Stress testing the UK banking system: 2014 results

Executive summary

Earlier this year, the Bank announced the first concurrent stress test of the UK banking system.(1) This built on the common, EU-wide exercise co-ordinated by the European Banking Authority (EBA). The 2014 UK stress test covered eight major UK banks and building societies (hereafter referred to as 'banks') and assessed the impact of a variant of the EU-wide stress scenario on end-2013 balance sheets.(2) The 2014 UK stress test explored vulnerabilities stemming from the UK household sector in particular, reflecting the Financial Policy Committee's (FPC's) assessment of the main domestic risks to financial stability.

To derive final projections of bank capital ratios in the stress scenario, Bank staff used an analytical framework that made use of a range of tools. These included banks' own models, in-house models, sectoral analysis and peer comparison. Key judgements to arrive at the final projections were taken by Bank staff, under the guidance of the FPC and the Prudential Regulation Authority (PRA) Board. The bank-specific results have been approved by the PRA Board.

Projections of bank capital ratios in the stress scenario

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 specifically to assess the resilience of UK banks.

Based on the Bank's final projections, the stress scenario would reduce the aggregate common equity Tier 1 (CET1) ratio across the eight participating banks from 10.0% in 2013 to a low point of 7.3% in 2015. This does not account for the effect of potential 'strategic' management actions that banks could take to cushion the effect of the stress on their balance sheets. Considered together with banks' plans to build capital further, the stress-test results indicate that the banking system would have the capacity to maintain its core functions in a stress scenario. The fall in CET1 ratios is driven by two factors. First, most banks make losses, eroding their CET1 resources (the numerator of the ratio). Second, for most banks, risk-weighted assets (the denominator of the ratio) increase sharply over the scenario period. The latter is due to a rise in average risk weights in the scenario.

There is substantial variation across participating banks in terms of the impact of the stress scenario (**Table A**). This is partly due to their different business models and geographic footprints. But it also reflects that some banks are still in recovery or in the process of restructuring their balance sheets.

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 an increasing number of borrowers face financial difficulties. Second, banks can widen their net interest margins between 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 participating banks 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.

Bank staff analysis also took into account the extent to which banks could take certain 'strategic' management actions to cushion the impact of the stress scenario on their balance sheets. These related mostly to cutting staff costs and dividend payouts. Some of the proposed management actions also related to banks' lending behaviour in the stress. 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 in the face of adverse shocks. The FPC agreed a general principle that management actions proposed by banks to reduce the size of their loan books would not be accepted, unless these were driven by changes in credit demand that would be

(1) Unless otherwise stated, references to the Bank of England throughout this document include the PRA.
(2) The eight participating banks and building societies are: Barclays, The Co-operative Bank, HSBC, Lloyds Banking Group, Nationwide, The Royal Bank of Scotland Group, Santander UK and Standard Chartered. Given Nationwide's different reporting date, the stress test used an estimated 4 April 2014 balance sheet as the starting point of the analysis. Throughout this document the term 'banks' is used to refer to the eight participating banks and building societies.

Table A Projected CET1 capital ratios in the stress scenario

Per cent

	Actual (end-2013)	Minimum stressed ratio (*before* the impact of management actions)[a][b]	Minimum stressed ratio (*after* the impact of management actions)[a][b]	Latest actuals[c]
Barclays	9.1	7.0	7.5	10.0
The Co-operative Bank	7.2	-2.6	-2.6	11.5
HSBC	10.8	8.7	8.7	11.2
Lloyds Banking Group	10.1	5.0	5.3	12.0
Nationwide	14.3[d]	6.1	6.7	17.6
The Royal Bank of Scotland Group	8.6	4.6	5.2	10.8
Santander UK	11.6	7.6	7.9	11.8
Standard Chartered	10.5	7.1	8.1	10.5

(a) The minimum CET1 ratios shown in the table do not necessarily occur in the same year of the stress scenario for all banks.
(b) The definitions of CET1 and risk-weighted assets are set out in Annex 1.
(c) Actuals are in 2014 Q2 for The Co-operative Bank, Santander UK and Standard Chartered; 2014 Q3 for Barclays, HSBC, Lloyds Banking Group and The Royal Bank of Scotland Group; and September 2014 for Nationwide.
(d) As a result of Nationwide's different reporting date, the Bank used an estimated 4 April 2014 balance sheet as the start point of the stress-testing analysis. This results in the difference between the CET1 ratio quoted in this table and that reported in Nationwide's annual accounts. See Annex 1 for more details.

expected to occur in the stress scenario. This is consistent with the FPC's objective 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 the stock of lending relative to end-2013. The FPC also noted that it may be appropriate for the PRA Board to depart from that general principle in idiosyncratic cases. Overall, after taking into account accepted 'strategic' management actions, the aggregate CET1 ratio falls to a low point of 7.5% in the stress scenario.

FPC and PRA Board actions taken in response to the stress test

The stress-test results were used by the PRA Board and the FPC as part of their evaluation of the capital adequacy of individual institutions and the resilience of the system as a whole. The overall 'hurdle rate' framework had been agreed by the FPC and the PRA Board earlier in the year. This is not a mechanistic 'pass-fail' test and there is, therefore, no automatic link between stress-test results and capital actions required. 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 different possible stressed states.

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 sheets at end-2013 (Barclays, HSBC, Nationwide, Santander UK and Standard Chartered). The PRA Board did not require these banks to submit revised capital plans.

The PRA Board judged that, as at end-2013, three of the eight participating banks needed to strengthen their capital position further. But, given continuing improvements to banks' resilience over the course of 2014 and concrete plans to build capital further going forward, only one of these banks was required to submit a revised capital plan. More specifically:

- **The Co-operative Bank**: The Co-operative Bank's CET1 capital resources are projected to be exhausted in the hypothetical stress scenario. The Co-operative Bank is currently delivering a recovery plan that has built resilience in light of current economic conditions. The bank's CET1 ratio improved from 7.2% at end-2013 to 11.5% at end-June 2014, materially above baseline projections. The Co-operative Bank has achieved the targets set over the past 18 months in terms of building its capital base. The PRA expects all firms to maintain capital buffers that provide insulation against stress scenarios. The results of this exercise provide an updated quantitative estimate of the bank's vulnerability to a severe housing-related stress. The PRA Board's expectation of The Co-operative Bank's capital buffer is being re-set to take into account the additional assessment provided by the stress test. In light of that, the PRA Board has required The Co-operative Bank to submit a revised capital plan, which has been accepted by the PRA Board. That plan envisages a reduction in the risk profile and size of the bank's balance sheet, as a means of reducing its capital requirements. If executed, the plan will deliver a level of resilience commensurate with a bank of its future size and business model. The PRA Board will continue to monitor The Co-operative Bank's progress against the plan.

- **The Royal Bank of Scotland Group**: The Royal Bank of Scotland Group's projected CET1 ratio remains above the 4.5% CET1 threshold in the stress scenario. The PRA Board has, however, judged that, as at December 2013, the bank's capital position needed to be strengthened further. The PRA Board noted that, since end-2013, The Royal Bank of Scotland Group has taken actions to do so. The bank's 2014 Q3 Interim Management Statement demonstrated the continued improvement in the CET1 capital ratio (increasing by 2.2 percentage points since end-2013), which is on track to exceed baseline projections. In addition, The Royal Bank of Scotland Group has updated its capital plan, adding a high-trigger additional Tier 1 (AT1) issuance programme, including plans to issue £2 billion of AT1 in 2015. These instruments will insure against risks over the next few years, during which time the bank is expected to rebuild CET1 capital further. The PRA Board would ordinarily have required The Royal Bank of Scotland Group to submit a revised capital plan in light of the stress-test results. However, given the progress already made and the capital strengthening actions that the bank has incorporated into its updated capital plan, which has been accepted by the PRA Board, an additional plan was judged not to be necessary.

- **Lloyds Banking Group**: Lloyds Banking Group's projected CET1 capital ratio remains above the 4.5% CET1 threshold in the stress scenario. The PRA Board has, however, judged that, as at December 2013, the bank's capital position needed to be strengthened further. The PRA Board noted that, since end-2013, Lloyds Banking Group has delivered positive financial results and is continuing to take steps to strengthen and de-risk the balance sheet, ahead of baseline projections. In April 2014, the bank also exchanged certain Tier 2 capital instruments into £5.3 billion of high-trigger AT1 securities. In light of the measures that Lloyds Banking Group already has in train to augment capital, the PRA Board did not require the bank to submit a revised capital plan.

The FPC considered the information provided by the stress-test results from the perspective of the resilience of the UK banking system as a whole:

- The FPC noted that only one bank fell below the 4.5% threshold at the trough of the stress scenario, that the capitalisation of the system had improved further over the course of 2014 and that the PRA Board had agreed plans with banks to build capital further. 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, indicated 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 were needed in response to the stress test.

- The FPC noted that a number of banks have issued high-trigger AT1 instruments since the balance sheet cut-off date for this stress test. As a number of banks saw their CET1 ratios fall below 7% in the stress, some of these instruments would have triggered in this particular scenario. The FPC noted that this would act to support the resilience of the banking system in the stress. The FPC emphasised that investors in these instruments should be aware of the possibility that this would happen in a real stress.

- The FPC and the PRA Board identified the behaviour of risk weights in the stress scenario as a potential structural issue, as it reflected the inherent procyclicality built into the system. Some banks' modelling approaches also led to significantly greater volatility than others. While there may be macroprudential benefits to diversity in modelling approaches, this would also result in significant variation in capital requirements against similar portfolios, making it harder for market participants to compare capital positions. Bank staff will be undertaking further work to explore these issues in more depth.

- 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.

The FPC also considered the information from the stress test and the PRA Board's actions, alongside other indicators and analysis, in forming its judgements on overall capital adequacy of the UK banking system. The FPC's overall judgement is described in Section 5.1 of the December 2014 *Financial Stability Report*.

Next steps

The 2014 test was the first step towards the Bank's medium-term stress-testing framework. It has provided a forward-looking assessment of capital adequacy, demonstrating the substantial improvement in resilience of participating banks collectively in recent years. The exercise has 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 Bank's analysis in public, it also provides greater transparency over, and reduces uncertainty about, the capital standards to which banks are being held.

The Bank will continue to build its own stress-testing capabilities and expects banks to do the same. From a qualitative perspective, the test revealed a number of areas of weakness in banks' approach to stress testing and capital planning, including weak stress-testing model management frameworks and difficulties in providing accurate data.

More broadly, the design of the overall stress-testing framework will also evolve over time. For example, as the stress-testing framework is used to inform a set of potential policy tools by the FPC and the PRA Board, the regime may need to adapt to provide sufficient information to calibrate those different tools.

The Bank will seek feedback from a range of stakeholders on the lessons learned from the 2014 exercise. This will include both participating banks and broader stakeholders — including investors in banks and other regulators. The Bank expects that many of these lessons will be reflected in the design and execution of the 2015 and future stress tests. Next year, the Bank is also planning to publish a document setting out its intended path towards the medium-term stress-testing framework.

1 Background

Concurrent stress testing is a new element of the financial policy framework in the United Kingdom…
The Financial Policy Committee (FPC) recommended in March 2013 that, 'looking to 2014 and beyond, the Bank and Prudential Regulation Authority (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'.(1)

In October 2013, the Bank published a Discussion Paper that set out the main features of the proposed stress-testing framework over the medium term.(2)(3) 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 meet a 3% Tier 1 leverage ratio.(4) Together, these three elements form the overall framework for assessing capital adequacy on a forward-looking basis in the United Kingdom.

The new stress-testing framework builds on the previous approach taken by the PRA (and the Financial Services Authority (FSA) before that). A key difference is that, historically, supervisory stress tests had been conducted sequentially on individual banks. The new, concurrent approach provides policymakers with a better understanding of the resilience of the UK banking system as a whole — helping to inform both the FPC and the PRA Board. The PRA continues to conduct sequential stress tests for firms that are outside the scope of the concurrent exercise.

…and the 2014 test is the first step towards the Bank's medium-term stress-testing framework.
Earlier this year, the Bank announced the key elements of the first concurrent stress test of the UK banking system. The test covered eight major UK banks and building societies and explored particular macroeconomic vulnerabilities facing the UK banking system.

The UK stress test in 2014 built on the EU-wide exercise co-ordinated by the European Banking Authority (EBA). 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. In line with those arrangements, the UK stress test in 2014 was conducted as a variant of the EBA test.

The 2014 stress test was the first step towards the Bank's medium-term stress-testing framework. As such, the scope of the analysis undertaken was more limited relative to the Bank's medium-term aspiration, covering a smaller number of institutions, being conducted over a longer time frame and assessing the impact of fewer scenarios. The Bank will continue to develop its stress-testing capabilities and the overall framework going forward, including in response to the lessons learned from the 2014 exercise. The Bank also intends to expand and improve the set of quantitative models it uses to assess the impact of stress scenarios, both to explore uncertainties around the projections and to capture potential system-wide amplification mechanisms more comprehensively.

Concurrent stress testing is intended to serve the needs of the FPC and the PRA Board…
The main purpose of the stress-testing framework is to provide a forward-looking, quantitative assessment of the capital adequacy of the UK banking system as a whole, and individual institutions within it. In doing so, it aims to support both the FPC and the PRA in meeting their statutory objectives.

The annual stress tests deliver an integrated process for deliberations around bank capital, both at a system-wide and an individual-institution level, helping co-ordinate the conduct of macroprudential and microprudential policy in the United Kingdom. Stress tests also provide a device through which the Bank can be held accountable to Parliament, and the wider public, on its financial stability objective. They allow the FPC and the PRA Board to articulate the resilience standard against which they hold the banking system.

…by informing their judgements around capital adequacy.
Stress-test results are not mechanically linked to policy responses. This is not a simple 'pass-fail' exercise. The stress test is one input that informs the judgements of the FPC and the PRA Board. Both bodies use a range of analysis and information to assess the capital adequacy of the system as a whole and of individual institutions. The FPC and the

(1) Bank of England (2013), 'Financial Policy Committee statement from its policy meeting, 19 March 2013', available at www.bankofengland.co.uk/publications/pages/news/2013/013.aspx.
(2) Bank of England (2013), 'A framework for stress testing the UK banking system: a Discussion Paper', available at www.bankofengland.co.uk/financialstability/fsc/Documents/discussionpaper1013.pdf.
(3) Unless otherwise stated, references to stress testing and the Bank's stress-testing framework throughout this document relate specifically to concurrent stress testing of the UK banking system.
(4) www.bankofengland.co.uk/publications/Pages/news/2013/181.aspx. In addition, HM Treasury recently consulted on draft legislation granting the FPC powers of Direction over a leverage ratio framework: www.gov.uk/government/consultations/financial-policy-committees-leverage-ratio-framework.

PRA Board are accountable to Parliament for these judgements.

The remainder of this document is structured as follows:

- Section 2 sets out the Bank's overall approach to concurrent stress testing in 2014 — covering the scenario that was explored and the analytical framework used to translate the scenario into projections of banks' capital ratios.

- Section 3 outlines the quantitative projections of capital adequacy, both in the baseline and the stress scenario.

- Section 4 provides a summary of the qualitative assessment of participating banks' stress-testing and capital-management processes.

- Section 5 outlines the standards against which banks were assessed to reach a judgement on capital adequacy and the actions taken in response to the stress-test results by the PRA Board and the FPC.

- Section 6 concludes with a description of next steps for the development of the concurrent stress-testing framework.

- The annexes to this document provide more detailed information on bank-specific results — and associated supervisory responses by the PRA Board.