

# B Resilience of the UK financial system

Resilience of the UK banking system has continued to strengthen in line with higher regulatory requirements, both in terms of capital and funding. UK insurers have also maintained solvency ratios in excess of current regulatory requirements. In financial markets, core intermediaries continue to reduce their exposure to liquidity and market risk, possibly with implications for market liquidity. Credit growth to the UK real economy has remained modest, though bank credit availability is gradually improving. Risks of a deterioration of underwriting standards in new lending to UK households and companies currently appear contained.

## B.1 Banking sector

This section assesses the resilience of the UK banking sector.

*UK banks have increased their risk-based capital ratios, which exceed agreed minimum requirements...*

Overall, regulatory capital requirements are set to be up to ten times higher than before the crisis for the most systemically important institutions.<sup>(1)</sup> UK banks started to report their ratios of common equity Tier 1 (CET1) capital to risk-weighted assets on a Basel III basis at end-2011. The UK banks' aggregate CET1 ratio is currently just above 11% (Chart B.1) — an increase of 4 percentage points since end-2011, of which nearly a third has been achieved by increasing capital through issuance and retained earnings, and the rest through reductions in risk-weighted assets (Table B.1).

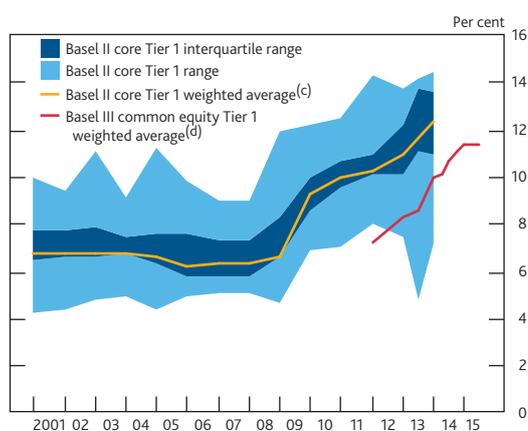
This aggregate ratio is in excess of the internationally agreed end-point CET1 ratio requirement — including a capital conservation buffer and a buffer for global systemically important banks (G-SIBs) — by over 2 percentage points (Table B.2). Time-varying buffers, such as the countercyclical capital buffer and the PRA buffer, may also be applied at the discretion of the FPC and the PRA Board respectively.

*...and UK banks have continued to raise their leverage ratios.*

Abstracting from risk weights, the average simple, accounting-based leverage ratio of UK banks — measured as equity capital as a percentage of banks' reported assets — is now more than double its end-2009 level, having fallen in the run-up to the crisis (Chart B.2).

**Chart B.1** Capital resilience has strengthened

UK banks' risk-weighted capital<sup>(a)(b)</sup>



Sources: PRA regulatory returns, published accounts and Bank calculations.

- (a) Major UK banks' core Tier 1 capital as a percentage of their risk-weighted assets. Major UK banks are Banco Santander, Bank of Ireland, Barclays, Co-operative Bank, HSBC, LBG, National Australia Bank, Nationwide, RBS and Virgin Money. Data exclude Northern Rock/Virgin Money from 2008.
- (b) From 2008, the chart shows core Tier 1 ratios as published by banks, excluding hybrid capital instruments and making deductions from capital based on FSA definitions. Prior to 2008 that measure was not typically disclosed; the chart shows Bank calculations approximating it as previously published in the *Report*.
- (c) The mean is weighted by risk-weighted assets.
- (d) 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 common equity Tier 1 capital over risk-weighted assets, according to the CRD IV definition as implemented in the United Kingdom. The Basel III peer group includes Barclays, Co-operative Bank, HSBC, LBG, Nationwide, RBS and Santander UK.

(1) See 'The future of financial reform', speech by Mark Carney, 17 November 2014 for a comparison of current capital requirements to pre-crisis requirements; [www.bankofengland.co.uk/publications/Documents/speeches/2014/speech775.pdf](http://www.bankofengland.co.uk/publications/Documents/speeches/2014/speech775.pdf). The calculations also draw upon 'Building a resilient financial system', speech by Jaime Caruana, 7 February 2012.

**Table B.1 Increase in UK banks' risk-weighted capital ratio has been driven by reductions in risk-weighted assets**

Change in UK banks' aggregate Basel III risk-weighted capital ratio in percentage points (pp)<sup>(a)</sup>

Change in Basel III CET1 ratio since end-2011	4.1 pp
of which due to increase in capital	1.2 pp
of which due to capital issuance <sup>(b)</sup>	29%
of which due to retained earnings	71%
of which due to reduction in risk-weighted assets	2.9 pp
of which due to reduced loans outstanding to the UK real economy	11%
of which due to reductions in other assets <sup>(c)</sup>	89%

Sources: Dealogic, PRA regulatory returns and Bank calculations.

- (a) UK banks are Barclays, Co-operative Bank, HSBC, LBG, Nationwide, RBS and Santander UK.  
 (b) Excludes capital downstreamed from parent companies.  
 (c) Includes changes to risk-weighted assets from changes in operational risk and market risk.

**Table B.2 Full implementation of the capital framework in the next few years will increase requirements**

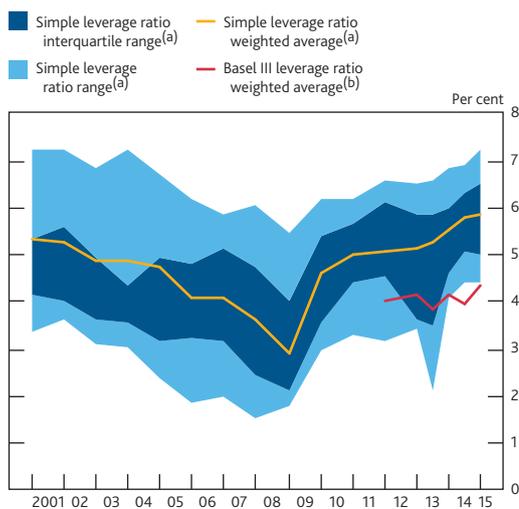
Minimum CET1 capital end-point requirements as a percentage of risk-weighted assets<sup>(a)(b)(c)</sup>

Baseline minimum requirement	4.5%
Capital conservation buffer	2.5% (phased in between 2016 and 2019)
Global systemically important bank (G-SIB) buffer	0%–2.5% (phased in between 2016 and 2019) (2% on average for UK banks)
Minimum end-point requirements	7%–9.5% (9% on average for UK banks)

- (a) A further requirement, the systemic risk buffer (SRB), will be phased in by 2019. In the United Kingdom, the SRB will be set by the PRA, applying a methodology to be determined by the FPC. This will be applied to those parts of UK banks that will be ring-fenced under the Financial Services (Banking Reform) Act 2013 ('ring-fenced bodies') and large building societies.  
 (b) The countercyclical capital buffer is currently set at zero in the United Kingdom.  
 (c) Additional CET1 capital may be required by the PRA for risks not covered by the capital framework.

**Chart B.2 UK banks' leverage ratios have improved**

UK banks' leverage ratios



Sources: PRA regulatory returns, published accounts and Bank calculations.

- (a) The simple (accounting-based) leverage ratio is defined as the ratio of shareholders' claims to total assets based on banks' published accounts (note a discontinuity due to introduction of IFRS accounting standards in 2005, which tends to reduce leverage ratios thereafter). The series uses major UK banks as a peer group as per Chart B.1. Data exclude Northern Rock/Virgin Money from 2008. Average is weighted by total assets.  
 (b) The Basel III leverage ratio corresponds to aggregate peer group Tier 1 capital over aggregate leverage ratio exposure. Up to 2013, Tier 1 capital includes grandfathered capital instruments and the exposure measure is based on the Basel 2010 definition. From 2014 H1, Tier 1 capital excludes grandfathered capital instruments and the exposure measure is based on the Basel 2014 definition. The Basel III sample consists of Barclays, Co-operative Bank, HSBC, LBG, Nationwide, RBS and Santander UK. Weighted by total exposures.

Since January 2015, all global banks disclose their Basel III leverage ratios, in line with regulatory requirements. The largest UK banks all reported a leverage ratio above 3% in 2015 Q1. This is the level at which the FPC has directed the PRA to set its minimum requirement for each major UK bank and building society, above which any applicable systemic and countercyclical leverage ratio buffers would apply (Box 4). Given that the countercyclical buffer is currently set at 0%, the UK banks' aggregate ratio is currently above the agreed FPC leverage requirement as it would fully apply.

Recent improvements to leverage ratios have been achieved largely through the issuance of additional Tier 1 (AT1) instruments, which convert into ordinary shares or are written down to generate equity once a regulatory capital ratio threshold has been breached. UK banks issued under £4 billion of AT1 instruments between 1 January and 19 June 2015 — around 40% of the amount that they issued over the same period last year. In October 2014, the FPC judged that only 'high-trigger' AT1 instruments (that is those that trigger at a CET1 ratio of at least 7%) should count towards the leverage ratio, to provide greater assurance that the AT1 would convert while a bank remains a going concern. In addition, the FPC expects to limit the share of AT1 instruments eligible to meet the minimum leverage ratio requirement to 25%.

The resilience of UK banks is further evaluated through the Bank's annual stress test. At its March 2015 meeting, the FPC agreed elements of the Bank's 2015 stress test, which is currently being undertaken (see Box 3).

#### *Profits have been lower since the crisis...*

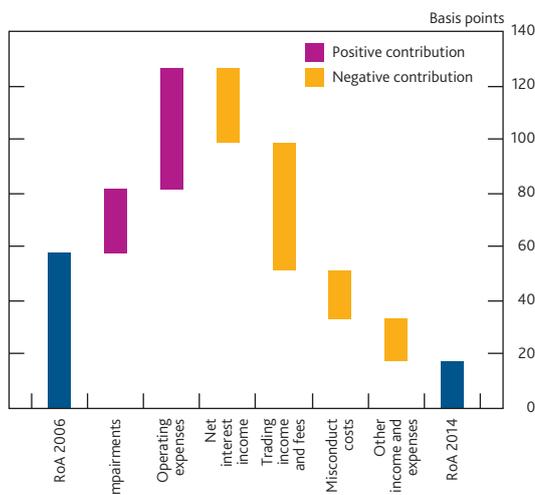
Major UK banks' annual profits increased by 60% in 2014, due largely to a continued fall in impairments and a 15% fall in expenses. But UK banks' profitability remains low relative to recent historic experience. For instance, major UK banks' average return on assets at end-2014 was less than a third of its average level between 1987 and 2007.

Compared to just prior to the crisis, falling returns on assets are explained largely by lower trading income and net interest income, despite banks' lower reliance on debt financing (Chart B.3). Pervasive charges relating to past misconduct have also depressed profits (see Misconduct section). Banks' low returns are reflected in market-based indicators, with UK banks' shares, for example, continuing to trade below their book value (Chart B.4). This measure indicates, in part, investors' expectations of the banking sector's future profitability.

Persistently low interest rates could put downward pressure on UK banks' profitability, especially as interest rates on new mortgages continue to decline, as a result of competitive pressures. However, the impact of low interest rates on net interest margins has not been material in the recent past due,

**Chart B.3 UK banks' returns are lower than their pre-crisis levels**

Change in UK banks' return on assets (RoA) decomposed<sup>(a)(b)(c)(d)</sup>

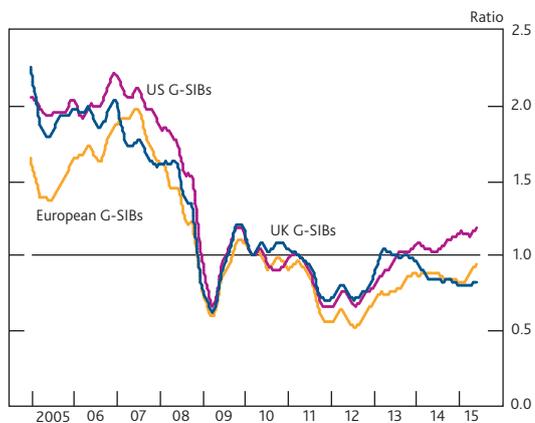


Sources: Firm submissions, published accounts and Bank calculations.

- (a) Returns are defined as profits attributable to shareholders.  
 (b) Assets are annual averages.  
 (c) When banks in the sample have merged, aggregate profits for the year are approximated by those of the acquiring group.  
 (d) UK banks are Barclays, Co-operative Bank, HSB, LBG, Nationwide, RBS, Santander UK and Standard Chartered. All data year-end, except for Nationwide due to its different reporting cycle.

**Chart B.4 Market indicators reflect banks' low returns**

Global banks' price to book ratios<sup>(a)(b)</sup>



Sources: Thomson Reuters Datastream and Bank calculations.

- (a) Chart shows the ratio of share price to book value per share. Simple averages of the ratios in each peer group are used. The chart plots the three-month rolling average.  
 (b) Global banks are as per the Financial Stability Board's November 2014 list of G-SIBs, excluding BBVA and Groupe BPCE.

in part, to banks' management of their interest rate risk through hedging.

*...but banks aim to improve profitability through strategic business model changes.*

UK banks plan to improve their profitability partly by exiting businesses with lower returns. That includes some of their global investment banking activities, in which they have already reduced exposures considerably since the crisis. Securities held for trading by the large UK banks, for example, amounted to nearly £400 billion at end-2014 — around £8 billion lower than in 2013 and almost 35% lower than in 2007. UK banks have also reduced their exposures to other financial institutions through repo lending and securities lending transactions, by around 20% in 2014 (Chart B.5). This will reduce intrafinancial exposures further, making contagion in the UK financial system less likely, but may affect access to funding for some financial institutions.

*Funding conditions have remained benign, and banks have reduced reliance on wholesale funding...*

The post-crisis trend towards more stable funding structures has continued. Banks have shifted their funding mix away from wholesale funding sources towards deposits. Major UK banks' funding from customer deposits has increased by nearly £250 billion since 2008, while wholesale funding declined by over £1.3 trillion over the same period (Chart B.6). Under the provisional proposal for the Net Stable Funding Ratio, banks will be required to fund their illiquid assets and off balance sheet activities using stable funding, such as equity, long-term bonds and household deposits, by 2018. UK banks' available amount of stable funding already exceeds 100% of the required amount.

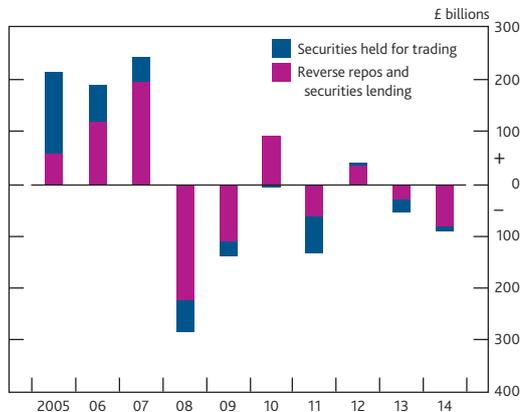
UK banks' net issuance of securitisation has continued to decline. UK monetary financial institutions' securitisation outstanding fell by nearly a quarter in the year to April 2015, to £146 billion. As highlighted in previous Reports, factors that may have restrained activity in UK and European securitisation markets include macroeconomic conditions, the availability of cheaper refinancing sources, regulatory uncertainties and the stigma still attached to securitisation given its role in the crisis. In response, the European Commission launched a public consultation on creating a European Union (EU) framework for simple, transparent and comparable securitisations in February 2015.<sup>(1)</sup> The European Banking Authority is expected to provide its technical advice to the Commission in early July.

The cost of default protection against UK banks, a proxy for their wholesale funding costs, has stayed low since the previous Report, despite increased risks of an adverse event in

(1) The consultation document is available at [http://ec.europa.eu/finance/consultations/2015/securitisation/index\\_en.htm](http://ec.europa.eu/finance/consultations/2015/securitisation/index_en.htm).

### Chart B.5 UK banks have continued to reduce investment banking and securities financing exposures

Annual change in big six UK banks' outstanding assets relating to investment banking and securities financing<sup>(a)(b)</sup>



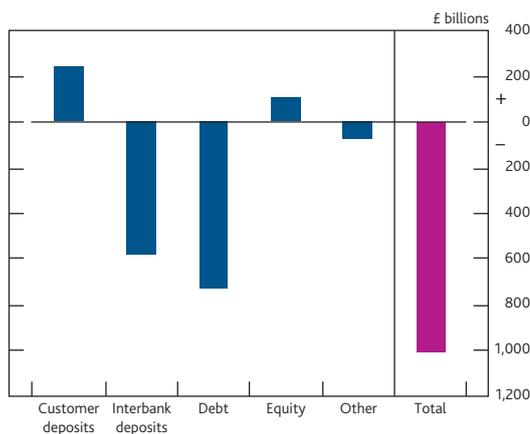
Sources: Published accounts and Bank calculations.

(a) Excluding derivatives.

(b) Big six UK banks are Barclays, HSBC, LBG, Nationwide, RBS and Santander UK.

### Chart B.6 UK banks' reliance on wholesale funding has continued to decline

Change in UK banks' funding between 2008 and 2014<sup>(a)(b)</sup>



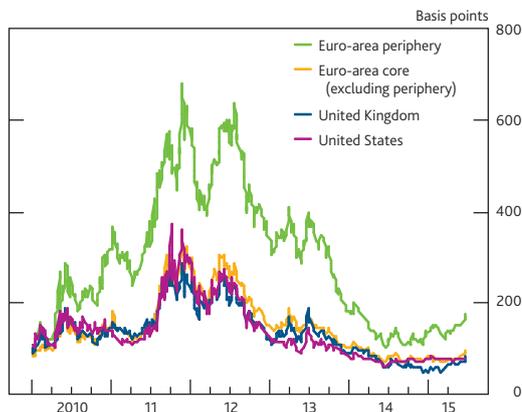
Sources: Bank of England, published accounts and Bank calculations.

(a) UK banks are Banco Santander, Bank of Ireland, Barclays, Co-operative Bank, HSBC, LBG, National Australia Bank, Nationwide and RBS.

(b) Excludes derivative liabilities. Deposit data include some repurchase agreements.

### Chart B.7 Banks' funding costs remained low

Cost of default protection for selected banking systems<sup>(a)</sup>



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 at 2014 H1.

the euro area (Chart B.7). The cost of deposit funding has also fallen. The effective interest rate paid by banks on customer deposits is around 20 basis points lower than in 2014 H1. Current low funding costs reflect in part wholesale market participants' greater confidence in banks' resilience, and high investor demand for banks' long-term debt instruments as a result of the global low-yield environment (see Market liquidity section).

*...although new resolution requirements may have some implications for bank funding.*

Ensuring that banks can fail without adversely affecting the rest of the financial system is vital for resilience. To this end, the Bank has been working closely with resolution authorities in other countries to develop plans to resolve systemically important banks. Improving banks' loss-absorbing capacity, so that they can be recapitalised in a resolution, is an important part of these plans. The Financial Stability Board's (FSB's) consultation on a proposal for a common international standard on total loss-absorbing capacity (TLAC) for G-SIBs closed in February this year. The FSB is undertaking a Quantitative Impact Assessment, to inform the finalisation of the TLAC standard by the end of 2015.

In the United Kingdom, the Bank intends to implement TLAC through its power to set a minimum requirement for own funds and eligible liabilities (MREL) — a requirement of the EU Bank Recovery and Resolution Directive. The Bank intends to consult on MREL in the coming months and the requirement will be phased in over a number of years. The setting of MREL will ensure that all relevant UK banks maintain sufficient amounts of loss-absorbing capacity — that is capital and other debt — to facilitate resolution should they fail.

In order to comply with these standards, it is likely that some UK banks will need to restructure their existing wholesale funding, for example, by issuing debt from a holding company. They may let maturing debt roll off and reissue it in a form that is eligible for MREL, or they may use liability management exercises to achieve the same outcome. Some banks may also need to issue a small amount of additional qualifying instruments.

*UK banks are well placed to respond to liquidity shocks.*

UK banks have increased their liquid asset buffers materially since the crisis, and are consequently well placed to comply with Liquidity Coverage Ratio (LCR) requirements, which will be phased in from October 2015. The LCR measures a bank's liquid assets as a proportion of the outflows it might face if funding conditions became stressed. In aggregate, UK banks currently hold sufficient liquid assets to meet the end-point LCR requirement of 100% (of stressed outflows). UK banks' holdings of cash and high-quality unencumbered securities have trebled since 2008 and now amount to over 15% of UK banks' funded assets. In addition, banks have increased the

### Box 3

## Stress testing the UK banking system in 2015

In 2015, the largest seven UK banks and building societies (hereafter 'banks') are taking part in the Bank's latest concurrent stress test of the UK banking system. This stress test will seek to address many of the risks described in this *Report*, including those arising from the global environment, misconduct and market liquidity, via the trading book. Risks arising from the UK housing market and UK current account were addressed in the first concurrent UK banking system stress test, carried out in 2014.<sup>(1)</sup> This box provides details on the 2015 exercise and highlights important differences to the 2014 stress test.

The Bank's concurrent stress-testing framework provides a quantitative, forward-looking assessment of the capital adequacy of the UK banking system and individual institutions within it, playing a critical role in supporting both the FPC and the PRA in meeting their statutory objectives. Building on the new regulatory infrastructure, the stress tests bring together expertise from across the Bank, including macroeconomists, risk and financial stability experts and supervisors to strengthen the Bank's assessment of risks to UK banking sector resilience.

The 2015 stress test builds on the approach taken in 2014. However, unlike the 2014 test, which was conducted as a 'UK variant' of the European Banking Authority's (EBA's) EU-wide stress test,<sup>(2)</sup> the 2015 stress and baseline scenarios have been fully designed and calibrated by Bank staff. For the United Kingdom, the baseline scenario is broadly consistent with projections in the February 2015 *Inflation Report*, while the international baseline is largely consistent with the International Monetary Fund's (IMF's) October 2014 *World Economic Outlook* projections. Both the stress and baseline scenarios have been discussed and agreed by the FPC and the PRA Board.

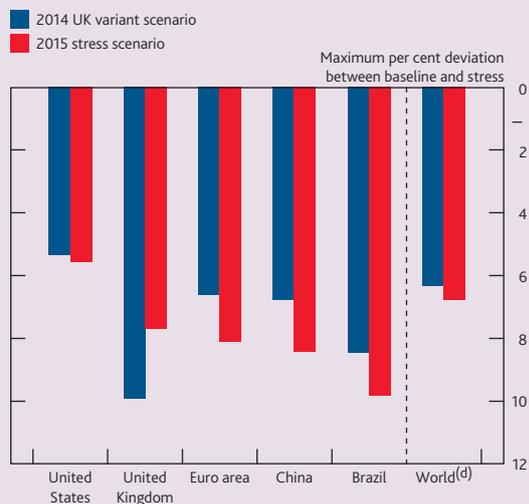
### Stress scenario<sup>(3)</sup>

The design of the 2015 stress scenario reflects the judgement of the FPC in the December 2014 *Report* that the global economic environment presented a growing threat to UK financial stability (as updated in the Global environment section). As a result, the 2015 scenario differs substantially from the 2014 test, which focused on risks to the domestic economy. The setting of different scenarios over time should help to ensure that the banking system is resilient to a range of adverse conditions.

Under the 2015 macroeconomic stress scenario, which stretches over five years, global growth turns out materially lower than expectations, with the level of world GDP falling

short of the baseline by almost 7% during the third year of the stress (Chart A). Related to that shortfall, disinflationary pressures build as oil prices fall to a low of US\$38 per barrel and other commodity prices drop. Market sentiment deteriorates rapidly, investors look to de-risk their portfolios, and safe-haven capital flows to high-quality US assets are generated. The VIX index peaks at above 45 percentage points in the second half of 2015, compared with a peak of around 60 percentage points in 2008. The dollar appreciates against a wide range of currencies, with emerging market economy (EME) exchange rates particularly affected, depreciating on average by more than 25% peak-to-trough during the stress.<sup>(4)</sup> Liquidity in some markets becomes seriously impaired and credit risk premia rise sharply.

**Chart A** Differences in the severity of GDP shocks between the 2014 and 2015 stress tests<sup>(a)(b)(c)</sup>



Sources: Bank of England, EBA, European Commission, IMF October 2014 *World Economic Outlook* and Bank calculations.

- Chart shows the maximum deviation between calendar-year real GDP in the stress and baseline scenarios, over the three-year (2014 scenario) and five-year (2015 scenario) horizons. The date of the maximum difference can differ for each bar. For example, the maximum difference between stress and baseline in the 2015 scenario occurs in the euro area in 2019, but for world GDP this occurs in 2017.
- The 2014 bars are calculated from: (i) the 2014 UK variant scenario (for the United Kingdom) and the 2014 EBA scenario (for foreign economies) in the stress, and (ii) the projections of the Monetary Policy Committee as communicated in the February 2014 *Inflation Report* (for the United Kingdom) and the European Commission's Winter 2014 forecast (for foreign economies) in the baseline.
- Baseline projections in 2015, other than for the United Kingdom, are consistent with the IMF's projections in the October 2014 IMF *World Economic Outlook*. Bank staff have quarterly interpolated the original annual series.
- The calculation for the world GDP bar in 2014 is an estimate. World GDP is weighted by purchasing power parity.

(1) For the results of the 2014 stress test, see 'Stress testing the UK banking system: 2014 results'; [www.bankofengland.co.uk/financialstability/Documents/fpc/results161214.pdf](http://www.bankofengland.co.uk/financialstability/Documents/fpc/results161214.pdf).

(2) While the EBA is not planning to conduct a stress test in 2015, a number of other international authorities are. The Bank continues to liaise with these authorities to ensure that a joined-up approach is taken whenever appropriate.

(3) For more details see 'Stress testing the UK banking system: key elements of the 2015 stress test'; [www.bankofengland.co.uk/financialstability/Documents/stresstesting/2015/keyelements.pdf](http://www.bankofengland.co.uk/financialstability/Documents/stresstesting/2015/keyelements.pdf).

(4) This group of EMEs comprises Argentina, Brazil, China, Indonesia, Mexico, Russia, Saudi Arabia, South Africa and Turkey. Emerging economies are those identified as such by the IMF (source: IMF *World Economic Outlook*, October 2014, Statistical Appendix).

In the United Kingdom, output growth turns negative as export demand contracts, resulting in a dip of more than 7.5% in the level of UK GDP relative to baseline in the third year of the stress. Higher household and corporate saving rates and an increase in the cost of credit — as corporate bond spreads rise by around 360 basis points — lead to falls in consumption, investment and property prices.<sup>(1)</sup> Peak-to-trough, house prices fall by 20% and commercial property values by around 30%. Additional monetary policy stimulus is pursued, contributing to a fall in the sterling yield curve of around 90 basis points over the course of the stress scenario.<sup>(2)</sup>

Compared with the 2014 test, the stress scenario is more severe for some EMEs and the euro area, and less severe for the UK economy (**Chart A**). Within the United Kingdom, the combination of shocks impacting the corporate sector is more severe than the shocks for households.

The traded risk scenario is also significantly different from the EBA methodology used in 2014. It is consistent with the macroeconomic scenario — both in terms of the broad movements in market risk factors and the types of counterparties affected — and takes account of the liquidity of trading book positions (reflecting the Market liquidity section). The traded risk scenario also tests UK banks' ability to withstand the default of a number of counterparties. This is a material risk as banks' trading books typically contain sizable exposures to individual counterparties.

For the 2015 stress test, the Bank has provided further clarification as to how banks should estimate potential costs relating to past misconduct in both their baseline and stress projections.<sup>(3)</sup> Banks' prudential estimates of future misconduct costs should be determined, irrespective of whether a provision has been recognised in the accounts, by evaluating a range of settlement outcomes and assigning probabilities to these outcomes. These prudential estimates are likely to exceed current provisions (see Misconduct section).

### Hurdle rate framework

The results of the UK stress test will inform analysis of the case for both system-wide policy interventions by the FPC and firm-specific supervisory actions by the PRA.

One threshold, or hurdle rate, for the test will be set at 4.5% of risk-weighted assets, to be met with common equity Tier 1 capital in the stress. For the 2015 test, an additional threshold has been introduced. This has been set at 3% of the Leverage Exposure Measure, to be met with Tier 1 capital, where relevant additional Tier 1 instruments would be permitted to comprise up to 25% of this requirement.

But the PRA may still require banks to take action to strengthen their capital position, even if they remain above

these hurdle rates in the stress scenario. Examples of factors that the PRA might take into consideration when deciding whether action is needed include, but are not limited to: the banks' Tier 1 and total capital ratios; Pillar 2A capital requirements; and the extent to which potentially significant risks are not quantified adequately as part of the stress.

### Lending profiles in the stress scenario

A central macroprudential objective of stress testing is to ensure that the banking system is sufficiently capitalised to maintain its lending capability in the face of adverse shocks. Reflecting this, in the 2014 stress test, the FPC agreed a general principle that banks' proposed management actions to reduce the size of their loan books would not be accepted, unless driven by changes in credit demand that would be expected to occur in the stress scenario. The aggregate bank lending profiles published as part of the 2015 stress-test scenario reflect that principle. In practice, this means that banks' ability to improve their stressed capital ratios through deleveraging is constrained.

### Results and next steps

The results of the 2015 stress test will be published alongside the December 2015 *Report*.

The 2014 stress test was a first step towards establishing the Bank's medium-term stress-testing framework, the main elements of which are set out in a Discussion Paper published in 2013.<sup>(4)</sup> The Bank intends to publish an update on its medium-term vision for the UK stress-testing framework later in 2015, drawing on its experience of concurrent stress testing thus far.

(1) Refers to the peak impact on investment-grade UK corporate bond spreads.

(2) Refers to the average impact on the ten-year UK government bond curve.

(3) Misconduct costs may not vary significantly between the baseline and stress scenario. However, there may be exceptions, for example where redress relates to market prices. See 'Stress testing the UK banking system: guidance for participating banks and building societies'; [www.bankofengland.co.uk/financialstability/Documents/stresstesting/2015/guidance.pdf](http://www.bankofengland.co.uk/financialstability/Documents/stresstesting/2015/guidance.pdf).

(4) See 'A framework for stress testing the UK banking system: a Discussion Paper'; [www.bankofengland.co.uk/financialstability/fsc/Documents/discussionpaper1013.pdf](http://www.bankofengland.co.uk/financialstability/fsc/Documents/discussionpaper1013.pdf).

## Box 4

### FPC Direction and Recommendation on a UK leverage ratio framework

On 6 April 2015, the Government gave the FPC powers of Direction over the PRA in relation to leverage ratio requirements. The Government's decision to legislate followed Recommendations made by the FPC as part of its review of the leverage ratio, requested by the Chancellor of the Exchequer in November 2013 and published in October 2014.<sup>(1)</sup>

The FPC's review of the leverage ratio set out the FPC's proposals, if granted powers of Direction over the leverage ratio, to direct 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, to be set at 3%;
- (b) a supplementary leverage ratio buffer to apply to global systemically important institutions (G-SIIs)<sup>(2)</sup> and other major domestic UK banks and building societies, to be phased in from 2016 alongside the existing systemic risk-weighted capital buffers and to be set at 35% of the corresponding risk-weighted capital buffer rate; and
- (c) a countercyclical leverage ratio buffer, to apply to all firms from the point that they become subject to the minimum requirement and to be set at 35% of the corresponding risk-weighted capital buffer rate as a guiding principle.

The FPC proposed to introduce the minimum requirement for UK G-SIIs and other major domestic UK banks and building societies at a consolidated level as soon as practicable. Furthermore, the FPC proposed to extend the minimum requirement to all PRA-regulated banks, building societies and investment firms from 2018, subject to a review in 2017 of progress on international leverage ratio standards.

To inform the Parliamentary debate on these proposed new leverage ratio tools, the FPC published a draft Policy Statement in February 2015 that set out the specific tools proposed, the firms that would be subject to them, the timelines for implementation, how these tools might affect financial stability and economic growth, and how the FPC would take decisions over the setting of the countercyclical leverage ratio buffer. It also explained the FPC's proposed calibration of the tools.

### FPC's Direction and Recommendation

In line with its proposal in the review of the leverage ratio, on 24 June 2015 the FPC approved its Policy Statement,<sup>(3)</sup> updating the draft to reflect that it had received the powers of Direction, and decided to give the following Direction and Recommendation to the PRA:

**The FPC directs the PRA to implement in relation to each major UK bank and building society on a consolidated basis measures to:**

- **require it to hold sufficient Tier 1 capital to satisfy a minimum leverage ratio of 3%;**
- **secure that it ordinarily holds sufficient Tier 1 capital to satisfy a countercyclical leverage ratio buffer rate of 35% of its institution-specific countercyclical capital buffer rate, with the countercyclical leverage ratio buffer rate percentage rounded to the nearest 10 basis points;**
- **secure that if it is a global systemically important institution (G-SII) it ordinarily holds sufficient Tier 1 capital to satisfy a G-SII additional leverage ratio buffer rate of 35% of its G-SII buffer rate.**

**The minimum proportion of common equity Tier 1 that shall be held is:**

- **75% in respect of the minimum leverage ratio requirement;**
- **100% in respect of the countercyclical leverage ratio buffer; and**
- **100% in respect of the G-SII additional leverage ratio buffer.**

**Common equity Tier 1 may include such elements that are eligible for grandfathering under Part 10, Title 1, Chapter 2 of Regulation (EU) No 575/2013 as the PRA may determine.**

**The FPC also recommends to the PRA that in implementing the minimum leverage ratio requirement it should specify that additional Tier 1 capital should only count towards Tier 1 capital for these purposes if the relevant capital instruments specify a trigger event that occurs when the common equity Tier 1 capital ratio of the institution falls below a figure of not less than 7%.**

(1) See [www.bankofengland.co.uk/financialstability/Documents/fpc/fs\\_lrr.pdf](http://www.bankofengland.co.uk/financialstability/Documents/fpc/fs_lrr.pdf).

(2) In line with the Financial Stability Board and Basel Committee on Banking Supervision, the FPC's review of the leverage ratio and Policy Statement on leverage ratio tools refer to global systemically important banks (G-SIBs). In European legislation, the Treasury's macroprudential measures order and the FPC's Direction, these institutions are referred to as global systemically important institutions (G-SIIs).

(3) See [www.bankofengland.co.uk/financialstability/Documents/fpc/policystatement010715lrrt.pdf](http://www.bankofengland.co.uk/financialstability/Documents/fpc/policystatement010715lrrt.pdf).

### Further details on the leverage ratio framework

As set out in detail in the review of the leverage ratio and the Policy Statement, the FPC believes that the leverage ratio has an important role to play in ensuring the resilience of the UK banking system. In accordance with its statutory objectives and the Bank's financial stability strategy, the FPC agreed that leverage ratio requirements are an essential part of the framework for assessing and setting capital adequacy requirements for the UK banking system. In environments that are characterised by complexity, small samples and uncertainties, simple indicators can outperform more complex ones. Complementing the risk-weighted capital requirements with leverage ratio requirements gives banks better protection against risks that are 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.

As explained further in the review of the leverage ratio, the FPC judged that a minimum leverage ratio requirement was needed to remove or reduce systemic risks attributable to unsustainable leverage in the financial system; a supplementary leverage ratio buffer was required to remove or reduce systemic risks attributable to the distribution of risk within the financial sector; and a countercyclical leverage ratio buffer was required to remove or reduce systemic risks that vary through time, such as periods of unsustainable credit growth or other cyclical risks. The FPC set the minimum requirement at 3% because this is consistent with domestic and international loss experience and would put the United Kingdom in line with emerging international standards. And it set the buffer rates at 35% of the relevant risk-weighted buffer rates to preserve the relationship with the risk-weighted framework.

The FPC decided that banks should use the highest quality of capital, common equity Tier 1 (CET1), to meet the majority of their leverage ratio requirements. It therefore decided to limit the share of additional Tier 1 (AT1) instruments eligible to meet a minimum leverage ratio requirement to 25% and to require that all leverage ratio buffers be met with CET1 only. This mirrors the risk-weighted framework. The FPC also decided to recommend that only 'high-trigger' AT1 instruments should count towards the leverage ratio, in order to provide greater assurance that the AT1 would convert to CET1 while the bank is still a going concern. The FPC considered that AT1 instruments should convert at a CET1 ratio of at least 7%. This corresponds to the trigger level that UK firms have adopted in their external issuances to date and is a level that investors and market analysts consider as a high trigger for contingent convertible capital.

EU Capital Requirements Regulation (CRR) recital 18<sup>(1)</sup> confirms that until the harmonisation of the leverage ratio in EU legislation, Member States should be able to apply such measures as they consider appropriate. As set out in its review of the leverage ratio, the FPC sees a strong case for introducing such measures for G-SIIs and other major domestic UK banks and building societies ahead of an international standard on leverage being agreed and implemented. The FPC's view reflects the number of systemically important banks 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.

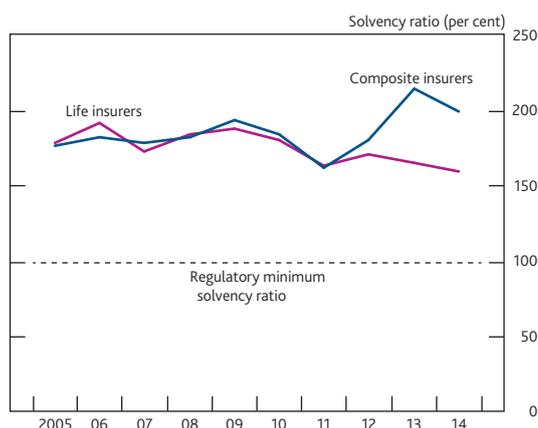
Further details on the leverage ratio framework and the impact analysis carried out by the FPC are set out in the review of the leverage ratio and the FPC's Policy Statement on leverage ratio tools. In particular, the FPC set out the estimated costs and benefits of leverage ratio requirements and its reasons for concluding the measures would be proportionate.

The FPC is also required to have regard to the impact of its policies on the PRA's objectives. As noted above, the FPC considers that the introduction of a leverage ratio framework for major UK banks and building societies would have a positive impact on the resilience of the UK financial system. It should therefore also have a positive impact on the PRA's general objective to promote the safety and soundness of the firms that it regulates, which includes consideration of financial stability. Consistent with the PRA's competition objective, the calibration should not have a detrimental impact on aggregate credit creation for any sectors of firms or segment of the lending market.

(1) Regulation (EU) No 575/2013.

**Chart B.8 Solvency levels for UK life and composite insurers**

Weighted average solvency ratio<sup>(a)(b)(c)</sup>



Sources: PRA regulatory returns and Bank calculations.

- (a) Weighted by Solvency I capital requirement.  
 (b) The solvency ratio is calculated as an insurer's capital resources divided by its Solvency I capital requirement. Since 2005, UK insurers have also been subject to the ICAS regime. For many firms, ICAS rather than Solvency I will act as the binding capital constraint. The chart shows Solvency I positions as ICAS solvency ratios are not publicly disclosed.  
 (c) Movements in solvency ratio over time reflect firm restructuring activity as well as changes in the external environment.

**Table B.3 UK life insurers have offered fewer and less onerous guarantees than European peers**

Select properties of the major EU life insurance markets<sup>(a)(b)</sup>

Country	Duration gap	Average guaranteed rate in force (per cent)	Share of products with guarantees (per cent)	Investment spread (per cent)
Germany	>10 years	3.1	75	-0.4
Sweden	>10 years	3.3	70	-0.5
Austria	>10 years	3.0	58	0.9
Netherlands	5½ years	3.6	40	0.2
France	4¾ years	0.5	n.a.	-0.6
Denmark	4¾ years	2.6	74	0.1
Spain	<1 years	3.8	n.a.	1.1
Italy	<1 years	2.5	n.a.	0.6
Ireland	<0 years	1.5	n.a.	1.3
United Kingdom	<0 years	0.5	19	-0.1

Sources: European Insurance and Occupational Pensions Authority, Moody's Investors Service, Standard & Poor's Ratings Services (May 2014) and Bank calculations.

n.a. = not available.

- (a) Investment spread is the difference between the internal rate of return on assets and the internal rate of return on liabilities.  
 (b) Duration gap is the difference between the average duration of liabilities and assets.

amount of funding that they would be able to access through the Bank of England's facilities by pre-positioning more assets. Banks could draw on £315 billion through these facilities in February 2015 — an increase of 14% on the previous year.<sup>(1)</sup>

## B.2 Insurance sector

This section considers the resilience of the UK insurance sector.

*UK insurers have maintained solvency ratios in excess of current regulatory requirements.*

A commonly used metric for assessing the resilience of insurers is the solvency ratio; that is the ratio of an insurer's regulatory capital resources to its regulatory capital requirements. Under Solvency I, the current European regulatory regime for insurers, UK firms have consistently reported solvency ratios that exceed minimum requirements (**Chart B.8**). A lack of risk sensitivity in Solvency I, however, led the United Kingdom to introduce the Individual Capital Adequacy Standards (ICAS) regime in 2005. On 1 January 2016, ICAS will be replaced by Solvency II, which will introduce for European insurers: more risk-based capital requirements; higher standards for the quality of capital instruments issued; strengthened governance and risk management requirements; and enhanced disclosure and regulatory reporting. As UK firms adjust to meet these new requirements, the resilience of the sector should increase.

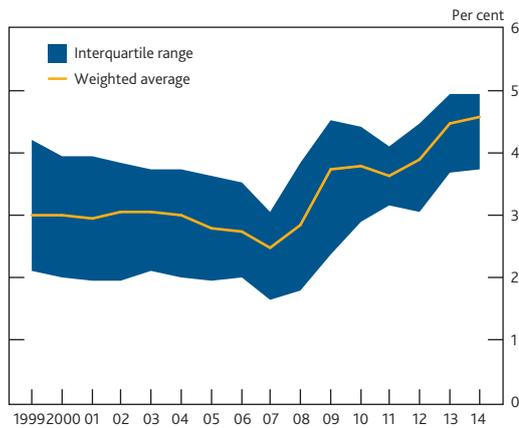
*A prolonged period of low interest rates may put pressure on some life insurers' business models.*

Persistent low rates can put pressure on life insurers' business models if the duration of their assets and liabilities are not closely matched, especially where their liabilities include long-term guarantees. Firms in a number of European countries have issued a substantial share of investment products offering guaranteed returns at rates that are well in excess of current long-term interest rates, and backed these guaranteed liabilities with assets of significantly shorter duration (**Table B.3**).

UK life insurers have been better placed in the recent low-rate environment as they tend to closely match their asset and liability durations. That said, under Solvency II, insurers will be required to value their insurance liabilities on a market-consistent basis. This will be achieved partly through the introduction of a risk margin, the anticipated size of which has increased as risk-free interest rates have fallen: insurers will need to accommodate this in their capital planning.

(1) See the *Sterling Monetary Framework Annual Report 2014–15* for more information; [www.bankofengland.co.uk/markets/Documents/smf/annualreport15.pdf](http://www.bankofengland.co.uk/markets/Documents/smf/annualreport15.pdf).

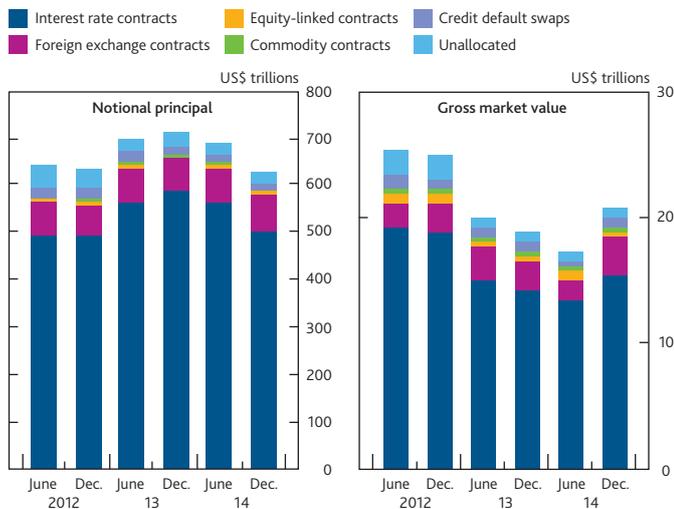
**Chart B.9 Dealers' leverage ratios have increased**  
Dealers' leverage ratios<sup>(a)(b)</sup>



Sources: SNL Financial, *The Banker* and Bank calculations.

- (a) Leverage ratio defined as reported Tier 1 capital (or common equity where not available) divided by total assets, adjusted for accounting differences on a best-efforts basis.  
 (b) Dealers included are Barclays, BNP Paribas, BofA Merrill Lynch, Citigroup, Crédit Agricole, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, JPMorgan Chase & Co., Mitsubishi UFJ, Morgan Stanley, RBS, Société Générale and UBS. Pre-crisis data also include Bear Stearns, Lehman Brothers and Merrill Lynch.

**Chart B.10 Notional amounts outstanding in OTC derivatives have fallen but gross market values have increased**  
Global OTC derivatives markets<sup>(a)</sup>



Source: Bank for International Settlements.

- (a) At half-year-end (end-June and end-December). Amounts denominated in currencies other than US dollars are converted to US dollars at the exchange rate prevailing on the reference date.

## B.3 Market-based finance

This section assesses the resilience of market-based finance in the United Kingdom. The FPC will conduct a more detailed assessment of five types of market-based activity over the coming twelve months (Box 5).

### *Dealers continue to reduce leverage...*

Resilient financial markets are vital to the functioning of the economy, providing essential services to borrowers and savers and to financial institutions that intermediate credit to households and companies, including real money investors and commercial banks. These services tend to be provided on an international basis, so the resilience of UK financial markets is heavily dependent on the global environment. Operating at the centre of global financial markets are a set of core intermediaries, or 'dealers', alongside key financial market infrastructures, such as central clearing counterparties (CCPs), upon whose safety the resilience of those markets relies.

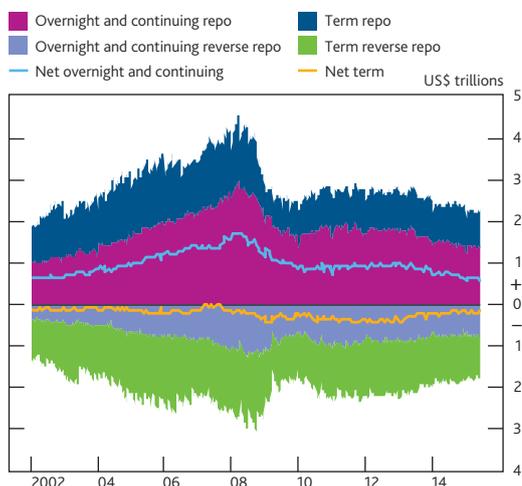
The aggregate leverage ratio of the world's largest dealers has increased from less than 2.5% at the peak of the financial crisis to just over 4.5%, though the rate of increase has slowed recently (Chart B.9). In part, this slowdown reflects an increase in derivative exposures, where these accounted for around 20% of the dealers' total assets at end-2014, compared with 17% a year earlier. Notional amounts outstanding in global over-the-counter (OTC) derivatives markets fell during that period (Chart B.10), which was likely, in large part, due to trade compression — a process by which historical contracts with offsetting risk characteristics are cancelled. But the gross market value of OTC derivatives — that is the cost of replacing outstanding contracts at market prices — rose, largely driven by pronounced moves in long-term interest rates and exchange rates.

### *...while counterparty risk appears to be contained...*

Through the derivatives markets, dealers are exposed to clients, CCPs and one another. In the absence of substantial central clearing, a complex network of counterparty risk may be created. Since the crisis, a significant and mandated move to central clearing for standardised contracts has simplified the network between firms and reduced the associated risks. For example, the proportion of interest rate derivatives centrally cleared now stands at around 50%, up from 16% in 2007. Central clearing simplifies the network of counterparty exposures and, through multilateral netting, tends to reduce the aggregate amount of risk in the system. However, it has also increased the systemic importance of CCPs. In response, tighter prudential standards have been introduced and international work is being pursued through the FSB, the Committee on Payments and Market Infrastructures and the International Organization of Securities Commissions to evaluate existing measures for CCP resilience and to ensure

**Chart B.11 US primary dealers' use of repo markets has declined further**

US primary dealers' repo financing<sup>(a)(b)</sup>

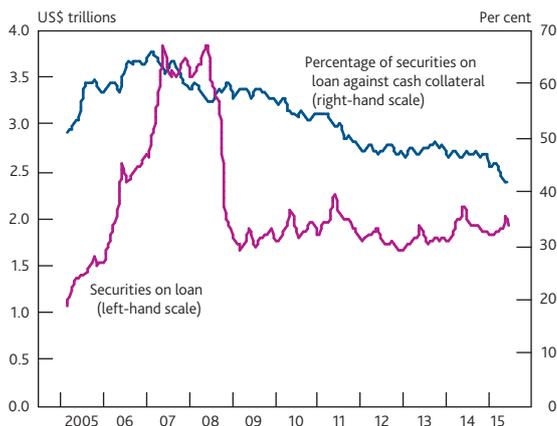


Sources: Federal Reserve Bank of New York and Bank calculations.

(a) The Federal Reserve Bank of New York trades US government and select other securities with designated primary dealers, which include banks and securities broker-dealers.  
 (b) Data to 10 June 2015.

**Chart B.12 The global securities lending market has remained subdued**

Securities on loan and percentage of securities on loan against cash collateral<sup>(a)(b)</sup>



Sources: Markit Group Limited and Bank calculations.

(a) Data are based on market value of securities.  
 (b) One-month moving average.

that appropriate recovery arrangements and resolution regimes are in place.

*...including through securities financing markets...*

The financial system is further interconnected through securities financing markets, which include both repo<sup>(1)</sup> and securities lending transactions.<sup>(2)</sup> These markets are integral to the smooth functioning of the financial system and facilitate the participation of leveraged investors, such as dealers and leveraged hedge funds, which rely on securities financing transactions to fund their trading activities. These transactions are also the means by which some financial institutions, including commercial banks and money market mutual funds, can lend to the financial system on a secured basis and others, such as pension funds and insurance companies, can provide securities on loan to facilitate settlements and short positions.

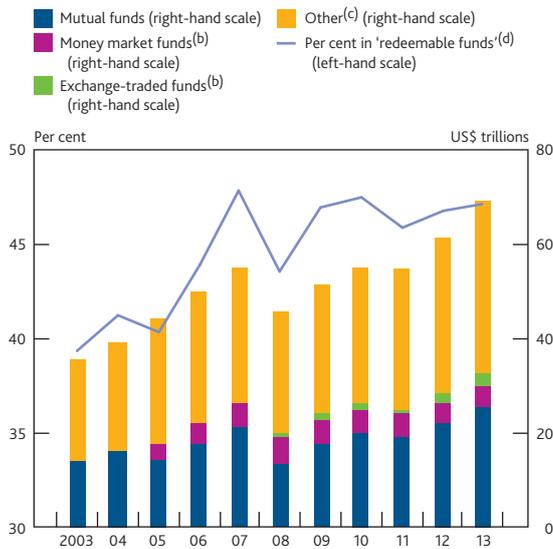
Since the crisis, US primary dealers' use of repo markets has steadily declined. According to the Federal Reserve Bank of New York, outstanding repo and reverse repo positions fell by 8% on a year ago to around US\$4 trillion in June 2015 (**Chart B.11**). Net positions in the overnight repo market of the US primary dealers now stand at around US\$660 billion, close to the lowest level since 2002. The latest International Capital Market Association survey suggests that activity in the European repo market has experienced a similar decline over the past few years.

The global securities lending market has also remained relatively subdued. Since its peak in 2008, it has contracted from around US\$3.9 trillion of securities on loan to US\$1.9 trillion (**Chart B.12**). More recently, the proportion of securities lent against non-cash collateral has increased. While this reduces risks arising through cash collateral reinvestment programmes, it raises the possibility that securities lending will contract as the value of non-cash collateral falls.

Declines in the volume of securities financing transactions are likely to reflect a variety of factors, including: a reduction in the risk appetites of market participants; the impact of enhanced capital requirements aimed at limiting the amount of leverage of banks' balance sheets; and the anticipation of liquidity regulations that seek to limit their reliance on short-term funding. With dealer business models evolving, an important question is how willing they will be to provide leveraged investors, such as hedge funds, with cash and securities financing during periods of stress.

(1) Repos allow one firm to sell a security to another firm with a simultaneous promise to buy the security back at a later date at a predetermined price.  
 (2) Securities lending is the temporary transfer of financial securities, such as equities and bonds, from a lender to a borrower. The lender usually requires the borrower to provide cash or securities to collateralise the loan.

**Chart B.13 Global assets under management are rising**  
Global assets under management<sup>(a)</sup>

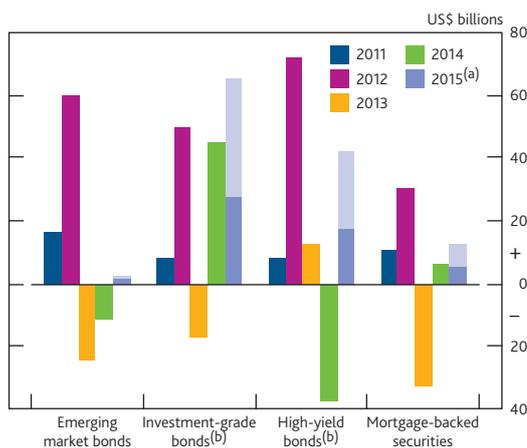


Sources: Investment Company Institute, The Boston Consulting Group Global Asset Management Market Sizing Database, The CityUK Limited and Bank calculations.

- (a) The total global assets under management (AUM) refers to assets that are professionally managed in exchange for management fees; includes captive AUM of insurance groups or pension funds if those AUM are delegated to asset management entities with fees paid. For countries that use currencies other than US dollars, the global AUM series is converted to US dollars at the average 2014 exchange rate. Other series are converted to US dollars at the exchange rate prevailing at the time of publication.
- (b) Data for money market funds start in 2005, prior to that they are included in mutual funds. Data for exchange-traded funds start in 2008.
- (c) Other estimated as a residual includes separately managed accounts, hedge funds and private equity.
- (d) Assets held in mutual funds, money market funds and exchange-traded funds used as a proxy for 'redeemable' funds as they typically offer investors the option to redeem at short notice.

**Chart B.14 There have been strong inflows into high-yield bond funds**

Flows into selected dedicated mutual funds



Sources: EPFR Global and Bank calculations.

- (a) Dark bars show data to end-May, while dark plus light areas show annualised data.
- (b) Dedicated funds that mainly hold investment-grade or high-yield bonds in advanced economies. There will be a small overlap between emerging market bond funds and other funds.

...with potential implications for market liquidity in some markets...

Developments in securities financing markets have reduced the interconnections between market participants but there may also be adverse implications for market liquidity. It could mean, for example, reduced trading activity by leveraged hedge funds. The observed reduction in repos and securities lending has also been accompanied by a fall in dealer inventories, which are held by US primary dealers to facilitate their role as market makers. This has reduced dealers' exposure to market risk, including from a significant sell-off in corporate bond markets, but might also reflect a deterioration in their ability and/or willingness to provide market liquidity, particularly during times of stress. Any decline in market liquidity may be a potential amplifier of financial market adjustments to changes in macroeconomic fundamentals (see Market liquidity section).

Alongside concerns about the resilience of underlying liquidity, global assets under management have grown significantly over the past decade, to around US\$70 trillion (Chart B.13). Within that, the share of funds typically offering investors short-term redemptions has increased, from just below 40% a decade ago to approaching half.

...as inflows in high-yield bonds remain strong.

Inflows into funds focused on less liquid assets, such as high-yield bonds, have been strong this year (Chart B.14). In part, these inflows largely reverse the trend of sharp outflows observed in 2014, as investors appeared to demand greater compensation for holding riskier corporate bonds (see December 2014 Report). In the event, these outflows were concentrated in a subset of markets and did not lead to either a widespread rise in volatility or forced asset sales. But there remains a risk that significant outflows from riskier asset classes, such as emerging market bonds, could lead to forced asset sales and widespread contagion to other markets.

## Box 5 Financial stability risk and regulation beyond the core banking sector

The Bank of England Act 1998, as amended by the Financial Services Act 2012 (the 'Act'), gives the FPC responsibility to identify, assess, monitor and take action in relation to financial stability risk across the UK financial system, including risks arising from beyond the core banking sector.<sup>(1)</sup>

The FPC published its first assessment of risks beyond the core banking sector in June 2014.<sup>(2)</sup> That assessment focused on five categories of non-bank financial institutions and activities: finance companies, investment funds, money market funds, hedge funds and securities financing transactions. The Committee has since completed its annual review of risks beyond the core banking sector by considering the channels through which activities undertaken by the non-bank financial system could affect UK financial stability. It has concluded on evidence currently available not to recommend a change in how these activities are regulated. The Committee intends to undertake a regular deep analysis of a range of activities. This work will start with a detailed assessment of five activities over the coming year.

In addition to undertaking these detailed assessments, the FPC has an ongoing workplan to assess risks arising in the context of market liquidity (see Box 1). As part of this, the FPC will review changes in market structure, including the impact of automated and passive trading strategies in financial markets.

### Activity-based risk assessment

There are numerous non-bank financial institutions and markets operating beyond the core banking sector. The FPC assesses systemic risks emanating from these activities using a risk assessment framework that considers sources of fragility, such as leverage and liquidity transformation, and three key transmission channels: (i) the provision of critical services; (ii) risks to systemically important counterparties; and (iii) disruption to systemically important financial markets.<sup>(3)</sup>

The remainder of this box provides an overview of the five activities the FPC will assess in greater detail. The Committee intends to review at least one activity per quarter over the coming year.

### Investment activities of open-ended investment funds

Open-ended investment funds provide credit to the real economy and the financial system, including through holdings of corporate bonds, bank debt and government debt. Globally, they account for around US\$27 trillion of assets under management, of which around US\$1.2 trillion are domiciled in the United Kingdom. Investment funds are also important participants in core financial markets, such as securities lending, repo and derivative markets.

As part of its work on market liquidity, the Committee is assessing the strategies of investment fund managers for managing the liquidity of their funds in normal and stressed conditions. The Financial Stability Board (FSB) and the European Systemic Risk Board are also considering this issue.

### Investment activities of hedge funds

Globally, the hedge fund industry manages around US\$3.1 trillion of assets. Those funds authorised or marketed in the United Kingdom manage around US\$553 billion of assets. Hedge funds trade frequently in financial markets and thereby support secondary market liquidity and price discovery. They are also interconnected with banks via repo transactions, margin loans and through derivative agreements.

There is a risk that, if a hedge fund becomes distressed, it could withdraw from markets in which it was previously active or sell assets rapidly. This could have a destabilising impact on liquidity and pricing. In the event of a failure of a hedge fund, counterparties with inadequately collateralised exposures to the fund could experience losses. This potential for rapid asset sales, price distortions and counterparty losses could be amplified if the hedge fund uses leverage, either by taking positions in derivatives ('synthetic leverage') or through cash and securities borrowings ('financial leverage'). According to the FCA's Hedge Fund Survey, hedge funds are on average leveraged 27x on a synthetic basis, and 2.3x on a financial leverage basis.<sup>(4)</sup>

Bank and FCA staff continue to gather data on the hedge fund sector.

### Securities financing transactions

Activities such as repo financing, securities lending and margin lending are often referred to as securities financing transactions (SFTs). By allowing investors to exchange cash and a broad range of securities, including government bonds, corporate bonds, equities and securitisations, SFTs support the wider functioning of financial markets. Securities lending facilitates market-making and allows investors to cover short positions, thereby increasing overall market liquidity and enhancing the efficiency of price discovery mechanisms in markets. The value of securities on loan globally is around US\$1.9 trillion. Repo markets further contribute to effective market functioning by enabling market makers such as broker-dealers to finance their inventories, thus supporting

(1) The Act gives the FPC the power to make Recommendations to HM Treasury on regulated activities, as well as more general powers in respect of information gathering.

(2) Box 9, 'Financial stability risk and regulation beyond the core banking sector', *Financial Stability Report*, June 2014, pages 73–76; [www.bankofengland.co.uk/publications/Documents/fsr/2014/fsrfull1406.pdf](http://www.bankofengland.co.uk/publications/Documents/fsr/2014/fsrfull1406.pdf).

(3) The risk assessment framework, described in more detail in Box 9 of the June 2014 *Report*, is consistent with frameworks developed by the FSB as part of its work to address risks in the shadow banking system.

(4) *Hedge Fund Survey*, FCA, June 2015; [www.fca.org.uk/static/documents/hedge-fund-survey.pdf](http://www.fca.org.uk/static/documents/hedge-fund-survey.pdf).

market liquidity. The combined size of the US and European repo markets is estimated to be around US\$10.9 trillion.

But SFTs increase interconnectedness between counterparties and key intermediaries such as custodian banks. SFTs can also increase system leverage and contribute to procyclicality in financial markets through changes in haircut requirements. For example, typical margins on AAA-rated structured products increased from around 10% in June 2007 to 100% in June 2009. In addition, participants may choose to withdraw from such markets when economic conditions deteriorate and aversion to counterparty credit risk increases. Such pressures can materialise quickly because of the typically short maturities of repo transactions (often below one month) and the ability of a securities lender to recall securities on loan on demand. The failure of Lehman Brothers in 2008 demonstrated that the withdrawal of net providers of funds can expose net borrowers in repo markets to funding liquidity risk.

The Bank is contributing to international initiatives on SFTs. The FSB has agreed qualitative standards for calculating haircuts on non-centrally cleared SFTs, and has also agreed that haircuts on certain non-centrally cleared SFTs involving non-banks should be subject to numerical floors. This aims to limit leverage outside the banking system and to reduce procyclicality in financing markets. In addition, the FSB has been developing data collection and aggregation standards to enhance transparency in securities financing markets. These are being implemented in Europe by the European Commission through the Securities Financing Transactions Regulation. The formal adoption of the proposed regulation is expected later this year, and will require SFTs to be reported to trade repositories.

### Non-traditional, non-insurance and investment activities of insurance companies

The provision of insurance is a critical service for the real economy. Insurance companies are therefore regulated to promote their safety and soundness, and to secure an appropriate degree of protection and continuity of service for those who are or may become policyholders. UK insurers hold around £1.8 trillion of assets (see Section B.2).

Some insurance companies undertake non-traditional insurance activities, such as providing financial guarantee insurance. Insurers may also be involved in non-insurance activities, such as cash collateral reinvestment programmes, associated with securities lending, or writing credit default swaps. Certain non-traditional, non-insurance (NTNI) activities involve maturity transformation or leverage, increasing insurers' fragility and the interconnectedness between insurance companies and the rest of the financial system.<sup>(1)</sup>

Insurance companies also create interconnectedness through the issuance of catastrophe bonds. These bonds contain specific provisions causing interest and/or principal payments to be delayed or lost in the event of a catastrophe, such as a natural disaster. Around £25 billion of catastrophe bonds are outstanding globally, distributing risk to other parts of the financial system.

As investors in certain financial instruments, such as corporate bonds and equities, insurers further have the potential to exacerbate asset price falls. Work published by the Bank last year set out measures taken by regulators in different countries to mitigate such procyclical behaviour, for example through changes to insurers' solvency requirements and valuation methods.<sup>(2)</sup> Regulatory actions appear to have tempered procyclical responses in stresses to some extent. Solvency II will provide some largely prescriptive measures that aim to tackle procyclicality, but it does not have the same scope for flexibility as the current UK regime.

### Derivative transactions

The global derivatives market is large, with around US\$695 trillion of contracts outstanding.<sup>(3)</sup> Derivative markets enable firms to hedge financial risk, but they may also be used for speculative purposes and can give rise to intra-financial system exposures, potentially of a complex and opaque nature.

Post-crisis reforms are addressing these concerns through a number of measures, including mandatory reporting of over-the-counter (OTC) derivative transactions to trade repositories, mandatory clearing of standardised derivatives, and the introduction of capital requirements for non-centrally cleared derivatives.<sup>(4)</sup> These initiatives are in the process of being implemented.

Central counterparties (CCPs) are becoming increasingly significant as a higher proportion of OTC derivatives activity is centrally cleared. This creates, by design, a concentration of risks in CCPs, highlighting the importance of international initiatives on CCP resilience and resolution.

Greater use of collateral to mitigate exposures also gives rise to the risk that margin requirements may increase procyclically during periods of stress. This procyclicality can cause liquidity stress, whereby parties posting margin have to find additional liquid assets, often at precisely the times when it is most difficult for them to do so.

(1) Further information on NTNI activities is included in the International Association of Insurance Supervisors' framework of policy measures for global systemically important insurers; <http://iaisweb.org/index.cfm?event=getPage&nodeId=25233>.

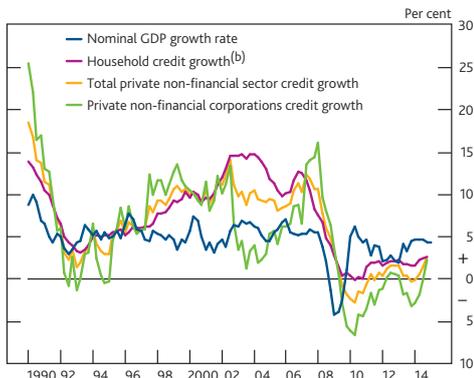
(2) Bank of England and the Procyclicality Working Group (2014), 'Procyclicality and structural trends in investment allocation by insurance companies and pension funds'; [www.bankofengland.co.uk/publications/Documents/news/2014/dp310714.pdf](http://www.bankofengland.co.uk/publications/Documents/news/2014/dp310714.pdf).

(3) Gross notional value, including both OTC and exchange-traded derivatives.

(4) The G20 Pittsburgh Summit of 2009 committed to improving transparency and mitigate systemic risk in OTC derivative markets; [https://g20.org/wp-content/uploads/2014/12/Pittsburgh\\_Declaration\\_0.pdf](https://g20.org/wp-content/uploads/2014/12/Pittsburgh_Declaration_0.pdf).

**Chart B.15 Credit growth has been weaker than nominal GDP growth since the crisis**

UK private sector credit annual growth rate<sup>(a)</sup>

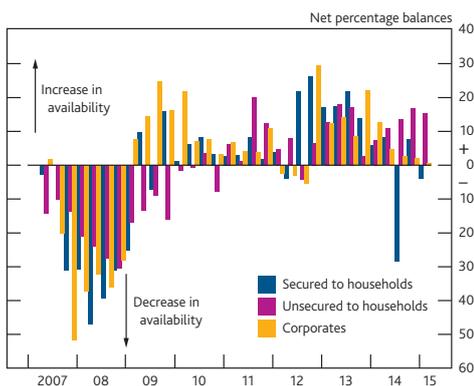


Sources: ONS and Bank calculations.

- (a) Twelve-month growth rate of nominal credit. 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 PNFCs' loans and debt securities excluding derivatives, direct investment loans and loans secured on dwellings.
- (b) Twelve-month growth rate of household and not-for-profit sector liabilities except for the unfunded pensions liabilities and financial derivatives of the not-for-profit sector.

**Chart B.16 Bank credit availability to UK households and companies has been improving since 2012**

Household and corporate credit availability<sup>(a)</sup>

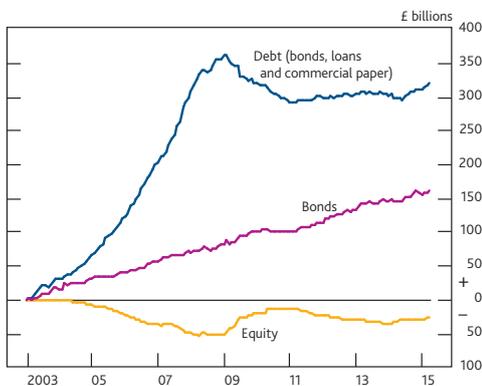


Source: Bank of England Credit Conditions Survey.

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

**Chart B.17 Bond issuance has accounted for a larger share than equity of net finance since the crisis**

Cumulative net finance raised by PNFCs<sup>(a)(b)</sup>



Source: Bank of England.

- (a) Finance raised by PNFCs from UK MFIs and from capital markets. Loans data cover bank lending from UK MFIs, seasonally adjusted. Bonds data cover debt issued by UK companies via UK-based Issuing and Paying Agents. Bonds, equity and commercial paper (CP) are non seasonal. All data cover funds raised in both sterling and foreign currency, expressed in sterling.
- (b) Data taken into account from January 2003 onwards.

## B.4 Provision of credit

This section assesses the recent provision of credit to UK households and businesses. Box 6 describes the setting of the countercyclical capital buffer in the United Kingdom.

*Credit availability in the United Kingdom has improved modestly since 2012.*

Total credit extended to UK households and private non-financial corporations (PNFCs) grew over 2014. But this recovery appears modest relative to the growth of nominal GDP (Chart B.15). The availability of bank credit to UK households and firms has generally been improving over the past few years, as indicated by lenders' responses to the Bank's *Credit Conditions Surveys* (Chart B.16) and reports from the Bank's Agents, although some of the smallest companies still report difficulties obtaining credit.

The provision of credit to the UK economy is a core function of the UK financial system. But unsustainable levels of debt, including that associated with a weakening in underwriting standards, could impact the capacity of the financial system to provide credit to the UK economy in the future.

*For UK PNFCs in aggregate, capital markets are an important source of finance, in particular debt markets...*

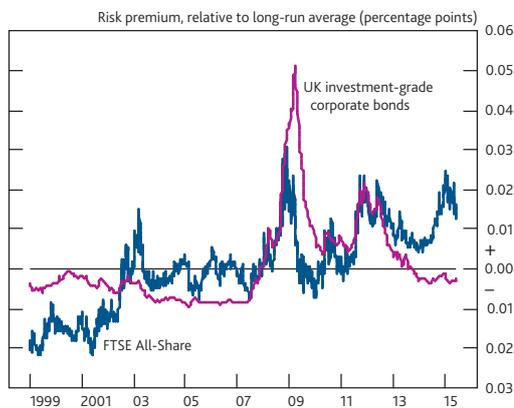
Bank credit for UK PNFCs has recovered slowly since the crisis, with capital markets becoming an increasingly important source of net financing for the UK corporate sector (Box 5). Net issuance of bonds by UK PNFCs was nearly £16 billion in the year to May 2015. This mirrors strong global corporate bond issuance. Net equity issuance was also positive over 2014 and in the first quarter of 2015, led by considerable activity in initial public offerings.

When cumulated, bond issuance has accounted for a larger share than equity of net finance raised in the past few years (Chart B.17). That may in part reflect a pattern of investors appearing to require relatively high compensation for equity risk and lower rates of compensation for the credit and liquidity risks inherent in corporate bonds (Chart B.18). This is also consistent with evidence of a 'search for yield' in credit markets (see Market liquidity section).

A shift towards more debt and less equity financing further implies less private sector risk-sharing in the economy. Other things being equal, equity might be expected to be most useful for supporting risk-sharing because companies are able to adjust their dividend payments according to the economic conditions they are facing. This is not true of debt where, prior to default, unchanged income flows will need to be paid on existing obligations.

An exception to this trend has been the UK commercial real estate (CRE) market, where much of the initial increase in

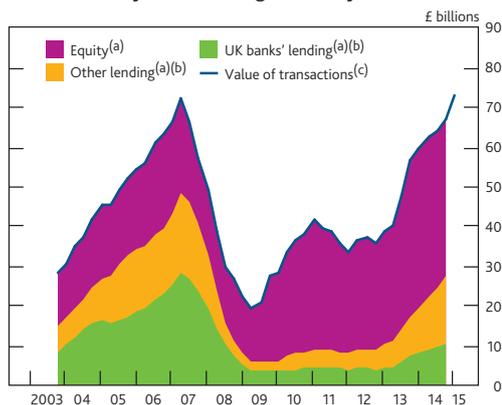
**Chart B.18** Equity risk premia have declined recently but remain well above those seen in credit markets  
Risk premia on UK equities and corporate bonds<sup>(a)</sup>



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

(a) There is a break in the equity series in February 2004 which has been accounted for.

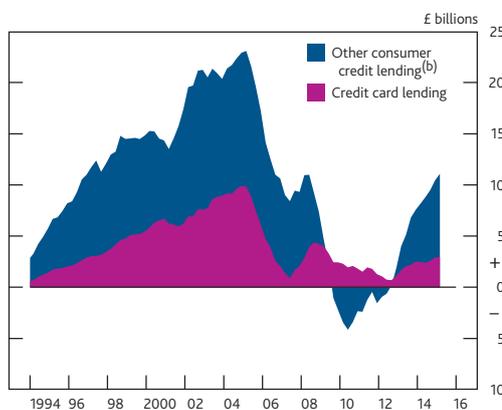
**Chart B.19** UK CRE activity, debt and equity finance have all been picking up  
UK CRE activity and financing of activity



Sources: CBRE, De Montfort University, The Property Archive and Bank calculations.

(a) Annual data, interpolated to match quarterly transactions data.  
(b) Excludes refinancing.  
(c) Four-quarter moving sum of the value of transactions.

**Chart B.20** Consumer credit has grown significantly over the past year  
Net new consumer lending by type<sup>(a)</sup>



Source: Bank of England.

(a) Net changes to consumer credit lending. Four-quarter moving sum. Seasonally adjusted.  
(b) Includes unsecured personal loans, overdrafts, dealership car finance and other forms of non-mortgage consumer credit.

transactions following the crisis appears to have been funded by equity investors (**Chart B.19**). Market contacts suggest that this was driven by a 'search for yield' by lightly leveraged foreign long-term investors. Nevertheless, over the past year there has been greater use of debt, in particular by private equity funds.

*... while underwriting standards on new lending have remained largely robust, there are a number of areas where standards warrant close monitoring.*

The cost of funding for UK PNFCs has continued to decline, and has fallen even more markedly in some more competitive lending markets such as prime CRE.

This has not been associated with a material increase in corporate sector credit risk. Most of the bond issuance by UK PNFCs over the past twelve months appears to have been undertaken by modestly leveraged firms. For example, the total debt to net earnings (that is earnings before interest, taxes, depreciation and amortisation) multiples of the UK PNFCs carrying out the largest net bond issuance over the past twelve months were in line with their averages over the past decade.

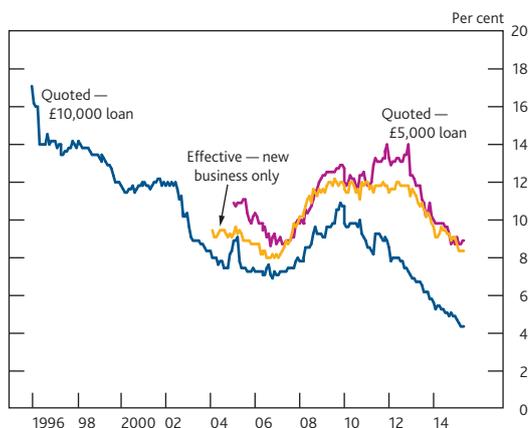
But there are a number of areas where underwriting standards may be weakening relative to the underlying strength of the sector.

The Bank undertook an in-depth review of underwriting standards in the CRE market in 2015 Q1. The review concluded that the averages and distributions of loan to value ratios and interest cover ratios of banks' realised lending appeared to have loosened between 2013 and 2014, although this did not present immediate concerns. Instead, buoyant activity and prices in the wider CRE market appear to have been supported largely by both the participation of non-leveraged investors and the growth of non-bank lenders, particularly overseas banks and non-bank financial institutions. Given the CRE market's historical importance for UK financial stability, the FPC supports more regular data gathering and will continue to monitor underwriting standards.

Globally, there have been signs of increased risk appetite in leveraged loan markets, though gross leveraged loan issuance in the United Kingdom has remained subdued and net lending in 2014 had been negative. At its March 2015 meeting, the FPC reviewed the results of a survey of underwriting standards in leveraged loan markets and concluded that, based on the historical experience of losses, the UK banking system currently appeared resilient to stress in the leveraged loan market. The Committee requested a repeat of this survey on a regular basis.

### Chart B.21 Interest rates on unsecured loans have fallen markedly in recent years

Interest rates on unsecured personal loans<sup>(a)(b)</sup>



Source: Bank of England.

(a) Average interest rates on personal unsecured loans provided by up to 22 MFIs. Quoted rates series are weighted averages of rates from a sample of banks and building societies with products meeting the specific criteria, see [www.bankofengland.co.uk/statistics/Pages/iadb/notesiadb/household\\_int.aspx](http://www.bankofengland.co.uk/statistics/Pages/iadb/notesiadb/household_int.aspx). Effective interest rates are for new fixed-rate unsecured loans to households with maturities of one to five years and compiled using data from up to 22 MFIs (see [www.bankofengland.co.uk/statistics/Pages/iadb/notesiadb/effective\\_int.aspx](http://www.bankofengland.co.uk/statistics/Pages/iadb/notesiadb/effective_int.aspx)). Non seasonally adjusted.

(b) Data are to May 2015, correct as at 29 June 2015.

*Mortgage lending has picked up recently, following a year of moderation, and consumer credit has increased.*

The banking sector remains the dominant source of contractual financing for UK households, and bank lending to households resumed early in the recovery, albeit at a relatively low rate of growth. Although the overall availability of household credit has increased since the crisis, there have been some periods of tightening over the past year — notably around the introduction of the Mortgage Market Review (see UK housing market section).

Consumer credit growth, meanwhile, has strengthened recently (**Chart B.20**), increasing by 6.9% in the year to March 2015. This growth has been led by increases in unsecured personal loans and car finance. Quoted interest rates on unsecured personal loans have fallen markedly in recent years, and for some loan sizes are now at their lowest levels since the start of the data series (**Chart B.21**). Effective rates — the rates at which loans are actually extended — have fallen to a lesser degree.

Consumer credit accounts for a relatively small share of total household lending: at end-2014 there was approximately £170 billion of UK consumer credit lending outstanding, compared with over £1 trillion of residential mortgage loans. Nevertheless, a sustained expansion of consumer credit could increase household indebtedness and interact with mortgage debt on household and lender balance sheets, making them less resilient to future shocks. Survey data suggest that the majority of consumer credit balances are held by households who already have mortgages.

## Box 6

### Setting of the countercyclical capital buffer

Since May 2014, the FPC has been responsible for setting the countercyclical capital buffer (CCB) in the United Kingdom, which it does 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.

In setting the CCB, the Committee considers a range of indicators and analysis that assess the threats to UK financial stability, and the resilience of the UK banking system.

The Committee's judgements on the main risks to UK financial stability are set out in Part A. Some risks, particularly around Greece and emerging markets, have increased since December. Some other risks have declined. Notably, the risks associated with low growth in advanced economies have moderated particularly as growth prospects in the euro area have improved following actions by the European Central Bank.

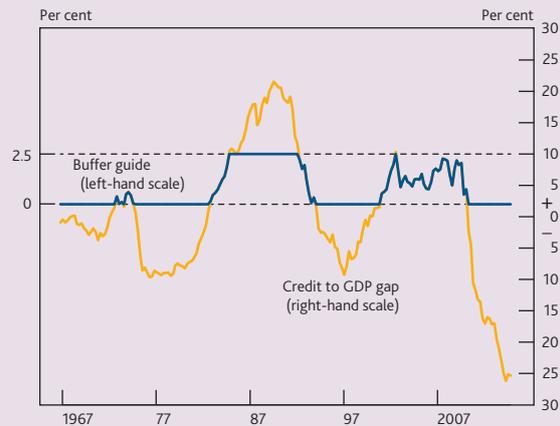
In June 2015, the Committee also considered the Basel 'buffer guide' — a simple metric identified in legislation, based on the size of the gap between the credit to GDP ratio and its long-term trend. Reflecting modest credit growth over the past year, the credit to GDP ratio has fallen by around 5 percentage points over the past twelve months to 145%. As a result, the 'buffer guide' implied that the CCB should be set at 0% (**Chart A**).

But the Committee considers there to be a number of drawbacks to this measure and that there should be no simple, mechanistic link between the buffer guide and the CCB rate. For example, while the negative gap partly reflects the weakness in credit growth to the non-financial private sector, it is also driven by a strong upward trend in the credit to GDP ratio prior to the crisis (**Chart B**); yet this strong growth trend was clearly not sustainable and might not be consistent with the path of credit to GDP in the years ahead.

As set out in Part B, UK banks have continued to strengthen their capital and funding positions, as part of transitioning towards stronger regulatory requirements (see Section B.1). Furthermore, actions taken as a result of the 2014 stress-test exercise will have increased UK banks' resilience. The Committee will examine UK banks' ability to withstand risks that could materialise from developments in emerging market economies and financial markets as part of the 2015 stress-test exercise, as set out in Box 3.

**Taking these considerations into its overall assessment of risks, at its June meeting the Committee agreed to set the**

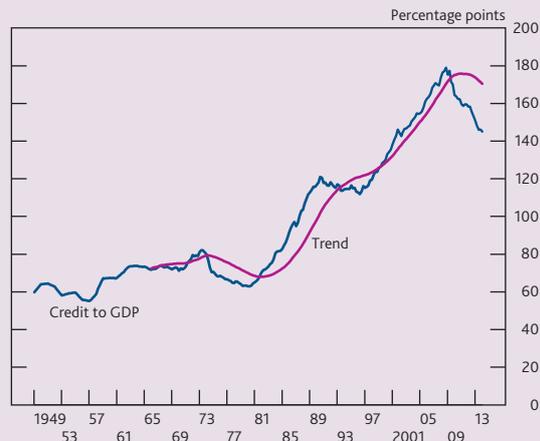
**Chart A** Credit to GDP gap and the countercyclical capital buffer guide<sup>(a)(b)(c)</sup>



Sources: British Bankers' Association, ONS, Revell, J and Roe, A (1971), 'National balance sheets and national accounting — a progress report', *Economic Trends*, No. 211 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 excluding the unfunded pension liabilities and financial derivatives of the not-for-profit sector, and PNFCS' 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 HP 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%.

**Chart B** Credit to GDP and trend<sup>(a)(b)</sup>



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

- (a) See footnote (a) **Chart A**.
- (b) See footnote (b) **Chart A**.

**CCB rate for UK exposures at 0%, unchanged from March 2015.**

### Reciprocation

The FPC also has responsibility for deciding whether foreign CCB rates should be reciprocated by the UK authorities. 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 light of this, the Committee noted that the PRA would reciprocate recent CCB actions by Hong Kong, Norway and Sweden.