Stress testing the UK banking system: 2017 results

Bank of England (BoE)

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Introduction
Context

In November 2017 the Bank of England (BoE) published the results of the fourth stress test of the UK banking system

Introduction

- In March 2017, the BoE launched its 2017 stress test of the UK banking system, which covered 7 major banks accounting for around 80**%** of PRA-regulated banks' lending to the UK real economy.
- The 2017 stress test includes for the first time a **biennial exploratory scenario (BES)** alongside the **annual cyclical scenario (ACS)**. In this regard, the ACS is more severe than the global financial crisis (UK GDP falls by 4.7%, UK residential property prices fall by 33%, UK bank rate rises and peaks at 4%, etc.) whereas the BES examines major UK banks' long term strategic responses to an extended low growth, low interest rate environment with increasing competitive pressures in retail banking enabled in part by an increase in the use of financial technology (FinTech).

- In this context, the BoE published in November the **2017 stress test results of the UK banking system**. These results include aggregated data and also the individual results of the 7 banks participating in the exercise.
- Overall, the stress scenario is estimated to lead to **bank's losses of £50 billion** in the first two years of the stress[1]. The stress test shows these losses can now be absorbed within the buffers of capital banks have on top of their minimum requirements.
- Moreover, the 2017 stress scenario would reduce the **aggregate CET1 capital ratio** across the 7 participating banks from 13.4% at the end of 2016 to a **low point of 8.3% in 2018**, and 13.0% in 2021.
- In any case, the BoE judged that **no bank needs to strengthen its capital position as a result of the stress test**. The 2017 stress test shows the UK banking system is resilient to deep simultaneous recessions in the UK and global economies, large falls in asset prices and a separate stress of misconduct costs.

This document summarises the main results of the 2017 stress test.

(1) Despite the 2017 ACS spans ta 5-year period to the end of 2021, the results of the 2017 stress test focus on the first 2 years of stress (end 2018).

Introduction

Sample of banks

7 UK banks participated in the test: Barclays, HSBC, Lloyds, Nationwide, RBS, Santander UK and Standard Chartered. Performance was assessed according to the 2017 ACS and 2017 BES, addressing projections on the economic situation in UK

Sample of banks and scenarios

Sample of banks

- The 2017 stress test covered **7 banks**, accounting for around 80**%** of PRA-regulated banks' lending to the UK real economy.
  - Barclays
  - HSBC
  - Lloyds Banking Group
  - Nationwide
  - Royal Bank of Scotland Group
  - Santander UK
  - Standard Chartered

BoE's scenarios

ACS 2017

Objective: to assess bank capital adequacy

Stress-test horizon: 5 years

Types of stress: macroeconomic stress, traded risk stress, and misconduct costs stress, which are assumed to be synchronised

Conditions: overall the scenario is more severe than the financial crisis[1]

BES 2017

Objective: to assess banks' long-term strategic responses to meet regulators/investors' requirements

Stress-test horizon: 10 years, with banks submitting projections for 7 years out to 2023

Types of stress: no additional stress is provided.

Conditions: weak global growth, persistently low interest rates, stagnant world trade and cross-border banking activity, increased competitive pressure, and a continuation of costs related to misconduct

(1) World GDP falls by 2.4%; UK GDP falls by 4.7%; UK unemployment rises to 9.5%; UK residential property prices fall by 33%; UK commercial real estate prices fall by 40%; UK Bank Rate rises and peaks at 4%; the sterling exchange rate index falls by 27%.

Introduction
Hurdle rate framework of the 2017 ACS

As in 2016, the BoE's hurdle rate framework of the 2017 ACS comprises two elements expressed both in terms of CET1 and leverage ratio

Hurdle rate framework of the 2017 ACS 2017

BoE's hurdle rate framework

Capital

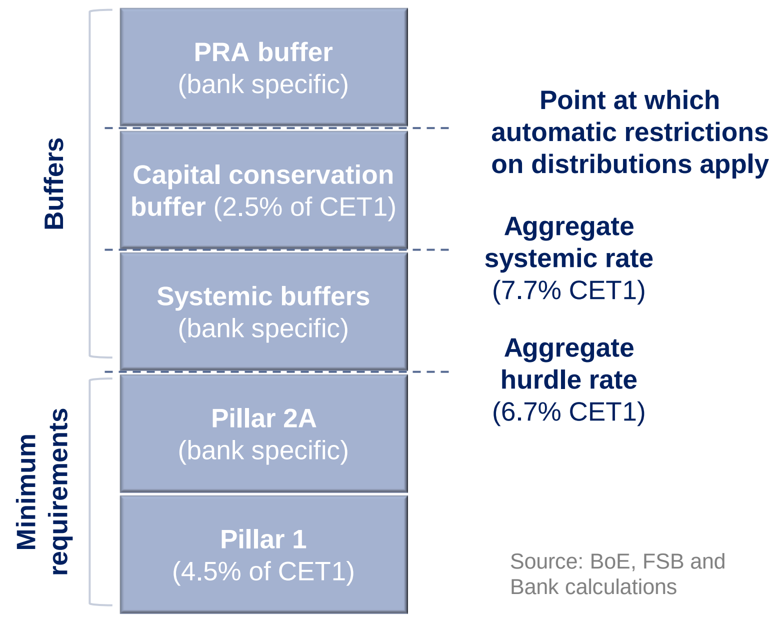
This framework comprises:

1. **Hurdle rate**
   - Definition: Minimum CET1 (4.5% of RWAs) + any Pillar 2A CET1 uplift set by PRA
   - Applicable level[1]: 6.7%
2. **Systemic reference point**
   - Definition: Hurdle rate + G-SIB capital buffer (phase-in)
   - Applicable level[1]: 7.7%

Leverage

This framework comprises:

1. **Hurdle rate**
   - Definition: Minimum Tier 1 leverage ratio (3%)
   - Applicable level[2]: 3.25%
2. **Systemic reference point**
   - Definition: Hurdle rate (3%) + G-SIB leverage buffer (35% of G-SIB capital buffer)
   - Applicable level[2]: 3.6%



Source: BoE, FSB and Bank calculations

The hurdle rate framework interacts with the **regulatory capital framework**, including buffers. In this regard, minimum requirements are the amount of capital a bank is expected to maintain at all times, whereas buffers sit on top of those minimum requirements, can be used to absorb losses in stress.

(1) Percentage of CET1.
(2) Percentage of exposures excluding central bank reserves.

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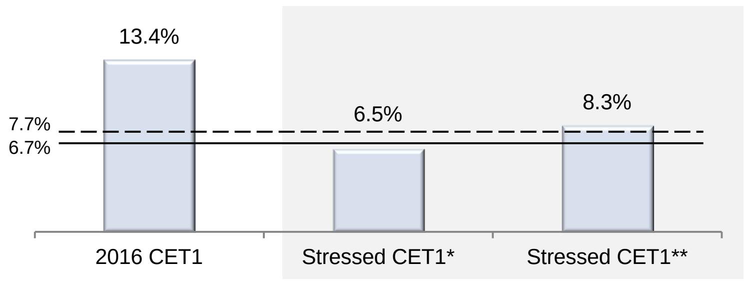
Main results

2017 ACS - Capital

The stress scenario would reduce the aggregate CET1 capital ratio from 13.4% at the end of 2016 to a low point of 8.3% in 2018, after factoring in the management actions, including the conversion of AT1 instruments. At an individual level, the impact differs across banks

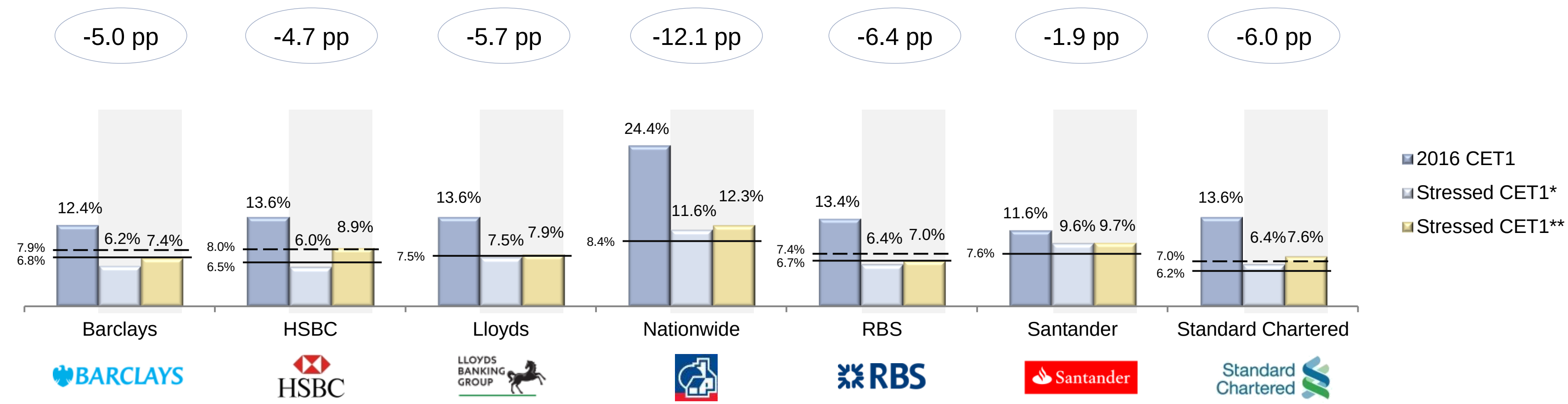
Capital

CET1: aggregated results



- As a result of the stress scenario, the aggregate CET1 ratio is reduced from **13.4%** in 2016 to a low point of **8.3%** in 2018, after considering the impact of management actions and the conversion of additional Tier 1 instruments.
- The low-point CET1 of 8.3% is **well above the average hurdle rate** (6.7%) and the **average systemic reference point** (7.7%).
- At individual level, **Barclays and RBS** do not meet the systemic reference point after taking into account the strategic management actions.

CET1: individual results[1]



(1) The variation in percentage points is calculated from the 2016 ratio to the stressed 2018 ratio after factoring in the strategic management actions of banks.

Hurdle rate
Systemic reference point

*Before strategic management actions or conversion of AT1
**After strategic management actions or conversion of AT1

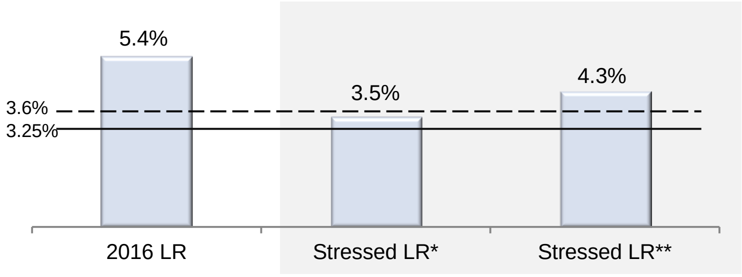
Main results

2017 ACS - Leverage

In the stress scenario, the aggregate leverage ratio (LR) would be reduced to a low point of 4.3%. Thus, it would be above the hurdle rate and also above the average systemic reference point. At individual level, all banks meet the hurdle rate and the systemic reference point

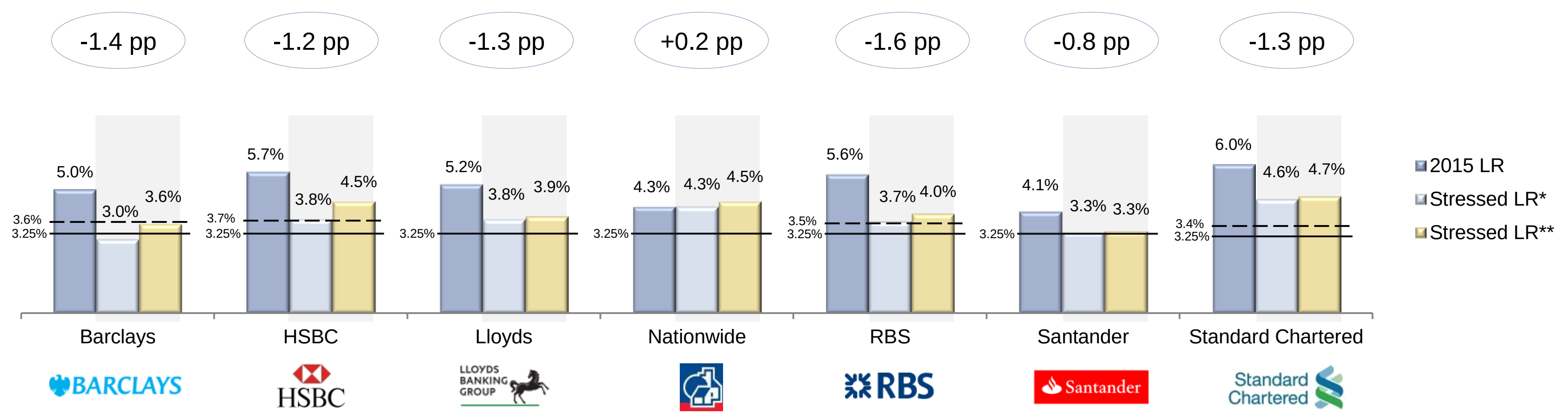
Leverage

LR: aggregate results



- The aggregate Tier 1 leverage ratio falls from **5.4%** at the end of 2016 to a low point of **4.3%** in 2018, after considering the strategic management actions.
- This minimum level is **above the hurdle rate** (3.25%), and also above the **average systemic reference point** (3.6%).
- At individual level, **all participating banks** meet the 3.25% hurdle rate and also the 3.6% systemic reference point, under the stress scenario.

LR: individual results[1]



(1) The variation in percentage points is calculated from the 2016 ratio to the stressed 2018 ratio after factoring in the strategic management actions of banks.

Hurdle rate
Systemic reference point

*Before strategic management actions or conversion of AT1
**After strategic management actions or conversion of AT1

Main results

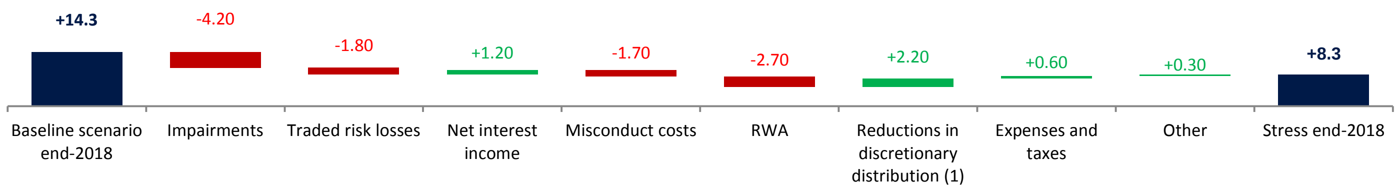
2017 ACS - Contributions to the shortfall of CET1 and LR

The following graphs explain to which extent diverse factors contribute to the increase or decrease of CET1 and LR metrics (e.g. net interest income, expenses and taxes, impairments) under the stress scenario

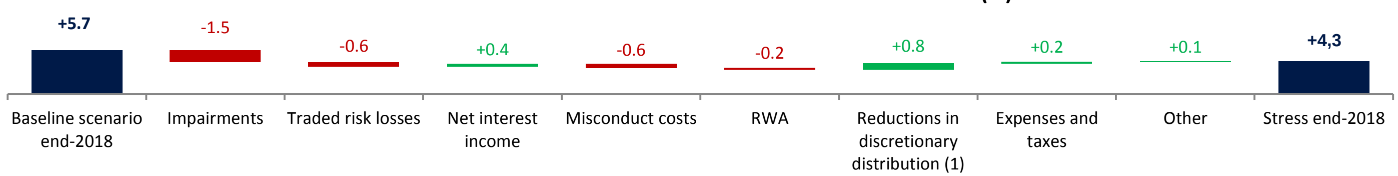
Contributions to the shortfall of CET1 and LR / Cumulative impairment rate

Contributions to the shortfall of CET1 and LR

Contributions to the shortfall of CET1 in the stress scenario (%)

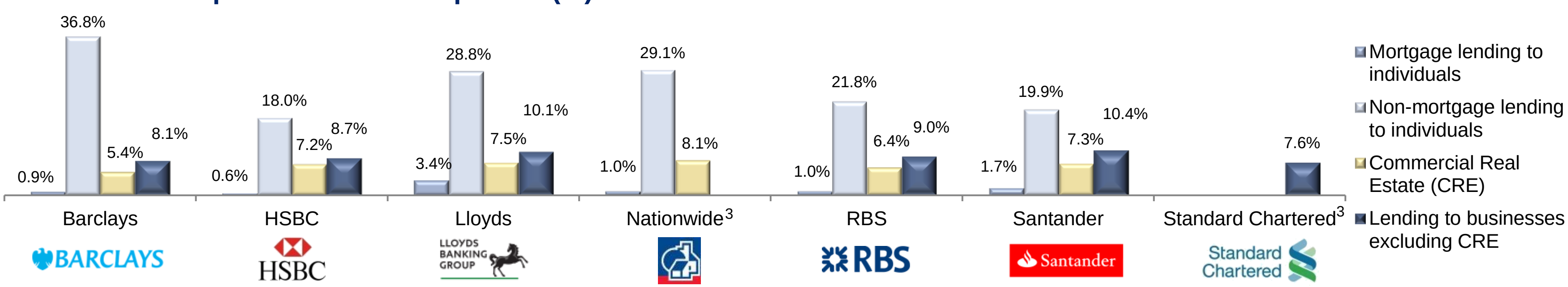


Contributions to the shortfall of LR in the stress scenario (%)



(1) In stress.

Cumulative impairment rate to exposure (%)[2]



(2) 5-year total impairment charge / Average gross on balance sheet exposure (in stress scenario).
(3) Data reported for only certain portfolios.

Main results

2017 ACS - Conclusions

Banks incur losses of around £50 billion in the first two years of the stress which can now be absorbed within the capital buffers. Due to these losses, the system-wide UK countercyclical capital buffer rate has been increased to 1%

Conclusions

At aggregate level

- Banks have continued to build their capital strength during 2017, and as a result, it is judged that all 7 participating banks now have **sufficient capital to meet the standard set by the test**.
- In the test, banks incur **losses of around £50 billion** in the first two years of the stress. The stress test shows these losses can now be absorbed within the **buffers of capital** banks have on top of their minimum requirements.
- Due to losses banks made on their UK credit assets in the stress test, the Financial Policy Committee (FPC) has increased the **system-wide UK countercyclical capital buffer rate**, which applies to all banks, from 0.5% to **1%**.
- As in previous concurrent tests, the BoE also undertook a **qualitative review** of banks' stress-testing capabilities. In this regard, the overall quality of data provided and the credibility of the analysis across a number of areas has improved, although some weaknesses regarding their ability to assess the impact of the stress on NII and traded risk remain.

At individual level

Santander, Lloyds Banking Group, HSBC, Nationwide, Standard Chartered	• For HSBC, Lloyds Banking Group, Nationwide Building Society and Santander UK, the stress test **did not reveal capital inadequacies**. • These banks are **not required to submit a revised capital plan**.	Green
Barclays	• Barclays did not meet its neither **CET1** nor **Tier 1 LR systemic reference points**. However, in light of the steps taken to strengthen its capital position, it is **not required to submit a revised capital plan**.	Yellow
RBS	• RBS did not meet its **CET1 systemic reference points**. However, in light of the steps taken to strengthen its capital position, it is **not required to submit a revised capital plan**.	Yellow

Main results

2017 BES - Bank's projections

The bank's projection under the 2017 BES reflects the horizon 2016-2023 and covers the RoE, CoE, net interest margin, annual profits, loan volumes, market share, non-interest income, capital and liquidity ratios, and risks to bank's projections

Bank's projections

Results from bank's projections[1]

Return on equity (RoE), cost of equity (CoE), net interest margin, and annual profits

- Aggregate statutory **RoE reaches 8.3% in 2023** under the 2017 BES, which is below returns before the financial crisis.. Banks' projections suggest that their **CoE to be around 8% by 2023**.
- At the end of 2023, **global net interest margins** are projected to be **35 basis points lower** than at the end of 2016.
- Overall, **annual profits** (net income attributable to shareholders) **rise by £28 billion** from 2016 to 2023.

Loan volumes, market share, and non-interest income

- In aggregate, participating banks project that the **stock of outstanding loans will increase by 12%** between end-2016 and end-2023. Further, **market share** is projected to **fall by around 4 pp**.
- Banks also expect a **rise in non-interest income to boost earnings** in the 2017 BES.

Capital ratios and liquidity (LCR)

- Under the 2017 BES, banks choose to **strengthen their capital positions**. The aggregate risk-weighted **CET1 capital ratio** rises to **14.9% at end-2023**. Likewise, the aggregate **Tier 1** leverage ratio rises to 6%. At the same time, banks are able to pay out, in aggregate, **£74 billion in dividends** to shareholders.
- In aggregate, they project **LCR of around 130% in 2023**.

Risks to bank's projections

- There are three main risks: i) **competitive pressures enabled by FinTech**, ii) **bank's projected large reductions in costs**, and iii) **cost of equity may be higher than banks expect**.

(1) Unlike the results of the 2017 ACS, the BoE has not provided judgement on these results.

2017 BES - Conclusions

In aggregate, participating banks project that they could adapt to a low rate, low growth macroeconomic environment without major strategic change or taking on more risk

Conclusions

At aggregate level

- Participating banks could **adapt to a low rate, low growth macroeconomic environment** without major strategic change or taking on more risk.
- **Net interest margins and lending volumes are squeezed**, as highlighted before. However, banks consider that they can offset this by extending their baseline plans to **reduce costs** (e.g. by employing more technology to deliver services, allowing them to reduce staff and other administrative expenses further).
- Banks expect that they would generate a **return on equity of a little over 8% by 2023**. They judge that this would meet the return demanded by investors (i.e. their estimated cost of equity) in the 2017 BES. Most banks' current return on equity targets are at or above 10%.
- The BoE has identified **three important risks to the banks' projections**:
    - **Competitive pressures enabled by FinTech**, in particular the emergence of the initiative Open Banking[1], may cause greater and faster disruption to banks' business models than banks project.
    - Banks are projecting **large reductions in costs** and there is a risk that they will be unable to execute these plans fully while delivering a broad range of services.
    - In an environment of low growth and low interest rates the **equity risk premium may be higher** than banks expect.

(1) Alongside the Payment System Directive 2 (PSD2) coming into force, 9 major UK banks are required to implement 'Open Banking' - a related reform that specifies the technology banks should use to make third party access to their systems available