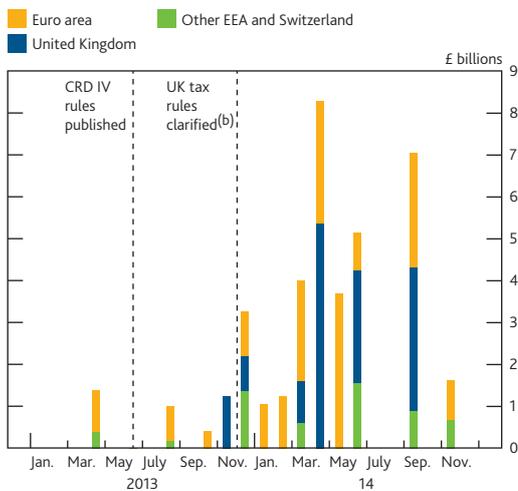
...and the European Central Bank examined the quality of European banks' assets...

In October, the ECB concluded a review of European banks' asset quality. The exercise identified nearly €140 billion of additional non-performing loans and around €48 billion of asset overvaluation. For most banks, these differences in valuation comprised less than 5% of CET1 capital. A number

(1) Unless otherwise noted, 'major UK banks' refers to: Banco Santander, Bank of Ireland, Barclays, Co-operative Bank, HSBC, Lloyds Banking Group, National Australia Bank, Nationwide, Royal Bank of Scotland and Virgin Money. Annual data used for National Australia Bank are for the period ending end-March, due to the bank's different reporting cycle.

Chart 1.12 European banks issued large quantities of additional Tier 1 capital

AT1 public issuance by EEA and Swiss banks^(a)

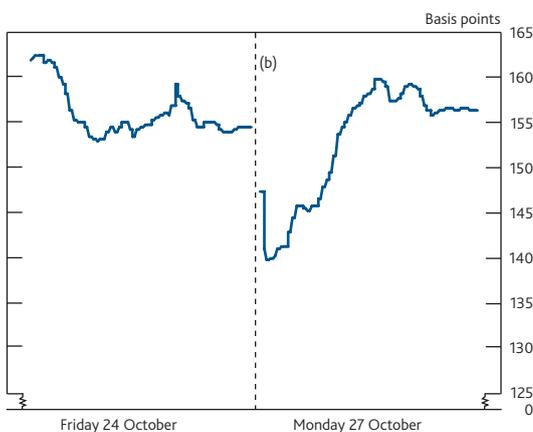


Sources: Bank of England, Dealogic, published accounts and Bank calculations.

- (a) UK issuance in April and June 2014 include the exchange of existing capital instruments for new AT1 securities by Lloyds Banking Group (around £4 billion) and Barclays (around £2 billion).
 (b) HM Revenue and Customs (2013), 'Draft Regulations – The Taxation of Regulatory Capital Regulations 2013 – Update', December, available at www.hmrc.gov.uk/drafts/reg-cap-technote.pdf.

Chart 1.13 Market reaction to European stress-test results was positive but short-lived

Cost of insuring subordinated debt issued by European financials^(a)



Sources: Bloomberg and Bank calculations.

- (a) iTraxx European financials' five-year subordinated debt credit default swap premia. Series shows the average premia within each minute for which data are available.
 (b) Results of the ECB's asset quality review and the EBA's stress test were announced on Sunday 26 October.

of market contacts commented that the review provided some assurance about the quality of European banks' assets.

...alongside the European Banking Authority's stress test...

Alongside the ECB's asset quality review, the European Banking Authority (EBA) co-ordinated a test of major European banks' resilience to a global macroeconomic downturn and financial market stress. In the stress scenario, banks' aggregate fully loaded CET1 ratio fell from 9.9% in 2013 to 7.6% in 2016. While most banks' transitional CET1 ratios exceeded the required minima over the stress period, thirteen banks — mainly in the euro-area periphery — were found to have a capital shortfall of around €10 billion in aggregate. Absent improvements in banks' capital ratios during 2014, a further twelve banks' CET1 ratios would have fallen below the required minima.

Markets reacted positively following the results of the stress test. Most banks' equity prices rose, and their credit default swap (CDS) premia fell, following the announcement — though both were largely short-lived (**Chart 1.13**). Equity prices of banks with identified capital shortfalls fell and tended to remain at lower levels.

...and the UK test of UK banks' resilience, which built on the EU-wide exercise.

The EU-wide stress-testing arrangements allow relevant authorities to explore country-specific risks, using their own scenarios and methodologies. In line with those arrangements, the Bank examined the impact of a variant of the EU-wide stress scenario on eight major UK banks and building societies, in order to assess the need for supervisory and system-wide actions by the Prudential Regulation Authority (PRA) Board and the FPC. Unlike the EBA test, the UK stress test used a range of tools to explore vulnerabilities stemming from the UK household sector, in particular. The UK test also assessed banks against a different hurdle rate framework, which included — but was not limited to — a 4.5% minimum CET1 ratio.

The FPC judged that recent stress-test results and banks' capital plans, taken together, suggested that the banking system would have the capacity to maintain its core functions in a stress scenario. Further details of the results from the exercise can be found in Section 5 (see Box 5 on pages 60–64).⁽¹⁾

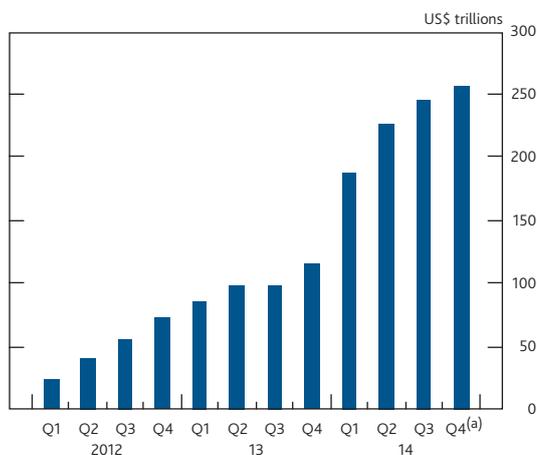
Banks continued to delever in order to improve their resilience, including by reducing trading assets...

Banks continued to reduce their assets in order to focus on core activities and improve their capital ratios. Trading assets of G-SIBs fell by 15% during the year to June 2014, to

(1) See also Bank of England (2014), 'Stress testing the UK banking system: 2014 results', available at www.bankofengland.co.uk/financialstability/Documents/fpc/results161214.pdf.

Chart 1.14 Banks continued to reduce offsetting derivative contracts

Cumulative notional value of derivative contracts eliminated through TriOptima

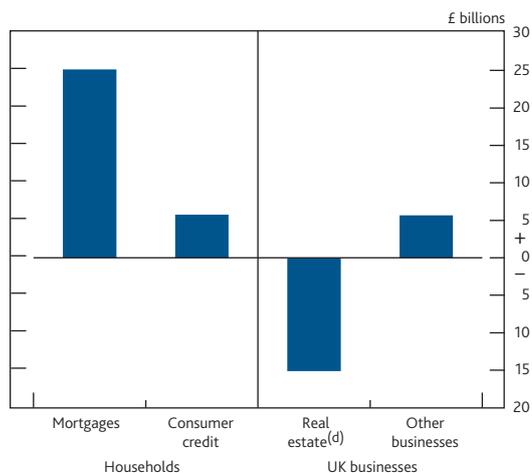


Sources: TriOptima and Bank calculations.

(a) Data for 2014 Q4 cover the period up to 3 December 2014.

Chart 1.15 UK banks' loans to the UK real estate sector have continued to fall

Changes in loans to UK households and businesses during the past year^{(a)(b)(c)}



Sources: Bank of England and Bank calculations.

- (a) Chart shows net changes in loans by UK monetary financial institutions during the twelve months to October 2014. Non seasonally adjusted.
 (b) Sterling loans to UK households.
 (c) Loans to UK businesses have been estimated by subtracting elements of the industrial breakdown for non-financial businesses thought to contain mainly public sector industries (public administration and defence, education, health and social work and recreational, personal and community services) from loans to non-financial businesses. Data cover loans in sterling and foreign currency, expressed in sterling.
 (d) The real estate sector is defined as buying, selling and renting of own or leased real estate; real estate and related activities on a fee or contract basis; and development of buildings.

three quarters of their end-2009 level. In part, that reflected continued actions by banks to reduce offsetting derivative positions. During 2014, one trade compression service eliminated offsetting derivative positions with a notional value of around US\$145 trillion (Chart 1.14). This should simplify banks' counterparty exposures which, in turn, should reduce the uncertainties relating to perceptions of banks' solvency and cross-border resolution plans.

Greater use of central counterparties (CCPs) to clear derivative contracts should also simplify the network of interbank exposures. The proportion of interest rate derivatives cleared through CCPs rose to nearly 50% in November 2014, from 16% in 2007.

The four largest UK banks' dealer inventories also fell, by around 10% during the past year. That should reduce banks' direct exposures to financial market shocks, but may also reduce their ability to intermediate between investors. According to market contacts, some dealers were less willing than in the past to intermediate in financial markets during the period of market volatility in October. As a consequence, indirect risks to banks and other investors from a shock to financial markets may have risen (Box 4 outlines drivers of market liquidity).

...and loans to riskier borrowers...

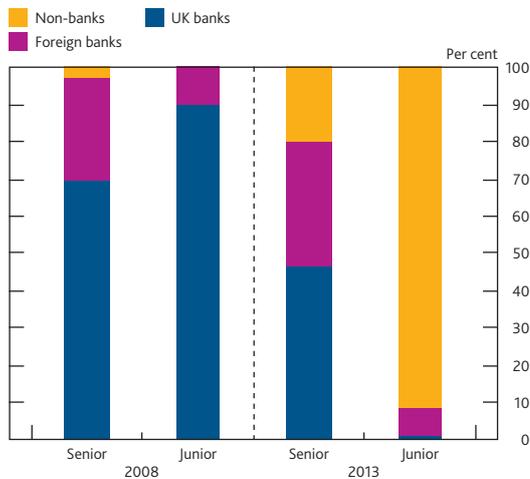
A number of UK banks continued to reduce selectively their customer lending. For example, UK banks' lending to borrowers in the euro-area periphery continued to fall (Section 2). And in the United Kingdom, lending to real estate companies fell by £15 billion during the past year (Chart 1.15). By contrast, lending to other businesses rose during the same period.

Greater lending by non-banks offset part of the fall in banks' lending to commercial real estate (CRE) companies in the United Kingdom (Chart 1.16). Non-bank lenders provided 20% of the aggregate senior debt (£30 billion) and more than 90% of the aggregate junior debt (£1.3 billion) borrowed by CRE companies during 2013. Market contacts suggest that non-bank lenders' underwriting standards may have eased recently, as debt funds have lent to riskier borrowers — possibly reflecting the need to achieve target returns promised to investors. So far, that trend appears to be confined to the non-bank sector. And a recent Bank of England review of UK banks' CRE loan portfolios indicated that asset quality has improved since 2011.

...which helped to boost UK banks' profits...

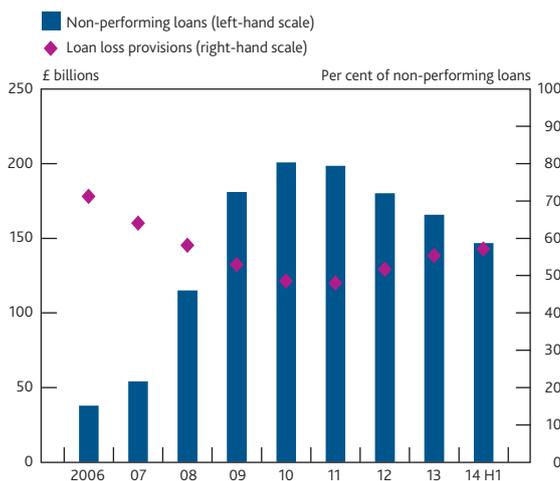
Major UK banks' non-performing loans fell further during 2014 H1 (Chart 1.17). For some UK banks, that resulted in a net release of provisions — where releases and recoveries of past provisions for non-performing loans exceeded new impairment charges. Partly as a result, major UK banks' profits

Chart 1.16 Lending to CRE companies by non-banks offset some of the fall in UK banks' lending
Sources of lending to UK CRE companies



Sources: De Montfort University and Bank calculations.

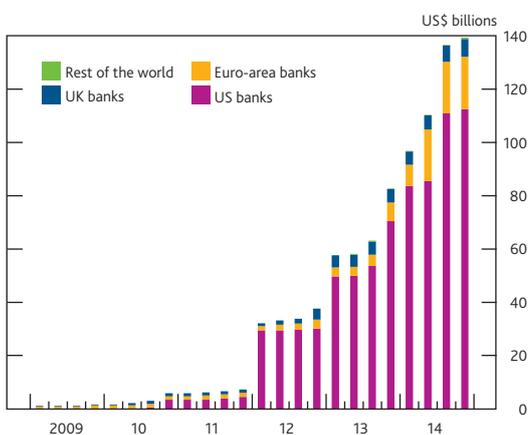
Chart 1.17 Indicators of asset quality improved
Major UK banks' non-performing loans and provisions^(a)



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

(a) Non-performing loans are as reported by the major UK banks.

Chart 1.18 Costs related to past misconduct remained large and uncertain
Cumulative misconduct fines paid by banks to US authorities^(a)



Sources: *Financial Times* and Bank calculations.

(a) Includes fines, penalties and redress greater than US\$250 million.

before tax rose to £20 billion during 2014 H1 — the highest level since 2010 H1.

Despite recent improvements, the profitability of a number of banking systems remained low. The IMF's *Global Financial Stability Report* reported that the return on equity did not exceed the cost of equity for banks that accounted for 80% of global banks' assets. That is likely to reflect cyclical factors, such as low loan growth, as well as structural factors, such as strategic changes in investment banking business models. A number of UK banks continued to restructure their businesses in order to improve their profitability (see Box 1).

...despite costs related to past misconduct which remained a headwind...

Regulatory fines, and litigation and redress costs for past misconduct, continued to reduce banks' profits. During 2014, the major UK banks announced nearly £7 billion of additional provisions for misconduct-related costs. This included new provisions for UK customer redress, which fell significantly during 2014. Fines from regulators and other authorities also remained large. During the same period, US authorities fined a number of global banks nearly US\$60 billion for misconduct issues (Chart 1.18). And in November, the Financial Conduct Authority fined five global banks £1.1 billion for inadequate systems and controls over their G10 spot foreign exchange trading businesses.

...but overall improvement in banks' financial resilience led to improvements in funding conditions.

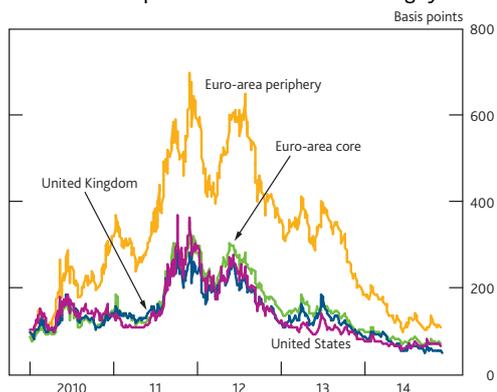
Despite ongoing headwinds to banks' profits from misconduct issues, banks' funding costs remained low. The average cost of default protection for UK and core euro-area banks (a proxy for wholesale funding costs) continued to fall during the past six months (Chart 1.19). While the cost of default protection for euro-area periphery banks increased in August — possibly reflecting the failure of two European banks and elevated sovereign risks — the increase was small and short-lived.

European banks' term funding issuance rose during 2014. Euro-area banks issued €250 billion of senior term debt by early-December 2014 (Chart 1.20). And in June, the ECB announced that banks would be able to access targeted longer-term refinancing operations (TLTROs), which provide funding for up to four years, at a spread of 10 basis points above the ECB's policy rate.

Risks to financial stability may also arise from outside the banking system, including from insurance companies...

Insurance companies, like banks, are a core component of the financial system. In late November, the European Insurance and Occupational Pensions Authority (EIOPA) published the results of its stress test of European insurance companies.

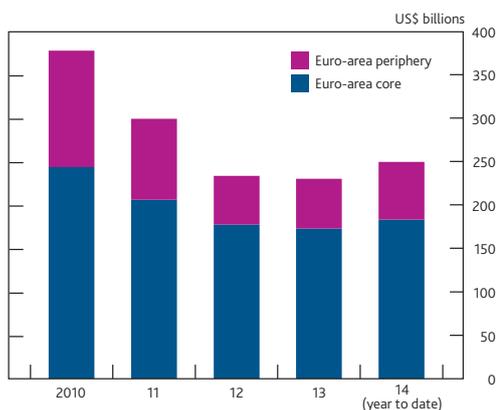
Chart 1.19 Banks' funding costs remained low
Cost of default protection for selected banking systems^(a)



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

(a) Average five-year senior CDS premia of selected banks, weighted by assets as at 2014 H1.

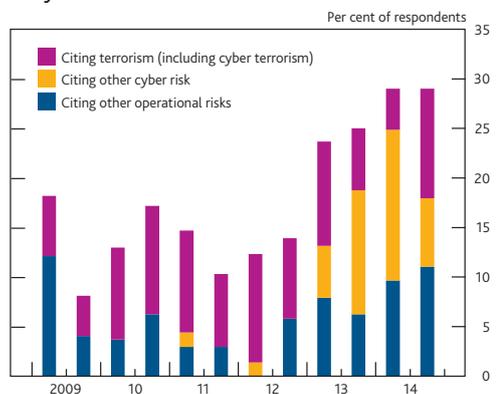
Chart 1.20 European banks' term debt issuance remained strong
Issuance of term senior unsecured debt in public markets by euro-area banks^(a)



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. Issuance is allocated to countries according to banks' nationality of operations listed on Dealogic.

Chart 1.21 Perceived risks from physical and cyber attack have remained high
Systemic Risk Survey: respondents highlighting operational risk as a key risk^{(a)(b)}



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

(a) Respondents who cited operational risk at least once, when asked to list the five risks that would have the greatest impact on the UK financial system were they to materialise.
(b) The composition of risks shown is based on the proportion of responses that explicitly cited terrorism (including cyber terrorism) and other cyber risks, or other closely related terms.

As part of the test, EIOPA assessed the resilience of European insurance groups and life insurance companies. While the tests focused on capital strength under the standard formula (rather than the internal model) approach — which many of the largest insurers plan not to use — the results indicated that the sector was broadly resilient to the shocks used in the exercise. As part of this, EIOPA assessed European insurance groups' resilience to a shock in which, among other things, equity prices fall by 41%. In that test, the median insurance group's solvency capital requirement (SCR) ratio was projected to fall by around 55 percentage points, to 105% on a standard formula approach basis. Separately, European life insurance companies' resilience to persistently low interest rates was assessed. In that test, the median life insurance company's SCR ratio fell by 24 percentage points, to 162%. Overall, UK insurance companies generally performed well in the test.

...financial market infrastructure...

The crystallisation of operational risks in financial market infrastructure can amplify shocks to financial institutions. For example, market contacts suggested that delays in pricing feeds from some exchanges in mid-October may have exacerbated the brief period of financial market volatility.

Payment systems are also vulnerable to failures in information technology (IT) systems. In October, a technical failure in the Real-Time Gross Settlement (RTGS) system delayed payments for several hours. During that time, contingency measures enabled continuous linked settlement pay-ins to be completed. Settlement restarted at 15:15 and by the end of the day all payments submitted to RTGS had been processed.

...and from external attacks.

Financial institutions continued to face a broad range of operational risks, including from cyber attack. For example, in August, attackers stole information relating to more than 80 million customers of one large US bank. And a significant proportion of respondents to the Bank of England's 2014 H2 *Systemic Risk Survey* cited operational risks from cyber attack as a key risk to UK financial stability (Chart 1.21). While that was lower than during 2014 H1, the proportion of respondents that highlighted risks from terrorism, including cyber terrorism, rose markedly.

The Bank continued to take actions to reduce risks to financial stability from IT failures and cyber attack. For example, the PRA has continued to review IT risk governance across the eight largest banks and building societies. And initiatives to improve the resilience of the core UK financial system to cyber attack continued to be implemented in response to the FPC's June 2013 Recommendation (Section 4).

Box 1

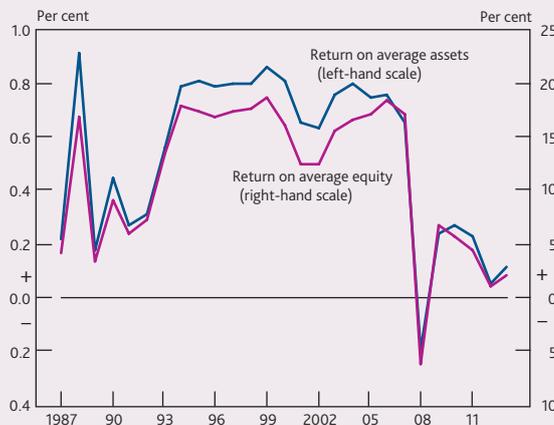
Changes in UK banks' balance sheets

A number of banks in the United Kingdom have reviewed their business models and have been changing their balance sheets and activities. That is in response to the global financial crisis and reflects changes in prudential regulation that have been agreed since then. This box examines how and why banks' assets and funding structures are changing and outlines how these changes, while they have increased bank resilience, might create new risks. In addition to the changes outlined in this box, some banks will also have to restructure to comply with the implementation of the Financial Services (Banking Reform) Act 2013 to ring-fence core UK financial services and activities.

Drivers of balance sheet change

While experience has varied significantly across banks, major UK banks' returns have generally been subdued since 2008 — over 80% lower on average than during the preceding decade (Chart A). In response, banks are implementing strategic changes, but profitability may not return to pre-crisis levels given reduced bank leverage and risk-taking.

Chart A Major UK banks' returns on assets and equity^{(a)(b)(c)}



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

- (a) Returns are defined as profits attributable to shareholders.
 (b) Assets and equity are annual averages.
 (c) When banks in the sample have merged, aggregate profits for the year are approximated by those of the acquiring group.

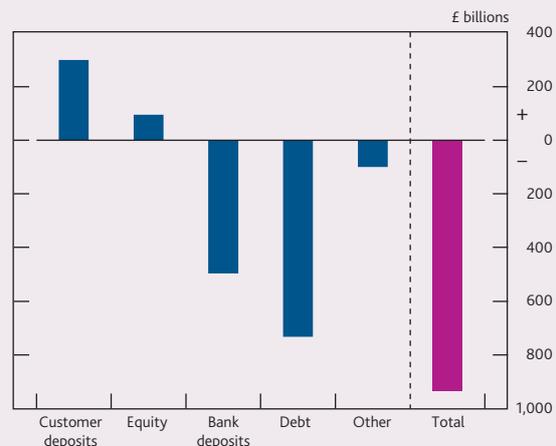
Another driver of the changes to banks' balance sheets has been the agenda for prudential regulatory reform. Banks are now required to have larger capital buffers, as well as more liquid assets relative to their short-term liabilities. Once fully implemented, capital requirements will be at least seven times the pre-crisis standards for most banks. For globally systemic banks, they could be more than ten times.⁽¹⁾ Banks are implementing plans to refocus their activities in the light of these standards, including where large losses were incurred during the crisis.

How balance sheets are changing

(i) Changes in funding structures

Banks have reduced reliance on wholesale funding by financing more of their loans with deposits. By June 2014, major UK banks' funding from debt markets and other banks had fallen by £1.2 trillion relative to 2008 (Chart B). This decline in wholesale funding was partly replaced by greater customer deposits (£300 billion) and equity (nearly £100 billion). Banks have also reduced their funded assets — and therefore total funding requirement — by around £900 billion.

Chart B Change in major UK banks' funding between 2008 and 2014 H1^{(a)(b)(c)}



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

- (a) Excludes Virgin Money.
 (b) Excludes derivative liabilities.
 (c) Deposit data include some repurchase agreements.

Banks have also become less exposed to liquidity risk. More than 70% of the reduction in UK banks' wholesale funding came from reducing short-term financing. At the same time, liquid asset buffers are higher and drawing capacity has been built up at the Bank of England's Discount Window Facility.

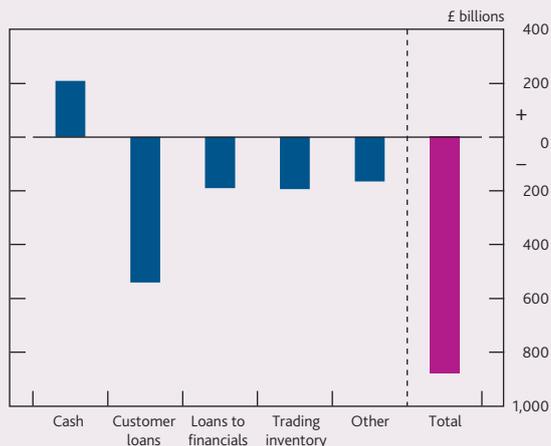
G-SIBs may need to make further adjustments to their long-term wholesale debt to meet the total loss-absorbing capacity (TLAC) standard (as discussed in Section 3.2). TLAC-eligible liabilities that do not qualify as Basel III regulatory capital would need to be issued from the resolution entities of the banks — which are likely to be holding companies for UK G-SIBs. As a result, UK G-SIBs may seek to migrate some of their senior debt from their operating companies to their holding companies before 2019.

(ii) Deleveraging and changing asset mix

UK banks have also made substantial changes to their assets. Higher post-crisis capital requirements have encouraged banks to delever by reducing assets no longer considered to be core to their business models. Since 2008, at least eight UK banks have announced non-core asset reduction plans that cover nearly £1.4 trillion of assets. Almost 60% has been completed so far.

Reductions in major UK banks' customer loans accounted for over half of the fall in their funded assets (Chart C). Much of this fall has been concentrated on corporate — in particular CRE — and overseas lending portfolios, many of which experienced large losses in the crisis. Countering some of these reductions, many building societies and new banks have been expanding their loan books, but from a small base.

Chart C Change in major UK banks' funded assets between 2008 and 2014 H1^{(a)(b)}



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

(a) Excludes Virgin Money.
(b) Excludes derivative assets.

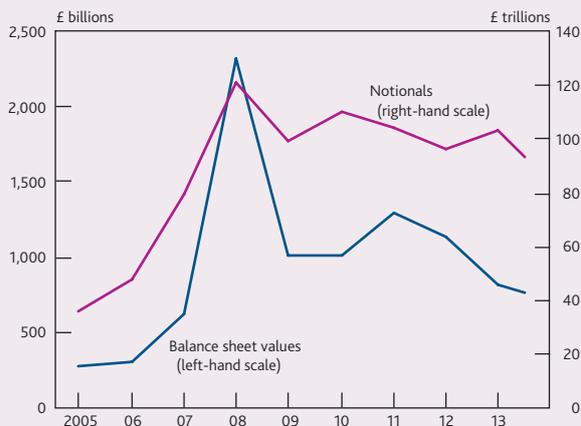
Banks' trading assets have fallen markedly. Major UK banks' trading inventories have fallen by almost 30% since 2008. The balance sheet values of UK banks' derivative assets have also fallen, by almost two thirds since 2008, although much of that reflected changes in the market value of derivatives, rather than strategic changes (Chart D). By contrast, the notional value of UK banks' derivatives, which is not affected directly by changes in market values, has fallen only modestly, despite recent reductions made using trade compression services (Section 1.2). Looking ahead, banks may decide to reduce their derivative portfolios further following implementation of future leverage ratio requirements (Section 3.1).

Risks emerging from these changes

The changes to UK banks' balance sheets, outlined above, have increased funding resilience and reduced exposure to assets that incurred large losses in the financial crisis. However, the fact that UK banks are undergoing such a large amount of change might risk interrupting their day-to-day operations.

These changes may also lead to activity migrating to non-banks. One key result of post-crisis regulatory reform is migration of the clearing of derivative trades to central counterparties (CCPs). The notional amount of interest rate derivatives cleared through the interest rate swap clearing

Chart D Balance sheet and notional values of UK banks' derivatives^{(a)(b)}



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

(a) Includes Barclays, HSBC and RBS.
(b) Balance sheet values refer to derivative asset values.

service operated by LCH.Clearnet Ltd has risen nearly fourfold since 2007. This reduces banking system interconnectedness, as dealers no longer face each other directly, but it concentrates risk in CCPs. The failure or operational failure of a CCP might cause the financial markets it supports to stop functioning temporarily with market participants unable to settle trades, hedge existing or new exposures or retrieve collateral lodged with the CCP. Regulators are developing tools to help mitigate this risk (Section 3).

Conclusion

UK banks have made substantial changes to their balance sheets and business models. These changes, which have improved bank resilience, will continue as banks adjust to meet the full implementation of regulation relating to capital, liquidity and resolution. Alongside these changes, as activities and services previously carried out in the banking sector are taken on by other sectors such as non-banks and CCPs, new risks may emerge.

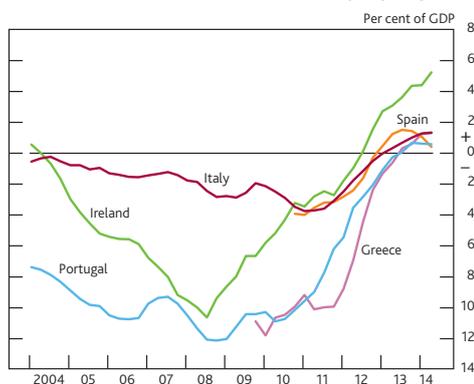
(1) See Carney, M (2014), 'The future of financial reform', available at www.bankofengland.co.uk/publications/Documents/speeches/2014/speech775.pdf.

2 Short-term risks to financial stability

The potential for the global economic and financial environment to expose vulnerabilities for UK financial stability has increased since the *June Report*. Against the backdrop of increased market concerns over persistent weak nominal growth and geopolitical risk, recent developments could affect the outlook for financial stability in the United Kingdom if concerns about persistent low growth lead to a sudden reappraisal of underlying vulnerabilities in highly indebted economies. Risks may also arise if a shift in global risk appetite triggers sharp adjustments in financial markets, including funding markets for banks and corporates, and undermines business and household confidence. The recent sharp fall in the oil price should support global and UK growth, but it also entails some risk to financial stability. Since June, the housing market has slowed, with the weakening in activity that was first seen during 2014 Q2 persisting. A further increase in risks to financial stability from the housing market has not occurred since June, although momentum may return.

Chart 2.1 Euro-area periphery countries have improved their current account balances

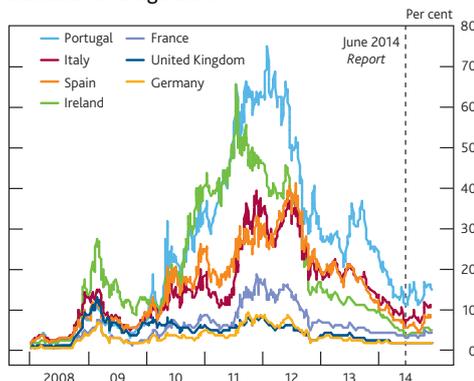
Current account balances of euro-area periphery countries



Sources: Eurostat (BPM6), Thomson Reuters Datastream and Bank calculations.

Chart 2.2 Market-implied default probabilities for selected sovereign debt remained low

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. If market participants are risk-averse, these measures may overstate actual probabilities of default. A loss given default of 60% is assumed.

2.1 Global risks to UK financial stability

The global outlook for growth and inflation has weakened...

The global outlook for growth and inflation has weakened since the *June Report*, particularly in the euro area and Asia (Section 1.1). The fall in longer-term government bond yields suggests markets are putting some weight on this weakness persisting into the medium term. This section examines the channels through which weakness could affect financial stability, starting with the euro area.

...but markets have confidence that policymakers will do whatever is required to prevent disorderly outcomes.

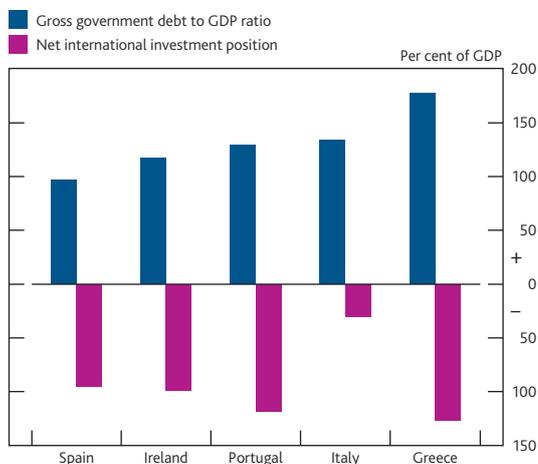
The euro area suffered severe financial market tensions during 2010–12. The situation improved following the ECB's announcement of its Outright Monetary Transactions (OMTs) programme, and since then conditions have in general remained relatively calm. In part, that is likely to reflect market confidence that policymakers will do whatever is required to prevent disorderly outcomes.

Improvements in fundamentals are also likely to have contributed. With banks globally on a path to greater resilience (Section 1.2), euro-area banks have taken advantage of improved market conditions and have raised significant amounts of new capital. In addition, many euro-area periphery countries have seen large improvements in their fiscal and current account balances (Chart 2.1).

Market reaction to the weaker outlook for nominal demand has so far been muted. For example, the cost of default protection on some vulnerable euro-area countries' sovereign debt, as measured by credit default swaps (CDS) premia, has risen only slightly and remains well below previous highs (Chart 2.2).

Chart 2.3 Government debt positions and net external liabilities of most euro-area periphery countries remain elevated

Government debt to GDP ratios and net international investment positions of euro-area periphery countries^(a)

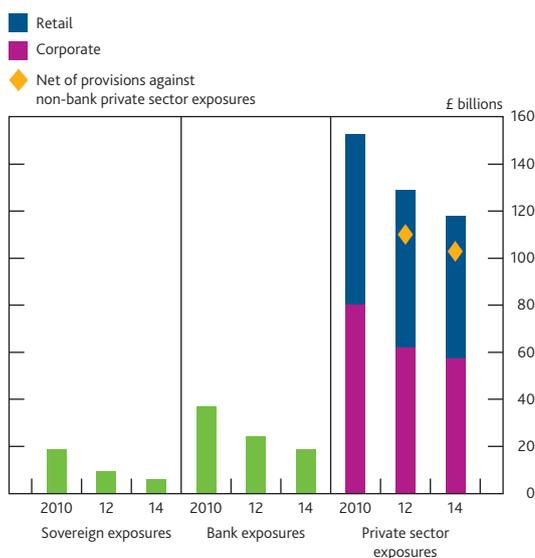


Sources: Eurostat, Thomson Reuters Datastream and Bank calculations.

(a) Data are for 2014 Q2.

Chart 2.4 UK banks' exposures to borrowers in euro-area periphery countries continued to fall

Evolution of UK banks' gross exposures to euro-area periphery countries^{(a)(b)(c)}



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

(a) Barclays, HSBC, Lloyds Banking Group and Royal Bank of Scotland.
 (b) 2010 and 2012 published accounts data include on balance sheet exposures as disclosed by banks according to counterparties' country of domicile or incorporation. Where possible exposures are gross of impairment provisions but net of collateral and netting arrangements. The classification by counterparty sector is on a best-efforts basis from available disclosures.
 (c) 2014 data are based on regulatory data.

But further downward revisions to nominal growth prospects in the euro area would pose risks, given existing vulnerabilities...

Nonetheless, net external liabilities and government debt positions remain extremely elevated in many of these countries (**Chart 2.3**), making them vulnerable to shocks. A further downward revision to growth and inflation prospects could lead investors to question once again the sustainability of debt positions in the most vulnerable euro-area member countries. This would be more likely to occur if there were doubts about the credibility and effectiveness of policy measures taken to restore growth and raise inflation, or if countries' determination to continue to service their debt were called into question. The impact could be particularly large were any euro-area member country to lose access to market funding.

...and could affect the UK financial system through various channels...

There are various ways through which such an event could propagate to the UK financial system. Some channels would be likely to operate as powerfully as three years ago. For example, the euro area is the United Kingdom's main trading partner accounting for nearly half of all UK exports. Weaker growth in the euro area could act as a significant drag on UK exports. As in 2010–12, that might be accompanied by heightened uncertainty, weighing on UK consumer and investment spending. Any deterioration in market confidence could also lead to sharp declines in the prices of risky assets and lead to losses on banks' trading books.

As the UK current account deficit remains historically large, weakness in euro-area growth could pose additional risks. Against that backdrop, Box 2 on pages 29–31 examines the United Kingdom's external balance sheet position in more detail.

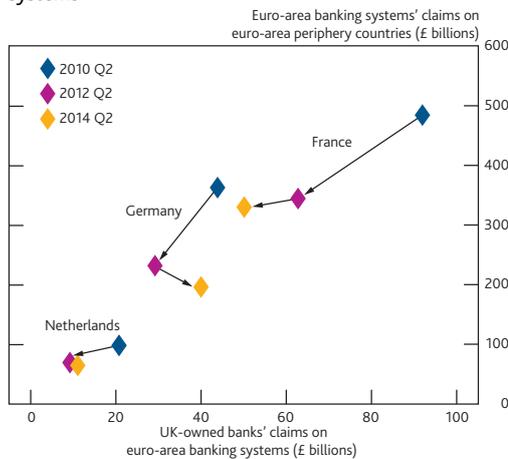
...though some channels, such as UK banks' direct exposures, might be less powerful than previously.

Some other channels might operate less powerfully than was previously the case. For example, although UK banks could be directly exposed to further asset write-downs on lending to euro-area countries, many of those exposures have fallen in recent years.

UK banks' exposures to the private sector in the euro-area periphery countries have declined since 2010 (**Chart 2.4**). Their holdings of periphery countries' sovereign and bank debt have also fallen. At the same time, UK banks have reduced their exposures to core euro-area banks, which themselves have cut back exposures to euro-area periphery countries (**Chart 2.5**). Renewed concerns could lead to a retrenchment in bank lending by euro-area banks to the UK real economy. But the share of lending by euro-area owned banks has already declined since the start of the financial crisis.

Chart 2.5 UK banks' indirect exposures to euro-area periphery countries have fallen

Claims on euro-area periphery countries via euro-area banking systems^(a)

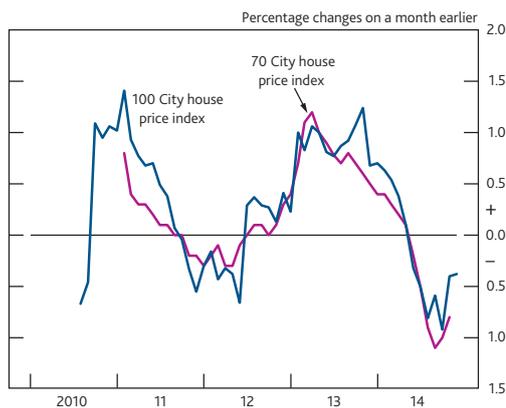


Sources: Bank of England, BIS consolidated banking statistics and Bank calculations.

(a) 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 consolidated ultimate risk basis foreign claims on all sectors of Greece, Ireland, Italy, Portugal and Spain by selected euro-area banking systems.

Chart 2.6 Chinese house prices remained weak

Chinese house prices^(a)

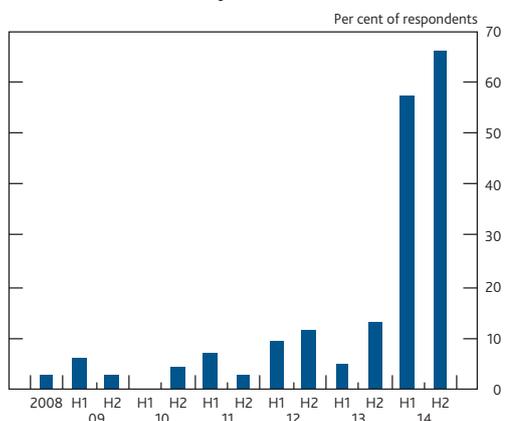


Sources: China Index Academy, National Bureau of Statistics of China, Thomson Reuters Datastream and Bank calculations.

(a) Both house price indices refer to sales of newly constructed residential buildings.

Chart 2.7 Concerns around geopolitical risk have risen

Systemic Risk Survey: respondents citing geopolitical risk as a key risk to the UK financial system^(a)



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

(a) Percentage of respondents who cited geopolitical risk at least once, when asked to list the five risks they thought would have the greatest impact on the UK financial system if they were to materialise.

It is, however, possible that a re-emergence of financial market strains could also trigger disruptions to bank funding markets. Over the period preceding the launch of the Funding for Lending Scheme (FLS) by the Bank of England and HM Treasury, the intensification of the crisis in the euro area caused UK bank funding costs to increase abruptly (**Chart 1.19**). More recently, however, bank funding costs have remained low both in the United Kingdom and the euro area. That reflects in part improvements in the banking sector's capital resilience (Section 1.2) and available backstops that have been put in place. But in the event of highly stressed conditions, market confidence in such backstops could be tested.

Weaker nominal growth elsewhere could also pose a risk to financial stability...

The outlook for growth in Asia has also deteriorated since the *June Report* (Section 1.1). In Japan, concerns remain over the continued weakness in activity, in the context of high public sector debt levels, despite the recent increase in the pace of asset purchases and the delay in the scheduled consumption tax increase. And the minutes of the Bank of Japan's 31 October meeting showed that many members saw downward pressure on prices, in part reflecting the recent falls in oil prices and 'a significant risk that conversion of the deflationary mindset, which had so far been progressing steadily, might be delayed'.

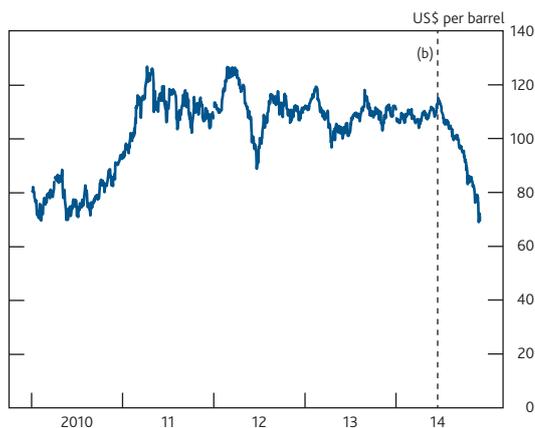
In China, the slowdown in growth has in part reflected efforts to rebalance the economy and has been accompanied by a weakening in non-bank lending growth. This follows a period of rapid growth in financing to the private sector, with the broadest measure of new private sector credit issuance rising by over 100% of GDP since 2008. Against the backdrop of slowing growth, the Chinese central bank cut its benchmark interest rates in November.

In the near term, the slightly weaker growth is likely to persist, reflecting continuing weakness in the property market (**Chart 2.6**). And, as set out in the November 2014 *Inflation Report*, domestic property and credit market developments remain key downside risks to Chinese growth.

...particularly if accompanied by geopolitical and event risks.

Heightened geopolitical risks might also undermine the stability of the financial system. In the Bank's *Systemic Risk Survey*, geopolitical risk has been cited by increasing numbers of respondents (**Chart 2.7**). And, in 2014 H2, it became the most-cited risk. Geopolitical developments could affect financial stability, for example via sharp adjustments in asset prices and increased volatility. Responses on geopolitical risk focused mostly on the Russian/Ukrainian conflict and to a lesser extent on the conflict in the Middle East.

Chart 2.8 The price of oil has fallen sharply
Oil price^(a)



Source: Bloomberg.

(a) Brent forward prices for delivery in 10–21 days' time.
(b) June 2014 Report.

The recent sharp fall in the oil price should support global and UK growth, but it also entails some risk to financial stability.

Since the June Report, the price of Brent crude oil has fallen by almost 40% in dollar terms (Chart 2.8). The fall in oil prices reflects a combination of weaker demand and increased supply. At the same time, the market-implied probability of future sharp movements in oil prices has also increased.

Overall, lower oil prices appear likely to provide support to global activity. Lower oil prices would benefit net oil importing countries, boosting real incomes, including in large economies such as China. But there would be some offset at the global level from a decrease in the incomes of oil exporters.

While the fall in oil prices does not appear to pose an immediate, significant risk to financial stability, it could if sustained also impact the ability of some, such as US shale oil and gas exploration firms, to service their debt. As US oil and gas firms account for 13% of outstanding debt in US high-yield bond markets, an increase in the perceived or realised credit risk in this sector could lead to sales by investors and potentially illiquidity in the broader high-yield bond market. A sustained lower oil price also has the potential to reinforce certain geopolitical risks. And there is a risk that, in economies where core inflation is already weak, particularly some parts of the euro area, low headline readings further depress expectations of future inflation. This, in turn, could result in slower rates of growth of nominal incomes, increasing the burden of existing debts.

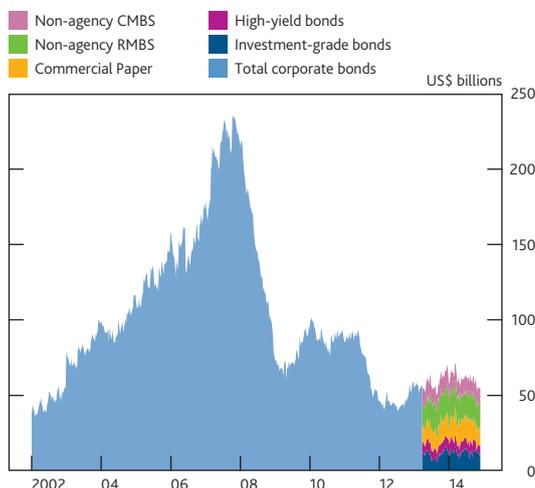
Recent episodes provide some indication of how such shocks could disrupt markets...

A further retrenchment in risk appetite, triggered for example by the weaker global environment or crystallisation of geopolitical risks, might prompt sharp moves in market prices. Such moves would be more disruptive to the extent that there has been a deterioration in underlying market liquidity in recent years, partly reflecting the evolution of banks' business models in response to regulation and their experience during the crisis (see Section 3.3 and Box 4 in Section 5). That has been associated with trends such as a decrease in dealers' inventories (Chart 2.9) and a retreat from market-making. As Section 5 notes, with firms still transitioning to new business models, levels of market liquidity may not yet have reached a new equilibrium.

...but in an environment in which investors might not be adequately prepared for further disruption...

Against this backdrop, there is a risk that current valuations are masking underlying fragilities. While estimates of the premia that investors require to compensate for liquidity risk have generally edged higher, they remain below historical averages (Chart 1.7). That contrasts with an apparent

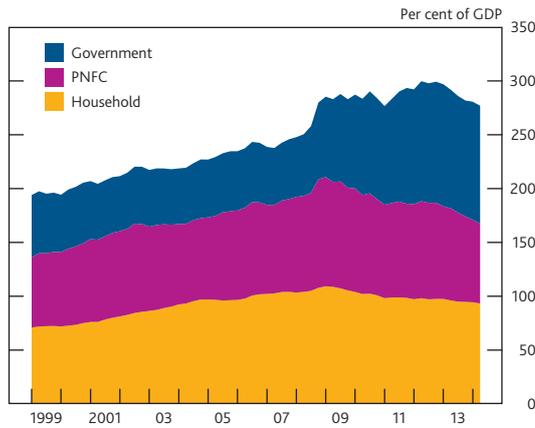
Chart 2.9 US primary dealers' corporate bond inventories have decreased significantly since the crisis
US primary dealers' corporate bond inventories^(a)



Source: Federal Reserve Bank of New York.

(a) Dealer inventories represent US primary net dealer positions in US corporate bonds.

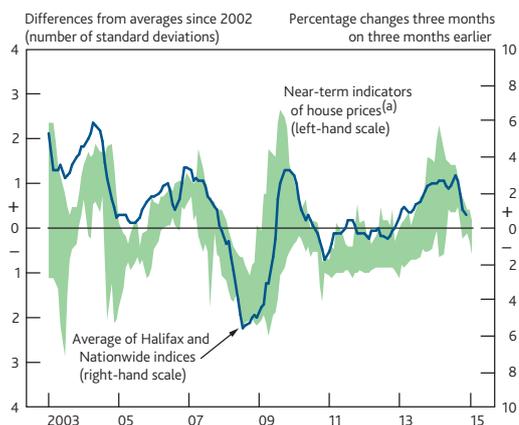
Chart 2.10 UK debt levels remain high relative to GDP
UK non-financial sector debt as a proportion of annual UK GDP



Sources: ONS and Bank calculations.

Chart 2.11 Near-term indicators of house price inflation have fallen

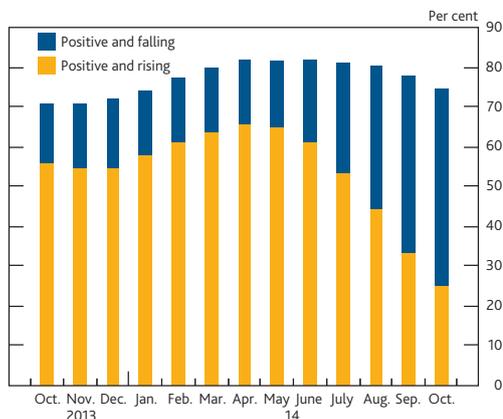
House prices and near-term indicators of house price inflation



Sources: Halifax, Nationwide, Rightmove.co.uk, Royal Institution of Chartered Surveyors (RICS) and Bank calculations.

(a) Includes the RICS expected house prices three months ahead net balance, the RICS new buyer enquiries less instructions to sell net balances, the RICS sales to stock ratio and the three month on three months earlier growth rate of the Rightmove index of the average asking price trend. All series have been moved forward by three months. The Rightmove index has been seasonally adjusted by Bank staff.

Chart 2.12 House price inflation has decreased
The proportion of UK postcodes with positive house price inflation^(a)



Sources: Hometrack and Bank calculations.

(a) Rising and falling inflation are determined by comparing current monthly inflation to the average rate of inflation in each postcode district during the past twelve months.

reduction in underlying market liquidity for these securities, which might warrant greater compensation.

Moreover, as discussed in the *June Report*, liquidity concerns do not yet appear to have prompted significant measures by market participants to reduce potential liquidity risks, such as substantively larger holdings of liquid assets or changes to how investment funds are structured.

...markets remain vulnerable to larger shocks than experienced recently.

While recent episodes of volatility may provide some indication of how shocks could affect financial markets in this environment, these episodes proved short-lived. The trading environment was only temporarily impacted and did not precipitate forced asset sales nor lead to widespread contagion to other markets.

For example, the disruption in the US Treasury market on 15 October proved short-lived, so there was no opportunity to test the ability of the system to absorb price moves or flows that persist for a number of days or longer. In particular, market participants with longer horizons (for example institutional bond fund managers) did not significantly change their positions.

Future episodes of illiquidity could be more persistent, particularly if triggered by a more fundamental shock or in the event of large-scale self-reinforcing asset disposals. Additional margin calls could cause participants to exit positions, potentially leading to further volatility. In such an event, constrained participants might be forced to liquidate positions in other markets. And that could cause contagion to those markets.

2.2 Domestic risks to UK financial stability

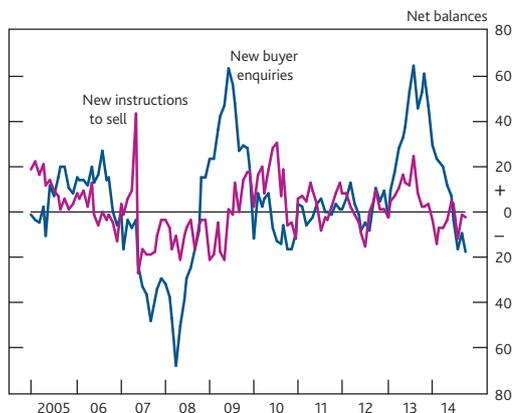
UK non-financial sector debt levels rose substantially in the run-up to the crisis. They have since remained high, at around 275% of GDP, partly reflecting greater government borrowing in recent years (Chart 2.10). And risks to financial stability remain from the level and distribution of debt among UK households and private non-financial corporations (PNFCs). This section examines these risks.

Risks from the UK housing market have not increased since the June Report...

Data available at the time of the *June Report* suggested the UK housing market had been recovering strongly. Average UK house price inflation substantially exceeded earnings growth and was expected to continue to do so. The proportion of mortgage lending at high loan to income (LTI) multiples had also risen, to a record level. While housing market activity had recently decelerated, it was unclear whether that reflected temporary factors.

Chart 2.13 Near-term demand for house purchase has fallen

New instructions to sell and buyer enquiries^(a)

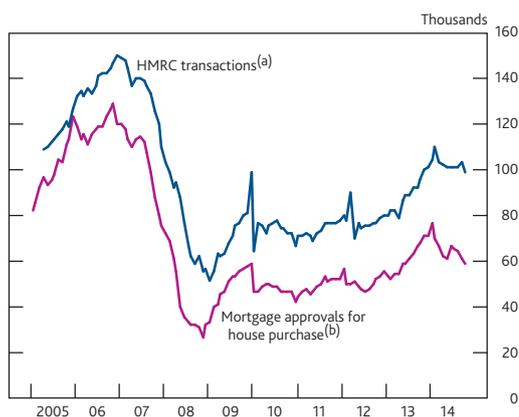


Source: Royal Institution of Chartered Surveyors (RICS).

(a) Data are for England and Wales, and show the percentage balance reporting an increase in new instructions to sell/new buyer enquiries over the past month less the percentage reporting reduced instructions/enquiries.

Chart 2.14 Housing market activity has slowed

Loan approvals for house purchase and HMRC transactions

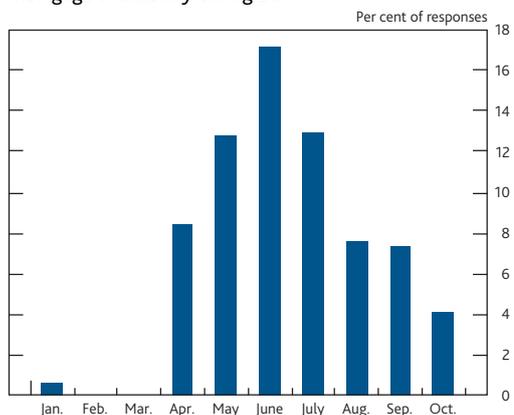


Sources: Bank of England, HM Revenue and Customs (HMRC) and Bank calculations.

(a) Number of residential property transactions in the United Kingdom with a value of £40,000 or above per month.
 (b) Seasonally adjusted approvals for sterling loans secured on dwellings, net of cancellations.

Chart 2.15 Responses to the RICS survey that refer to the MMR or mortgage availability have fallen

Responses to the RICS survey that reference the MMR or mortgage availability during 2014^(a)



Sources: Royal Institution of Chartered Surveyors (RICS) and Bank calculations.

(a) Chart shows the proportion of comments provided as part of the RICS survey that reference the MMR, mortgage availability or related terms. Identified on a best-efforts basis.

In June, the FPC outlined two risks from high and rising levels of household indebtedness. First, high levels of household debt posed a direct risk to the UK banking system’s resilience. Second, highly indebted households might react to a shock by cutting spending sharply in order to maintain their mortgage payments. That would have knock-on effects for the rest of the economy. In response, the Committee made two Recommendations to help insure against the risks from a marked loosening in underwriting conditions and a further significant rise in the number of highly indebted households.

... as UK house price inflation has moderated and near-term demand for house purchase has declined...

Since June, the housing market has slowed. Nationally, the Halifax and Nationwide house price indices rose at a quarterly rate of 0.8% during the three months to November 2014, down from 2.4% during the three months to June 2014 (Chart 2.11). Data from Hometrack suggest that, while house prices have continued to rise in three quarters of UK postcodes, house price inflation has fallen across much of the United Kingdom since May (Chart 2.12). Royal Institution of Chartered Surveyors (RICS) survey data also confirm that the softening in house price expectations that began in May has continued. And since July, the RICS measure of new buyer enquiries, which had peaked at the start of the year, has been lower than new instructions to sell (Chart 2.13).

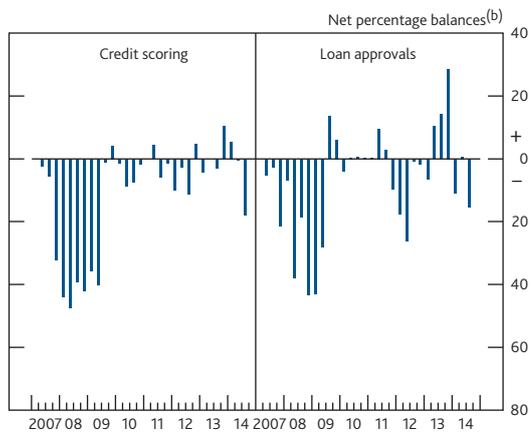
... leading to a reduction in housing transactions and mortgage approvals...

Housing transactions and mortgage approvals have continued to fall, by around 5% and 10% respectively since March (Chart 2.14). These falls stand in contrast to the period of rapidly rising activity towards the end of 2013. Evidence from the Bank’s regional Agents suggests that this slowdown has been sharpest in London, perhaps reflecting concerns about the near-term sustainability of house price inflation.

The weakening in mortgage approvals is likely to have reflected a number of factors. Operational delays associated with new application processes related to changes made to conduct rules as a result of the Mortgage Market Review (MMR) could have had an effect, though may have diminished somewhat recently as banks and borrowers have adjusted to new processes. There was a fall in the proportion of respondents to the RICS survey that highlighted the MMR or mortgage availability in their comments about housing market activity (Chart 2.15).

The slowing could also reflect tightening in lending standards by a number of banks around the time of the FPC’s June Recommendations and the introduction of the MMR. For example, lenders responding to the 2014 Q3 *Credit Conditions Survey* reported that credit scoring criteria had tightened and approval rates for mortgages had fallen (Chart 2.16). While the FPC’s Recommendation on lending at high LTI ratios was

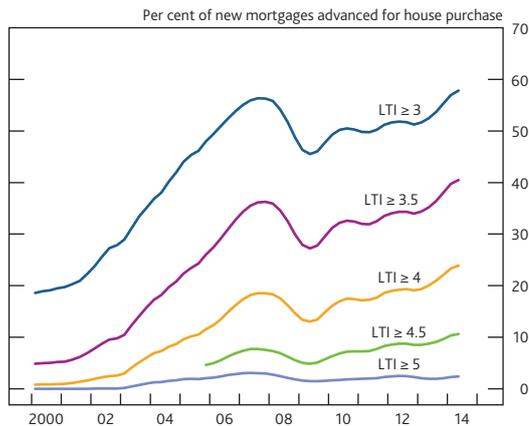
Chart 2.16 Indicators of credit conditions tightened
Credit Conditions Survey: credit scoring criteria and the proportion of mortgage applications being approved^(a)



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.
 (b) For credit scoring, a positive balance indicates a loosening in credit scoring criteria during the previous three months. For loan approvals, a positive balance indicates an increase in the loan approval rate during the previous three months.

Chart 2.17 The share of new mortgages with LTI multiples above 4.5 remained around 10%
New mortgages advanced for house purchase by LTI^{(a)(b)(c)(d)}



Sources: Council of Mortgage Lenders (CML), FCA Product Sales Data (PSD) and Bank calculations.

- (a) Data are shown as a four-quarter moving average to remove seasonal patterns.
 (b) Includes loans to first-time buyers, council/registered social tenants exercising their right to buy and homemovers.
 (c) The FCA PSD include regulated mortgage contracts only, and therefore exclude 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.
 (d) Data from the FCA PSD are only available since 2005 Q2. Prior to this, FCA PSD have been grown in line with data from the discontinued Survey of Mortgage Lenders (SML), which was operated by CML. These data are not directly comparable and shares are illustrative prior to 2005 Q2. SML data covered only around 50% of the mortgage market.

not expected to have a material impact on lending in the near term — but was designed instead as insurance against a further rise in LTI ratios — the signal caused by authorities voicing concerns about the housing market may have encouraged some lenders and borrowers to move away from high-risk mortgages. Other factors that may have contributed to the slowdown in activity include the possibility of future interest rate increases, which became more prominent in the summer.

Some recovery in mortgage approvals may be expected over coming quarters. For example, mortgage applications rose by 10% in October. Some quoted mortgage rates have declined recently. And changes announced as part of the Government's Autumn Statement, in December, will reduce the stamp duty paid on house purchases with values between £125,000 and £937,500. That may help to support near-term activity.

... which has so far contained further risks from high household indebtedness.

The proportion of mortgage lending to households with an LTI multiple greater than 4.5 has remained around 10% during Q3 (Chart 2.17), consistent with the Committee's central view described in the June Report (see Section 5).

Despite an upward trend in LTI multiples during recent years, debt-servicing ratios (DSRs) on new mortgage lending remain low, reflecting continued low interest rates. During 2014 Q3, the proportion of new mortgages with DSRs at or above 35% remained at 2%. As in previous quarters, that proportion would have been around 20% if interest rates had been 7%.

Aggregate household indebtedness has remained high, and while risks from the distribution of debt have not increased...

Aggregate UK household debt as a proportion of income has fallen to 136% during the past year. In addition, the proportion of highly indebted households has fallen modestly. The latest NMG survey reported that the proportion of mortgagors with a mortgage debt to income ratio greater than five has fallen to 6.6% in 2014, from 11.4% in 2011 (Chart 2.18). Nevertheless, that remains higher than in the early 2000s.

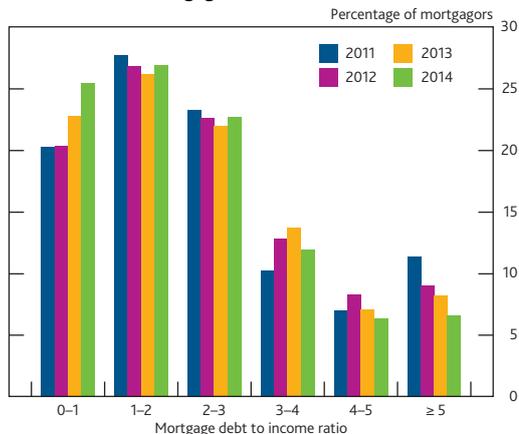
... indirect risks from a rise in interest rates on highly indebted households warrant monitoring...

Households with large mortgages might amplify the effects of a shock by cutting spending in order to service their mortgages. For example, results from the latest NMG survey indicated that, if incomes remained unchanged, nearly half of households with a mortgage would need to take some kind of action, such as curtailing significantly their spending or seeking to earn more, if interest rates rose by 3 percentage points (Chart 2.19).⁽¹⁾

(1) Also see Anderson, G, Bunn, P, Pugh, A and Uluc, A (2014), 'The potential impact of higher interest rates on the household sector: evidence from the 2014 NMG Consulting survey', *Bank of England Quarterly Bulletin*, Vol. 54, No. 4, pages 419–33; www.bankofengland.co.uk/publications/Documents/quarterlybulletin/2014/qb14q405.pdf.

Chart 2.18 The proportion of highly indebted households has fallen

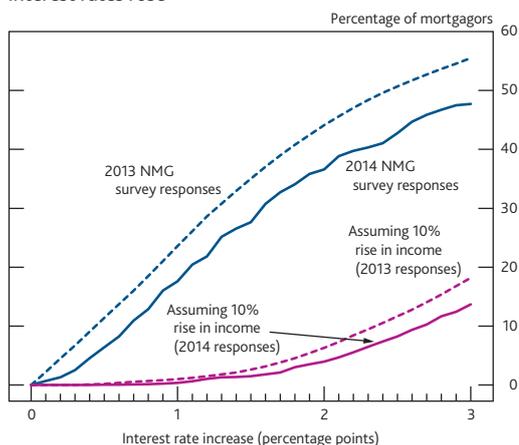
Distribution of mortgage debt



Sources: NMG Consulting and Bank calculations.

Chart 2.19 Fewer borrowers would need to take action to deal with higher interest rates than in 2013

Proportion of mortgagors that would need to take action if interest rates rose^(a)

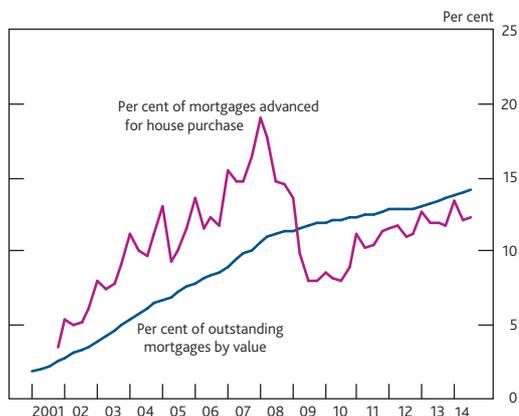


Sources: NMG Consulting and Bank calculations.

(a) Households are defined as having to take action if the additional mortgage payments from higher interest rates (calculated using information on the size of the current outstanding mortgage) exceed the income available to meet higher mortgage payments. The income growth scenario line uses the same calculation but assumes that monthly disposable incomes are increased in line with a 10% increase in annual gross income.

Chart 2.20 Lending to buy-to-let borrowers has remained strong

Proportion of mortgage lending to buy-to-let borrowers^(a)



Sources: Council of Mortgage Lenders (CML) and Bank calculations.

(a) Semi-annual data are interpolated where not available on a quarterly basis.

Some households have temporarily insulated themselves from a rise in interest rates. The NMG survey indicated that around half of mortgagors had a fixed-rate mortgage. And that proportion is higher among highly indebted households. This should help to delay any increase in actual interest expenses if interest rates were to rise, which may give borrowers time to reduce their debts or spending, or increase their income. The NMG survey also indicated that, if incomes were 10% higher, only 15% of households would need to take some kind of action, such as curtailing significantly their spending or seeking to earn more, if interest rates rose by 3 percentage points (Chart 2.19).

...and were examined as part of the 2014 UK stress-test.

Risks to the UK financial system's resilience from the level and distribution of UK household debt were examined through the 2014 UK stress test. This assessed the resilience of the eight major UK banks and building societies, based on end-2013 balance sheets, to a shock involving a weakening of household incomes, tightening of monetary conditions, rising unemployment and a 35% fall in UK house prices. Details of the results from the exercise can be found in Box 5 in Section 5 (pages 60–64).

Buy-to-let lending has continued to increase...

Buy-to-let mortgage lending has continued to expand as a proportion of total mortgage debt (Chart 2.20). And competition in this sector appears to have increased. Interest rates charged on buy-to-let mortgages have fallen and the number of products available has grown rapidly, possibly reflecting some lenders' plans to increase their market shares.

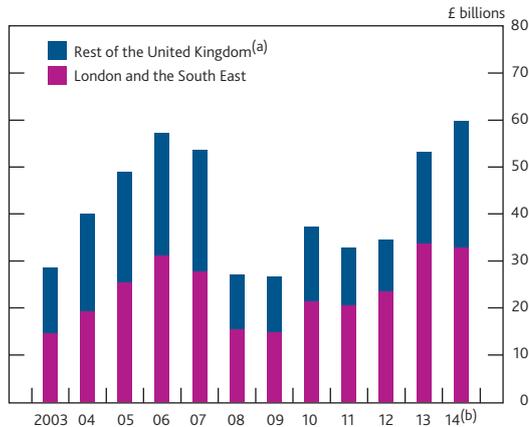
Buy-to-let lending may be more vulnerable to rising interest rates than owner-occupied mortgage lending. Lending is typically interest-only, meaning that mortgage payments would rise proportionally more in the event of a rise in interest rates. Moreover, buy-to-let mortgage affordability is typically tested to a lower interest rate than for owner-occupied mortgages. Although payments on these mortgages can be supported by both rental incomes and borrowers' own income, rental yields have fallen (reducing the rental income available to investors). And market contacts have suggested that landlords are unlikely to be able to offset fully the impact of higher interest payments by increasing rents.

...and UK commercial property investment has remained strong, including from non-banks...

Investment into the UK commercial property market has remained strong. The value of CRE transactions has risen to around £60 billion during the twelve months to October 2014, which is broadly comparable to the level of activity seen immediately before the financial crisis (Chart 2.21). And the recovery has become more entrenched outside of the South East. This has helped to support prime and secondary commercial property values, which have both risen by 12% during the past year.

Chart 2.21 Activity in commercial property markets has continued to strengthen

Value of commercial real estate transactions

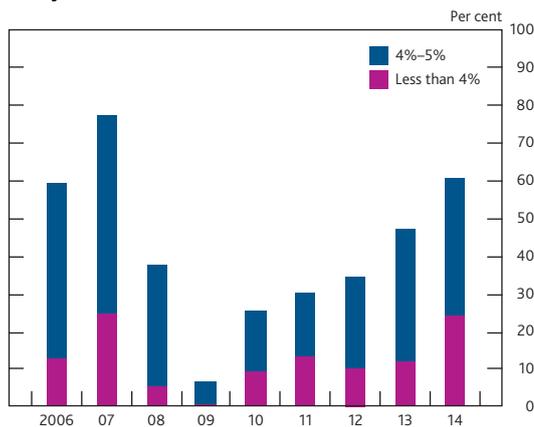


Sources: The Property Archive and Bank calculations.

(a) Rest of the United Kingdom includes UK-wide portfolios where the regions of the properties are not known.
 (b) Data for 2014 are for the twelve months to October 2014.

Chart 2.22 The proportion of commercial property transactions at low yields has risen

The proportion of commercial real estate transactions in London with yields below 5%^(a)

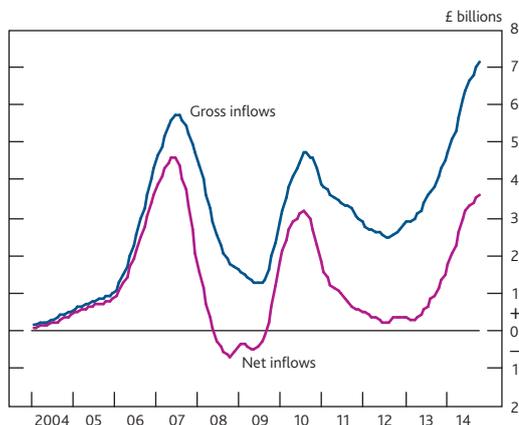


Sources: The Property Archive and Bank calculations.

(a) Chart shows the value of CRE transactions in London with yields below 5%, as a proportion of the total value of CRE transactions in London for which yield data are available.

Chart 2.23 Investments into open-ended property funds have increased

Retail investment flows into open-ended property funds^(a)



Sources: Investment Management Association and Bank calculations.

(a) Twelve-month moving sum of retail investment inflows into open-ended property funds.

Rental incomes have not grown as strongly as property values, particularly outside of the South East, leading to a reduction in CRE yields. In part, low yields may be justified by low interest rates. But the proportion of CRE transactions at very low yields has increased. For example, during 2014, around 60% of CRE transactions in London had a yield of 5% or less and nearly a quarter yielded less than 4% (Chart 2.22). This may have increased some CRE companies' vulnerability to a sharp rise in interest rates on their debts or fall in property values. To date, however, many of these purchases have been made by unlevered investors.

Investments into open-ended property funds, which were popular before the crisis, have increased recently (Chart 2.23). These funds typically allow investors to sell their shares back to the fund with little notice. If sentiment towards the CRE market were to change, then funds could face large investor redemptions, forcing them to sell property investments and potentially amplifying falls in CRE values.

Market contacts suggest that, in contrast to non-banks, banks' CRE underwriting standards have remained broadly unchanged, though the Bank is currently conducting a review of the largest UK banks' CRE underwriting standards. And the 2014 UK stress test assessed UK banks' resilience to a shock in the CRE market (see Box 5 in Section 5, pages 60–64).

... who have also been active in the non-property sector...

Large non-property related companies have also obtained large amounts of finance from non-bank lenders. In common with other advanced economies, UK corporate bond issuance has been strong during 2014. And, as in 2013, high-yield debt issuance has also been strong. At least half of that high-yield issuance was used to refinance existing debt. Market contacts suggest that some of that issuance has been by companies that had originally borrowed through leveraged loan markets.

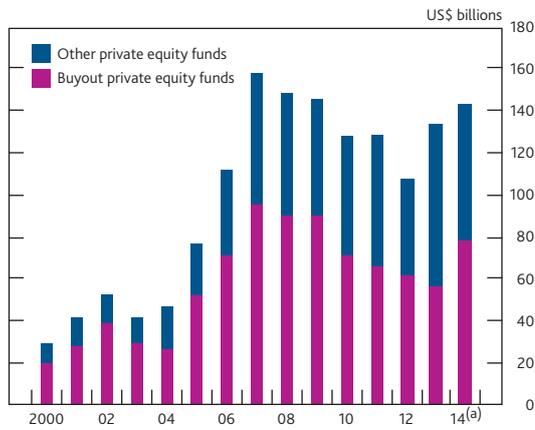
... where risks from leveraged lending may have risen.

During 2014, UK companies have raised more than US\$40 billion of funds through the leveraged loan market, although net issuance has been negative. That has been accompanied by a loosening of underwriting standards, greater access to funding for lower-quality borrowers and a weakening of loan covenants. For example, in the year to date around 90% of European leveraged loans issued during 2014 had no more than two financial maintenance covenants.

Looking ahead, strong demand for corporate assets among private equity companies could reduce the quality of borrowers in the leveraged loan market. Private equity companies typically use leveraged loans to finance the acquisition of existing companies, which are then restructured and sold. For a number of years, the value of investments acquired by UK private equity companies has been low, and a large number of investments have been exited recently. As a

Chart 2.24 UK private equity funds' 'dry powder' has been accumulating

UK private equity funds' 'dry powder'



Sources: Preqin and Bank calculations.

(a) Data for 2014 are as at end-October 2014.

result, capital committed by investors but not yet allocated to particular companies (so called 'dry powder') has been accumulating (Chart 2.24). Investor pressure to use these funds could create greater competition for corporate assets among these companies, leading to higher levels of leverage for more UK companies.

Earlier this year, authorities in the United States issued guidance on underwriting standards in the larger US leveraged loan market. And the Bank will conduct a one-off data collection and cross-firm review of risks from the UK leveraged loan market.

Box 2

The United Kingdom's external balance sheet

The Financial Policy Committee regularly reviews a set of core indicators that have proved helpful in identifying emerging risks to financial stability in the past. This — alongside assessment of other metrics and analysis, supervisory and market intelligence and information from stress tests — informs UK macroprudential policy, including the setting of the countercyclical capital buffer and sectoral capital requirements (Section 5).

One of these indicators is the UK current account deficit. The scale and persistence of the deficit may suggest an external vulnerability to the United Kingdom. This box examines the external balance sheet position in the light of this indicator and the implications for financial stability.

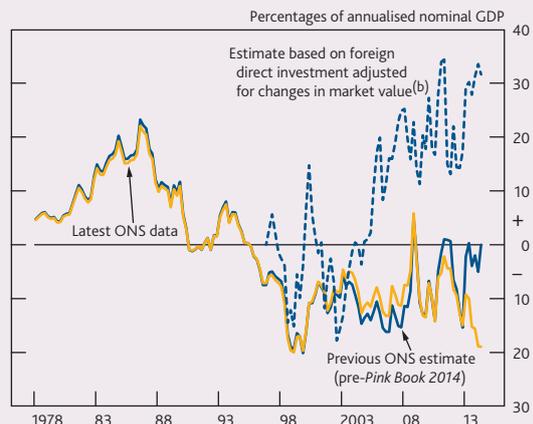
Recent developments

Current account deficits indicate domestic expenditure is running ahead of income, requiring net borrowing from overseas. An important aspect of assessing the risks from running a large current account deficit is to consider which sectors of the economy are doing the borrowing and how sustainable is their borrowing. At present, government borrowing is the largest counterpart to the current account deficit. With fiscal consolidation, public sector net borrowing has declined by around 2 percentage points of GDP since 2012 and the budget is forecast by the Office for Budget Responsibility to be back in balance by 2018–19. And risks are reduced by the government borrowing in local currency and at long maturities. But growth in private expenditure, in the face of still weak income growth, has increased the United Kingdom's overall net reliance on external finance to around 5% of GDP in 2014 Q2. Historical evidence suggests that, in addition to reliance on a flow of net external borrowing, a country's vulnerability to a financial crisis also depends on its accumulated net stock of external assets.⁽¹⁾

A key summary measure of a country's external balance sheet position is the net international investment position (NIIP). This reflects the cumulative net funding flows associated with the current account and previous changes in the values of the stocks of external assets and liabilities. As a result of upward revisions to foreign direct investment (FDI) in official data published in October, and following a sustained period of current account deficits since the late 1990s, the United Kingdom's negative NIIP reached almost 20% of annual GDP in 2014 Q2. For the United Kingdom, with an external balance sheet valued at around six times annual GDP, valuation changes tend to be the most important element in determining the size of the NIIP. However, values can be calculated in a variety of ways. For example, official ONS data

use book values to estimate foreign direct investment stocks. An alternative approach, using market values, gives a positive estimate for the United Kingdom's NIIP (Chart A), suggesting that favourable net returns on overseas investments have allowed the United Kingdom to spend in excess of its domestic income (ie run current account deficits) without becoming a net debtor.⁽²⁾

Chart A The UK net international investment position^(a)



Sources: ONS, Thomson Reuters Datastream and Bank calculations.

(a) Some pre-1997 ONS data are no longer available from the ONS. In such circumstances, we use Bank of England data originally sourced from the ONS.

(b) Underlying data consistent with the *Pink Book 2014*. For details on how FDI estimates are adjusted for changes in market value see footnote (3), on page 23 of the May 2014 *Inflation Report*; www.bankofengland.co.uk/publications/Documents/inflationreport/2014/ir14may.pdf.

Implications for UK financial stability

Determining the point at which deficits or debt positions leave a country vulnerable to a change in circumstances is very difficult. Statistical analysis of past crises suggests that vulnerability in advanced economies is heightened when the current account deficit exceeds 6% of GDP and the net liability position exceeds 60% of GDP.⁽³⁾ Even using the official data, the United Kingdom's NIIP is still well below this threshold. By way of comparison, several vulnerable euro-area economies have net liability positions of around 100% of GDP (Chart 2.3). More fundamentally, a country's ability to borrow depends on the credibility of its policy framework and institutions, which, for example, have made the United Kingdom an attractive destination for FDI. In 2013, the United Kingdom had the largest stock of inward FDI among European countries and the second largest in the world after the United States.

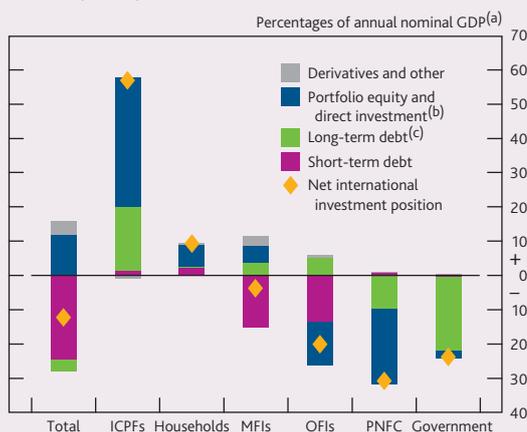
Net international investment position by sector

The aggregate NIIP can mask divergent positions across sectors and the distribution of assets and liabilities across and within sectors matters when assessing vulnerability to shocks. If residents are unable to roll over their foreign debt, they will need access to assets sufficient to fill this funding gap. Additionally, external assets and liabilities may have different maturities or be denominated in different currencies, so in

illiquid market conditions assets may not be readily available to pay off maturing liabilities even if held by the same residents.

In the United Kingdom, the aggregate NIIP is distributed unevenly across sectors (**Chart B**).⁽⁴⁾ Based on official ONS estimates, net external debt liabilities are concentrated in: MFIs (monetary financial institutions, or banks and building societies) and other financial institutions (OFIs), (for example broker-dealers and finance companies), where they are short term in nature; and in the private non-financial corporate (PNFC) and government sectors, where they are long term. The average maturity of government debt is significantly longer than the G7 average, reducing refinancing risks. Net external assets are concentrated in insurance companies and pension funds (ICPFs) and so would not be available to meet MFIs' or OFIs' short-term external debt refinancing needs.

Chart B Net international investment position by sector (2013)



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

- (a) Calculated using average balance sheets across the four quarters of the year.
 (b) Foreign direct investment includes intragroup debt for all sectors except for monetary financial institutions where it is treated as debt.
 (c) Original maturity of greater than twelve months.

As a global financial centre, London is host to a large number of foreign-owned institutions, who account for around a quarter of lending and deposit-taking in the United Kingdom. Their balance sheets are included in the United Kingdom's balance of payments statistics, which are compiled on a residency basis. But many may be able to draw on the resources of parent companies abroad to meet their payment obligations. As such, their balance sheets may have different implications for financial stability than the balance sheets of domestically focused institutions.

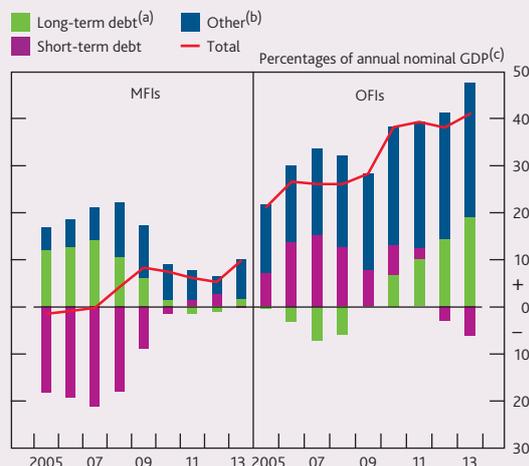
But UK-owned banks also built up a substantial dependence on foreign borrowing as their balance sheets expanded in the run-up to the crisis. When the crisis broke and short-term funding markets seized up, these banks struggled to refinance their foreign funding.

Currency and maturity mismatches

Net short-term external debt liabilities — which indicate maturity mismatch — can leave a country in a particularly vulnerable position if they are in foreign currency. Absent large stocks of foreign currency reserves, central banks are not able to supply large amounts of liquidity quickly in foreign currency unless they have agreed swap lines with other central banks. Past experience suggests that currency and maturity mismatches can raise the probability and impact of a financial crisis.⁽⁵⁾

In 2007, prior to the global financial crisis, the foreign-currency net international investment position of the banking sector was close to balance. Nevertheless, banks were vulnerable because they had large net short-term foreign-currency liabilities (**Chart C**). UK-resident banks had been borrowing abroad short term in dollars and using those funds to invest in longer-term US assets — such as asset-backed securities. Access to US dollar swap lines with the Federal Reserve was then required to alleviate the subsequent scarcity of dollar funding, as pressure on banks' liquidity positions became apparent. Since the crisis, UK MFIs have sharply reduced their net short-term foreign-currency liabilities (**Chart C**). Swap facilities with the Federal Reserve, available to meet systemic dollar shortages, are also now on a standing basis.

Chart C Net foreign currency-denominated international investment positions



Sources: BIS, ONS and Bank calculations.

- (a) Original maturity of greater than twelve months.
 (b) Other includes direct investment, portfolio investment in equity, derivatives and other. Foreign direct investment includes intragroup debt for all sectors except for monetary financial institutions where it is treated as debt.
 (c) Calculated using average balance sheets across the four quarters of the year.

At the same time, OFIs (eg broker dealers, finance companies) have recently been accumulating net short-term foreign-currency debt liabilities and investing in long-term foreign-currency debt (**Chart C**). This mismatch looks less pronounced than that which banks took into the crisis. In addition, OFIs in aggregate have a large net surplus in foreign

currency-denominated assets which could potentially be liquidated to meet short-term financing needs.⁽⁶⁾ But data for the OFI sector are of poor quality and the aggregate position could conceal vulnerabilities in particular firms.

Conclusion

The current account indicator over recent years may suggest an external vulnerability to the United Kingdom. At the sectoral level, one area that warrants further analysis is estimating to what extent individual non-bank subsectors of the financial system (eg broker-dealers, finance companies) rely on net short-term foreign-currency funding. On an alternative basis of measurement, the United Kingdom's overall external stock balance sheet position is likely to be healthier than implied by official estimates. Net debt is easier to refinance when maturities are longer. More generally, as Section 5 notes, sustained current account deficits are easier and more stable to finance when confidence in an economy

and its policy framework is maintained, including through credible monetary and fiscal policies.

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- (1) See Broadbent, B (2014), 'The UK current account', available at www.bankofengland.co.uk/publications/Documents/speeches/2014/speech750.pdf.
 - (2) See page 19 of the November 2014 *Inflation Report*, available at www.bankofengland.co.uk/publications/Documents/inflationreport/2014/ir14nov.pdf.
 - (3) See IMF *World Economic Outlook* October 2014, Chapter 4.
 - (4) The sectoral and asset decomposition shown in the charts has been estimated by the Bank using official data on valuations. International assets and liabilities from the National Accounts are split by asset type. Each asset class can then be broken down by sector. For some this is straightforward, as for each sector the ONS lists that sector's holdings of specific types of assets. For others (mostly equity) this has to be estimated. In order to get the currency split, sectoral information by asset class has to be combined with other sources. ONS, Bank of England and BIS data give an indication of the currency split of loans and some bonds. Overall it is possible to estimate a split for around 60% of the United Kingdom's external assets and 70% of the United Kingdom's external liabilities. For the remaining, a simple assumption is made that all UK foreign assets are in foreign currency and all UK liabilities are in sterling.
 - (5) See Al-Saffar, Y, Ridinger, W and Whitaker, S (2013), 'The role of external balance sheets in the financial crisis', *Bank of England Financial Stability Paper No. 24*, available at www.bankofengland.co.uk/research/Documents/fspapers/fs_paper24.pdf.
 - (6) Other sectors outside the financial system appear to have relatively safe external funding positions, with net short-term foreign-currency assets.

3 Medium-term risks to financial stability

The financial crisis and its aftermath made apparent the risks to the economy arising from an inadequately capitalised banking system, 'too big to fail' financial institutions, and a lack of diverse and resilient substitutes for bank finance. The overall design of the prudential regulatory framework has now largely been set out; further work is necessary to ensure the framework is fully implemented. And there remain other areas where policy action may be needed, in particular to support diverse sources of financing, and to address new risks and vulnerabilities, many of which may emerge from outside of the banking system.

Table 3.A The FPC's medium-term priorities (as set out in the March 2014 Record following the November 2013 *Report*)

Establishing the medium-term capital framework	<ul style="list-style-type: none"> • Leverage ratio review • Usability and interaction of capital buffers • Overall calibration of UK bank capital requirements, following progress on relevant international agendas and taking into account FPC discussions on ending 'too big to fail'
Ending 'too big to fail'	<ul style="list-style-type: none"> • Process for identifying domestic systemically important banks in the United Kingdom • Macroprudential objectives to consider when setting the height of the ring-fence • Protocols around stays in derivative contracts • Policies on resolution and on recovery and resolvability • The UK framework for gone-concern loss-absorbing capacity
Ensuring diverse and resilient sources of market-based finance	<ul style="list-style-type: none"> • Assessing and mitigating systemic risks beyond the existing regulatory perimeter • Risks to stability arising from procyclicality in the availability of finance, including via collateral markets • Resilience of market liquidity

Source: Bank of England.

The FPC set out three medium-term priorities in its November 2013 *Report*, and agreed in March of this year to focus its work on a number of issues within those priorities (**Table 3.A**). This section sets out recent progress on these issues as well as of developments in the three priority areas more generally.

Progress on the medium-term capital framework and ending 'too big to fail', together, mean that the overall design of the prudential regulatory framework has now largely been set out. Further work is planned to finalise the calibration of parts of the prudential regulatory framework and to complete its implementation. There has also been progress on measures to ensure diverse and resilient sources of market-based finance.

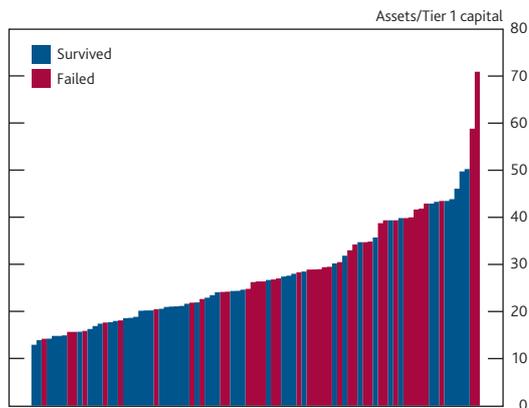
3.1 Medium-term capital framework for banks

Financial stability is underpinned by a robust bank capital framework...

The dangers of an inadequately capitalised banking system were revealed in the crisis. Capital provides banks with a cushion to absorb losses, reducing the risk of bank failure, and supporting the continuity of provision of banking services to the real economy. A robust capital framework has several complementary elements. Risk-weighted minimum capital requirements and buffers are designed to ensure banks with riskier portfolios have larger capital cushions. But the measurement of the riskiness of banks' portfolios is uncertain and may not reflect risk adequately at all times. To address this, risk-weighted requirements can be complemented with stress testing — as illustrated by the 2014 UK stress-testing exercise, which explored vulnerabilities to UK banks and building societies including those stemming from the UK household sector (see Box 5 in Section 5) — and leverage ratio requirements that reflect a bank's total exposures, unadjusted for risk.

Chart 3.1 High leverage was associated with a greater likelihood of bank failure in the crisis

Leverage and bank failures as of end-2006^{(a)(b)(c)}



Sources: Capital IQ and SNL Financial.

- (a) Sample includes 88 large banks (assets greater than US\$100 billion) from Canada, Europe and the United States. Notable exceptions are the five US banks that were investment banks at the time, because of data limitations.
- (b) For more details, see Chart 2 in Bank of England (2014), 'The Financial Policy Committee's review of the leverage ratio: a consultation paper', July.
- (c) The S&P's disclaimer of liability, which applies to the data provided, is available at www.bankofengland.co.uk/publications/Documents/fsr14dec3.xls.

Table 3.B The FPC's review of the leverage ratio has concluded
Summary of FPC requests for leverage ratio Direction powers and proposed application of Direction powers^(a)

Minimum leverage ratio requirement

- The requirement would be set at 3%. For global systemically important banks (G-SIBs) and other major domestic UK banks and building societies, it would be introduced as soon as practicable. For all other PRA-regulated banks, building societies and investment firms, it would be introduced from 2018, subject to a review in 2017.

Supplementary leverage ratio buffer

- This buffer would be set at 35% of the corresponding risk-weighted systemic buffer rates. For G-SIBs, it would be phased in between 2016 and 2019, in parallel with the risk-weighted buffers on G-SIBs. For other major domestic UK banks and building societies, it would be introduced in 2019, when equivalent risk-weighted buffers will begin to be applied.

Countercyclical leverage ratio buffer

- This buffer would be set at 35% of the risk-weighted countercyclical capital buffer rate. The buffer would be applied to all firms subject to the minimum leverage ratio requirement.

Source: Bank of England.

- (a) See Bank of England (2014), 'The Financial Policy Committee's review of the leverage ratio', available at www.bankofengland.co.uk/financialstability/Documents/fpc/fs_lrr.pdf.

...of which the leverage ratio is a key element.

While not all banks that failed in the crisis were highly leveraged, a high degree of leverage at the start of the crisis was associated with a greater likelihood of subsequent failure (Chart 3.1). Against that backdrop, in November 2013, the Chancellor of the Exchequer asked the FPC to conduct a review of the leverage ratio. The FPC published the conclusions of its review in October of this year (Table 3.B).⁽¹⁾ The FPC recommended that it be given powers to direct the PRA to set: a minimum leverage ratio requirement for all PRA-regulated banks, building societies and investment firms; a supplementary leverage ratio buffer that will apply to UK-based G-SIBs and other major domestic UK banks and building societies; and a countercyclical leverage ratio buffer (Section 4).

The proposal is that the leverage ratio buffers vary with the countercyclical capital buffer and the additional risk-weighted capital requirements imposed on systemically important banks in such a way that the relationship between the risk-weighted capital and leverage ratio requirements is broadly maintained over time and across banks (Chart 3.2). If that were not the case and the leverage ratio became less binding when the countercyclical buffer was activated or additional risk-weighted capital requirements were imposed on systemically important banks, the effectiveness of the leverage ratio as a means of mitigating the potential weaknesses in the risk weighting of assets would be reduced.

Following the FPC's review, HM Treasury has published its proposals for the legislation required to give the FPC the necessary powers to implement its leverage ratio framework.⁽²⁾ Once legislation has been introduced into Parliament, the FPC intends to publish a draft Policy Statement on the proposed leverage ratio powers in early 2015 to inform the Parliamentary debate.

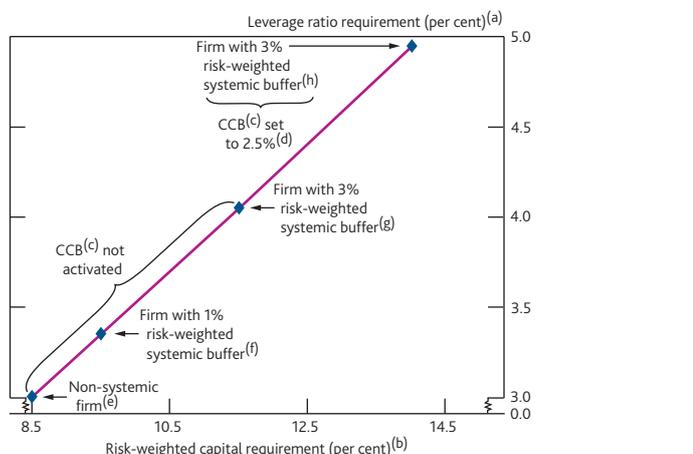
The overall calibration of the capital framework for domestic systemically important banks will be reviewed next year...

As set out in the March Record, the FPC will review next year the overall calibration of the capital framework for banks in the United Kingdom, following progress on relevant international agendas and taking into account the measures to end 'too big to fail'. A framework will be developed for setting additional capital buffer requirements — so-called systemic risk buffers (SRBs) — for the parts of major domestic UK banks that will be ring-fenced under the Financial Services (Banking Reform) Act 2013 ('ring-fenced bodies') and large building societies. The Government intends before the end of this year to legislate to enable SRBs to be imposed on those types of institutions from 2019.

(1) See Bank of England (2014), 'The Financial Policy Committee's review of the leverage ratio', available at www.bankofengland.co.uk/financialstability/Documents/fpc/fs_lrr.pdf.

(2) See HM Treasury (2014), 'FPC leverage ratio consultation', available at www.gov.uk/government/consultations/financial-policy-committees-leverage-ratio-framework.

Chart 3.2 The relationship between risk-weighted capital and leverage ratio requirements will be broadly constant over time and across banks
The mapping from risk-weighted capital requirements to leverage ratio requirements



Source: Bank calculations.

- (a) Of the Basel III leverage ratio exposure measure as implemented in European law.
 (b) Of risk-weighted assets (RWAs).
 (c) Countercyclical capital buffer.
 (d) This shows an example of the size of the countercyclical leverage ratio buffer for a firm with UK exposures only.
 (e) The risk-weighted capital requirement equals 8.5% (the Basel III minimum Tier 1 to RWA requirement, 6%, + the capital conservation buffer, 2.5%). The leverage ratio requirement is the minimum requirement equal to 3% of leverage exposures.
 (f) The risk-weighted capital requirement equals 9.5% (the Basel III minimum requirement + the capital conservation buffer + a 1% systemic buffer) and the leverage ratio requirement is 3.35% (the minimum leverage ratio requirement + $0.35 \times 1\%$).
 (g) The risk-weighted capital requirement is 11.5% (the Basel III minimum requirement + the capital conservation buffer + a 3% systemic buffer) and the leverage ratio requirement is 4.05% (the minimum leverage ratio requirement + $0.35 \times 3\%$).
 (h) The risk-weighted capital requirement is 14% (the Basel III minimum requirement + the capital conservation buffer + the 3% systemic buffer + a 2.5% countercyclical capital buffer) and the leverage ratio requirement is 4.95% (the minimum leverage ratio requirement + $0.35 \times 3\% + 0.35 \times 2.5\%$ rounded to 0.9%).

Table 3.C Reforms to strengthen further bank capital regulation and restore confidence in bank capital ratios are being developed internationally

International work on reducing variability in banks' regulatory capital ratios that is not due to differences in risk^(a)

Standardised and internal-model approaches

- Revisions to the standardised approaches to credit risk, market risk and operational risk are being developed to improve the way banks calculate RWAs. These will be finalised by end-2015. The revised approaches may also be used as a basis for a replacement of the current Basel capital floor.
- Other measures will seek to reduce excessive variability of RWAs for credit risk and market risk, including constraints on certain modelling choices.
- The advanced approach to operational risk is being reviewed; the Basel Committee is assessing whether considerable simplification is needed.

Disclosure

- Substantial revisions to Pillar 3 disclosure requirements are being developed. Proposed revisions aim to promote greater consistency in the way banks disclose information about their RWAs. The revisions are expected to be finalised around the end of 2014.

Review of the structure of regulatory capital framework

- A strategic review is considering the costs and benefits of determining regulatory capital using internal models, as well as alternative approaches for determining regulatory capital that reduce or remove reliance on internal models while still being adequately risk-sensitive.

Sources: BCBS and BIS.

- (a) See BCBS (2014), 'Reducing excessive variability in banks' regulatory capital ratios: a report to the G20', available at www.bis.org/bcbs/publ/d298.pdf.

...and further work to develop leverage ratio requirements internationally is planned.

The leverage ratio requirements recommended by the FPC are based on the definition of the leverage ratio exposure measure agreed by the Basel Committee on Banking Supervision (BCBS) and recently adopted in the EU.⁽¹⁾ Banks globally are required to disclose their leverage ratios under this definition from 2015. It is expected that an international standard for a minimum leverage ratio requirement will be applied from 2018. The FPC will therefore review progress towards this in 2017, and consider the implications for the leverage ratio framework.

Resilience of banks is also supported by other reforms.

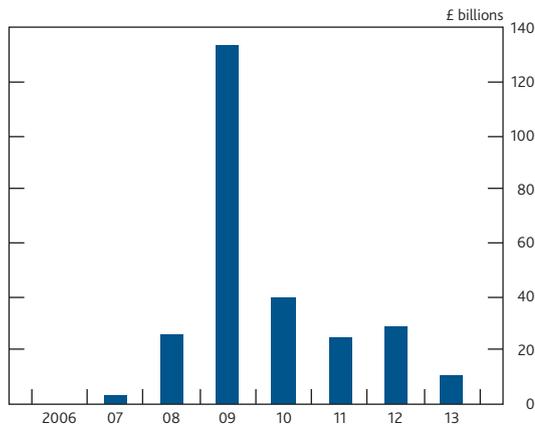
Reforms to strengthen further the capital framework, by reducing variability in banks' regulatory capital ratios that is not due to differences in risk, are being developed internationally (Table 3.C). Progress has also been made on measures to reduce the impact of disruptions to bank funding on the stability of the banking system. The European Commission has adopted a Delegated Act to specify and implement an EU version of the Basel III Liquidity Coverage Ratio (LCR), which aims to ensure the short-term resilience of banks to liquidity risk.⁽²⁾ And the BCBS published its final standard for the Net Stable Funding Ratio (NSFR) — which, when introduced in 2018, aims to increase the resilience of banks to liquidity risk over a longer time horizon.⁽³⁾

Beyond measures to strengthen financial resources, resilience of banks could also be supported by new remuneration rules proposed by the PRA and FCA that are aimed at aligning incentives of senior risk-takers with maintaining financial stability; for example, lengthening the periods of time over which bonuses should be deferred and could be clawed back.⁽⁴⁾ The PRA and FCA have also proposed measures to ensure individuals in institutions are held to account for their behaviour.⁽⁵⁾ These proposals reflect the recommendations of the Parliamentary Commission on Banking Standards.⁽⁶⁾ They may also support the fairness and effectiveness of wholesale financial markets (see Section 3.3).

- (1) In October the European Commission adopted a Delegated Act that sets out a revised leverage ratio exposure measure for the purposes of disclosure under the Capital Requirements Regulation, see http://ec.europa.eu/finance/bank/docs/regcapital/acts/delegated/141010_delegated-act-leverage-ratio_en.pdf.
 (2) See http://ec.europa.eu/finance/bank/docs/regcapital/acts/delegated/141010_delegated-act-liquidity-coverage_en.pdf. In November, the PRA published a consultation paper on the implementation of the LCR in the United Kingdom, see www.bankofengland.co.uk/pradocuments/publications/cp/2014/cp2714.pdf.
 (3) See BCBS (2014), 'Basel III: the net stable funding ratio', available at www.bis.org/bcbs/publ/d295.pdf.
 (4) See PRA and FCA (2014), 'Strengthening the alignment of risk and reward: new remuneration rules', PRA CP15/14/FCA CP14/14, available at www.bankofengland.co.uk/pradocuments/publications/cp/2014/cp1514.pdf.
 (5) See PRA and FCA (2014), 'Strengthening accountability in banking: a new regulatory framework for individuals', FCA CP14/13/PRA CP14/14, available at www.bankofengland.co.uk/pradocuments/publications/cp/2014/cp1414.pdf.
 (6) See Parliamentary Commission on Banking Standards (2013), 'Changing banking for good', available at www.publications.parliament.uk/pa/jt201314/jtselect/jtpebs/27/2702.htm.

Chart 3.3 Estimates suggest implicit subsidies for large UK banks have fallen but still remain

Estimates of implicit subsidies for large UK banks^{(a)(b)}



Sources: BofA Merrill Lynch Global Research, Moody's and Bank calculations.

- (a) The total value of the implicit subsidies to the largest UK banks. Sum of the estimated implicit subsidies for Barclays, HSBC, LBG and RBS. Estimates obtained by multiplying the differences in bond yields associated with Moody's support and stand-alone ratings by the corresponding quantity of ratings-sensitive liabilities.
- (b) Measuring the scale of banks' risk-sensitive liabilities is subject to a degree of judgement. The estimate used here takes this to be the sum of their deposits from other banks and financial institutions, some financial liabilities designated at fair value (debt securities, deposits), and certain debt securities in issue (commercial paper, covered bonds, other debt securities and subordinated debt). See Noss, J and Sowerbutts, R (2012), 'The implicit subsidy of banks', *Bank of England Financial Stability Paper No. 15*, available at www.bankofengland.co.uk/research/Documents/fspapers/fs_paper15.pdf.

Table 3.D Key features of the proposed TLAC standard
Summary of the TLAC term sheet^(a)

Scope	<ul style="list-style-type: none"> G-SIBs. G-SIBs headquartered in emerging market economies will not, initially, be subject to the minimum Pillar 1 requirement.
Calibration	<ul style="list-style-type: none"> A minimum Pillar 1 requirement will be set between 16% and 20% of RWAs and at least twice the Basel III Tier 1 leverage requirement. Incorporates the Basel III minimum capital requirement. Basel III capital buffer requirements are in addition to TLAC.
Issuer	<ul style="list-style-type: none"> Issued by entities that would be put into resolution ('resolution entities'). Material subsidiaries that are not resolution entities must meet an 'internal TLAC' requirement.
Eligible instruments	<ul style="list-style-type: none"> Tier 1 and Tier 2 regulatory capital. Other liabilities that can be effectively written down and/or converted to equity without causing disruption, or giving rise to the risk of successful legal challenge or compensation claims. Remaining maturity of at least one year. Must be subordinated to all debt liabilities that are excluded from TLAC.
Timing	<ul style="list-style-type: none"> Not before 2019.

Source: FSB.

- (a) See www.financialstabilityboard.org/wp-content/uploads/TLAC-Condoc-6-Nov-2014-FINAL.pdf for a more detailed term sheet for the TLAC standard.

In addition, the FPC published in October 2014 a Recommendation to HM Treasury to grant the FPC powers of Direction in relation to certain housing instruments (see Box 3 in Section 4).

3.2 Ending 'too big to fail'

In the past, systemically important financial institutions have been considered 'too big to fail'...

The 'too big to fail' problem arises when the disorderly failure of a systemically important financial institution (SIFI) could cause instability across the financial system without a bailout by public authorities. Expectations of public bailouts distort SIFIs' costs of funding — giving them implicit subsidies (**Chart 3.3**) — and create incentives for SIFIs to take excessive risks.

...but significant milestones have been reached towards ensuring systemic banks can be resolved without public support...

In November, the Financial Stability Board (FSB) published a proposal for a common standard on total loss-absorbing capacity (TLAC) for G-SIBs (**Table 3.D**). It is designed to ensure G-SIBs have sufficient capacity — before and during resolution — to absorb losses and be recapitalised. The proposed standard, which was welcomed by G20 leaders at their Brisbane summit, incorporates the Basel III minimum risk-weighted capital requirements (**Chart 3.4**).

The TLAC standard should enable resolution authorities to resolve G-SIBs while minimising the impact on the financial system and wider economy, strengthening the credibility of authorities' commitments to resolve G-SIBs without exposing taxpayers to losses. It should also reduce any implicit subsidies received by G-SIBs. The FSB, with support from the BCBS and the Bank for International Settlements (BIS), will work during 2015 to finalise the details of the standard, taking into account the results of a public consultation and impact assessment studies.

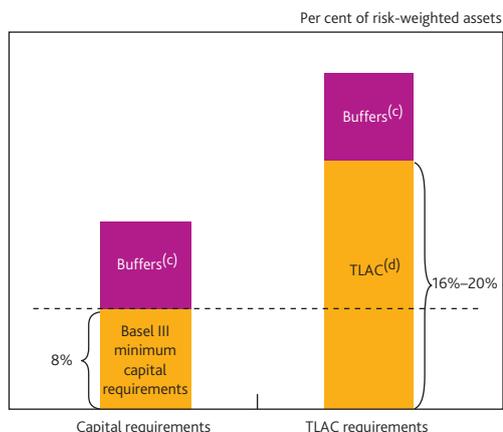
...which may mean systemic institutions need to adjust their liability structures.

G-SIBs may need to change their liability structures to meet the TLAC standard. TLAC must, in general, be subordinated to other liabilities that cannot be readily bailed-in during resolution.⁽¹⁾ TLAC that does not qualify as regulatory capital under Basel III would need to be issued to external investors from the legal entities that would be put into resolution ('resolution entities'), the identity of which would depend on a G-SIB's resolution strategy (**Chart 3.5**). Besides potentially seeking to move existing TLAC-eligible liabilities to resolution entities within their groups, some G-SIBs may need to issue

(1) See Box 4 in the June 2014 *Report* for the role of bail-in as part of resolution strategies.

Chart 3.4 TLAC incorporates the Basel III minimum capital requirements

TLAC and the risk-weighted minimum capital requirements and buffers^{(a)(b)}



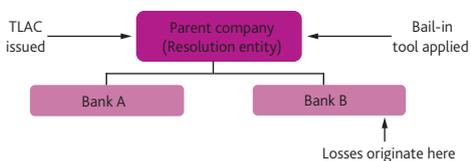
Sources: BCBS, BIS and FSB.

- (a) Risk-based minimum capital requirements and buffers are shown as under full implementation of CRD IV in 2019.
- (b) The FSB proposal is that the minimum Pillar 1 TLAC requirement will be set between 16% and 20% of RWAs and at least twice the Basel III Tier 1 leverage requirement. This chart only shows the risk-weighted Pillar 1 requirement.
- (c) Consists of the capital conservation buffer, buffer requirements on systemically important banks, and the countercyclical capital buffer. The buffers must be met with common equity Tier 1 capital.
- (d) See Table 3.D for the types of liabilities that are eligible to meet the TLAC standard.

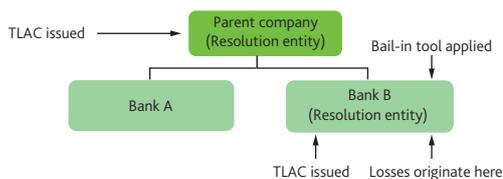
Chart 3.5 A G-SIB needs to issue TLAC from specific parts of its group to support its resolution strategy

Stylised resolution strategies and the issuance of TLAC

Single point of entry (SPE) resolution strategy^(a)



Multiple point of entry (MPE) resolution strategy^(b)



- (a) Under an SPE resolution strategy, a banking group will be held together in resolution. To ensure losses can be absorbed, the resolution authority in the group's home jurisdiction conducts a bail-in at the level of the parent company (the resolution entity for the whole group).
- (b) Under an MPE resolution strategy, a banking group is likely to be split up into different subgroups in resolution. To ensure losses can be absorbed, the relevant resolution authority for each subgroup conducts a bail-in at the level of the subgroup's resolution entity. Under MPE, resolution entities could be intermediate holding companies rather than being banks as shown here.

additional eligible liabilities from these resolution entities (Chart 3.6). Plus, G-SIBs' material subsidiaries in foreign countries should have 'internal TLAC' arrangements in place to reassure those countries' authorities that sufficient resources will be available to recapitalise the subsidiaries in a resolution.

The credibility of the commitment to expose holders of TLAC to losses could be undermined if losses made on a failed G-SIB's TLAC trigger contagion to other G-SIBs that have invested in those instruments. The risk of contagion will be reduced by requiring G-SIBs to deduct their investments in other G-SIBs' TLAC from their own regulatory capital or TLAC. The treatment of other banks' holdings of G-SIBs' TLAC will be specified in 2015.

Under the EU Bank Recovery and Resolution Directive, banks and certain investment firms established in the EU, including G-SIBs from the EU, will be subject to a minimum requirement for own funds and eligible liabilities (MREL) to ensure they have adequate loss-absorbing capacity in place. MREL will be set on a firm-by-firm basis from the start of 2016 at the latest. The TLAC standard, in effect, extends the concept behind MREL to G-SIBs worldwide.

Steps have been taken to ensure financial contracts are not terminated in ways that cause wider disruption...

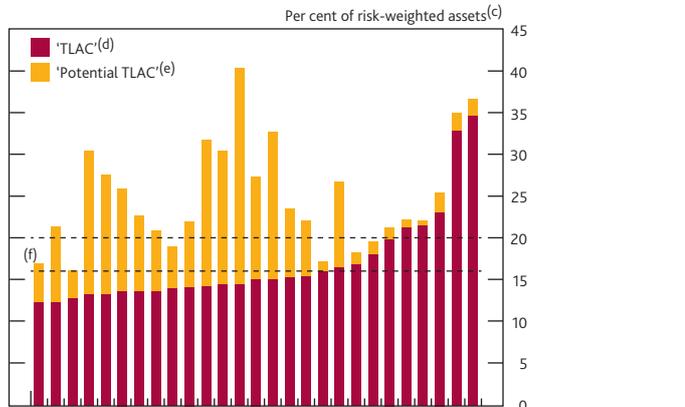
An enforced suspension or 'stay' before counterparties of a failed bank can terminate financial contracts, such as bilateral over-the-counter (OTC) derivatives, provides time to facilitate an orderly resolution of the failed bank. In October the International Swaps and Derivatives Association (ISDA) announced that 18 major global banks had agreed to sign an industry protocol to recognise, in OTC derivative contracts between themselves, stays under each bank's domestic resolution regime if one of the banks is subject to resolution action. The cross-border recognition of stays will improve the effectiveness of resolution of global banks. The adoption of the protocol means over 90% of the 18 banks' OTC bilateral trading activity will be covered by stays of a contractual or statutory nature. FSB members have committed to seek to ensure that all G-SIBs and other firms with significant derivatives exposures adhere to the protocol by the end of 2015.

...further work to support the resolvability of systemic institutions has been identified...

The TLAC standard and the ISDA protocol address two barriers to resolvability identified by the FSB.⁽¹⁾ It plans to consider how to address other potential barriers (eg funding in resolution, ensuring operational continuity during resolutions) in 2015.

(1) The barriers were reported to the FSB as part of the resolvability assessment process (RAP). The RAP was identified in 2014 as one of the FSB's key priorities on ending 'too big to fail'.

Chart 3.6 Some G-SIBs may need to issue eligible instruments to meet the TLAC standard, while others could relocate TLAC within their groups
Estimates of G-SIBs' current levels of TLAC-eligible liabilities and potentially eligible liabilities^{(a)(b)}



Source: Published accounts 2013.

- (a) TLAC values are estimates, based on 2013 published accounts. Proxies are used where information is not available in published accounts.
 (b) G-SIBs as announced by the FSB in 2014 excluding Agricultural Bank of China, Bank of China and Industrial and Commercial Bank of China Limited.
 (c) RWAs are measured on a 'fully loaded' Basel III basis, where available. 'Fully loaded' refers to the rules that will apply at the end of the transition period.
 (d) Consists of regulatory capital instruments recognised for the purpose of consolidated capital requirements under Basel III and debt liabilities that meet the TLAC eligibility criteria set out in the FSB TLAC term sheet.
 (e) Consists of debt liabilities that meet the TLAC eligibility criteria except that they are not subordinated to other liabilities ineligible as TLAC.
 (f) The proposed minimum Pillar 1 requirement for TLAC will be set within 16% and 20% of RWAs.

Table 3.E Measures to protect depositors and core banking activities of UK banks have been set out

Depositor protection

- The PRA in October published proposed changes to its rules to implement the recast European Deposit Guarantee Schemes Directive and to ensure the capability of providing depositors, covered by the Financial Services Compensation Scheme in the United Kingdom, with continuity of access to their accounts in the event of the failure of a deposit-taker.^{(a)(b)}
- These proposals will support financial stability by minimising the likelihood of a run on a deposit-taker and reducing any disruption to the real economy in the event of a deposit-taker failing.

Implementing the ring-fence

- The PRA is required to make policy to implement the ring-fencing of core UK financial services and activities in subsidiaries ('ring-fenced bodies' or RFBs) within banking groups.
- In October, the PRA published for consultation policies related to the legal structure of groups containing RFBs (eg RFBs are not expected to own or be owned by entities that undertake activities RFBs are prohibited to do), the governance arrangements for RFBs (eg rules on RFB board composition), and access to services RFBs need to perform their core services (eg RFBs should not depend on services provided by other group members that would become unavailable if other group members fail).^(c)
- The PRA will publish policies related to other aspects of the ring-fence in the future.

Ensuring operational continuity in resolution^(d)

- In October, the PRA set out preliminary views on the standards that banks, building societies and PRA-regulated investment firms may have to meet in their operational arrangements to facilitate recovery actions, resolution, and post-resolution restructuring.^(d)
- The aim is to ensure that firms put in place measures (such as in contracts) that mean there is no disruption of operational services needed to support a firm's orderly resolution.

- (a) See *PRA Consultation Paper CP20/14*, 'Depositor protection', October, available at www.bankofengland.co.uk/pradocuments/publications/cp/2014/cp2014.pdf.
 (b) The PRA also published proposed changes to the rules for insurance policyholder protection (see *PRA Consultation Paper CP21/14*, 'Policyholder protection', October, available at www.bankofengland.co.uk/pradocuments/publications/cp/2014/cp2114.pdf).
 (c) See *PRA Consultation Paper CP19/14*, 'The implementation of ring-fencing: consultation on legal structure, governance and the continuity of services and facilities', October, available at www.bankofengland.co.uk/pradocuments/publications/cp/2014/cp1914.pdf.
 (d) See *PRA Discussion Paper DP11/14*, 'Ensuring operational continuity in resolution', October, available at www.bankofengland.co.uk/pradocuments/publications/cp/2014/dp1114.pdf.

...and there has been some progress on resolution regimes and recovery plans for non-banks...

The FSB intends that any financial institution that could be systemically important should be subject to a resolution regime that satisfies its 'Key attributes of effective resolution regimes for financial institutions' (Key Attributes). The 2014 version of the Key Attributes includes additional guidance on how they apply to insurers and financial market infrastructures such as central counterparties (CCPs), as well as to the protection of client assets in resolution.⁽¹⁾

Cross-border crisis management groups (CMGs) have now been established for most global systemically important insurers (G-SIIs). CMGs will report in 2015 on progress on developing resolution strategies for G-SIIs.

Recent international guidance outlines a set of recovery tools for CCPs,⁽²⁾ which could be used in the event that initial margin and other resources collected by a CCP are insufficient to cover losses arising from the default of a market participant. Where recovery does not succeed, resolution arrangements would be necessary. The European Commission is expected to bring forward a legislative proposal on the recovery and resolution of non-banks, including CCPs, in 2015. And the UK Special Resolution Regime was extended to cover CCPs in August.

...and also domestically to support an effective resolution regime.

In October, the Bank published its approach to resolution, which outlines the key features of the UK resolution regime and how the Bank expects to carry out the resolution of a failing firm in practice.⁽³⁾ And the PRA set out measures to support effective compensation of depositors, implement the ring-fencing of core activities and services, as required under the Financial Services (Banking Reform) Act 2013, and help ensure firms are structured in ways that facilitate their resolution (Table 3.E).

Structural banking reforms continue to be developed internationally.

Negotiations are ongoing in the EU about legislative proposals for structural reform of the banking system put forward by the European Commission in January 2014. The proposals seek to introduce a ban on proprietary trading and provide powers for supervisors to require the separation of certain trading activities within banking groups. The FSB reported to the G20 in October on what impact different countries' structural reforms are having on cross-border capital and liquidity flows

- (1) See FSB (2014), 'Key attributes of effective resolution regimes for financial institutions', available at www.financialstabilityboard.org/wp-content/uploads/r_141015.pdf.
 (2) See CPMI and IOSCO (2014), 'Recovery of financial market infrastructures', available at www.bis.org/cpmi/publ/d121.pdf.
 (3) See Bank of England (2014), *The Bank of England's approach to resolution*, available at www.bankofengland.co.uk/financialstability/Documents/resolution/apr231014.pdf.

Table 3.F A new set of global systemically important banks has been announced, the first to face additional capital buffer requirements

G-SIBs as of November 2014 and additional capital buffer requirements^(a)

Bucket	Banks	Additional capital buffer requirements (per cent of RWAs)	
		2016 ^(b)	Fully phased-in ^(c)
4	HSBC, JPMorgan Chase	0.625	2.5
3	Barclays, BNP Paribas, Citigroup, Deutsche Bank	0.5	2
2	Bank of America, Credit Suisse, Goldman Sachs, Mitsubishi UFJ FG, Morgan Stanley, Royal Bank of Scotland	0.375	1.5
1	Agricultural Bank of China, Bank of China, Bank of New York Mellon, BBVA, Groupe BPCE, Groupe Crédit Agricole, Industrial and Commercial Bank of China Limited, ING Bank, Mizuho FG, Nordea, Santander, Société Générale, Standard Chartered, State Street, Sumitomo Mitsui FG, UBS, UniCredit Group, Wells Fargo	0.25	1

Sources: BCBS, BIS, FSB and Bank calculations.

(a) See www.financialstabilityboard.org/wp-content/uploads/r_141106b.pdf.

(b) As of 1 January 2016.

(c) As of 1 January 2019.

and on global financial stability. FSB members agreed it was too early to tell, but the FSB, with the IMF and OECD, will continue to monitor developments and report to the G20 in 2016.

Another part of ending ‘too big to fail’ is reducing the probability of systemic institutions failing.

Reducing the probability of systemically important financial institutions failing in the first place — for example, by requiring additional capital buffers — is another measure that could contribute to ending ‘too big to fail’. Additional buffer requirements for G-SIBs are going to be phased in between 2016 and 2019. The new set of G-SIBs, announced by the FSB in November, will be the first to face these requirements (Table 3.F).

The FSB has also identified G-SIIs. G-SIIs will face a specific capital requirement, called Higher Loss Absorbency (HLA). But, unlike with G-SIBs, there is currently no common global minimum capital standard for insurers upon which to base HLA. To fill that gap, the International Association of Insurance Supervisors (IAIS) has concluded development of its Basic Capital Requirements (BCR).⁽¹⁾ G-SIIs will report their BCR ratios to supervisors, on a confidential basis, from 2015 and be required to have capital no lower than the BCR plus HLA from 2019. The design and calibration of HLA will be completed by the end of 2015. The IAIS is developing concurrently a global Insurance Capital Standard (ICS) for all internationally active insurance groups. The ICS will, once developed, replace the BCR as the basis of G-SIIs’ capital requirements.

In addition, progress has been made on developing methodologies for identifying global systemically important financial institutions that are neither banks nor insurers. The FSB, working with the International Organization of Securities Commissions (IOSCO), is expected to publish a second consultation on these methodologies around the end of 2014 or early 2015.

3.3 Diverse and resilient sources of market-based finance

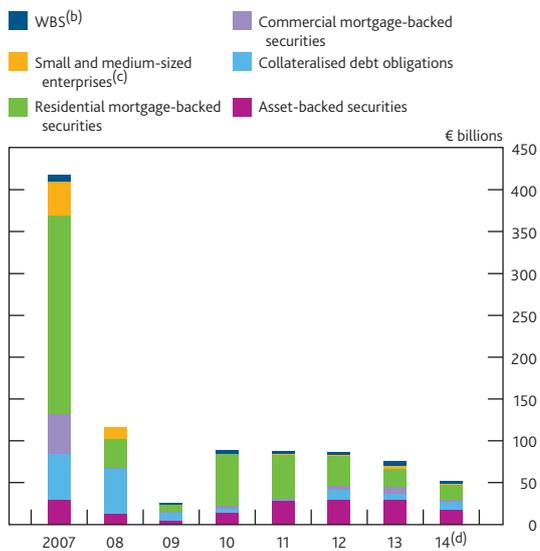
Financial stability can be supported by non-bank financial firms and market-based finance...

Alongside banks, non-bank financial firms can be an important source of finance to the real economy, increasing the diversity of providers and enhancing competition, and potentially acting as a stabilising force on the total supply of finance to the economy. Non-banks also play a key role in financial markets, helping to achieve an efficient distribution of risk

(1) See International Association of Insurance Supervisors (2014), ‘Basic capital requirements for global systemically important insurers’, available at www.iaisweb.org/view/element_href.cfm?src=1/23741.pdf.

Chart 3.7 Securitisation in Europe has not recovered since the crisis

European securitisation issuance^(a)



Sources: Association for Financial Markets in Europe, Securities Industry and Financial Market Association, Thomson Reuters Datastream and Bank calculations.

- (a) Does not include retained issuance.
 (b) Whole business securitisation and public finance initiatives.
 (c) Securities backed by loans to small and medium-sized enterprises.
 (d) Only includes data up to and including 2014 Q3.

across the financial system and supporting liquidity in financial markets. The importance of market-based finance will be reinforced if activity moves out of the banking system following changes to banking regulation.

... which in turn could be facilitated by robust securitisation markets...

Securitisation markets enable non-bank financial institutions to provide finance to the real economy, as well as broadening the range of funding sources available to banks.⁽¹⁾ The fragility of securitisation markets was revealed during the crisis, when issuance dried up abruptly; issuance in Europe has still not recovered (**Chart 3.7**). Obstacles to the emergence of sustainable and robust securitisation markets include investors' lack of confidence in securitisation following the crisis, the current availability of alternative sources of funding for banks, the regulatory treatment of investments in securitisations, and the difficulties investors face when trying to assess the riskiness of potentially complex and opaque securitisation structures.

Steps are being taken to overcome some of these obstacles by distinguishing — potentially in prudential regulation — between securitisation structures that are simple, transparent, and comparable (STC) and those that are not. Internationally, the BCBS and IOSCO have published a consultation paper on criteria developed to identify STC securitisation structures⁽²⁾ and the BCBS will consider in 2015 how to incorporate those criteria into capital standards for banks' investments in securitisations. In the EU, similar efforts have been made to differentiate between securitisations, as reflected in proposed bank liquidity requirements⁽³⁾ and in proposed insurer capital requirements.⁽⁴⁾

Proposals for a Capital Markets Union to develop and integrate further capital markets in the EU might also help to increase the availability of market-based finance to the real economy. Work to develop these proposals will seek to identify current obstacles to integration and ways to overcome them.⁽⁵⁾ The European Commission has indicated that it will publish an action plan by the summer of next year, which is likely to be followed by a number of legislative initiatives.

- (1) See Bank of England and European Central Bank (2014), 'The case for a better functioning securitisation market in the European Union: A Discussion Paper', available at www.bankofengland.co.uk/publications/Documents/news/2014/paper300514.pdf.
 (2) See BCBS and IOSCO (2014), 'Criteria for identifying simple, transparent and comparable securitisation', available at www.bis.org/bcbs/publ/d304.pdf.
 (3) According to this differentiation, certain securitisations are eligible for inclusion in banks' high-quality liquid assets. See http://ec.europa.eu/finance/bank/docs/regcapital/acts/delegated/141010_delegated-act-liquidity-coverage_en.pdf.
 (4) According to this differentiation, certain securitisations have lower capital requirements under Solvency II. See http://ec.europa.eu/finance/insurance/docs/solvency/solvency2/delegated/141010-delegated-act-solvency-2_en.pdf.
 (5) See http://europa.eu/rapid/press-release_SPEECH-14-1460_en.pdf.

Table 3.G Steps are being taken to address a lack of available information about commercial borrowers

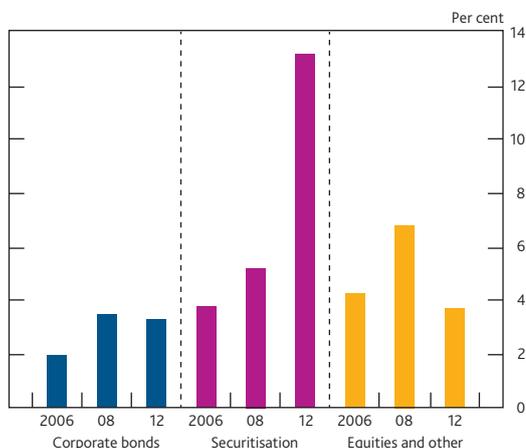
Programme of work to improve the availability of information about commercial borrowers

- Government proposals to mandate a greater sharing of credit information between banks and other financial intermediaries are being progressed through the Small Business, Enterprise and Employment Bill.
- The Bank is pursuing the following priorities as it takes forward its commercial credit data initiative:
 - working with information providers to quantify the impact on the provision of trade credit of improving trade creditors' access to credit data;
 - exploring with industry the case for making market-wide credit data available to support market-based funding (eg securitisation);
 - working with challenger lenders and information providers to improve the use of pooled credit data in developing credit risk models;
 - exploring with the Government the case for improving access to publicly held data that might be useful in assessing the creditworthiness of businesses; and
 - pursuing a pilot with industry to assess the merits of using loan-level credit data to inform macroprudential and monetary policy.
- In the Autumn Statement, the Government signalled its willingness to consider legislation to realise the benefits of the Bank's initiatives if industry is not able to deliver these in a timely fashion.
- The Bank is also considering how best to take forward the recommendation of the Real Estate Finance Group that a loan-level database for commercial real estate loans be established.

Sources: Bank of England, HM Government and Investment Property Forum.

Chart 3.8 Haircuts on collateral in securities financing transactions providing financing to non-banks increased in the financial crisis

Average haircuts in reverse repos with counterparties that are not banks^{(a)(b)}



Source: FSB.

(a) The data were collected as part of a quantitative impact study of the FSB proposed framework for numerical haircut floors. Firms reported reverse repos (ie where cash is lent against collateral).

(b) Data are for end-September of each year.

...and by improvements in the availability of data on commercial borrowers.

A lack of available information about commercial borrowers — especially small and medium-sized enterprises (SMEs) — can act as a barrier to entry and expansion in lending markets for both banks and non-banks. That might impede the provision of resilient market-based finance and credit from a diverse range of sources. In November the Bank set out several priorities it will pursue to improve the availability of credit data about SMEs;⁽¹⁾ other measures are being taken forward by the Government and the Bank, including for commercial real estate lending (Table 3.G). In addition, the Competition and Markets Authority has launched an investigation into SME retail banking (along with personal current accounts), because of concerns about continuing barriers to entry and expansion.

Steps have been taken to limit excessive leverage and maturity mismatch outside of the banking system.

If non-banks and markets become more important sources of finance for the real economy, the types of risks that can arise in the banking sector could re-emerge elsewhere in the financial system.

For example, securities financing markets — used by banks and non-banks to obtain funding, manage risk and collateral, and help support secondary market liquidity — can pose risks to financial stability by enabling excessive leverage and maturity mismatches to build up outside of the regulated banking system. In good times, securities financing transactions can create liabilities that seem safe and liquid. But in periods of stress, increases in uncertainty about the value of underlying collateral can push up the haircuts applied to collateral in these transactions (Chart 3.8). This can tighten funding conditions for non-banks and may trigger fire sales of assets, leading to falling asset prices and further increases in haircuts; these markets may even stop functioning entirely.

To reduce these risks, the FSB published in October a set of recommended floors on haircuts that should apply to securities financing transactions in which financing is provided to non-banks (Table 3.H).⁽²⁾ In good times, floors prevent haircuts from falling too low and hence leverage rising too high. That reduces the degree to which haircuts rise procyclically in periods of stress.

(1) See Bank of England (2014), 'Summary of feedback received on the Bank of England's May 2014 Discussion Paper on UK credit data', available at www.bankofengland.co.uk/financialstability/Documents/securitisation/responses281114.pdf.

(2) The haircut floors apply only to transactions that are not centrally cleared and in which the assets used as collateral are not government securities. See Financial Stability Board (2014), 'Strengthening oversight and regulation of shadow banking: regulatory framework for haircuts on non-centrally cleared securities financing transactions', available at www.financialstabilityboard.org/wp-content/uploads/r_141013a.pdf.

Table 3.H Floors on haircuts in securities financing transactions will reduce the build-up of excessive leverage in non-banks
Numerical haircut floors for securities-against-cash transactions

Per cent Residual maturity of collateral	Haircut level	
	Corporate and other issuers	Securitised products
≤ one year debt securities, and floating-rate notes	0.5	1
> one year, ≤ five years debt securities	1.5	4
> five years, ≤ ten years debt securities	3	6
> ten years debt securities	4	7
Main index equities		6
Other assets within the scope of the framework		10

Source: FSB.

Market-based finance can be supported by predictable levels of market liquidity...

A lack of liquidity in key financial markets could threaten financial stability for the reasons outlined in Box 4 in Section 5. Dealers' inventories have decreased since the crisis. For example, US primary dealers' inventories stand at around only a quarter of their pre-crisis peak. This may be in part due to the increase in bank capital requirements — particularly, against traded credit instruments — that may have reduced dealers' willingness to maintain inventories of corporate bonds and structured credit assets. Other factors, though, might also be relevant — for instance, reductions in dealers' risk tolerance following the crisis.

But bank regulation could in some ways support market liquidity. By supporting their resilience, leverage requirements may result in dealers being a more stable source of liquidity. Dealers can also help to support market liquidity in periods of stress by providing funding to leveraged investors willing to step in to buy assets in falling markets. Increases in the resilience of dealers in banking groups due to strengthened regulation might support their capacity to provide such funding.

...effective liquidity backstops...

Financial markets do not always operate smoothly, and it may be necessary for a central bank to act as liquidity backstop to participants in core markets to support the positive contributions those markets make to the economy. In November, the Bank widened access to its Sterling Monetary Framework to accept broker-dealers and CCPs operating in UK markets.⁽¹⁾⁽²⁾

...well-designed market infrastructures...

Concerns about the solvency of other participants may reduce liquidity in financial markets. But the risk of financial difficulties at one participant in the financial system spreading to others can be mitigated by well-designed financial market infrastructures. A new EU regulation — the Central Securities Depositories Regulation — requires the length of time between an agreement to trade transferable securities (eg shares) on a trading venue (eg an exchange) and settlement to be no longer than two days. This will reduce a security buyer's exposure to the possibility that a seller might fail before the security is delivered. The United Kingdom and 23 other Member States in the EU moved from a three-day to a two-day settlement cycle on 6 October.

(1) Access was widened to broker-dealers deemed critical to the stability of the UK financial system and CCPs that operate in UK markets and are either authorised under the European Market Infrastructure Regulation or recognised by the European Securities and Markets Authority.

(2) See www.bankofengland.co.uk/publications/Pages/news/2014/144.aspx.

...and participants having confidence in the fairness and effectiveness of wholesale financial markets.

The formation of the Fair and Effective Markets Review was announced by the Chancellor of the Exchequer and the Governor of the Bank of England in June. Markets are fair and effective if: they enable end-users to invest, obtain finance, and transfer risk in resilient and predictable ways and at competitive prices; operate in accordance with clear standards of market practice; offer appropriately open access and transparency; allow market participants to compete on the basis of merit; and provide confidence that participants will behave with integrity.

In August, the Review recommended that the regulatory regime for Libor be extended to seven major UK-based benchmarks for fixed income, currency and commodities (FICC) markets.⁽¹⁾ In October, it published a consultation document to seek views on the fairness and effectiveness of FICC markets and on ways in which, where necessary, those might be improved.⁽²⁾ The Review will make its final recommendations in June 2015.

(1) FEMR (2014), 'Recommendations on additional financial benchmarks to be brought into UK regulatory scope', available at www.bankofengland.co.uk/markets/Documents/femraug2014.pdf.

(2) FEMR (2014), 'How fair and effective are the fixed income, foreign exchange and commodities markets? Consultation document', available at www.bankofengland.co.uk/markets/Documents/femr/consultation271014.pdf.

4 Progress on previous macroprudential policy decisions

The Financial Policy Committee (FPC) has reviewed progress made since the June 2014 *Report* against its existing Recommendations. It assessed that there has been sufficient progress since June to consider four of its Recommendations as implemented, given the positive contribution that each had made towards the FPC meeting its objectives. These included its Recommendations on disclosure and on the mortgage market. Continued action is under way to implement the FPC's other existing Recommendations.

The table below describes progress in implementing the FPC's Recommendations since the June *Report*. Each Recommendation has been given an identifier to ensure consistent referencing of Recommendations over time. For example, the identifier 13/Q1/6 refers to the sixth Recommendation made following the 2013 Q1 Committee meeting.

13/Q1/6	Develop proposals for regular stress testing of the UK banking system	Action under way
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Looking to 2014 and beyond, the Bank and PRA should develop proposals for regular stress testing of the UK banking system. The purpose of those tests would be to assess the system's capital adequacy. The framework should be able to accommodate any judgements by the Committee on emerging threats to financial stability.

The 2014 stress test is now complete, and its results are discussed in Box 5 of this *Report*. As discussed in the October 2013 Discussion Paper on stress testing, the 2014 exercise was intended as a stepping stone towards the medium-term stress-testing framework. The FPC intends to review this Recommendation in the first half of 2015, based on the lessons learned in the 2014 stress test and responses to the October 2013 Discussion Paper.

13/Q2/3	Work towards consistent and comparable Pillar 3 disclosures	Implemented
13/Q2/4	Implement EDTF recommendations	

The PRA should continue to work with the banking industry to ensure greater consistency and comparability of the Pillar 3 disclosures of the major UK banks and building societies, including reconciliation of accounting and regulatory measures of capital.

The PRA should ensure that all major UK banks and building societies comply fully with the October 2012 recommendations of the Enhanced Disclosure Task Force (EDTF) upon publication of their 2013 annual reports.

In the period after these Recommendations were made, the PRA has worked with the British Bankers' Association to find ways to improve the usefulness of firms' Pillar 3 disclosures. For example, all major UK banks and building societies provided a reconciliation of accounting and regulatory measures of capital in their 2012 reports, and enhanced those disclosures in their 2013 reports. These improvements were aligned with, and subsequently incorporated into, firms' implementation of EDTF recommendations for 2013. Major UK banks and building societies had complied with the EDTF recommendations in their 2013 annual reports, with a few exceptions including around asset encumbrance, changes in risk-weighted assets and counterparty credit risk. Given the overall high level of compliance, and plans to improve disclosure further, the FPC judges that the Recommendation has been implemented.

The Basel Committee is currently undertaking a revision of the current Pillar 3 disclosure framework. The FPC will look again at Pillar 3 disclosures following the completion of this review, and will consider then whether to take further action in this area.

13/Q2/6 Improve resilience to cyber attack

Action under way

HM Treasury, working with the relevant government agencies, the PRA, the Bank's financial market infrastructure supervisors and the FCA should work with the core UK financial system and its infrastructure to put in place a programme of work to improve and test resilience to cyber attack.

The FPC received an update on work by HM Treasury, the Bank and regulators to enhance cyber resilience. All core firms and financial market infrastructures have submitted a self-assessment on cyber resilience, and these have been reviewed by the regulators. Although these assessments have not revealed any critical shortcomings at this stage regulators have noted some areas for improvement, including a tendency among firms to view cyber threats as a 'technical' problem — rather than as an issue which merits board-level attention given the evolving nature of cyber threats and the key importance of cyber resilience to continuity of financial services. Supervisors are working with firms to agree timetables for remediation.

These self-assessments are one part of assessing resilience to cyber threats. Another part is the vulnerability testing framework (known as CBEST), which was launched in May 2014 and which has been made available to core firms. CBEST is a framework for delivering controlled, bespoke cyber security tests, using the expertise of Government and commercial intelligence providers to simulate the types of threat that systemically important financial institutions face. The findings of both the self-assessments and CBEST will together form the basis for specific and concrete action plans for firms. Some firms have begun the process of CBEST testing. At its December meeting, the FPC judged that there was a need for core firms and financial market infrastructures to conduct CBEST vulnerability testing as soon as practicable in order to enhance the resilience of the financial system to cyber threats (Section 5). The Committee intends to review this Recommendation in 2015 Q2, when it expects that a fuller set of CBEST results will be available.

14/Q2/1 Mortgage affordability test

Implemented

When assessing affordability, mortgage lenders should apply an interest rate stress test that assesses whether borrowers could still afford their mortgages if, at any point over the first five years of the loan, Bank Rate were to be 3 percentage points higher than the prevailing rate at origination. This Recommendation is intended to be read together with the FCA requirements around considering the effect of future interest rate rises as set out in MCOB 11.6.18(2).

Lenders were required to have regard to this Recommendation immediately, by virtue of an existing FCA rule (MCOB 11.6.18(2)), which had been created in response to a previous FPC Recommendation (13/Q4/1). The 3 percentage point stress remains in force and the FPC intends to keep this under review at future meetings. The FCA is continuing to monitor that lenders are having regard to the Recommendation when carrying out affordability tests.

14/Q2/2 Loan to income limit

Implemented

The PRA and the FCA should ensure that mortgage lenders do not extend more than 15% of their total number of new residential mortgages at loan to income ratios at or greater than 4.5. This Recommendation applies to all lenders which extend residential mortgage lending in excess of £100 million per annum. The Recommendation should be implemented as soon as is practicable.

Following consultations, on 1 October 2014 the PRA and FCA published their respective approaches to implementing this Recommendation. The PRA issued a Policy Statement, and the FCA issued general guidance. Therefore the FPC agreed in its September meeting that this Recommendation had been implemented. The loan to income limit remains in force, and the FPC will continue to consider whether it remains appropriate.

14/Q3/1 Powers of Direction over housing instruments

Action under way

The FPC recommends that HM Treasury exercise its statutory power to enable the FPC to direct, if necessary to protect and enhance financial stability, the PRA and FCA to require regulated lenders to place limits on residential mortgage lending, both owner-occupied and buy-to-let, by reference to:

- a. loan to value ratios;
- b. debt to income ratios, including interest coverage ratios in respect of buy-to-let lending.

The Government published a consultation document on the FPC's proposed powers of Direction over the housing market — which the FPC had proposed in response to a request from the Chancellor — on 30 October. This consultation, which closed on 28 November 2014, covered powers of Direction over loan to value (LTV)/debt to income limits in respect of owner-occupied mortgages. Following consultation the Government intends to lay the final legislation before Parliament in early 2015, alongside publishing a consultation response document and impact assessment. The FPC intends to issue a draft Policy Statement in early 2015, including the indicators that it would monitor regularly, to inform the Parliamentary debate. HM Treasury intends to consult separately in 2015 on the FPC's proposed LTV/interest coverage ratio powers for the buy-to-let sector. The FPC's proposals on powers of Direction over housing instruments are summarised in Box 3 of this *Report*.

14/Q3/2⁽¹⁾ Powers of Direction over leverage ratio

Action under way

The FPC recommends that HM Treasury exercise its statutory power to enable the FPC to direct, if necessary to protect and enhance financial stability, the PRA to set leverage ratio requirements and buffers for PRA-regulated banks, building societies and investment firms, including:

- a. a minimum leverage ratio requirement;
- b. a supplementary leverage ratio buffer that will apply to G-SIBs and other major domestic UK banks and building societies, including ring-fenced banks; and
- c. a countercyclical leverage ratio buffer.

The Government published a consultation document on FPC's proposed powers of Direction over the leverage ratio — which the FPC had proposed in response to a request from the Chancellor — on 7 November. These proposals are discussed in more detail in Section 3.1 and Box 3 of this *Report*. The consultation closed on 28 November 2014. The Government intends to lay the final legislation before Parliament in early 2015, alongside publishing a consultation response document and impact assessment. As with the housing instruments, the FPC intends to issue a draft Policy Statement in early 2015 to inform the Parliamentary debate.

(1) This Recommendation was made at the FPC's dedicated meeting on the leverage ratio review, held on 15 October 2014.

Box 3

FPC Recommendations on housing and leverage ratio instruments

Under the legislation introduced by the Financial Services Act 2012, the FPC has two main types of power. First, it can make Recommendations to the microprudential regulators, the PRA and the FCA, as well as to others. Second, the FPC has the power to direct the PRA and FCA to deploy specific macroprudential tools prescribed by HM Treasury.

Following requests from the Chancellor of the Exchequer, in September and October 2014 the FPC made Recommendations to HM Treasury on the housing market and leverage ratio instruments over which it should have additional powers of Direction. HM Treasury has subsequently published Consultation Papers regarding both sets of instruments, with the intention of legislating to have powers in place before the end of this Parliament.⁽¹⁾

The FPC described its Recommendations in its statement on housing market powers of Direction and its review of the leverage ratio.⁽²⁾ This box sets out the Recommendations with reference to the FPC's statutory objectives.

Housing market instruments

The Chancellor of the Exchequer announced in June that HM Treasury wanted to grant the FPC additional powers to guard against financial stability risks from the housing market. Following discussion of this issue at its meeting on 26 September, the FPC announced its Recommendation to HM Treasury on the form of these powers.

The FPC recommends that HM Treasury exercise its statutory power to enable the FPC to direct, if necessary to protect and enhance financial stability, the PRA and FCA to require regulated lenders to place limits on residential mortgage lending, both owner-occupied and buy-to-let, by reference to:

- a. loan to value ratios;
- b. debt to income ratios, including interest coverage ratios in respect of buy-to-let lending.

Following this Recommendation, HM Treasury has issued a consultation on powers of Direction over loan to value (LTV)/debt to income (DTI) limits in respect of owner-occupied mortgages. HM Treasury intends to consult separately on LTV/interest coverage ratio powers for the buy-to-let sector in 2015, with a view to building further evidence on how the UK buy-to-let housing market may pose risks to financial stability.

In the statement from its 26 September meeting, the FPC set out the channels through which the housing market can pose risks to financial stability. In accordance with its statutory objectives, the Committee agreed that the power to direct the PRA and FCA to limit the proportion of loans extended at high LTV ratios would add to its ability to tackle sources of housing risk that arise directly through lenders' balance sheets both by reducing likely losses for lenders on residential property, and by moderating housing cycles by limiting excessive mortgage credit growth in booms.

In accordance with its statutory objectives, the Committee agreed that the power to direct the PRA and FCA to limit the proportion of loans extended at high DTI ratios would also add to its ability to mitigate systemic risks that could otherwise arise from increases in the number of highly indebted households during an upswing.

The Committee's Recommendation would be implemented by HM Treasury establishing, in legislation, a framework for general use for these instruments.

In its statement, the FPC summarised evidence on the benefits in principle of the FPC being able to mitigate housing-related risks to financial stability, as well as the effectiveness in general terms of the proposed powers of Direction. The Recommendation does not imply that any of the powers of Direction will be exercised imminently, and as such no specific policy calibration was discussed. That, and questions concerning proportionality and the impact on the PRA and FCA's objectives, would be decided by the Committee at the point at which a particular power of Direction was being used. In accordance with its statutory requirements, the FPC would prepare an explanation of the reason for its decision, as well as an estimate of the costs and benefits unless it was not reasonably practicable to do so. For this Recommendation, a quantitative assessment of the costs and benefits was neither practicable nor appropriate given that no specific policy calibration was proposed, but the FPC provided an illustrative example of how it would approach such a quantitative analysis, based on its actions in the housing market in June 2014, and will continue to build on this approach.

The Committee considered that this Recommendation does not affect the United Kingdom's international obligations as these matters are outside the directly applicable provisions in relevant EU law.

Leverage ratio framework

The international community has previously set out its intention, through the Basel Committee on Banking Supervision, to review the calibration of a minimum required leverage ratio framework by 2017, with a view to introducing a Pillar 1 standard by 1 January 2018.⁽³⁾ In November 2013, the

Chancellor of the Exchequer asked the FPC to conduct a review into the role for the leverage ratio within the capital framework for UK banks, and to consider the case for the FPC having the power to implement a leverage ratio requirement ahead of the international timetable, or to set a higher baseline ratio in some circumstances for UK banks.

In October 2014, the FPC therefore met to agree its review of the leverage ratio and made the following Recommendation:

The FPC recommends that HM Treasury exercise its statutory power to enable the FPC to direct, if necessary to protect and enhance financial stability, the PRA to set leverage ratio requirements and buffers for PRA-regulated banks, building societies and investment firms, including:

- a. a minimum leverage ratio requirement;
- b. a supplementary leverage ratio buffer that will apply to G-SIBs and other major domestic UK banks and building societies, including ring-fenced banks; and
- c. a countercyclical leverage ratio buffer.

In accordance with its statutory objectives, the FPC agreed that leverage ratio requirements were an essential part of the regulatory framework for assessing and setting capital adequacy requirements for the UK banking system. The rationale for using a leverage ratio as part of regulation was that in environments which were characterised by complexity, small samples and uncertainties, simple indicators often outperformed more complex ones. Complementing the risk-weighted ratio with a leverage ratio requirement would give banks better protection against risks that were hard to model. On top of this, the relative simplicity of the leverage ratio might make it more readily understood by market participants and more comparable across firms than risk-weighted measures or stress test outputs. The FPC judged that:

- a minimum leverage ratio requirement was required to remove or reduce systemic risks attributable to unsustainable leverage in the financial system;
- a supplementary leverage ratio buffer was required for systemically important firms, to remove or reduce systemic risks attributable to the distribution of risk within the financial sector; and
- a countercyclical leverage ratio buffer was required for all PRA-regulated banks, building societies and investment firms to remove or reduce systemic risks attributable to credit booms — periods of unsustainable credit growth in the economy.

Further, the Committee saw a strong case for introducing a leverage ratio framework ahead of an internationally agreed standard for global systemically important banks (G-SIBs) and other major domestic UK banks and building societies. This reflected the number of systemically important institutions present in the United Kingdom; the size of the UK banking system relative to the domestic economy; and the importance, therefore, of being able to manage effectively model risk and to respond consistently to risks to financial stability that might emerge before an international standard on leverage is agreed and implemented.

Further details on the Committee's proposed design and calibration of the leverage ratio framework, and the impact analysis carried out by the Committee, are set out in the review. The impact analysis gives the Committee's estimate of the potential costs and benefits of granting the FPC the power to impose a leverage ratio requirement on PRA-regulated banks, building societies and investment firms on the assumption that the Direction power is exercised in the manner assumed in the review.

The Recommendation concerns establishing a framework to enable the exercise of this power; any further questions concerning proportionality and the impact on the PRA objectives would be evaluated when specific Directions are being considered.

(1) See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/368614/FPC_Housing_Consultation.pdf and <https://www.gov.uk/government/consultations/financial-policy-committees-leverage-ratio-framework/fpc-leverage-ratio-consultation>.

(2) See www.bankofengland.co.uk/financialstability/Documents/fpc/statement021014.pdf and www.bankofengland.co.uk/financialstability/Documents/fpc/fs_lrr.pdf.

(3) The EU Capital Requirements Regulation confirms that until the harmonisation of an EU leverage ratio in 2018, Member States should be able to apply such measures as they consider appropriate, including measures to mitigate macroprudential or systemic risk in a specific Member State.

5 Prospects for financial stability

The global economic outlook has weakened since the June 2014 *Report* and market concerns over persistent weak nominal growth and geopolitical risk have increased. These developments could affect the outlook for financial stability in the United Kingdom if concerns about persistent low growth lead to a sudden reappraisal of underlying vulnerabilities in highly indebted economies, or if a shift in global risk appetite triggers sharp adjustments in financial markets and undermines business and household confidence. The recent sharp fall in the oil price should support global and UK growth, but it also entails some risk to financial stability. Adjustments will be more disruptive if investors' pricing of liquidity risk does not fully reflect structural changes in market liquidity. Such developments could lead to stress in funding markets for banks and corporates. In the Committee's view, these global risks to the outlook for financial stability have increased since June.

Domestically, the Committee was concerned in June about a further increase in risk to financial stability from the housing market. This increase has not so far occurred; but debt levels in the UK household sector remain high relative to incomes and the insurance provided by the FPC's June Recommendations therefore remains warranted.

UK banks are on a transition path towards greater resilience, in advance of regulatory requirements, and have significantly increased their capital over the last year. Since June, there have been two further important milestones in the development of a more robust prudential regulatory framework: agreement on total loss-absorbing capacity requirements internationally and the publication of the *Review of the Leverage Ratio* domestically. The overall design of the prudential regulatory framework has now largely been set out.

The recent stress tests provide a check on the banking system's capital adequacy. The Committee judges that no system-wide, macroprudential actions on bank capital are needed given the results of those tests, the capital plans agreed by banks with the PRA Board, and given that the banking system is on the transition path to meet higher standards of loss absorbing capacity.

But recent misconduct and other operational failings have highlighted that rebuilding confidence in the banking system requires more than financial resilience. That, and changes to banks' business models in response to commercial and regulatory developments, make it important for banks to continue to enhance the effectiveness of their governance arrangements. Further, the FPC judges that there is a need for core firms and financial market infrastructures to conduct vulnerability testing as soon as practicable to enhance the resilience of the financial system to cyber threats, in line with its June 2013 Recommendation.

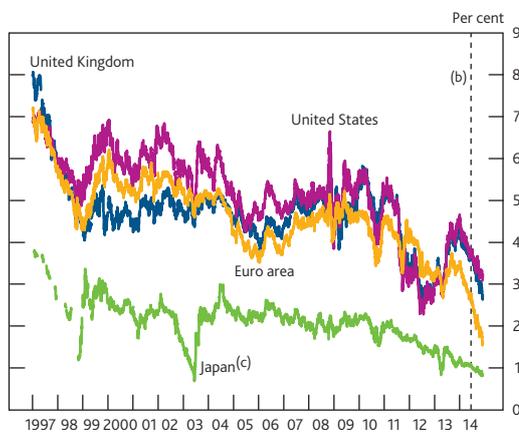
In the light of its assessment of the outlook for financial stability, including the outcome of the stress tests, the FPC decided at its December meeting to set the countercyclical capital buffer rate for UK exposures at 0%.

The Committee's assessment of global and domestic developments, including its judgments on the key risks to UK financial stability and the resilience of the UK financial system, is set out in Section 5.1. The Committee's latest decision on the countercyclical capital buffer rate in the light of this assessment is in Section 5.2. Key developments in the Committee's medium-term priorities since the June *Report* are described in Section 5.3. There are also boxes on market liquidity and the results of the 2014 Bank of England stress-testing exercise.

5.1 Outlook for financial stability

The Committee's view on current key risks to UK financial stability is set out below.

Chart 5.1 Medium-term interest rates fell internationally
Five-year, five-year forward nominal interest rates^(a)



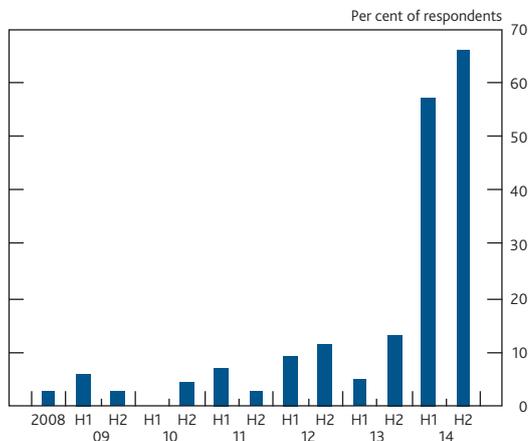
Sources: Bloomberg and Bank calculations.

(a) Derived from the Bank's government liability curves. Euro-area rates are estimated from French and German government bonds.

(b) June 2014 *Report*.

(c) Japan series based on partial data to 1999.

Chart 5.2 Concerns around geopolitical risk have risen
Systemic Risk Survey: respondents citing geopolitical risk as a key risk to the UK financial system^(a)



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

(a) Percentage of respondents who cited geopolitical risk at least once, when asked to list the five risks they thought would have the greatest impact on the UK financial system if they were to materialise.

Risks to financial stability from the global economic and financial environment

The global economic environment has deteriorated since June, as highlighted in Section 1.1. Projections for global growth in 2015 have weakened slightly with larger downward revisions for the euro area and parts of Asia, such as Japan, but with improvements in the United States. Recent oil price falls should provide some support for growth. Nominal yields (**Chart 5.1**) and real yields on government bonds have fallen significantly across many advanced economies suggesting that market participants expect weak growth and low inflation to persist into the medium term. As highlighted by the Bank's *Systemic Risk Survey*, focus on geopolitical risks has increased, including in the light of the conflict in the Middle East and Ukraine (**Chart 5.2**). In this context, the Committee judges that the potential for the global economic and financial environment to expose vulnerabilities for UK financial stability has grown.

In particular, risks to UK financial stability could materialise if concerns about persistent low growth lead to a sudden reappraisal of underlying vulnerabilities in highly indebted economies — or if a shift in global risk appetite triggers sharp adjustments in financial markets, including funding markets for banks and corporates, and undermines business and household confidence.

Any decline in market confidence in the ability of the authorities to achieve the rebalancing and adjustments required in the euro area would be a particular concern for UK financial stability. This could lead investors to question again the sustainability of debt positions in the most vulnerable euro-area countries — particularly if core euro-area countries were also affected by a deterioration in global economic growth prospects, for example in China. As discussed in Section 2.1, such events could in principle create spillovers to UK financial stability through trade, direct and indirect exposures. Potentially more rapid contagion could occur if a decline in market confidence led to a sharp rise in

bank funding costs across Europe, as in 2011–12. In practice, however, improvements in banking sector resilience and the greater availability of backstops should mitigate this risk.

While the recent sharp fall in the oil price does not pose an immediate, significant risk to financial stability, it could affect the ability of some, such as US shale oil and gas exploration firms, to service their debt and could affect market sentiment more broadly. A sustained lower oil price also has the potential to reinforce certain geopolitical risks. There is also a risk that, in economies where core inflation is already weak, particularly some parts of the euro area, low headline readings further depress expectations of future inflation. This, in turn, could result in slower rates of growth of nominal incomes, increasing the burden of existing debts.

The Committee intends to take into account developments in the global economic and financial environment when setting the 2015 stress testing scenario.

Risks to financial stability from market liquidity

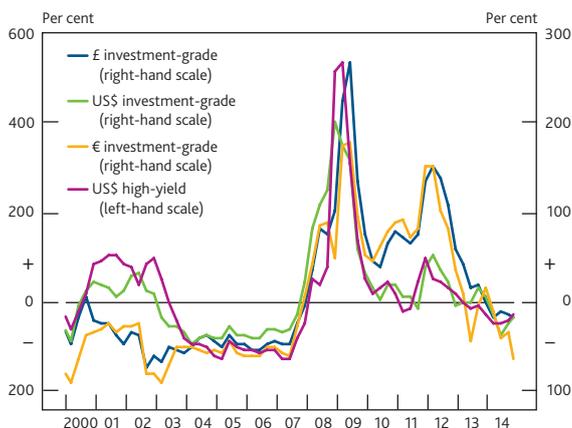
A sudden reappraisal of economic prospects could result in a severe adjustment to asset prices and increase in volatility, especially if investors have not fully reflected structural changes in market liquidity in their assessment of liquidity risk. Model estimates suggest that investors currently require relatively low compensation for bearing the risk of secondary market illiquidity (Chart 5.3). An increase might have been expected to the extent that decreases in dealers' inventories and a retreat from market-making have contributed to a reduction in market liquidity (Section 2.1). Further, with firms still making the transition to new business models, levels of market liquidity may not yet have reached a new equilibrium.

Recent episodes of market volatility have highlighted the Committee's previous concern that market liquidity can suddenly prove illusory and contribute to greater market disruption. Heightened volatility has occurred in some markets since June — such as US Treasury markets — where liquidity would typically be considered to be deep. In the event, financial markets recovered relatively quickly, in part because longer-term asset holders, such as institutional bond fund managers, did not change their positions. But tail events could trigger a larger and more prolonged reaction in asset prices and volatility. Market intelligence suggests, for example, that some asset managers may be assuming that they can sell assets quickly in the event of redemptions. If many asset managers try to do this simultaneously, this could amplify price falls and market volatility.

In the light of recent developments, the Committee judges that there is a continued need for participants in financial markets to be cognisant of these risks and, in particular, to price liquidity risk appropriately. In addition, given that these issues are global in nature, the Committee notes that it is

Chart 5.3 Model-based measures of liquidity risk premia remained low

Deviations of estimated corporate bond liquidity risk premia from historical averages^(a)(b)(c)



Sources: Bloomberg, BofA Merrill Lynch Global Research, Thomson Reuters Datastream and Bank calculations.

(a) Implied liquidity risk premia are estimated using a Merton model as in Leland, H and Toft, K (1996), 'Optimal capital structure, endogenous bankruptcy, and the term structure of credit spreads', *Journal of Finance*, Vol. 51, pages 987–1,019, by decomposing corporate bond spreads.

(b) Quarterly averages of deviations of implied liquidity risk premia from sample averages.

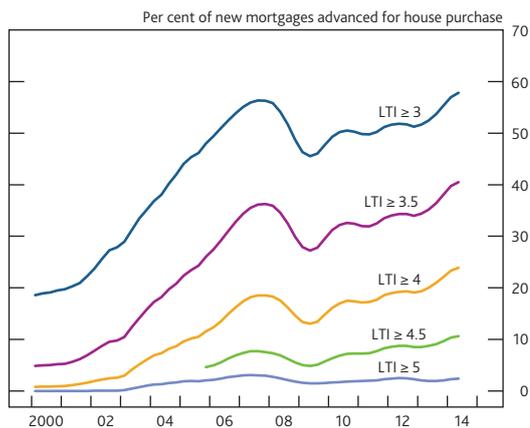
(c) Sample averages are from 1999 Q4 for € investment-grade and 1997 Q1 for £ investment-grade, US\$ investment-grade and US\$ high-yield.

Table 5.A Changes to key housing indicators since the June 2014 FPC Recommendations

	2007 ^(a)	2013 ^(a)	June Report 2014 Q1	Dec. Report 2014 Q3
Quarterly house price growth ^(b)	1.5%	1.8%	2.6%	2%
Quarterly approvals ('000)	313	184	213	191
Mean LTV above median ^{(c)(d)}	90.8	85.3	86.3	86.4
Mean LTI above median ^{(c)(d)}	3.9	4.0	4.1	4.1
Share of mortgages with LTI ≥ 4.5 ^{(c)(e)}	6%	9%	10%	10%
Share of mortgages with DSR $\geq 35\%$ at constant stress of 7% ^{(c)(e)}	19%	20%	21%	20%

Sources: Bank of England, FCA Product Sales Data (PSD), Halifax, Nationwide and Bank calculations.

- (a) Year average.
 (b) Calculated from the average of the Halifax and Nationwide house price indices.
 (c) The FCA Product Sales Data include regulated mortgage contracts only, and therefore exclude other regulated home finance products such as home purchase plans and home revisions, and unregulated products such as second charge lending and buy-to-let mortgages.
 (d) Only includes loans to first-time buyers, council/registered social tenants exercising their right to buy and homemovers.
 (e) Includes all mortgages in scope of the FPC's policies: loans for house purchase as outlined in (d) and re-mortgages with increase in principal.

Chart 5.4 The share of new mortgages with LTI multiples above 4.5 remained around 10%
New mortgages advanced for house purchase by LTI^{(a)(b)(c)(d)}

Sources: Council of Mortgage Lenders (CML), FCA Product Sales Data (PSD) and Bank calculations.

- (a) Data are shown as a four-quarter moving average to remove seasonal patterns.
 (b) Includes loans to first-time buyers, council/registered social tenants exercising their right to buy and homemovers.
 (c) The FCA PSD include regulated mortgage contracts only, and therefore exclude 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.
 (d) Data from the FCA PSD are only available since 2005 Q2. Prior to this, FCA PSD have been grown in line with data from the discontinued Survey of Mortgage Lenders (SML), which was operated by CML. These data are not directly comparable and shares are illustrative prior to 2005 Q2. SML data covered only around 50% of the mortgage market.

important for the Bank to continue to contribute to international policymaking in relation to them. Box 4 sets out the Committee's views on some of the drivers of market liquidity.

Risks to financial stability from the UK housing and mortgage market

In June 2014, the Committee made two Recommendations to help insure against the risks of a marked loosening in mortgage underwriting standards and a further significant rise in the number of highly indebted households (Section 4). Since then, activity in the UK housing market has slowed (Section 2.2). Housing transactions and mortgage approvals have fallen since March 2014, by around 5% and 10% respectively. Although annual measures continue to show strong house price inflation, near-term indicators of house price inflation have weakened markedly since June (Table 5.A), particularly in London. Lending at higher loan to income (LTI) ratios — multiples over 4.5 — has remained around 10%, consistent with the Committee's central view described in the June Report (Chart 5.4).

A number of factors may have caused this moderation in the housing market. Momentum in the market has eased, particularly in London, perhaps reflecting concerns about the near-term sustainability of house price inflation. The introduction of the *Mortgage Market Review* may also have had an impact on housing market activity. The possibility of future interest rate increases became more prominent in the summer. And market intelligence suggests that some lenders have tightened lending criteria in 2014 Q3, which may have constrained the amount that households can borrow. The FPC's Recommendation on lending at high LTI ratios was not expected to have a material impact on mortgage lending in the near term. But the signalling effect of the Recommendation — and more generally the authorities voicing concerns about risks in the housing market — may have encouraged some lenders and borrowers to move away from higher-risk mortgages.

Notwithstanding the recent moderation in the housing market, momentum may return — for example, following recent falls in some quoted mortgage rates or if the recent changes to stamp duty provide support to activity. With levels of debt in the UK household sector still elevated relative to incomes, at 136%, high household indebtedness continues to pose risks to financial stability. The Committee's Recommendations will therefore, as intended, continue to act as insurance against a significant deterioration in lending terms.

As discussed in Box 5, a detailed assessment of credit risks from the housing market was carried out as part of the 2014 UK banking system stress test.

Rebuilding confidence in the UK banking system

Financial resilience

There have been important milestones in the reform of the prudential regulatory framework for banks since the June *Report*, including agreement on total loss-absorbing capacity requirements for global systemically important banks and publication of *The FPC's Review of the Leverage Ratio* (Section 3). Changes to the regulatory framework have put the UK banking sector on a transition path to greater resilience. Average capital ratios for the largest UK banks have risen to 10.7% in 2014 H1 on a Basel III CET1 basis compared with 8.7% a year earlier. And both leverage and dependence on wholesale funding have fallen over the past couple of years (Section 1.2).

While banks still have further to go on the transition path, the recent stress-testing exercise provides further information about the financial resilience of the UK banking system. As discussed in Box 5, the Committee considered the stress-test results as part of its evaluation of the overall capital adequacy and resilience of the UK banking system, taking into account the severity of the scenario and the particular combination of shocks it entailed.

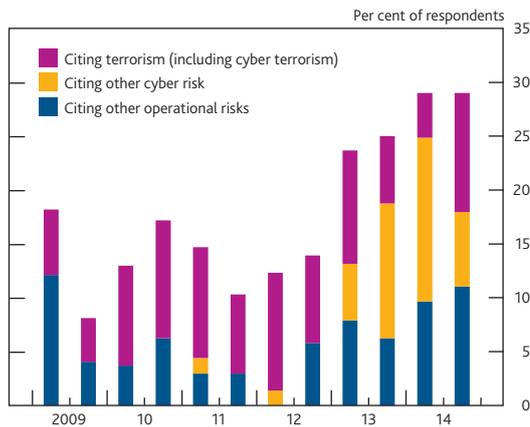
The Committee looked, among other things, at: the number of institutions that suffered sharp declines or low capital ratios post stress; indications that system-wide bank behaviour in the stress could adversely affect the macroeconomy or the stability of other parts of the financial system; and sectoral concentrations in losses.

In considering the final results from a system-wide perspective, the FPC noted that the stress test did not reveal capital inadequacies for five of the eight participating banks, and only one bank fell below the 4.5% CET1 threshold at the trough of the stress scenario. The Committee also took into consideration: progress in building capital over 2014; the capital plans agreed by the banks with the PRA Board; and that the banking system as a whole is on a transition path to meet higher standards of loss-absorbing capacity. Overall, the FPC judged that the resilience of the system had improved significantly since the capital shortfall exercise in 2013. Moreover, the stress-test results and banks' capital plans, taken together, suggested that the banking system would have the capacity to maintain its core functions in a stress scenario. Therefore, the FPC judged that no system-wide, macroprudential actions on bank capital were needed in response to the stress test. And as explained in Section 5.2, the Committee left the countercyclical capital buffer (CCB) rate unchanged.

The exercise, however, provided empirical evidence of procyclicality in some banks' capital models and differences across firms in risk weights through the cycle. While the FPC recognises that there may be macroprudential benefits from

Chart 5.5 Perceived risks from physical and cyber attack have remained high

Systemic Risk Survey: respondents highlighting operational risk as a key risk^{(a)(b)}



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

- (a) Respondents who cited operational risk at least once, when asked to list the five risks that would have the greatest impact on the UK financial system were they to materialise.
 (b) The composition of risks shown is based on the proportion of responses that explicitly cited terrorism (including cyber terrorism) and other cyber risks, or other closely related terms.

diversity in banks' risk-weight models, Bank staff will look at the drivers of risk-weight procyclicality and how models can produce very different capital requirements based on similar portfolios.

Governance

Recent events have demonstrated that rebuilding confidence in the UK banking system requires more than just greater financial resilience. Regulatory fines and litigation and redress costs for misconduct, for example, continue to highlight the risk of financial losses and the challenges for those responsible for governing banks. Furthermore, misconduct issues are just one of a broader set of operational challenges faced by banks, including, for example, dealing with cyber risks (Chart 5.5). Changes to banks' business models, owing both to commercial and regulatory drivers (Box 1), though necessary are also expected to challenge management capacity over the next few years. In this environment, the Committee judges that strong, effective and well-informed governance and management in banks will be essential to rebuild confidence in the banking system and to manage the transition.

5.2 Countercyclical capital buffer

Since May 2014, the FPC has been responsible for setting the CCB in the United Kingdom, which it does — as required by law — on a quarterly basis. The CCB is a macroprudential instrument that enables the FPC to put banks in a better position to withstand stress through the financial cycle, by requiring them to raise capital ratios as threats to financial stability increase and allowing them to run them down if risks crystallise or if risks ease. This helps the FPC to achieve both of its objectives — to protect and enhance the resilience of the UK financial system and to support the Government's economic policy, including its objectives for growth and employment.

As part of its discussions in December, the Committee considered both the 'buffer guide' — a simple metric identified in legislation which provides a guide for the CCB based on the size of the credit-to-GDP gap — and its core indicators, which look at aspects of balance sheet stretch in banks and other sectors and terms and conditions in markets.

Indicators of bank resilience — such as capital, leverage ratios, and dependence on short-term wholesale funding — have improved during 2014. Levels of resilience are markedly higher than before the crisis and are expected to improve further as banks continue to transition to Basel III. The Committee's view on capital adequacy has been supported by the stress-testing exercise and its assessment of the risk outlook.

Box 4 Drivers of market liquidity

Liquid financial markets are important elements of a well-functioning financial system that help facilitate the financing of investment in the real economy and so support economic growth. Financial market liquidity has been affected by a number of recent structural changes, including regulation that was needed in response to the financial crisis. This has led to concerns that a reversal in risk-taking among investors might test the predictability of liquidity in some key market segments.

Box 1 in the June *Report* described some empirical measures of market liquidity. This Box begins by defining market liquidity and explaining its role in financial stability. It then discusses the high-level factors that determine the degree to which a market may be prone to a sudden reduction in liquidity, and provides an assessment of the extent to which these factors may apply across different markets. This can be useful for systemic risk assessment looking across the financial system.

The clear implication of the framework is that not all assets are equally liquid. Rather, liquidity in any given market segment relies on a diverse investor base, well-understood cash flows and sufficiently transparent trading arrangements. Independent of these underlying factors that drive liquidity in different market segments, an illusion of durable market liquidity can be created by shifts in demand for assets driven by broader conditions in the financial system. This illusion of market liquidity can be damaging when investor preferences shift and liquidity risk premia change, for example if this undermines the actual or perceived resilience of systemically important institutions or their counterparties, or important funding markets, with wider adverse consequences for financial stability — as distinct from the more contained crystallisation of investment risk.

What is market liquidity?

Market liquidity refers to the ease with which one asset can be traded for another. It can be characterised in two complementary ways.

A 'microstructure' view of market liquidity

From a 'microstructure' perspective, a market is typically considered liquid if investors can transact in a security at a price close to that prevailing in the market prior to their trade and prices are predictable in the sense that fluctuations are primarily driven by fundamental factors, such as the outlook for future cash flows. Together, these characteristics speak to the efficiency with which economic agents are able to make core financial transactions, including the payment for goods and services, intermediating between savers and borrowers,

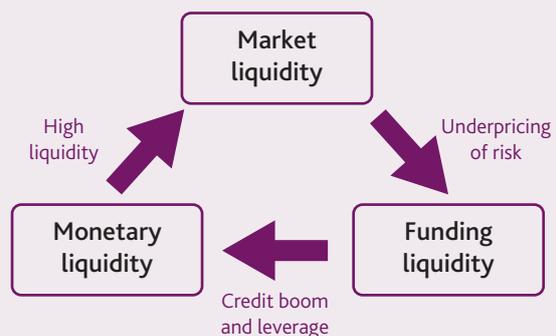
and insuring against and dispersing risk. Greater transactional efficiency ought also to contribute to better price discovery among tradeable financial assets.

A 'macrofinancial' view of market liquidity

A complementary 'macrofinancial' view of market liquidity is obtained by evaluating the degree to which markets are susceptible to large and sustained shifts in the demand for and supply of an asset, perhaps as a result of changes in investors' risk appetite. From this perspective, market liquidity can be framed in terms of its interaction with 'funding liquidity' (the ease with which banks and other non-bank financial intermediaries can raise funding) and 'monetary liquidity' (as the counterpart to credit creation within the financial system).⁽¹⁾

In this regard, market liquidity can contribute to the build-up of systemic risk if, for example, an excess of demand for assets can distort the price discovery process, leading to apparently stable prices and/or an underpricing of economic tail risk and liquidity risk. This in turn may lead to an excess of funding liquidity — for example, as non-bank financial companies need to place less collateral against repo financing and banks are able to finance their own activities more cheaply through securitisations and other forms of bank debt. As a result, overall credit conditions loosen and leverage increases, thereby increasing monetary liquidity and further strengthening the demand for assets (**Figure A**).

Figure A Illustration of how different concepts of 'liquidity' may lead to a build-up of systemic risk



Source: Bank of England.

Why does market liquidity matter for financial stability?

Financial stability can also be threatened when one or more of the factors described above reverse. While it is desirable that imbalances correct, market illiquidity can transmit systemic risk if a repricing of risk is allowed to overshoot. This is likely to matter, in particular, for debt securities whose in-built maturities create a need for refinancing in the primary market. Systemic risk can crystallise when the market microstructure is unable readily to absorb sudden changes in demand for or

supply of certain assets, leading to order imbalances, market illiquidity and overshooting in prices leading to extreme losses. This underlines that not all instruments can have the same level of underlying market liquidity — and that illusory liquidity (boosted by broader developments in the financial system) can be problematic. It is therefore important to assess the features that make markets more or less susceptible to order flow imbalances, whether they occur quickly, as in the case of ‘flash crashes’, or over a longer period. Both can undermine investor confidence in the financial system.

Broad determinants of order flow imbalances

Factors affecting prospects for order flow imbalances and hence risks to market liquidity can be grouped into those features that: render a market vulnerable to comparatively small initial price shocks; amplify the effect of such shocks; and provide a stabilising influence on prices as market conditions become more illiquid. Within this, reliable diversity of participation under different economic conditions is especially important.

Vulnerabilities

Some vulnerabilities to illiquidity arise as a result of the characteristics of assets themselves, viewed on a stand-alone basis. Examples here include their degree of complexity and opacity, lack of uniformity across similar securities, and their exposure to rare, unfavourable outcomes for the real economy (so-called ‘economic tail risks’).

Other vulnerabilities are associated with the wider context in which markets operate, including the possibility that an asset might easily be hedged and/or used as collateral during normal times but not during times of stress.

Amplifiers

Some factors serve to amplify market illiquidity in response to the crystallisation of these vulnerabilities, reinforcing pressure on investors to buy or sell. An important example here is forced selling of assets by market participants in response to a sudden withdrawal of their funding, perhaps because of redemptions by investors or calls for margin against repo and derivative contracts. For example, some such risks are faced by those investment funds that offer investors near-term redemptions at the net asset value of the fund — with the concern being that, in principle, the associated sales of securities could overwhelm the ability of some markets to absorb them in an orderly fashion.⁽²⁾ This risk could be particularly acute in investment vehicles that utilise securities lending as a core part of their investment strategy, such as some exchange-traded funds, especially if the resulting cash is reinvested in illiquid assets.⁽³⁾ Some investors might also sell other assets whose liquidity has remained comparatively robust because it is less costly to unwind those positions — but at the risk of causing contagion across asset markets.

Stabilisers

A diverse investor base supports resilient market liquidity as it increases the likelihood that a natural buyer will exist at the point that an existing asset owner wants to sell. The corollary of this is that market liquidity is more fragile if a market is dominated by participants who invest over a single time horizon. For example, pension funds typically buy securities in order to hold them to maturity, while very short-term investors, like high-frequency traders, will typically look to hold only very small positions overnight. Reliable participation by a mix of long and short-term investors is likely to be most conducive to market liquidity, other things being equal.

For a given investor base, an efficient matching process between buyers and sellers can also contribute to stable market liquidity. This typically depends on a combination of:

- **Price transparency:** Short-term movements in asset prices can be reinforced if prices are easily observed and investors use such movements to infer fundamental news. But over longer timescales, investors may be more likely to provide countervailing demand (supply) for an asset whose price has unduly fallen (risen) if they are confident in observed market prices. In this regard, there may be benefits of price transparency, for example as typically associated with exchange-trading.
- **Flexibility of trading provision:** There can be benefits to investors having different options for executing trades. In particular, market liquidity may be more resilient when investors are able to trade in both order-driven and quote-driven markets.⁽⁴⁾ Order-driven markets are centralised, typically through an exchange. By contrast, quote-driven markets rely on bilateral relationships between participants, including investors and market makers. As such, pricing in order-driven markets is intrinsically transparent (see above) but with the corollary that large trades may move the market, while quote-driven markets are more opaque but more able to accommodate large trades depending on others’ risk appetite.

Historically, dealers have contributed to market liquidity by acting as ‘market makers’ — holding inventories of assets built up to meet selling pressure that can then be sold when demand for assets increases. As discussed in Section 3.3, in addition to other factors, regulations designed to strengthen the resilience of financial institutions may have reduced dealers’ incentives to warehouse assets and act as market makers.⁽⁵⁾ As regulations are finalised and implemented, dealers’ business models are likely to adjust, resulting in a reduced and more differentiated provision of market-making across different asset classes and types of end-investor.

Liquidity in selected financial markets

Applying this framework unavoidably involves a degree of judgement, but it provides a means of understanding the high-level risks to UK financial stability associated with illiquidity in different market segments. For example, UK firms are major participants in, and have asset and liability exposures to, a large number of financial markets internationally. Market liquidity therefore directly and indirectly affects their actual and perceived resilience. And while some markets such as the sterling-denominated high-yield corporate bond market are small, at around £45 billion, the disruption of such markets could, at the margin, affect the willingness and ability of some companies to rely on market-based finance.

More generally, the framework helps to explain why securities markets have differing levels of liquidity, reflecting a variety of underlying factors, some fundamental (**Table 1**). For example, during the recent financial crisis, the opacity and complexity of some securitisation markets made them vulnerable to

illiquidity, in part because assets became hard to finance.⁽⁶⁾ Efforts are now underway internationally to improve the simplicity and transparency of securitisations. And haircuts on financing against other assets, including corporate bonds and equities, rose substantially, leading to funding strains from margin calls.⁽⁷⁾ FSB finalised in November proposals to reduce the procyclicality of leverage available to non-banks against collateral through a schedule of numerical haircut floors and methodological standards, and suggested that its framework might provide the basis for future macroprudential tools.

The Committee's view on current market liquidity conditions is described in Section 5.1. In particular, a sudden reappraisal of economic prospects could result in a severe adjustment to asset prices and increase in volatility if investors have not fully reflected structural changes in market liquidity in their assessment of liquidity risk. Further, recent episodes of market volatility have highlighted the Committee's previous concern that market liquidity can suddenly prove illusory and contribute to greater market disruption.

(1) This is in the spirit of the interactions between different concepts of 'liquidity' described by Mark Carney in *Building Continuous Markets* (November 2008) and *Principles for Liquid Markets* (May 2008).

(2) Redemptions that do not necessitate the disposal of securities in secondary markets do not pose direct risks to market liquidity, but they may do so indirectly depending on the behaviour of the redeeming investor. For example, roughly half of global investment funds' assets (US\$30–US\$40 trillion) are held in separately managed accounts that may result in transfer of control of assets on redemption rather than direct asset sales.

(3) As described in Box 5 of the June 2010 *Financial Stability Report*.

(4) But within these broad types, fragmentation of trading across venues is likely to be detrimental to the resilience of market liquidity.

(5) See also Committee on the Global Financial System (2014), 'Market-making and proprietary trading: industry trends, drivers and policy implications'.

(6) See Bank of England *Financial Stability Report*, October 2008.

(7) See, for example, page 3 of the *Regulatory Framework for Haircuts on Non-Centrally Cleared Securities Financing Transactions* published by the FSB on 14 October 2014; www.financialstabilityboard.org.

Table 1 Factors affecting the resilience of market liquidity in selected market segments

	Securitisations	EME corporate bonds	Developed economy corporate bonds	Equities
Vulnerabilities	Some key investors operate maturity mismatch ^(a)			
	Collateral haircuts can increase materially in stressed economic environment and collateral eligibility can be threatened ^(b)			
	Comparatively opaque/complex and more exposed to economic tail risk	Comparatively more exposed to economic tail risk	Price contagion from other fixed-income markets ^(c)	Comparatively more exposed to economic tail risk
Amplifiers	Quote-driven, dealer-intermediated market has had limited price transparency			Evidence of partly correlated behaviour in some securities ^(d)
	Credit ratings downgrades may lead to forced selling by mandate-driven investors			
	Crisis experience demonstrated potential for contagion to other fixed-income markets ^(e)	Reportedly low conviction among investors in some positions and evidence of partly correlated behaviour ^(d)	Reportedly low conviction among investors in some positions	
Stabilisers	Clear signs of major undervaluation may attract distressed debt funds if reliable funding can be obtained ^(f)	Diversity among market participants		
	Industry studies have found that the market-maker model is important to secondary market functioning across fixed-income sectors ^(g)	Transparent order-driven market (exchange trading) coupled with quote-driven offering from dealers (dark pools)		

Source: Bank of England.

(a) Including, for example, investment funds and hedge funds that offer investors cash redemptions.

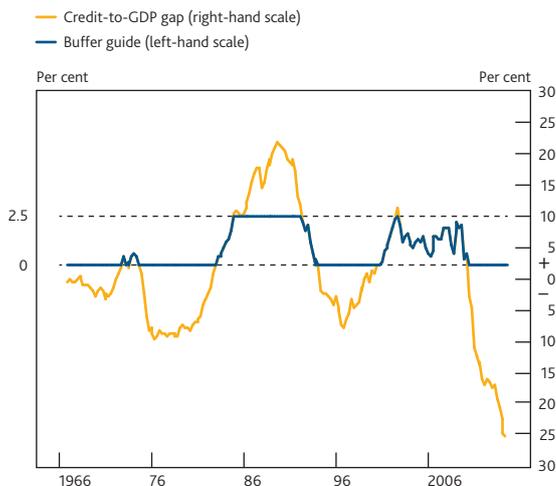
(b) For example, the FSB Workstream 5 Market Overview report published in April 2012 noted that securities lenders and providers of short-term repo financing typically managed risk in the period following the crisis by adjusting counterparty exposure limits and/or collateral eligibility restrictions. Evidence regarding the procyclicality of market haircuts was presented in the Regulatory Framework for Haircuts on Non-Centrally Cleared Securities Financing Transactions published by the FSB on 14 October 2014 available from www.financialstabilityboard.org.(c) As described in the October 2008 *Financial Stability Report*.(d) See, for example, the evidence of herding among equity and bond funds investing in EMEs published by the International Monetary Fund in its *Global Financial Stability Report* in April 2014, based on the measure proposed by Lakonishok, J, Shleifer, A and Vishny, R W (1992).(e) As described in the October 2008 *Financial Stability Report*.(f) Prices of some high credit quality securitisations fell sharply in the early phases of the recent financial crisis and remained low for some time, including UK Prime RMBS. In the event, realised default losses on such securitisations were lower than these price developments suggested. Box 1 in the October 2008 *Financial Stability Report* set out illustrative scenario analysis of the severity of economic stress that would have been required for credit losses to begin eroding the most senior tranches.

(g) An analysis of the effects on fixed-income trading of the review of the Markets in Financial Instruments Directive (MiFID II) was published by the Association for Financial Markets in Europe in September 2012. It found that the market-maker model was important to secondary market functioning across fixed income sectors.

Aggregate private sector credit in the United Kingdom has continued to fall relative to GDP, though the level of debt — particularly for the household sector — remains high. As a result of weak net credit growth, the gap between the ratio of credit-to-GDP and its long-term trend (**Chart 5.6**) has been strongly negative and falling in recent years. Reflecting this, the 'buffer guide' suggests that the CCB should be set at 0%. But this is only one indicator that the Committee considers.

Other imbalances in the UK economy have persisted. The UK current account deficit — at 5.2% of GDP in 2014 Q2 — remains close to historical highs. And the official estimate of the UK net foreign asset position has deteriorated over the past few years, to around -20%. As discussed in Box 2, however, the United Kingdom's external balance sheet position is likely to be healthier than implied by official estimates. And to the extent that fiscal policy is credible and investors are confident in the policy framework and its continuing openness, current account deficits are easier to finance. At a sectoral level, other financial institutions have become more reliant on net short-term foreign currency

Chart 5.6 Credit-to-GDP gap and the countercyclical capital buffer guide^{(a)(b)(c)}



Sources: British Bankers' Association, ONS, Revell, J and Roe, A (1971), 'National balance sheets and national accounting — a progress report', *Economic Trends*, Vol. 310.5, No. 211, May, pages xvi–xvii and Bank calculations.

- (a) Credit is defined here as debt claims on the UK private non-financial sector. This includes all liabilities of the household and not-for-profit sector and private non-financial corporations' loans and debt securities excluding derivatives, direct investment loans and loans secured on dwellings.
- (b) 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 Hodrick-Prescott filter with a smoothing parameter of 400,000.
- (c) The buffer guide suggests that a credit gap of 2% or less equates to a CCB rate of 0% and a credit gap of 10% or higher equates to a CCB rate of 2.5%.

funding recently (Chart C, Box 2). But banks appear to be in a better position on this measure than before the crisis.

The modest increase in market volatility in Autumn 2014 has been associated with a slight tightening in terms and conditions in financial markets, following a period of easing over the past couple of years. Market intelligence also suggests that yield-seeking behaviour has eased a little. But long-term real interest rates remain very low.

Taking these indicators into its overall assessment of risks, at its December meeting the Committee agreed to set the CCB rate for UK exposures at 0%, unchanged from September.

Reciprocation

As well as setting the UK CCB, the FPC has responsibility for deciding whether foreign CCB rates should be reciprocated by the UK authorities.

Under EU law, EEA countries will be mandated to reciprocate each other's CCB rates from 2016. UK legislation in force since May 2014, however, allows the FPC to reciprocate before that date. Given the potential benefits of reciprocation, the Committee decided in September 2014 to consider reciprocation with immediate effect. While such decisions are made on an individual basis, in most cases reciprocation would enhance UK financial stability and therefore the FPC expects to reciprocate foreign CCB rates.

In the light of this, in September the Committee recognised the 1% CCB rates set by the Norwegian and Swedish authorities. These rates will be applied by UK regulated banks, building societies and investment firms with relevant exposures in Norway and Sweden in calculating their institution-specific CCBs from 3 October 2015.

Table 5.B The FPC's medium-term priorities (as set out in the March 2014 Record following the November 2013 Report)

Establishing the medium-term capital framework	<ul style="list-style-type: none"> • Leverage ratio review • Usability and interaction of capital buffers • Overall calibration of UK bank capital requirements, following progress on relevant international agendas and taking into account FPC discussions on ending 'too big to fail'
Ending 'too big to fail'	<ul style="list-style-type: none"> • Process for identifying domestic systemically important banks in the United Kingdom • Macroprudential objectives to consider when setting the height of the ring-fence • Protocols around stays in derivative contracts • Policies on resolution and on recovery and resolvability • The UK framework for gone-concern loss-absorbing capacity
Ensuring diverse and resilient sources of market-based finance	<ul style="list-style-type: none"> • Assessing and mitigating systemic risks beyond the existing regulatory perimeter • Risks to stability arising from procyclicality in the availability of finance, including via collateral markets • Resilience of market liquidity

Source: Bank of England.

5.3 Structural developments

There has been significant progress both domestically and internationally on the three medium-term priorities established by the Committee in 2013: establishing the medium-term capital framework; ending 'too big to fail'; and ensuring diverse and resilient sources of market-based finance (Table 5.B). Section 3 of this Report takes stock of those developments and identifies remaining issues within those areas.

In its meetings in September, October and December, the Committee focused on the development of macroprudential instruments and cyber risks.

(i) Housing market and leverage ratio instruments

Since the June Report, the Committee has made two Recommendations to HM Treasury on new macroprudential

instruments. These Recommendations were in response to two separate requests from the Chancellor of the Exchequer. The first was for the FPC to consider additional powers to guard against financial stability risks from the housing market. The second was for the FPC to conduct a review into the role for the leverage ratio within the capital framework for UK banks, and to consider the case for the FPC having the power to implement a leverage ratio requirement ahead of the international timetable or to set a higher baseline ratio in some circumstances for UK banks.

Box 3 summarises the Committee's Recommendations. Following the Recommendations, HM Treasury has published its proposals and draft legislation to implement them.

In early 2015, the Committee will publish draft Policy Statements to inform the Parliamentary debate of the proposed legislation to provide these powers.

(ii) Cyber risks

In June 2013, the FPC recommended that HM Treasury work with regulators and firms to put in place a programme of work to improve and test resilience to cyber attack (Section 4 describes progress against this Recommendation).

Unlike many other forms of operational risk, this risk results from deliberate actions of malicious (and potentially sophisticated) actors, who adapt their strategies in response to defensive measures taken by firms and regulators. As a result, the threat is continually evolving.

In the light of this, the Committee considers it important that firms take steps to ensure their defences remain up to date, and that boards see this as a strategic priority. While overall levels of cyber risk are difficult to measure, regulators have worked with firms to develop benchmarks of good practice. Vulnerability testing has been made available that uses the expertise of Government and commercial intelligence providers to mimic current threats to cyber resilience. In line with its June 2013 Recommendation, the FPC judges that there is a need for core firms and financial market infrastructures to conduct vulnerability testing as soon as practicable in order to enhance the resilience of the financial system to cyber threats.

Box 5

Results of the 2014 stress test of major UK banks

On 16 December, the Bank of England published the results of the 2014 UK stress test, which covered eight major UK banks and building societies (hereafter referred to as 'banks') and explored macroeconomic vulnerabilities facing the UK banking system, given the outlook for financial stability.⁽¹⁾

This box summarises these results and the responses of the PRA Board and the FPC. Both committees used the stress-test results to inform their respective judgements around the capital adequacy of individual institutions and the resilience of the system as a whole, although there was no automatic link between stress-test results and capital actions.

Background

Annual stress tests of the UK banking system form one part of the overall capital adequacy framework, alongside risk-weighted capital requirements and the PRA's expectation that major UK banks should meet a 3% Tier 1 leverage ratio.⁽²⁾

Earlier this year, the Bank announced the key elements of the first concurrent stress test of the UK banking system. The UK stress test in 2014 built on the EU-wide exercise run by the European Banking Authority (EBA).⁽³⁾ European stress-testing arrangements make provision for national sensitivities and variations to the common EU-wide test, allowing relevant authorities to explore country-specific risks using their own scenarios and methodologies.

The stress test was designed to assess the combined impact of (i) the global macroeconomic and market elements of the common, EU-wide stress scenario; and (ii) the UK macroeconomic elements of the stress scenario designed by the Bank of England. The latter examined, in particular, the resilience of UK banks and building societies to a housing market shock, an increase in unemployment, contraction in GDP and a sharp rise in Bank Rate.⁽⁴⁾

The stress scenario is not a forecast of macroeconomic and financial conditions in the United Kingdom. It is not a set of events that is expected, or likely, to materialise. Rather, it is a coherent, tail-risk scenario that was designed to assess the resilience of UK banks and building societies to stresses that could affect household and corporate sector balance sheets. Although the exercise only assessed the impact of a single stress scenario, it allowed policymakers to form judgements on the resilience of the UK banking system to a severe macroeconomic downturn, which could be a feature of many different possible stressed states.

What have we learned from the stress test about bank resilience?

The Bank used an analytical framework that made use of a range of tools to arrive at the final projections of bank capital ratios in the stress scenario, including banks' own models, in-house models, sectoral analysis and peer review. The bank-specific results have been approved by the PRA Board.

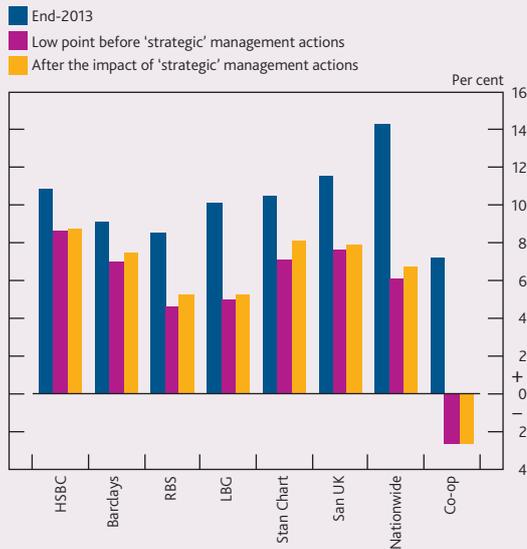
The Bank's final projections imply that the stress scenario would reduce the aggregate CET1 ratio, across the eight participating banks, from 10.0% to a low point of 7.3% in 2015. This does not account for the effect of management actions that banks could take to cushion the effect of the stress on their balance sheets. Overall, after taking into account accepted management actions — discussed below — the aggregate CET1 ratio falls to a low point of 7.5% in the stress scenario.

From an individual-institution perspective, the PRA Board judged that this stress test did not reveal capital inadequacies for five out of the eight participating banks, given their balance sheet structure at end-2013 (Barclays, HSBC, Nationwide, Santander UK and Standard Chartered). The PRA Board did not require these banks to submit revised capital plans.

Only one bank — the smallest among the set of major UK banks included in the test — saw its projected capital ratio fall below the 4.5% CET1 threshold at the trough of the stress (**Chart A**). The other two banks (The Royal Bank of Scotland Group and Lloyds Banking Group) were found to have capital inadequacies based on their end-2013 balance sheets,⁽⁵⁾ but were not required to submit revised capital plans given progress in building capital during 2014 and concrete plans to build capital further.

Based on the Bank's final projections, there are two key factors that drive banks' projected profitability in the stress, which act in opposite directions. First, impairments rise sharply as macroeconomic conditions deteriorate and increasing numbers of borrowers face financial difficulties. Second, banks can widen their net interest margins on sterling assets and sterling liabilities, as Bank Rate rises in the stress scenario, generating additional income that offsets some of the credit impairments. In part, this is because about 20% of banks' sterling retail deposits are current accounts. Interest expense on these liabilities would be expected to remain low as Bank Rate rises due to the transactional nature of these deposits, thereby widening the gap between interest earned on assets relative to that paid on liabilities. In aggregate, the eight UK banks taking part in the stress test are projected to make £13 billion of cumulative losses in the first two years of the stress scenario, before returning to profitability in the third year.

Chart A Impact of 'strategic' management actions on low-point CET1 capital ratios^{(a)(b)(c)}



Sources: Participating banks' FDSF data submissions, Bank analysis and calculations.

- (a) The CET1 capital ratio is defined as CET1 capital expressed as a percentage of risk-weighted assets, where these are defined in line with the UK implementation of CRD IV.
 (b) The year of the low point in the CET1 capital ratio before the impact of 'strategic' management actions differs across banks.
 (c) For Nationwide the stress tests are based on an estimated 4 April 2014 balance sheet. See Annex 1 for more details.

As discussed in Section 5.1 of this *Report*, the stress-test exercise has provided an updated assessment of credit risks to major UK banks and building societies — based on their balance sheets as at end-2013. These included a number of key risks that the FPC has highlighted over the last year. In particular, the 2014 stress test considered risks to UK households and UK corporate credit risk, including from commercial real estate (CRE).

The shocks in the 2014 scenario are particularly stressful for UK households — including a increase in Bank Rate to over 4%, and an increase in unemployment to almost 12%. In addition to mortgagors facing repayment difficulties, property values fall precipitously in the stress scenario. The combination of these two factors results in a significant rise in impairment charge rates on UK mortgage portfolios in the stress scenario, exceeding the Bank's best estimates of loss rates seen in the early 1990s. In total, projected impairments on UK mortgages account for around 60% of banks' total impairments on exposures to UK households in the stress scenario.

There is uncertainty in assessing the impact of the stress scenario, in part because quantitative models calibrated to historical data may not fully capture the shocks set out in the scenario. One uncertainty identified by Bank staff was around the assessment of the combined impact of affordability shocks and large property price falls on arrears. There is a risk that, in the face of an affordability shock, the scale and depth of negative equity in the stress scenario could lead to a larger

proportion of borrowers defaulting than incorporated in the final projections. This could be the case, for example, because — in the face of affordability shocks — borrowers deep in negative equity would be unable to avoid default by selling their properties.

There is limited granular data publically available from periods in which significant house price falls have been experienced in countries sufficiently comparable to the United Kingdom. The Bank will look to investigate this uncertainty in greater depth in future stress-testing exercises.

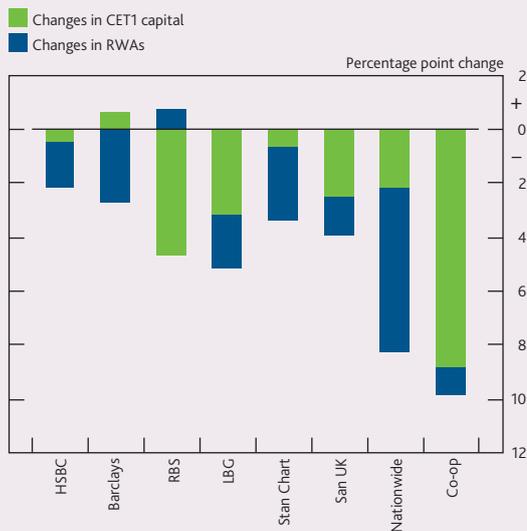
In addition, the UK variant scenario was designed to test corporate credit risk through a number of channels. The main focus of the Bank's corporate credit risk analysis, though, was on UK CRE exposures, which were stressed directly by the 30% fall in commercial property prices.

The Bank's projections for impairments on CRE portfolios were informed by a detailed review of UK banks' CRE portfolios conducted by Bank staff in early 2014, described in detail in *Stress testing the UK banking system: 2014 results*. The review found that the risk associated with banks' CRE books is substantially lower than in 2011.⁽⁶⁾ In line with that finding, impairment charges were projected to be lower in the stress scenario than those seen in the recent crisis. In part, this is consistent with the smaller CRE price fall assumed in the stress scenario relative to the recent crisis. It is also consistent with an improvement in the credit quality of banks' CRE portfolios in recent years, and the shrinking of the books. These results, however, do not suggest that there are no potential risks in the CRE market. The CRE market has seen strong price increases and rising activity recently, and is an area that the Bank continues to monitor closely (Section 2 of this *Report*). Given this, risks to CRE portfolios are likely to be a feature of future stress-testing exercises.

Another key feature of the projections in the 2014 stress test is a significant rise in risk-weighted assets (RWAs) in the stress scenario for some banks (**Chart B**).⁽⁷⁾ This observed increase highlights the potential procyclicality of the capital regime.

Given the nature of the 2014 stress scenario, the procyclicality of risk weights is particularly apparent for UK mortgage books. Average mortgage risk weights of the seven participating banks with UK mortgage portfolios rise from around 14% at end-2013 to around 30% at their peak in the stress scenario. Effectively, at the same time as the housing market stress materialises, regulatory capital requirements against UK mortgage exposures are projected to double on average across the major banks. The size of the effect varies significantly across banks. This reflects, among other factors, differences in the modelling approaches used to calculate RWAs for regulatory capital purposes.

Chart B Contributions to the change in CET1 capital ratios in the stress relative to end-2013^{(a)(b)(c)(d)}



Sources: Participating banks' FDSF data submissions, Bank analysis and calculations.

- Changes are calculated from end-2013 to the lowest point in the stress, before the impact of 'strategic' management actions. The year of the low point differs across banks.
- The CET1 capital ratio is defined as CET1 capital expressed as a percentage of RWAs, where these are defined in line with the UK implementation of CRD IV.
- For Nationwide the stress tests are based on an estimated 4 April 2014 balance sheet, rather than end-2013. See Annex 1 for more details.
- RWAs fall for RBS due to asset disposals, including the disposal of Citizens (and hence make a positive contribution in the chart above).

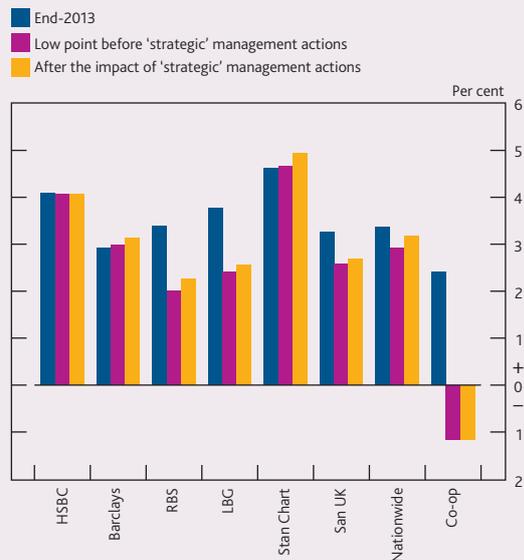
The FPC and the PRA Board identified the behaviour of risk weights in the stress scenario as a potential structural vulnerability. A procyclical capital framework can encourage credit exuberance in a boom and deleveraging in a downturn. While there may be macroprudential benefits from banks using a diverse set of approaches, differences across banks that result in significant variation in capital requirements against similar portfolios make it harder for market participants to compare capital positions. This also underscores the benefit of having a complementary leverage-based approach to ensuring capital adequacy. Bank staff will undertake further work to explore the issue of risk-weight procyclicality — and any inconsistencies in banks' modelling approaches — in more depth.

Leverage ratios also decrease for most banks in the stress, although the impact is generally more muted relative to risk-based ratios (Chart C). This is because the rise in RWAs affecting risk-based capital ratios is driven by a sharp increase in average risk weights rather than growth in the nominal size of the balance sheet. This channel does not affect banks' leverage metrics, as the denominator of the ratio is not risk-weighted. The aggregate leverage ratio of the eight participating banks falls from around 3.6% at end-2013 to about 3.4% at the low point of the stress, before the impact of any management actions.

Management actions in a stress

In a stress, banks will naturally take actions to reduce the impact of shocks to their profitability and capital ratios. As

Chart C Impact of 'strategic' management actions on low-point leverage ratios^{(a)(b)(c)}



Sources: Participating banks' FDSF data submissions, Bank analysis and calculations.

- The leverage ratio is defined as the sum of CET1 capital and additional Tier 1 capital using the end-point definition of additional Tier 1 capital as set out in the final 30 November 2013 CRR text expressed as a percentage of leverage exposure where leverage exposure is defined in line with the Basel 2014 definition.
- The year of the low point in the CET1 capital ratio before the impact of 'strategic' management actions differs across banks.
- For Nationwide the stress tests are based on an estimated 4 April 2014 balance sheet. See Annex 1 for more details.

part of their stress-testing submissions, participating banks were asked to propose a range of 'strategic' management actions that they could take to mitigate the impact of the stress on their balance sheet. These related mostly to cutting staff costs and dividend pay-outs.

But some actions were considered unlikely to be feasible in the stress scenario or were not considered to be desirable given their impact on the rest of the system. In the 2014 test, a high threshold was set for accepting 'strategic' management actions that banks would be given credit for, as set out in the guidance document.⁽⁸⁾ This document noted that actions would only be permitted to improve banks' projected capital positions if they were considered to be plausible in stressed conditions and consistent with actions included in banks' recovery plans.

Some actions related to reducing the size of their loan books over the course of the stress scenario. A core objective of capital regulation from a macroprudential perspective is to ensure that the banking system is sufficiently capitalised to be able to maintain the supply of bank lending (and other financial services) in the face of adverse shocks. Accepting management actions that would imply a retrenchment in the supply of lending to the real economy in the stress scenario would be inconsistent with that overall objective. But the FPC also noted that in a severe stress, the demand for credit is also likely to shift.

The FPC, therefore, agreed a general principle that banks' proposed management actions to change the size of their loan books in the stress scenario would not be accepted, unless these were driven by changes in credit demand that would be expected to occur in the stress scenario. This is consistent with the FPC's objectives to protect and enhance the financial stability of the United Kingdom and, subject to that, support the economic policy of the Government, including its objectives for growth and employment.

Although identifying the purely demand-driven change in credit quantities is difficult to do precisely, for the 2014 stress test, the FPC judged that it would be appropriate to reject any management actions that implied a fall in stock of lending relative to end-2013. This judgement was supported by a range of model-based evidence considering how demand for credit might evolve in the stress scenario, and evidence on the stock of bank lending in the recent crisis.

The FPC also noted that it may be appropriate for the PRA Board to depart from that general principle in idiosyncratic cases. For example, this might be appropriate if the actions proposed by banks would (i) not have a material impact on the market as a whole and (ii) not be correlated with actions of other banks operating in the same market.

In addition, a number of banks have issued high-trigger AT1 instruments after the balance sheet cut-off date for the stress test that would have triggered in this particular stress scenario. The FPC noted that this would act to support the resilience of the banking system in the stress. The Committee emphasised that investors in these instruments should be aware of the possibility that this would happen in a real stress.

Before accounting for the impact of strategic management actions, the projections were derived based on a set of consistent assumptions around dividend payments. Banks' proposed management actions to change their dividend payments in response to the stress scenario were generally accepted in the 2014 test. But the timing of any adjustments to dividends through the stress had to be plausible. For example, as a general rule, it was assumed that banks would pay their interim dividends in 2014, as they would not have had the foresight to expect the full magnitude of the stress scenario. Further detail on the approach to dividends is provided in the bank-specific commentary boxes in Annex 1 of *Stress testing the UK banking system: 2014 results*.

What policy actions have been taken on the back of the stress test?

The PRA Board used the stress-test results to inform its judgements around the capital adequacy of individual banks, and considered these results relative to existing capital planning.

Stress testing the UK banking system: 2014 results outlines where individual banks have been asked to take further action to strengthen their capital position. The PRA Board judged that, as of end-2013, three of the eight participating banks needed to strengthen their capital position further. But given capital actions taken over the course of 2014 and changes to capital plans, only one bank was required to submit a revised capital plan.

The PRA Board considered a number of factors in forming their decisions. A key consideration was the extent to which a bank's CET1 ratio was projected to fall below the minimum 4.5% threshold in the stress.

Where individual banks' CET1 ratios remained above, but close to, the 4.5% threshold, the PRA Board also considered other factors. These included, but were not limited to, the extent to which Pillar 2A risks could be covered through the projection period and the extent to which vulnerabilities in banks' business models were tested by the particular stress scenario. Finally, the PRA Board assessed the extent to which — in the baseline projections — banks met the capital standard set out in 'Capital and leverage ratios for major UK banks and building societies — SS3/13': that is, 7% of RWAs to be met with CET1 capital and a 3% leverage ratio using a Tier 1 definition of capital.⁽⁹⁾

The FPC also considered the information from the stress test and the PRA Board's actions in forming its judgements on overall capital adequacy of the UK banking system. The FPC's overall judgement — that the stress-test results and banks' capital plans taken together suggested that the banking system would have the capacity to maintain its core functions in a stress scenario and, therefore, that no system-wide, macroprudential actions on bank capital were needed in response to this stress test — is described in Section 5.1 of this *Report*.

The FPC and the PRA Board also noted that, in future years, banks are likely to be assessed in the stress test against an explicit leverage ratio threshold, as well as a risk-based capital ratio, and banks would need to have plans in place to meet these requirements.

Next steps

The 2014 test was the first step towards the Bank's medium-term stress-testing framework. The forward-looking assessment of capital adequacy demonstrated the substantial improvement in resilience of participating banks collectively in recent years. The exercise also shed light on banks' behaviour under stress, including the actions they would take to conserve capital in such scenarios, such as cutting dividend payments to shareholders. And by setting out the authorities' analysis in public, it provides greater transparency and reduces

uncertainty about the capital standards to which banks are being held.

The design of the stress-testing framework will evolve over time, to ensure that it continues to serve the needs of the FPC and the PRA Board. This will include continuing to develop the approach so that stress-test results can be used to inform the setting of different capital requirements and buffers by the PRA Board and the FPC.

The Bank intends to publish further material on the evolution of the stress-testing framework in 2015.

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- (1) Bank of England (2014), 'Stress testing the UK banking system: 2014 results', available at www.bankofengland.co.uk/publications/Pages/news/2014/169.aspx.
 - (2) www.bankofengland.co.uk/publications/Pages/news/2013/181.aspx. The CET1 capital ratio is defined as CRD IV end-point. The leverage ratio is defined as the sum of CET1 capital and additional Tier 1 (AT1) capital using the end-point definition of AT1 capital as set out in the final 30 November 2013 CRR text expressed as a percentage of Leverage Exposure where Leverage Exposure is defined in line with the Basel 2014 definition. In addition HM Treasury have been preparing to introduce a new leverage ratio framework: www.gov.uk/government/consultations/financial-policy-committees-leverage-ratio-framework.
 - (3) www.bankofengland.co.uk/publications/Pages/news/2014/141.aspx.
 - (4) www.bankofengland.co.uk/publications/Pages/news/2014/071.aspx.
 - (5) Given Nationwide's different reporting date, the stress test used an estimated 4 April 2014 balance sheet as the starting point of the analysis.
 - (6) The first review of banks' UK CRE portfolios was conducted in 2012.
 - (7) Box 3 in *Stress testing the UK banking system: 2014 results* provides more detail around the observed procyclicality of risk weights and outlines the main reasons behind it.
 - (8) Bank of England (2014), 'Stress testing the UK banking system: guidance for participating banks', available at www.bankofengland.co.uk/financialstability/Documents/fpc/guidance.pdf.
 - (9) www.bankofengland.co.uk/pr/Pages/publications/capitalleverage.aspx.

Annex: Core indicators

Table A.1 Core indicator set for the countercyclical capital buffer^(a)

Indicator	Average, 1987–2006 ^(b)	Average 2006 ^(c)	Minimum since 1987 ^(b)	Maximum since 1987 ^(b)	Previous value (oya)	Latest value (as of 3 Dec. 2014)
Bank balance sheet stretch^(d)						
1 Capital ratio						
Basel II core Tier 1 ^(e)	6.6%	6.3%	6.2%	12.3%	11.7%	n.a.
Basel III common equity Tier 1 ^(f)	n.a.	n.a.	n.a.	n.a.	8.7%	10.7% (2014 H1)
2 Leverage ratio ^(g)						
Simple	4.7%	4.1%	2.9%	5.8%	5.3%	5.8% (2014 H1)
Basel III (2010 proposal)	n.a.	n.a.	n.a.	n.a.	3.8%	n.a.
Basel III (2014 proposal)	n.a.	n.a.	n.a.	n.a.	n.a.	4.0% (2014 H1)
3 Average risk weights ^(h)	53.6%	46.4%	34.6%	65.4%	35.9%	38.7% (2014 H1)
4 Return on assets before tax ⁽ⁱ⁾	1.0%	1.1%	-0.2%	1.5%	0.3%	0.3% (2014 H1)
5 Loan to deposit ratio ^(j)	114.5%	132.4%	96.0%	133.3%	100.8%	99.4% (2014 H1)
6 Short-term wholesale funding ratio ^(k)	n.a.	24.5%	14.8%	26.8%	17.1%	14.8% (2013)
of which excluding repo funding ^(k)	n.a.	15.6%	5.8%	16.1%	6.9%	5.8% (2013)
7 Overseas exposures indicator: countries to which UK banks have 'large' and 'rapidly growing' total exposures ^{(l)(m)}	In 2006 Q4: AU, BR, CA, CH, CN, DE, ES, FR, IE, IN, JP, KR, KY, LU, NL, US, ZA			In 2013 Q2: CA, CH, HK, MY, SG, TW		In 2014 Q2: CN, HK, IE, SG, TW
8 CDS premia ⁽ⁿ⁾	12 bps	8 bps	6 bps	298 bps	95 bps	57 bps (3 Dec. 2014)
9 Bank equity measures						
Price to book ratio ^(o)	2.14	1.97	0.52	2.83	1.06	1.09 (3 Dec. 2014)
Market-based leverage ratio ^(p)	9.7%	7.8%	1.9%	14.9%	5.7%	5.8% (3 Dec. 2014)
Non-bank balance sheet stretch^(q)						
10 Credit to GDP ^(r)						
Ratio	124.9%	161.1%	92.4%	181.8%	158.4%	150.0% (2014 Q2)
Gap	6.3%	5.4%	-25.5%	21.7%	-19.5%	-25.5% (2014 Q2)
11 Private non-financial sector credit growth ^(s)	10.1%	9.7%	-2.7%	23.0%	0.8%	2.6% (2014 Q2)
12 Net foreign asset position to GDP ^(t)	-3.1%	-12.1%	-19.9%	20.4%	-10.0%	-18.9% (2014 Q2)
13 Gross external debt to GDP ^(u)	193.9%	321.8%	123.0%	406.7%	372.8%	320.8% (2014 Q2)
of which bank debt to GDP	128.2%	202.6%	84.4%	275.6%	208.9%	174.4% (2014 Q2)
14 Current account balance to GDP ^(v)	-1.8%	-2.2%	-5.6%	0.6%	-2.0%	-5.2% (2014 Q2)
Conditions and terms in markets						
15 Long-term real interest rate ^(w)	3.10%	1.27%	-0.58%	5.29%	0.57%	-0.53% (3 Dec. 2014)
16 VIX ^(x)	19.1	12.8	10.6	65.5	13.0	13.3 (3 Dec. 2014)
17 Global corporate bond spreads ^(y)	115 bps	87 bps	52 bps	486 bps	136 bps	127 bps (3 Dec. 2014)
18 Spreads on new UK lending						
Household ^(z)	478 bps	350 bps	283 bps	837 bps	719 bps	654 bps (Oct. 2014)
Corporate ^(aa)	107 bps	100 bps	84 bps	417 bps	280 bps	231 bps (June 2014)

Table A.2 Core indicator set for sectoral capital requirements^(a)

Indicator	Average, 1987–2006 ^(b)	Average 2006 ^(c)	Minimum since 1987 ^(b)	Maximum since 1987 ^(b)	Previous value (oya)	Latest value (as of 3 Dec. 2014)
Bank balance sheet stretch^(d)						
1 Capital ratio						
Basel II core Tier 1 ^(e)	6.6%	6.3%	6.2%	12.3%	11.7%	n.a.
Basel III common equity Tier 1 ^(f)	n.a.	n.a.	n.a.	n.a.	8.7%	10.7% (2014 H1)
2 Leverage ratio ^(g)						
Simple	4.7%	4.1%	2.9%	5.8%	5.3%	5.8% (2014 H1)
Basel III (2010 proposal)	n.a.	n.a.	n.a.	n.a.	3.8%	n.a.
Basel III (2014 proposal)	n.a.	n.a.	n.a.	n.a.	n.a.	4.0% (2014 H1)
3 Average mortgage risk weights ^(ab)	n.a.	n.a.	17.3%	22.4%	19.3%	17.3% (2014 H1)
4 Balance sheet interconnectedness ^(ac)						
Intra-financial lending growth ^(ad)	12.0%	13.0%	-15.3%	45.5%	-1.8%	-13.3% (2014 H1)
Intra-financial borrowing growth ^(ae)	14.1%	14.0%	-19.8%	28.9%	-19.8%	-14.8% (2014 H1)
Derivatives growth (notional) ^(af)	37.7%	34.2%	-18.0%	52.0%	7.2%	-17.6% (2014 H1)
5 Overseas exposures indicator: countries to which UK banks have 'large' and 'rapidly growing' non-bank private sector exposures ^{(ag)(m)}		In 2006 Q4: AU, CA, DE, ES, FR, IE, IT, JP, KR, KY, NL, US, ZA			In 2013 Q2: CA, DE, FR, SG	In 2014 Q2: CN, FR, HK, IE, JP, SG
Non-bank balance sheet stretch^(q)						
6 Credit growth						
Household ^(ah)	10.2%	11.0%	-0.1%	19.9%	2.5%	4.5% (2014 Q2)
Commercial real estate ^(ai)	15.3%	18.5%	-9.7%	59.8%	-5.6%	-7.6% (2014 Q3)
7 Household debt to income ratio ^(aj)	112.0%	149.6%	91.9%	158.0%	137.2%	136.0% (2014 Q2)
8 PNFC debt to profit ratio ^(ak)	262.2%	309.0%	193.5%	407.7%	335.9%	295.2% (2014 Q2)
9 NBFI debt to GDP ratio (excluding insurance companies and pension funds) ^(al)	59.3%	126.7%	14.8%	180.1%	171.5%	155.3% (2014 Q2)
Conditions and terms in markets						
10 Real estate valuations						
Residential price to rent ratio ^(am)	100.0	151.1	66.9	160.6	123.0	132.1 (2014 Q3)
Commercial prime market yields ^(an)	5.4%	4.0%	3.8%	7.3%	4.7%	4.2% (2014 Q3)
Commercial secondary market yields ^(an)	8.9%	5.8%	5.4%	10.9%	9.2%	8.0% (2014 Q3)
11 Real estate lending terms						
Residential mortgage loan to value ratio (mean above the median) ^(ao)	90.6%	90.6%	81.6%	90.8%	85.3%	86.4% (2014 Q3)
Residential mortgage loan to income ratio (mean above the median) ^(ao)	3.8	3.8	3.6	4.1	4.0	4.1 (2014 Q3)
Commercial real estate mortgage loan to value (average maximum) ^(ap)	77.6%	78.3%	60.4%	79.6%	61.3%	63.3% (2014 Q2)
12 Spreads on new UK lending						
Residential mortgage ^(aq)	81 bps	50 bps	35 bps	361 bps	213 bps	174 bps (Oct. 2014)
Commercial real estate ^(ar)	138 bps	136 bps	119 bps	423 bps	318 bps	263 bps (2014 Q2)

Footnotes to Core indicator tables

- (a) A spreadsheet of the series shown in this table is available at www.bankofengland.co.uk/financialstability/Pages/fpc/coreindicators.aspx.
- (b) If the series starts after 1987, the average between the start date and 2006 and the maximum/minimum since the start date are used.
- (c) 2006 was the last complete non-crisis year.
- (d) Unless otherwise stated, indicators are based on the major UK bank peer group defined as: Abbey National (until 2003); Alliance & Leicester (until 2007); Bank of Ireland (from 2005); Bank of Scotland (until 2000); Barclays; Bradford & Bingley (from 2001 until 2007); Britannia (from 2005 until 2008); Co-operative Banking Group (from 2005); Halifax (until 2000); HBOS (from 2001 until 2008); HSBC (from 1992); Lloyds TSB/Lloyds Banking Group; Midland (until 1991); National Australia Bank (from 2005); National Westminster (until 1999); Nationwide; Northern Rock (until 2011); Royal Bank of Scotland; Santander (from 2004); TSB (until 1994); Virgin Money (from 2012) and Woolwich (from 1990 until 1997). Accounting changes, eg the introduction of IFRS in 2005 result in discontinuities in some series. Restated figures are used where available.
- (e) Major UK banks' aggregate core Tier 1 capital as a percentage of their aggregate risk-weighted assets. The core Tier 1 capital ratio series starts in 2000 and uses the major UK banks peer group as at 2014 and their constituent predecessors. Data exclude Northern Rock/Virgin Money from 2008. From 2008, core Tier 1 ratios are as published by banks, excluding hybrid capital instruments and making deductions from capital based on PRA definitions. Prior to 2008, that measure was not typically disclosed and Bank calculations approximating it as previously published in the *Financial Stability Report* are used. The series is annual. Sources: PRA regulatory returns, published accounts and Bank calculations.
- (f) The Basel II series was discontinued with CRD IV implementation on 1 January 2014. The 'Basel III common equity Tier 1 capital ratio' is calculated as aggregate peer group common equity Tier 1 levels over aggregate risk-weighted assets, according to the CRD IV definition as implemented in the United Kingdom. The Basel III peer group includes Barclays, Co-operative Banking Group, HSBC, Lloyds Banking Group, Nationwide, RBS and Santander UK. Sources: PRA regulatory returns and Bank calculations.
- (g) A simple leverage ratio calculated as aggregate peer group equity (shareholders' claims) over aggregate peer group assets (note a discontinuity due to the introduction from 2005 of IFRS accounting standards, which tends to reduce reported leverage ratios thereafter). The Basel III (2010) series corresponds to aggregate peer group Tier 1 capital (including grandfathered instruments) over aggregate Basel 2010 leverage ratio exposure. The Basel III (2014) series corresponds to aggregate peer group CRD IV end-point Tier 1 capital over aggregate Basel 2014 exposure measure. Note that the simple series excludes Northern Rock/Virgin Money from 2008. The Basel III series consists of Barclays, Co-operative Banking Group, HSBC, Lloyds Banking Group, Nationwide, RBS and Santander UK. The simple series is annual. Sources: PRA regulatory returns, published accounts and Bank calculations.
- (h) Aggregate end-year peer group risk-weighted assets divided by aggregate end-year peer group published balance sheet assets. Data for 2014 H1 onwards are on a CRD IV basis. Sample excludes Northern Rock. Series begins in 1992. Source: Published accounts and Bank calculations.
- (i) Calculated as major UK banks' annual profit before tax as a proportion of total assets, averaged over the current and previous year. When banks in the sample have merged, aggregate profits for the year are approximated by those of the acquiring group. Series is annual. Latest value shows return on assets between 2013 H1 and 2014 H1. Previous value is for 2013 as a whole. Sources: Published accounts and Bank calculations.
- (j) Major UK banks' loans and advances to customers as a percentage of customer deposits, where customer refers to all non-bank borrowers and depositors. Repurchase agreements are excluded from loans and deposits where disclosed. It is not possible, on a consolidated basis, to distinguish between retail deposits from households and those placed by non-bank financial corporations. Additional data collections would be required to improve the data in this area. Series starts in 2000 and is annual. Sources: Published accounts and Bank calculations.
- (k) Share of total funding (including capital) accounted for by wholesale funding with residual maturity of under three months. Wholesale funding comprises deposits by banks, debt securities, subordinated liabilities and repo. Funding is proxied by total liabilities excluding derivatives and liabilities to customers under investment contracts. Where underlying data are not published estimates have been used. Repo includes repurchase agreements and securities lending. The series starts in 2005. Sources: Published accounts and Bank calculations.
- (l) This indicator highlights the countries where UK-owned monetary financial institutions' (MFIs) overall exposures are greater than 10% of UK-owned MFIs' tangible equity on an ultimate risk basis and have grown by more than 1.5 times nominal GDP growth in that country. Foreign exposures as defined in BIS consolidated banking statistics. Uses latest data available, with the exception of tangible equity figures for 2006-07, which are estimated using published accounts. Sources: Bank of England, ECB, IMF *World Economic Outlook (WEO)*, Thomson Reuters Datastream, published accounts and Bank calculations.
- (m) Abbreviations used are: Australia (AU), Brazil (BR), Canada (CA), Switzerland (CH), People's Republic of China (CN), Germany (DE), Spain (ES), France (FR), Ireland (IE), Italy (IT), Hong Kong (HK), India (IN), Japan (JP), Republic of Korea (KR), Cayman Islands (KY), Luxembourg (LU), Malaysia (MY), Netherlands (NL), Singapore (SG), Taiwan (TW), United States (US) and South Africa (ZA).
- (n) Average of major UK banks' five-year senior CDS premia, weighted by total assets. Series starts in 2003. Includes Nationwide from July 2003. Sources: Markit Group Limited, published accounts and Bank calculations.
- (o) Relates the share price with the book, or accounting, value of shareholders' equity per share. Simple averages of the ratios in the peer group, weighted by end-year total assets. The sample comprises the major UK banks excluding Britannia, Co-operative Banking Group and Nationwide. Northern Rock is excluded from 2008 and Virgin Money from 2012. Series starts in 2000. Sources: Thomson Reuters Datastream, published accounts and Bank calculations.
- (p) Total peer group market capitalisation divided by total peer group assets (note a discontinuity due to introduction of IFRS accounting standards in 2005, which tends to reduce leverage ratios thereafter). The sample comprises the major UK banks excluding Britannia, Co-operative Bank, and Nationwide. Northern Rock are excluded from 2008 and Virgin Money from 2012. Series starts in 2000. Sources: Thomson Reuters Datastream, published accounts and Bank calculations.
- (q) The current vintage of ONS data is not available prior to 1997. Data prior to this and beginning in 1987 have been assumed to remain unchanged since *The Blue Book 2013*.
- (r) Credit is defined as debt claims on the UK private non-financial sector. This includes all liabilities of the household and not-for-profit sector and private non-financial corporations' (PNFCs) 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 Hodrick-Prescott filter with a smoothing parameter of 400,000. For further explanation of how this series is calculated, see www.bankofengland.co.uk/publications/Documents/fsr/2014/bufferdec14.xls. Sources: BBA, ONS, Revell, J and Roe, A (1971), 'National balance sheets and national accounting — a progress report', *Economic Trends*, No. 211, Vol. 310.5, May, pages xvi-xvii and Bank calculations.
- (s) Twelve-month growth rate of nominal credit. Credit is defined as above. Sources: Bank of England, ONS and Bank calculations.
- (t) As per cent of annual GDP (four-quarter moving sum). Sources: ONS and Bank calculations.
- (u) Excluding derivatives. Non-debt liabilities in the form of either foreign direct or portfolio investment. Ratios computed using a four-quarter moving sum of GDP. MFIs cover banks and building societies resident in the United Kingdom. Sources: ONS and Bank calculations.
- (v) As per cent of quarterly GDP. Sources: ONS and Bank calculations.
- (w) Five-year real interest rates five years forward, derived from the Bank's index-linked government liabilities curve. Sources: Bloomberg and Bank calculations.
- (x) The VIX is a measure of market expectations of 30-day volatility as conveyed by S&P 500 stock index options prices. Series starts in 1990. One-month moving average. Sources: Bloomberg and Bank calculations.
- (y) 'Global corporate debt spreads' refers to the global broad market industrial spread. This tracks the performance of non-financial, investment-grade corporate debt publicly issued in the major domestic and eurobond markets. Index constituents are capitalisation-weighted based on their current amount outstanding. Spreads are option adjusted, (ie they show the number of basis points the matched-maturity government spot curve is shifted in order to match a bond's present value of discounted cash flows). One-month moving average. Series starts in 1997. Sources: Bank of America Merrill Lynch and Bank calculations.
- (z) The household lending spread is a weighted average of mortgage and unsecured lending spreads, with weights based on relative volumes of new lending. The mortgage spread is a weighted average of quoted mortgage rates over risk-free rates, using 90% LTV two year fixed rate mortgages and 75% LTV tracker, two and five year fixed-rate mortgages. Spreads are taken relative to gilt yields of matching maturity for fixed-rate products until August 2009, after which spreads are taken relative to OIS of matching maturity. Spreads are taken relative to Bank Rate for the tracker product. The unsecured component is a weighted average of spreads on credit cards, overdrafts and personal loans. Spreads are taken relative to Bank Rate. Series starts in 1997. Sources: Bank of England, CML and Bank calculations.
- (aa) The UK corporate lending spread is a weighted average of: SME lending rates over Bank Rate; CRE lending rates over Bank Rate; and, as a proxy for the rate at which banks lend to large, non-CRE corporates, UK investment-grade company bond spreads over maturity-matched government bond yields (adjusted for any embedded option features such as convertibility into equity). Weights based on relative volumes of new lending. Series starts in October 2002. Sources: Bank of England, Bank of America Merrill Lynch, BBA, Bloomberg, De Montfort University, Department for Business, Innovation and Skills and Bank calculations.
- (ab) Sample excludes Bank of Ireland; Britannia; National Australia Bank; Northern Rock; Virgin Money; and Nationwide for 2008 H2 only. Average risk weights for residential mortgages (exposures on the Retail IRB method only) are calculated as total risk-weighted assets divided by total exposure value for all banks in the sample. Calculated on a consolidated basis, except for where only solo data were available. Series starts in 2008 and is updated half-yearly. Sources: PRA regulatory returns and Bank calculations.
- (ac) The disclosures the series are based on are not currently sufficient to ensure that all intra-financial activity is included in these series, nor is it possible to be certain that no real economy activity is included. Additional data collections would be required to improve the data in this area. The intra-financial lending and borrowing growth series are adjusted for the acquisitions of Midland by HSBC in 1992, and of ABN AMRO by RBS in 2007 to avoid reporting large growth rates resulting from step changes in the size and interconnectedness of the major UK bank peer group.
- (ad) Lending to other banks and other financial corporations. Growth rates are year on year. Latest value shows growth rate for year to 2014 H1. Previous value is for 2013 as a whole. Sources: Published accounts and Bank calculations.
- (ae) Wholesale borrowing, composed of deposits from banks and non-subordinated securities in issue. Growth rates are year on year. Latest value shows growth rate for year to 2014 H1. Previous value is for 2013 as a whole. One weakness of the current measure is that it is not possible to distinguish between retail deposits and deposits placed by non-bank financial institutions on a consolidated basis. Sources: Published accounts and Bank calculations.
- (af) Based on notional value of derivatives (some of which may support real economy activity). The sample includes Barclays, HSBC and RBS who account for a significant share of UK banks' holdings of derivatives, though the sample could be adjusted in the future should market shares change. Series starts in 2002. Growth rates are year on year. Latest value shows growth rate for year to 2014 H1. Previous value is for 2013 as a whole. Sources: Published accounts and Bank calculations.
- (ag) This indicator highlights the countries where UK-owned MFIs' non-bank private sector exposures are greater than 10% of UK-owned MFIs' tangible equity on an ultimate risk basis and have grown by more than 1.5 times nominal GDP growth in that country. Foreign exposures as defined in BIS consolidated banking statistics. Overseas sectoral exposures cannot currently be broken down further at the non-bank private sector level. The intention is to divide them into households and corporates as new data become available. Uses latest data available, with the exception of tangible equity figures for 2006-07, which are estimated using published accounts. Sources: Bank of England, ECB, IMF *World Economic Outlook (WEO)*, Thomson Reuters Datastream, published accounts and Bank calculations.
- (ah) Twelve-month nominal growth rate of total household and not-for-profit sector liabilities. Source: ONS and Bank calculations.
- (ai) Four-quarter growth rate of UK-resident MFIs' loans to the real estate sector. The real estate sector is defined as: buying, selling and renting of own or leased real estate; real estate and related activities on a fee or contract basis; and development of buildings. Not seasonally adjusted. Quarterly data. Data cover lending in both sterling and foreign currency from 1998 Q4. Prior to this period, data cover sterling only. Source: Bank of England.
- (aj) Gross debt as a percentage of a four-quarter moving sum of disposable income. Includes all liabilities of the household sector except for the unfunded pension liabilities and financial derivatives of the non-profit sector. The household disposable income series is adjusted for financial intermediation services indirectly measured (FISIM). Sources: ONS and Bank calculations.
- (ak) Gross debt as a percentage of a four-quarter moving sum of gross operating surplus. Gross debt is measured as loans and debt securities excluding derivatives, direct investment loans and loans secured on dwellings. The corporate gross operating surplus series is adjusted for FISIM. Sources: ONS and Bank calculations.
- (al) Gross debt as a percentage of four-quarter moving sum of nominal GDP. The NBF sector includes all financial corporations apart from MFIs (ie deposit taking institutions). This indicator additionally excludes insurance companies and pension funds. Sources: ONS and Bank calculations.
- (am) Ratio between an average of the seasonally adjusted Halifax and Nationwide house price indices and RPI housing rent. The series is rebased so that the average between 1987 and 2006 is 100. Sources: Halifax, Nationwide, ONS and Bank calculations.
- (an) The prime (secondary) yield is the ratio between the weighted averages, across the lowest (highest) yielding quartile of commercial properties, of IPD's measures of rental income and capital values. Source: Investment Property Databank (IPD UK).
- (ao) Mean LTV (respectively LTI) ratio on new advances above the median LTV (LTI) ratio, based on loans to first-time buyers, council/registered social tenants exercising their right to buy and home movers, and excluding lifetime mortgages and advances with LTV above 130% (LTI above 10x). Data include regulated mortgage contracts only, and therefore exclude 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. Series starts in 2005. Sources: FCA Product Sales Data and Bank calculations.
- (ap) Average of the maximum offered loan to value ratios across major CRE lenders. Series starts in 2002. Source: De Montfort University and Bank calculations.
- (aq) The residential mortgage lending spread is a weighted average of quoted mortgage rates over risk-free rates, using 90% LTV two-year fixed rate mortgages and 75% LTV tracker, two and five-year fixed-rate mortgages. Spreads are taken relative to gilt yields of matching maturity for fixed-rate products until August 2009, after which spreads are taken relative to OIS of matching maturity. Spreads are taken relative to Bank Rate for the tracker product. Weights based on relative volumes of new lending. Series starts in 1997. Sources: Bank of England, CML and Bank calculations.
- (ar) The CRE lending spread is the average of rates across major CRE lenders relative to Bank Rate. Series starts in 2002. Sources: Bank of England, De Montfort University and Bank calculations.

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Glossary and other information

Glossary of selected data and instruments

CDS – credit default swap.

CMBS – commercial mortgage-backed security.

GDP – gross domestic product.

Libor – London interbank offered rate.

PSD – Product Sales Data.

RMBS – residential mortgage-backed security.

Abbreviations

AT1 – additional Tier 1.

BCBS – Basel Committee on Banking Supervision.

BCR – Basic Capital Requirement.

BIS – Bank for International Settlements.

CBEST – UK Government's National Cyber Security Programme.

CCB – countercyclical capital buffer.

CCP – central counterparty.

CET1 – common equity Tier 1.

CMG – crisis management group.

CML – Council of Mortgage Lenders.

CPMI – Committee on Payments and Market Infrastructures.

CRD IV – Capital Requirements Directive.

CRE – commercial real estate.

CRR – Capital Requirements Regulation.

DSR – debt-servicing ratio.

DTI – debt to income.

EBA – European Banking Authority.

ECB – European Central Bank.

EDTF – Enhanced Disclosure Task Force.

EEA – European Economic Area.

EIOPA – European Insurance and Occupational Pensions Authority.

EME – emerging market economy.

EU – European Union.

FCA – Financial Conduct Authority.

FDI – foreign direct investment.

FEMR – Fair and Effective Markets Review.

FICC – fixed income, currency and commodities.

FLS – Funding for Lending Scheme.

FPC – Financial Policy Committee.

FSB – Financial Stability Board.

FTSE – Financial Times Stock Exchange.

G7 – Canada, France, Germany, Italy, Japan, the United Kingdom and the United States.

G10 – Belgium, Canada, France, Germany, Italy, Japan, the Netherlands, Sweden, Switzerland, the United Kingdom and the United States.

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

G-SIB – global systemically important bank.

G-SII – global systemically important insurer.

HLA – Higher Loss Absorbency.

HMRC – Her Majesty's Revenue and Customs.

IAIS – International Association of Insurance Supervisors.

ICPFs – insurance companies and pension funds.

ICS – Insurance Capital Standard.

IMF – International Monetary Fund.

IOSCO – International Organization of Securities Commissions.

ISDA – International Swaps and Derivatives Association.

IT – information technology.

LBG – Lloyds Banking Group.

LCR – Liquidity Coverage Ratio.

LTI – loan to income.

LTV – loan to value.

MCOB – Mortgages and Home Finance: Conduct of Business sourcebook.

MFI – monetary financial institution.

MMR – Mortgage Market Review.

MPE – multiple point of entry.

MREL – minimum requirement for own funds and eligible liabilities.

NIIP – net international investment position.

NSFR – Net Stable Funding Ratio.

OECD – Organisation for Economic Co-operation and Development.

OFI – other financial institution.

OMT – Outright Monetary Transaction.

ONS – Office for National Statistics.

OTC – over the counter.

PNFC – private non-financial corporation.

PPP – purchasing power parity.

PRA – Prudential Regulation Authority.

RAP – resolvability assessment process.

RBS – Royal Bank of Scotland.

RFB – ring-fenced body.

RICS – Royal Institution of Chartered Surveyors.

RTGS – real-time gross settlement.

RWA – risk-weighted asset.

SCR – solvency capital requirement.

SIFI – systemically important financial institution.

SME – small and medium-sized enterprise.

SML – Survey of Mortgage Lenders.

SPE – single point of entry.

SRB – systemic risk buffer.

STC – simple, transparent and comparable.

S&P – Standard & Poor's.

TLAC – total loss-absorbing capacity.

TLTRO – targeted longer-term refinancing operation.

WEO – IMF *World Economic Outlook*.

© Bank of England 2014

ISSN 1751-7044

Printed by Park Communications Limited

