In 2014 we saw the introduction of new stress testing regimes in the European Union by the European Central Bank (ECB) and European Banking Association (EBA). The Bank of England’s Prudential Regulatory Authority (PRA) also initiated new stress tests in the UK. The year also saw increased participation in the US Comprehensive Capital Analysis and Review (CCAR) exercise. The scale of these exercises and implications for participating banks may be gauged from some of the numbers presented on the next page.
# Stress Testing – Why it Matters More Than Ever

## Who is impacted?

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banks in the European Union (EU)</td>
<td>124</td>
</tr>
<tr>
<td>Entities in the US</td>
<td>31</td>
</tr>
<tr>
<td>Major UK Banks</td>
<td>7</td>
</tr>
</tbody>
</table>

## Complexity involved?

<table>
<thead>
<tr>
<th>Entity Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excel template submissions per bank in the ECB</td>
<td>36</td>
</tr>
<tr>
<td>FR Y-14 reports to be submitted by US Banks</td>
<td>90+</td>
</tr>
<tr>
<td>Forms to be submitted to the PRA</td>
<td>19+</td>
</tr>
</tbody>
</table>

## What is the severity?

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banks in EU that failed the test</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>Banks in US that had inadequate capital</td>
<td>6.5%</td>
<td></td>
</tr>
<tr>
<td>Banks in UK that had inadequate capital</td>
<td>37.5%</td>
<td></td>
</tr>
</tbody>
</table>

## What is at stake?

<table>
<thead>
<tr>
<th>Amount</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$24.6B</td>
<td>For Banks in EU</td>
</tr>
<tr>
<td>$511B</td>
<td>In Tier 1 Capital for US Banks</td>
</tr>
</tbody>
</table>
Stress testing regulations are broadly aligned across regimes, with some differences to account for differing regulatory priorities. Further convergence across regimes may be expected in the future as the regimes mature. Some of the defining features of the most popular regimes as they stand today are highlighted below.

<table>
<thead>
<tr>
<th>US CCAR</th>
<th>UK PRA</th>
<th>EBA Stress Tests</th>
</tr>
</thead>
</table>
| **Scenarios** | Four scenarios  
CCAR - 3 common regulatory scenarios (baseline, adverse, severely adverse)  
Dodd-Frank Act Stress Testing (DFAST) - bank generated scenario for mid-cycle submission | All elements of the stress scenario will be designed by bank staff and discussed and agreed to by the Financial Policy Committee and PRA Board  
The 2015 stress test will cover a five-year horizon, from Q1 2015 to Q4 2019. The 2014 exercise covered a three-year horizon | Two scenarios, baseline and adverse, created by the EBA  
The scenarios cover the period 2014 -16 (3 years) |
| **Timelines** | Annual cycle: January 5 of the following calendar year  
Mid-cycle: Data as of March end, submission on July 5 | Data collection and common scenarios: December 31, 2014  
Submission of results to PRA by banks: to be confirmed  
Public disclosure of outcomes: Q4 2015 | Data collection: March/April 2014  
Publication of methodology and scenarios: April 2014  
Publication of results: October 26, 2014 |
| **Institution Coverage** | 31 Bank Holding Companies (BHCs) with assets ≥ $50 billion  
12 new entrants in the 2014 cycle  
1 new entrant in the 2015 cycle | 7 major UK banks with assets ≥ GBP 50 billion will participate in 2015 stress test | 123 Eurozone banks account for 82% of Eurozone banking assets  
4 UK banks, 5 Irish banks |
| **Risk Coverage** | Credit, market, operational risk  
Liquidity risk not a component at present | Credit, market, operational risk  
Status of liquidity risk not known at present | Credit risk, market risk, sovereign, securitization, cost of funds  
Operational risk via simplified approach |
| **Balance Sheet Treatment** | Common scenarios: Static balance sheet  
Custom scenarios: Dynamic balance sheet  
No asset quality review of balance sheet | Common scenarios: Dynamic balance sheet  
No asset quality review of balance sheet | Static balance sheet  
Asset quality review of balance sheet |
| **Hurdle Rates** | Common equity Tier 1 ratio of 5% across the baseline and stress scenarios | Common equity Tier 1 ratio of 7% for the baseline and 4.5% for stress scenarios | Common equity Tier 1 ratio of 8% for baseline and 5.5% for stress scenarios |
| **Stress Test Results** | FR Y-14A schedules: Profit and loss (P&L) and balance sheet projections  
90+ total reports | Quarterly results as per the Firm Data Submission Framework (FDSF) issued to banks in Q1 2015 | Calculation support and validation templates by risk type (36 reports) |
| **Other Disclosures - Quantitative** | FR Y-9 reporting on P&L and balance sheet projections | As defined by the FDSF | Advance data collection  
Transparency disclosures |
| **Other Disclosures - Qualitative** | Scenario-specific capital plan  
Methodology and assumptions | Qualitative information on stress testing methodology and governance, risk management information systems and capital plan | Scenario-specific capital plan  
Methodology and assumptions |
Stress Testing Regimes: Themes for Participating Banks

Based on previous submissions, regulators have identified certain common themes amongst participants. Highlighted below are the recommended practices by regulators in line with these themes.

**US CCAR**

**Data and Platforms**
- Moving away from "spreadsheet" infrastructure and manual consolidation
- Integrated data platform for finance and risk
- Strong macro-economic forecasting capabilities for custom scenarios

**Governance and Operating Model**
- Establish a central stress testing function, moving away from "silo-based" processes
- Seamless alignment of capital planning and stress testing processes

**Stress Testing Models**
- New modeling methodologies gaining usage including quantile regression, regime switching regression, and panel data models
- Better integration of loss and pre-provision net revenue modeling
- Creation of challenger models
- Higher expectations regarding model testing and sensitivity analysis

**Capital Planning and Reporting**
- Integrated reporting platform, with reconciliation to FR Y-9 and FR Y-14 submissions
- Risk-weighted assets (RWA) reporting commenced with the 2014 cycle

**UK Bank of England (BoE) Stress Tests**

**Scenario Design**
- Extension of the EBA European recession scenario with UK-specific features such as a steeper fall in house prices

**Feedback and Dynamic Effects**
- The BoE (as stated in its supervisory expectations paper SS6 13) expects all participating banks to take into account the behavior of counterparties and of the firm itself, especially as it relates to the exercise of choices embedded in financial instruments or insurance contracts
- Government monetary policy responses to the scenario will be permitted, unlike the EBA stress tests

**Liquidity Risk**
- Liquidity risk only included as an amplification mechanism

**Transparency**
- Disclosure of individual bank level results, which was not a feature of earlier stress tests conducted by the Financial Services Authority (FSA)

**EBA/ECB Stress Tests**

**Comprehensive Assessment**
- Three-step procedure involving supervisory review, asset quality review and stress testing
- In the 2014 exercise the assessment arrived at an overall impact of €62 billion, of which €25 billion consisted of capital shortfall and €37 billion arose from asset value adjustments not resulting in a capital shortfall

**Disclosures and Transparency**
- Full disclosure of inputs and outputs of the stress testing exercise
- Advance data collection (ADC): Credit risk data collected as of December 31, 2013
- Calculation support and validation (CSV): Projected credit risk parameters, evolution of RWA across risk types, detailed evolution of capital including restructuring measures; detailed P&L projections
- Transparency data: Detailed disclosures of the P&L and balance sheet for areas such as credit risk (exposure, RWA, value adjustments and provisions, default and loss rates)
Accenture supports global financial institutions in their efforts to plan for and conduct stress testing submissions that meet their needs and deliver favorable outcomes. We also support clients in setting up robust and repeatable processes and below we outline some of the tools, assets and frameworks available to the benefit of financial institutions.

### Stress Testing Workflow

<table>
<thead>
<tr>
<th>Activities and Practices</th>
<th>Framework Deployed, Assets and Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stress Testing</strong></td>
<td><strong>Operating Model</strong></td>
</tr>
<tr>
<td>Perform assessment of present capabilities across all areas</td>
<td>Stress testing maturity analyzer</td>
</tr>
<tr>
<td>Identify and validate approaches for different risk types and portfolios</td>
<td>Best practice operating and governance model</td>
</tr>
<tr>
<td><strong>Scenario Management</strong></td>
<td><strong>Model Management</strong></td>
</tr>
<tr>
<td>Design bespoke stress scenarios with inputs from business lines</td>
<td>Comprehensive point of view on data requirements and processes</td>
</tr>
<tr>
<td>Secure regulatory approval</td>
<td>Library of scenarios used by regulatory bodies</td>
</tr>
<tr>
<td><strong>Model Management</strong></td>
<td><strong>Stress Test Execution</strong></td>
</tr>
<tr>
<td>Methodology selection</td>
<td><strong>Scenario execution</strong></td>
</tr>
<tr>
<td>Variable selection</td>
<td>Management review and challenge</td>
</tr>
<tr>
<td>Model estimation</td>
<td><strong>Tried and tested stress test execution models</strong></td>
</tr>
<tr>
<td>Validation, testing and sensitivity analysis</td>
<td><strong>Automated regulatory reporting</strong></td>
</tr>
<tr>
<td>Documentation</td>
<td><strong>Automated CCAR modeling infrastructure</strong></td>
</tr>
<tr>
<td>Implementation</td>
<td><strong>Complete suite of frameworks for stress testing model development and model validation</strong></td>
</tr>
<tr>
<td><strong>Stress Test</strong></td>
<td><strong>Narratives and Capital Plan</strong></td>
</tr>
<tr>
<td>Execution</td>
<td><strong>Creation of narratives to accompany CCAR/DFAST loss and pre-provision net revenue (PPNR) projections</strong></td>
</tr>
<tr>
<td><strong>Regulatory Submission of Results</strong></td>
<td><strong>Capital plan creation</strong></td>
</tr>
<tr>
<td>Completion of reporting schedules (e.g. 700 data points for CCAR submission alone)</td>
<td><strong>Industry leading content tested in regulatory interactions across small, medium and large banks</strong></td>
</tr>
<tr>
<td>Reconciliation to reported financials</td>
<td><strong>Proven experience supporting banks at all stages of maturity with regulatory submissions</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Automated template completion modules</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Best practices for capital plan content</strong></td>
</tr>
</tbody>
</table>
Notes


15. Stress Testing Regime at a Glance sources:

CCAR:

UK PRA Stress Tests:

EBA/ECB:

16. Accenture experience and:

US CCAR:

UK Bank of England:

EBA/ECB:

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