

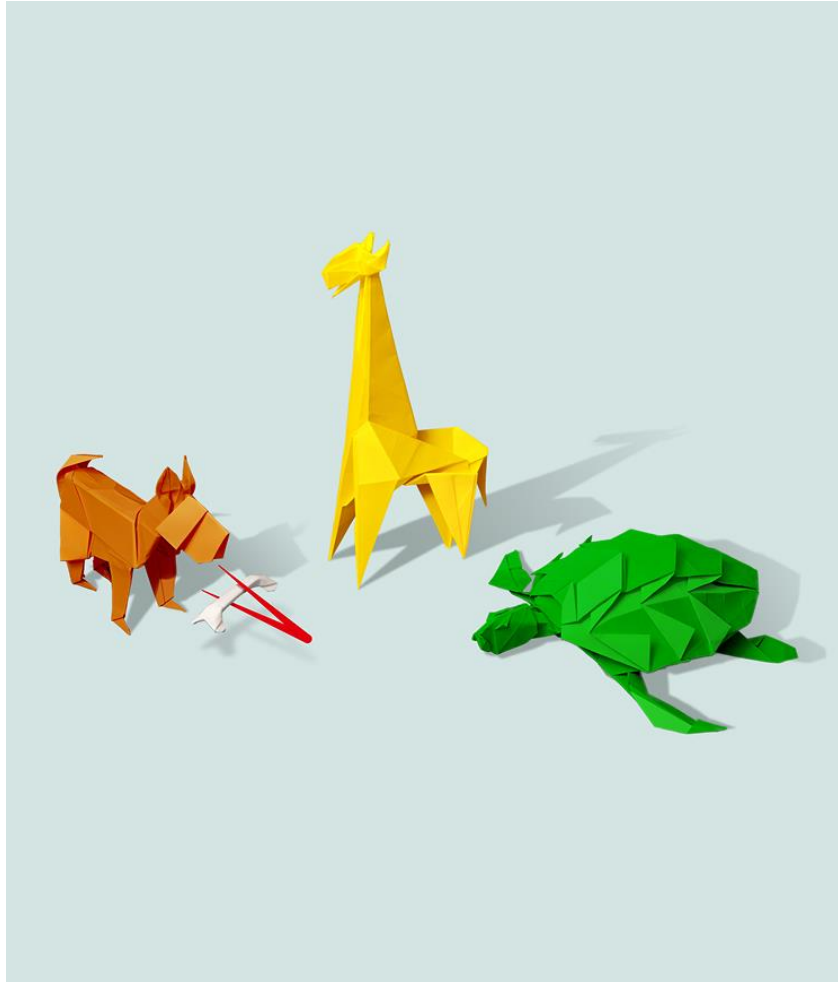


*COVID-19 and Stress Testing for
Banks & Building Societies
30 April 2020*

SHUVO BANERJEE

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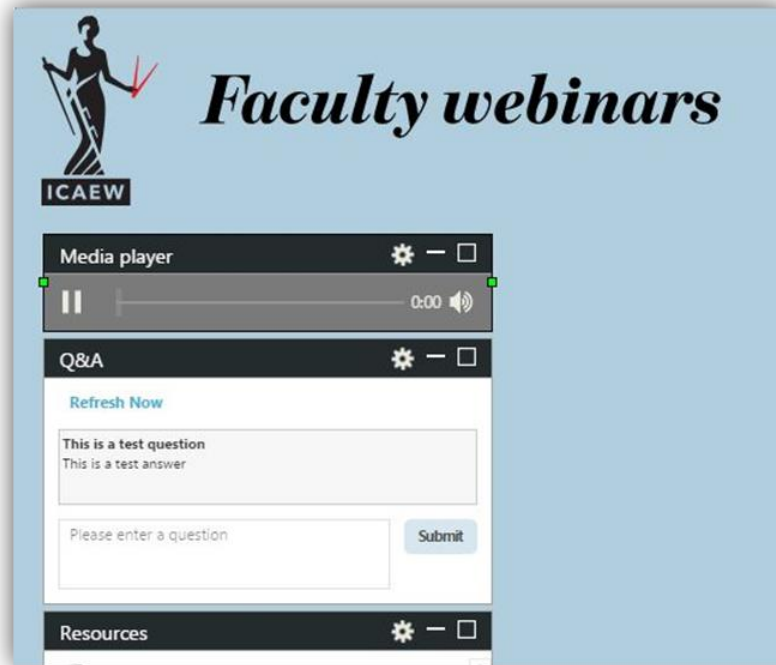
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Stress Testing Webinar Banks and Building Societies

1. Shuvo Banerjee

Head of Risk and Finance Assurance, Retail Banking

shuvo.banerjee@uk.gt.com

2. John Mongelard

Technical Manager, Risk & Regulation

john.mongelard@icaew.com





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- *Model Risk Management principles*
- *Climate Change*

(5) Key considerations during Covid-19

Stress testing & Reverse stress testing – the context

Objective



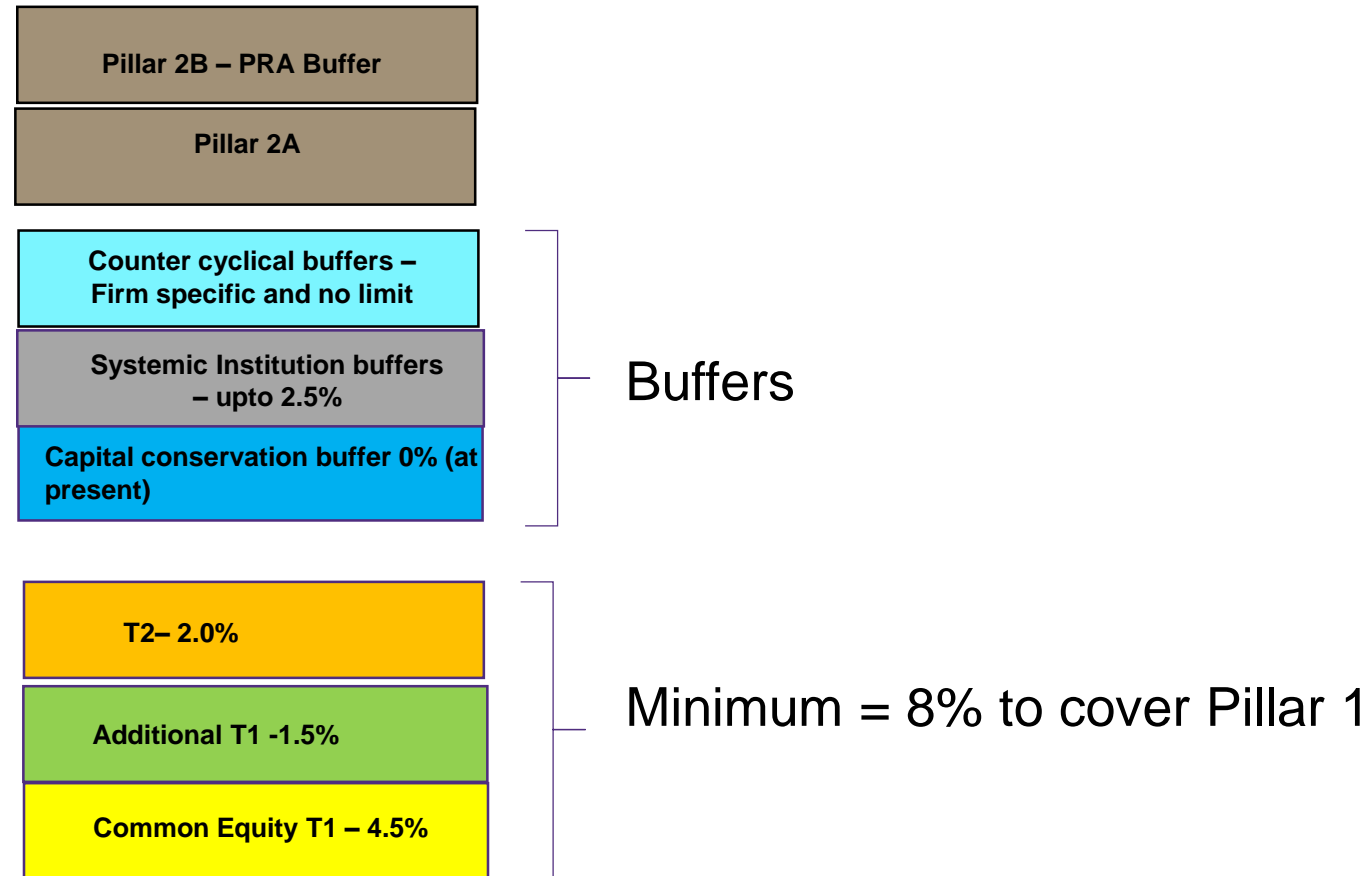
*‘trying to achieve a
bridge through this
period’*

ANDREW BAILEY, GOVERNOR BANK OF
ENGLAND

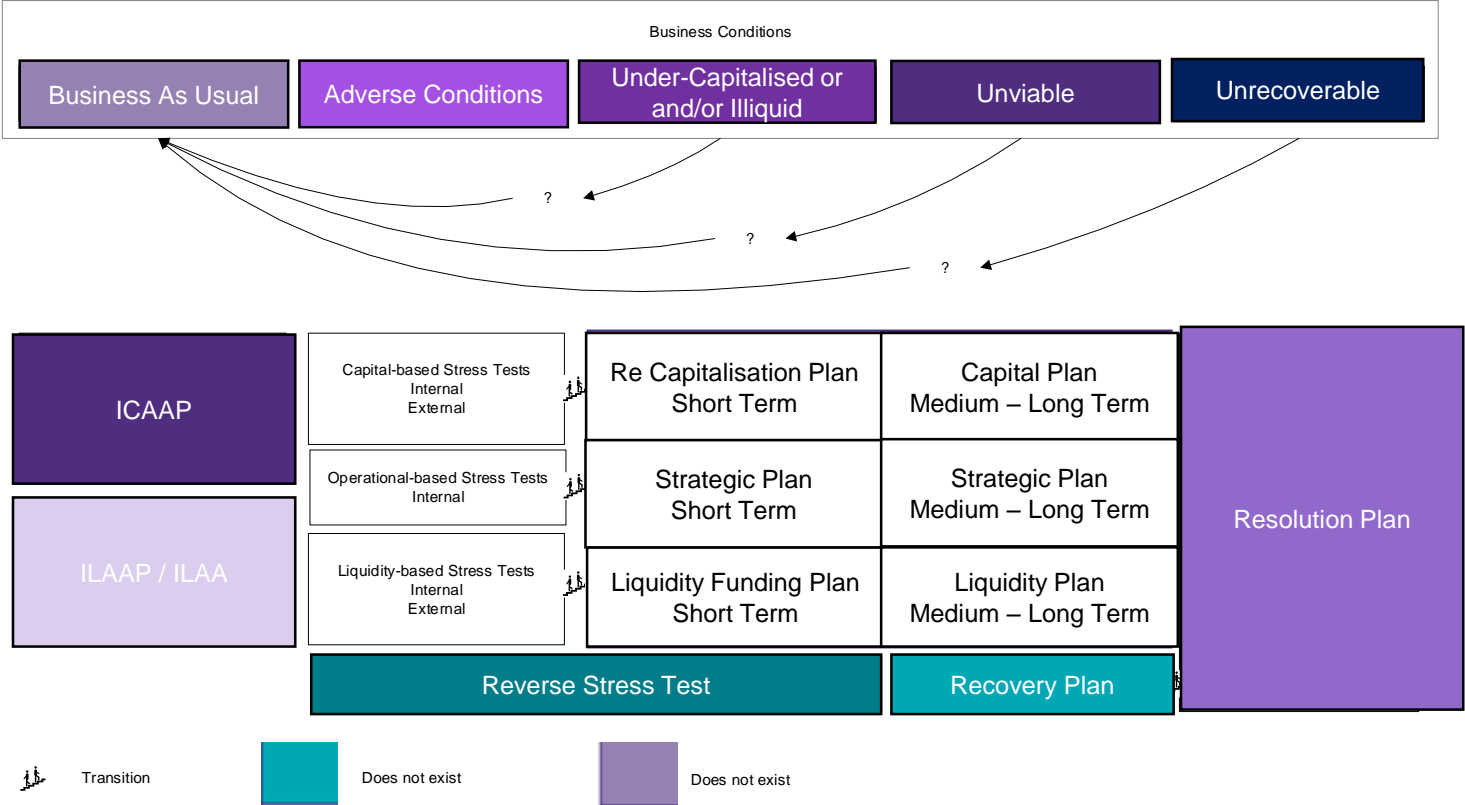
Test, test, test



Stress testing to maintain the Capital Stack



Stress testing to avoid Resolution



22 April 2020

EBA statement on additional supervisory measures in the COVID-19 pandemic

Institutions should analyse how the COVID-19 stress might evolve for their institution and estimate their overall recovery capacities for liquidity and capital

Reverse Stress Test

Reverse stress test usually refers “scenarios that will make bank to be bankrupt or insolvency – i.e. break the bank and make business unviable”.

In general, How does reverse stress test being performed?



EBA Statement – April 2020

Financial institutions should be able to focus on core operations in the context of the COVID19 pandemic and the European Banking Authority (EBA) recognises the need for credit institutions to maintain a strong focus on effective crisis management and preparedness. In this context, recovery plans, which aim at restoring the institutions’ financial and economic viability under stress, should be kept reviewed and updated in order to be implemented timely and effectively if needed.

Focus on recovery options from the EBA

STATEMENT ON ADDITIONAL SUPERVISORY MEASURES IN THE COVID-19 PANDEMIC

22 April 2020



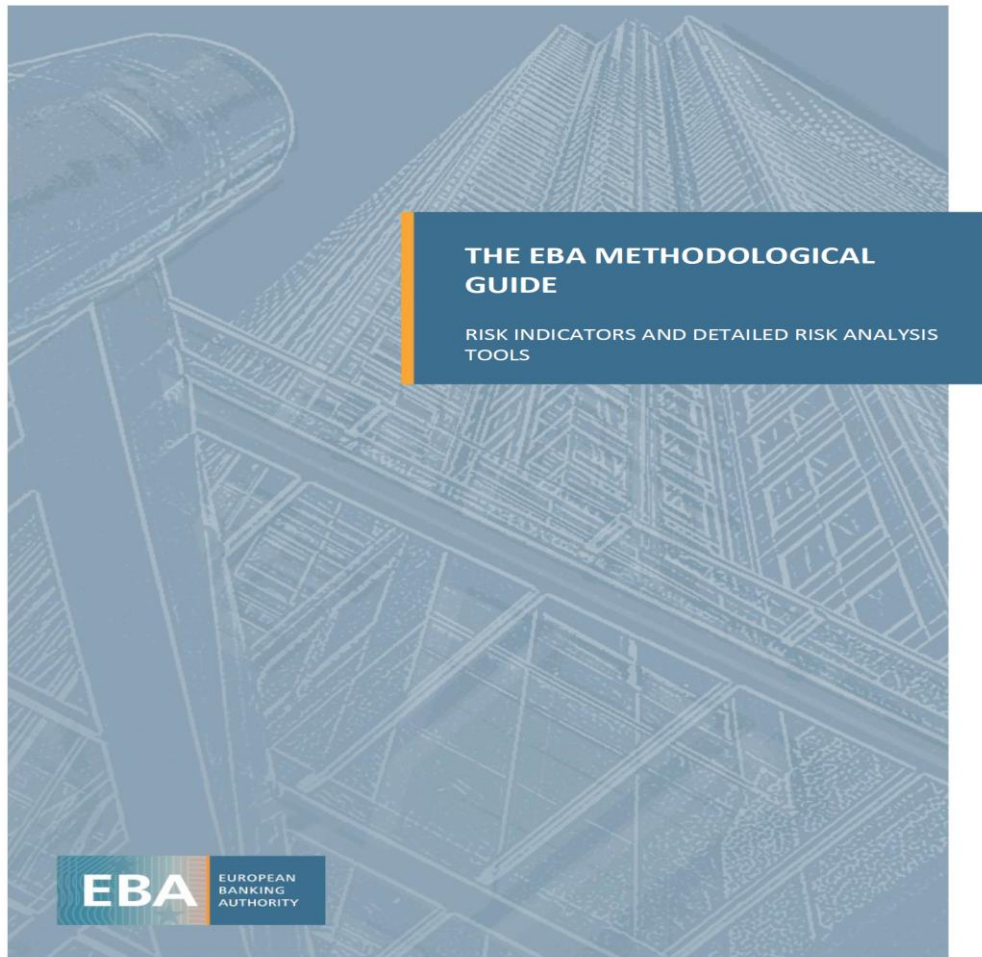
EBA statement on additional supervisory measures in the COVID-19 pandemic

Institutions should:

- a. monitor their **recovery plan indicators** and timely report to the competent authority any breach even if it does not result in the implementation of recovery actions,
- b. regularly **review and update their list of credible and feasible recovery options** included in their recovery plans, taking into account the current COVID-19 system-wide stress, and
- c. where feasible and necessary, take any preparatory measures to **increase the institutions' ability to quickly implement these recovery options.**

Directive 2014/59/EU (BRRD), Delegated Regulation (EU) 2016/1075, EBA GL on the minimum list of qualitative and quantitative recovery plan indicators (EBA/GL/2015/02); EBA GL on the range of scenarios to be used in recovery plans (EBA/GL/2014/06).

EBA publication on Risk Indicators – April 2020



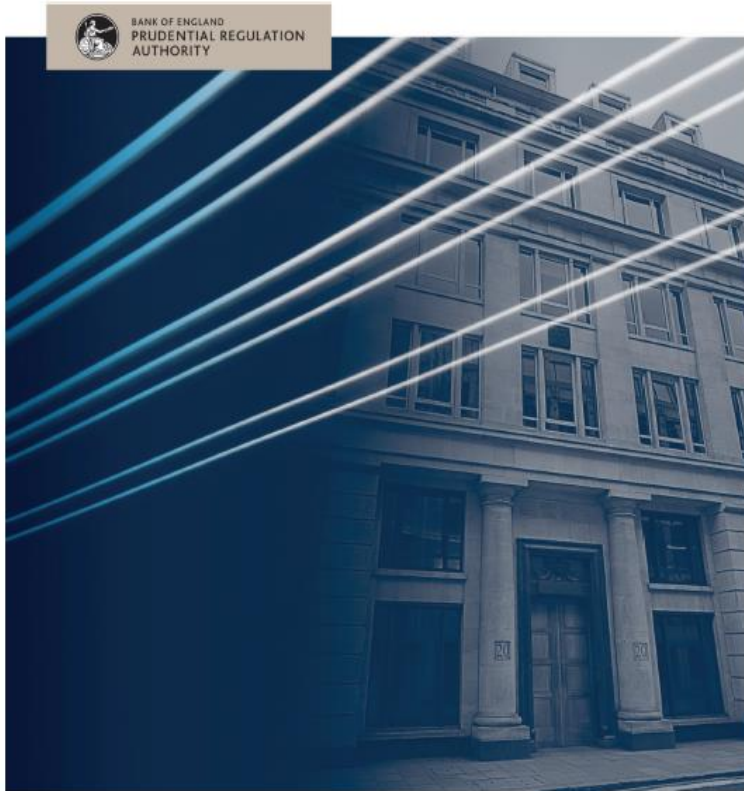
Regulatory frameworks for Stress Testing

Regulatory References

Supervisory Statement | SS31/15
The Internal Capital Adequacy Assessment
Process (ICAAP) and the Supervisory
Review and Evaluation Process (SREP)

December 2017

(Updating October 2017)



Statement of Policy

The PRA's methodologies for setting
Pillar 2 capital

April 2018

(Updating December 2017)



Basel guidance on stress testing – October 2018

Stress testing principles – BCBS October 2018 – ‘Guidance not standards’

Principles	Key points
1- Objectives	<ul style="list-style-type: none"> To inform capital and liquidity planning OR to their role as an integral element of Risk Management.
2- Framework & Governance	<ul style="list-style-type: none"> Framework – (a) scenario development and approval (b) model development and validation (c) reporting and challenge of results (d) use of stress test outputs The roles of the second and third line should be specified Board has ultimate responsibility Can delegate the development and implementation of the framework to senior management or a Stress Testing Committee The board, OR an appropriately senior-level governance body, should have an understanding of the material aspects of the framework and engage actively and challenge key modelling assumptions and scenario selection
3- Risk Management tool	<ul style="list-style-type: none"> Stress testing constitutes a key input related to risk identification, monitoring and assessment Stress tests should contribute to formulating and pursuing strategic and policy objectives Results of stress tests should, where appropriate, inform banks’ calibration of risk appetite and limits, financial and capital planning, liquidity and funding risk assessment, contingency planning and recovery and resolution planning.
4- Capture material and relevant risks Apply stresses that are sufficiently severe	<ul style="list-style-type: none"> Stress testing should capture material and relevant risks If certain risks are excluded, their exclusion should be explained and documented Scenarios should be severe but plausible and should not be limited to the supervisory scenarios
5- Resources should be adequate	<ul style="list-style-type: none"> Resources should have the appropriate skill sets to execute the framework & to facilitate insights from business lines The set of skills typically required includes (but are not limited to) expertise in liquidity risk, credit risk, market risk, capital rules, financial accounting, modelling and project management.

Stress testing principles – BCBS

October 2018 – ‘Guidance not standards’

Principles	Key points
6- Accurate and sufficiently granular data and by robust IT systems	<ul style="list-style-type: none"> Data used should be accurate, complete, available at a sufficiently granular level and in a timely manner – reference to BCBS 239 Robust data infrastructure capable of retrieving, processing, and reporting information used in stress tests to ensure information is of adequate quality
7- Models and methodologies should be fit for purpose	<ul style="list-style-type: none"> Models should adequately define the coverage, segmentation and granularity of data and types of risk Level of sophistication should be appropriate Overlays if used should be well justified & documented Links between solvency & liquidity stresses should be considered Include a certain amount of expert judgment, justified, challenged & documented Should have adequate inventory Robust model validation function
8- Subject to challenge and regular review	<ul style="list-style-type: none"> Review of all aspects of the Stress Testing framework on a periodic basis Reviews should include a validation Other types of independent reviews should include key components of the stress testing process - methodologies, scenario assumptions, estimations of the stressed losses, revenues and liquidity forecasts Internal audit reviews should review the stress testing framework, be comprehensive and be available to senior management Challenge from the Business areas on the assumptions and plausibility of outcomes
9- Communication	<ul style="list-style-type: none"> Banks should consider ways to ensure that market participants understand the data that are disclosed, including the limitations of and the assumptions on which it is based

PRA assessment against Basel principles in the ACS

PRA feedback against the 9 Basel principles

Positives

Principles 1 & 2
(Obj, Framework,
Governance)

- Stress testing objectives largely defined in most banks

Principle 3 (Risk
Management tool)

- **Most Banks are using stress tests to calibrate Risk Appetite and Limits**

Principle 4
(Capture material
risks)

- Some relevant risks are captured

Areas for Improvement

- **Close links to their Risk Management framework**
- Processes and governance are appropriate to the nature of the stress test

- Use insights from Stress Testing more systematically and consistently in **Business Planning and Risk Management**
- Stress testing results could also be used, where appropriate, to support financial and capital planning, contingency planning, recovery and resolution planning, portfolio management and new trade/product approval processes

- **Banks capture some relevant risks in their internal scenarios but improvements are needed to ensure that risk identification processes comprehensively capture these risks** and feed into the design of internal stress scenarios

PRA feedback against the 9 Basel principles

Positives

Areas for Improvement

Principles 5 & 6
(Resources,
granularity of data)

- Improvements made to infrastructure, execution, delivery and management of data

- Further improvements to data quality, granularity and the **reconciliation of risk to finance data**
- **Assessment of BCBS 239**

Principle 7 (Models
and Methodology)

- Strong methodologies - Adequate justification of the assumptions, limitations and overlays applied

- Expectation that the **principles of SS3-18** need to be further embedded

Principle 8 (Subject
to challenge and
regular review)

- Some Banks had comprehensive review and challenge

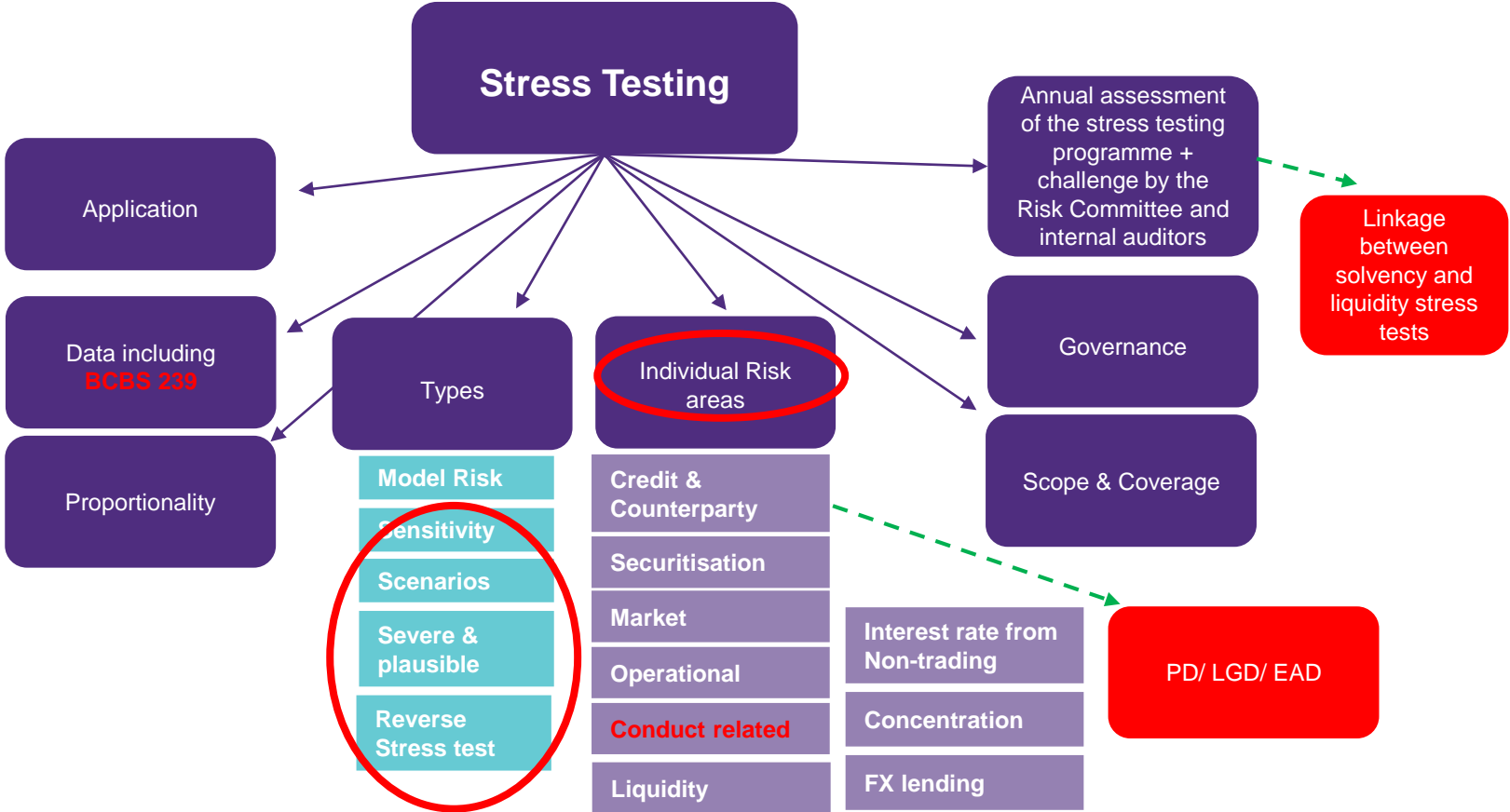
- Review and challenge to be enhanced to ensure **reliability of stress test results** and aid an understanding of **limitations or areas for improvement**

Principle 9
(Communication)

- Communication of **Business insights** along with quantitative results
- Stress testing could be systematically communicated to relevant stakeholders – **this could enhance the use of stress testing**

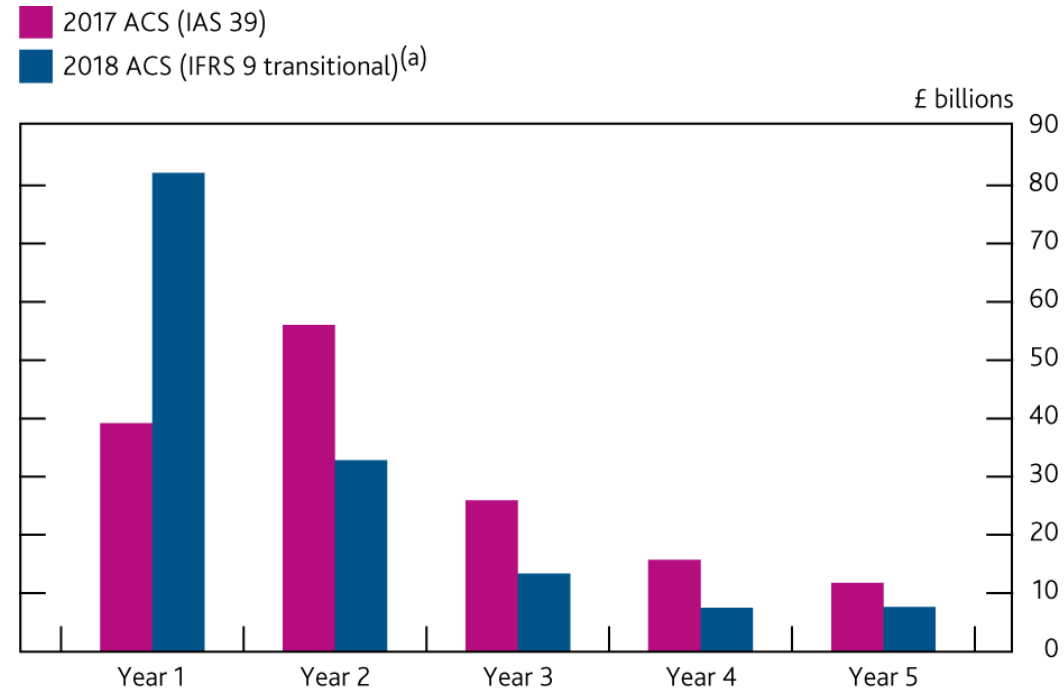
EBA guidance on Stress Testing – July 2018

EBA Guidance – July 2018 – ‘to be complied with’



Integrating IFRS 9 and Stress Testing

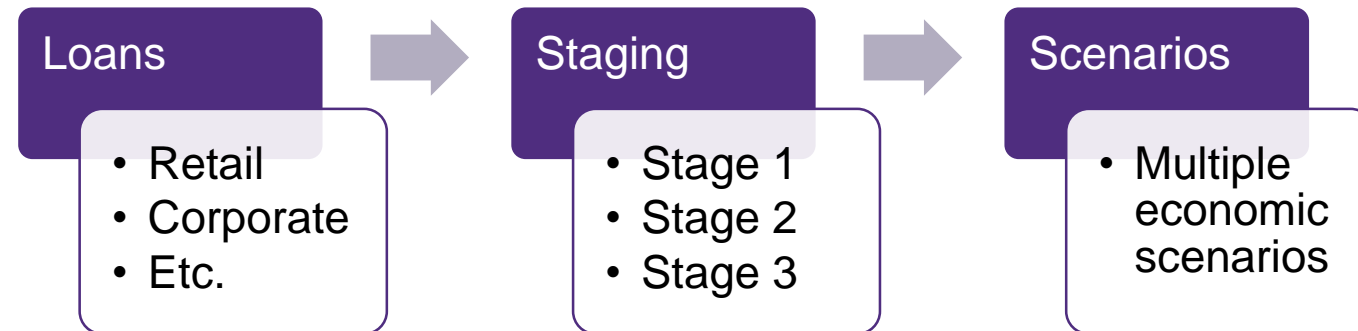
IFRS 9 – timing of provisions



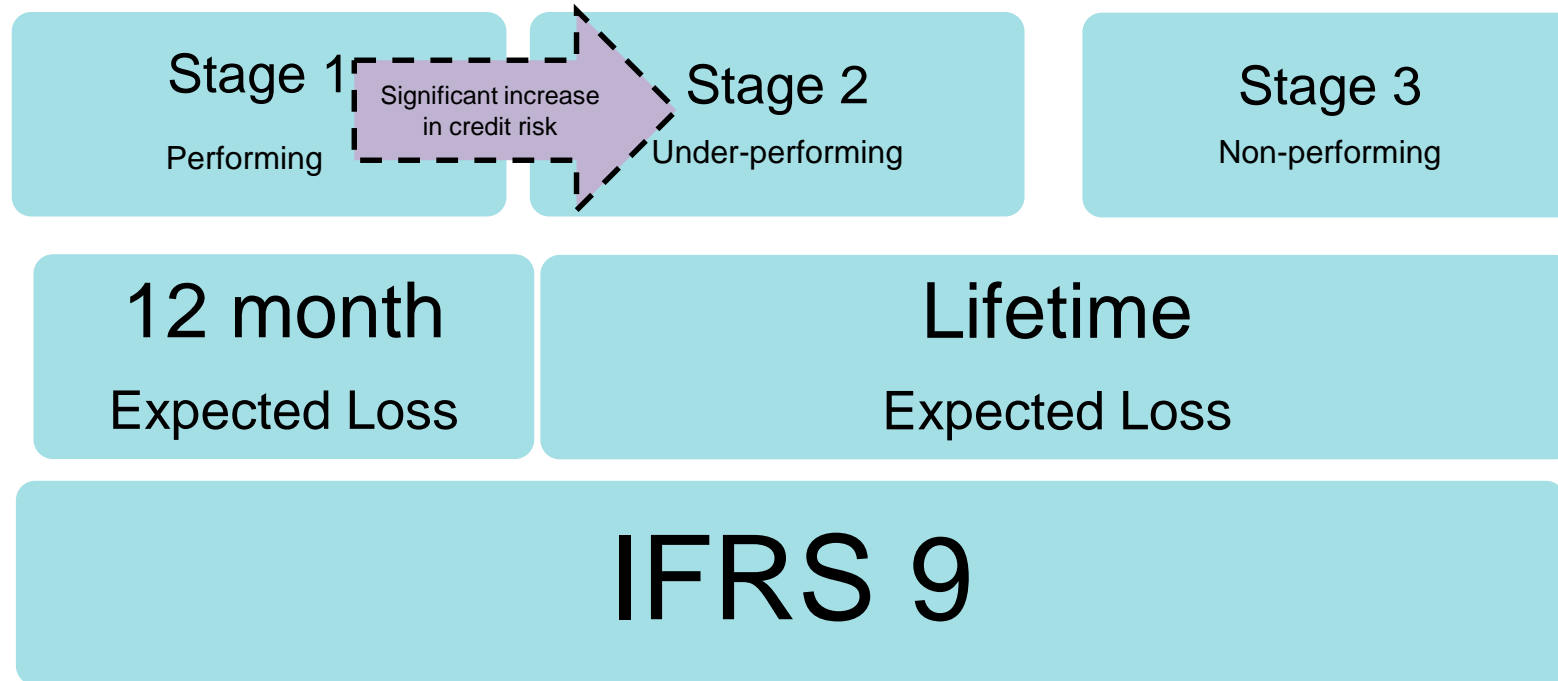
Sources: Participating banks' STDF data submissions, Bank analysis and calculations.

(a) Transitional relief is calculated as the impact of IFRS 9 on credit losses but is applied directly to capital (ie transitional relief does not affect figures shown in this chart).

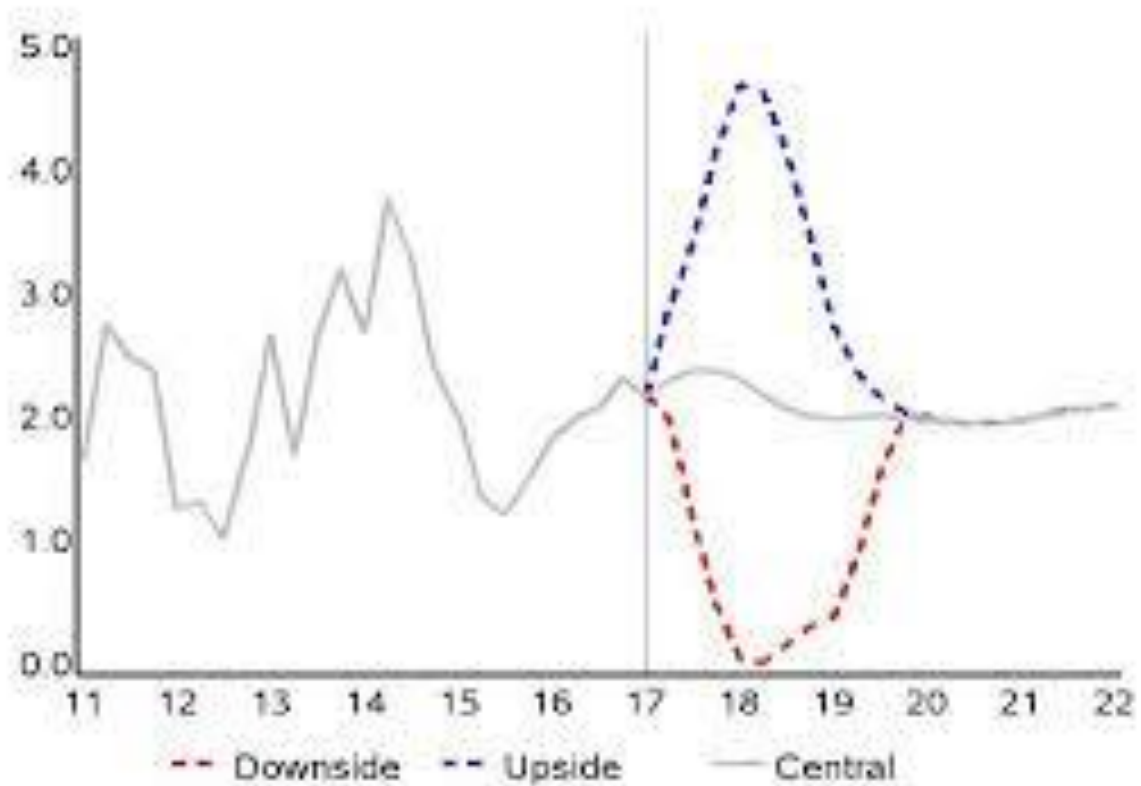
IFRS 9 – the process



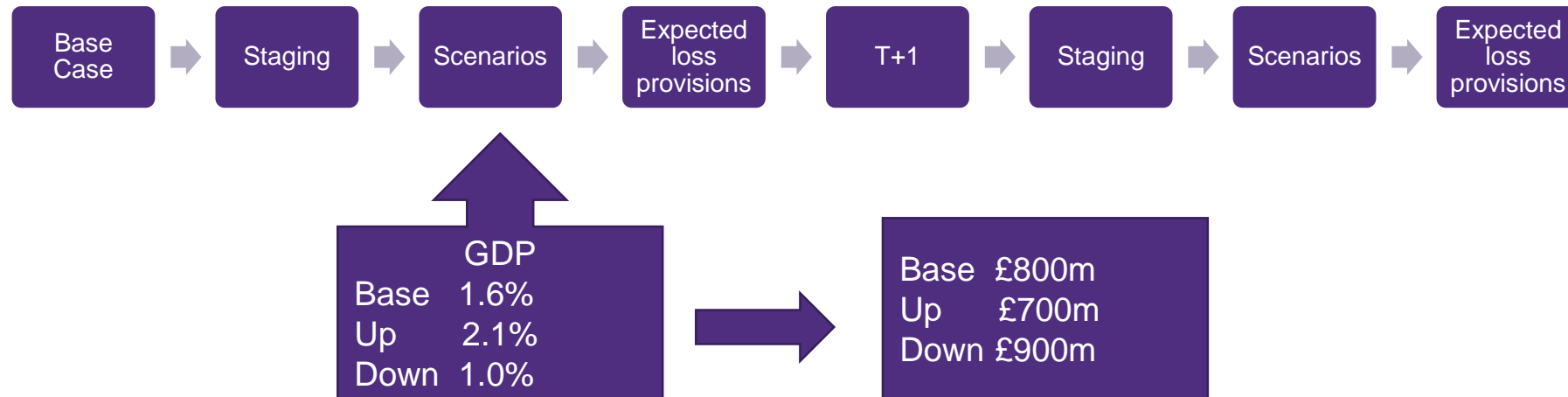
Expected Credit Loss Accounting - staging



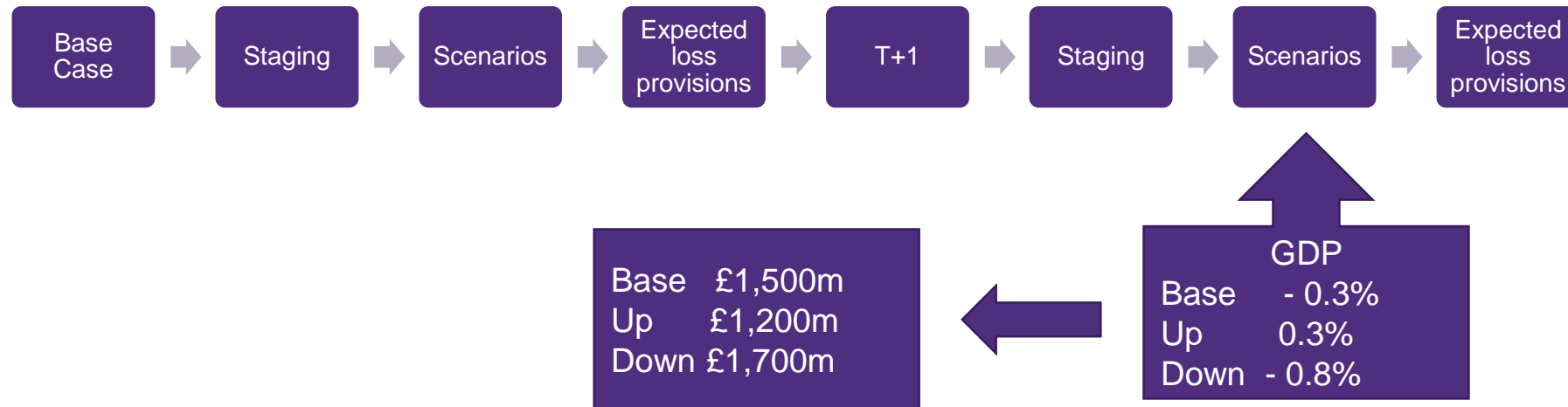
IFRS 9 – Multiple Economic Scenarios



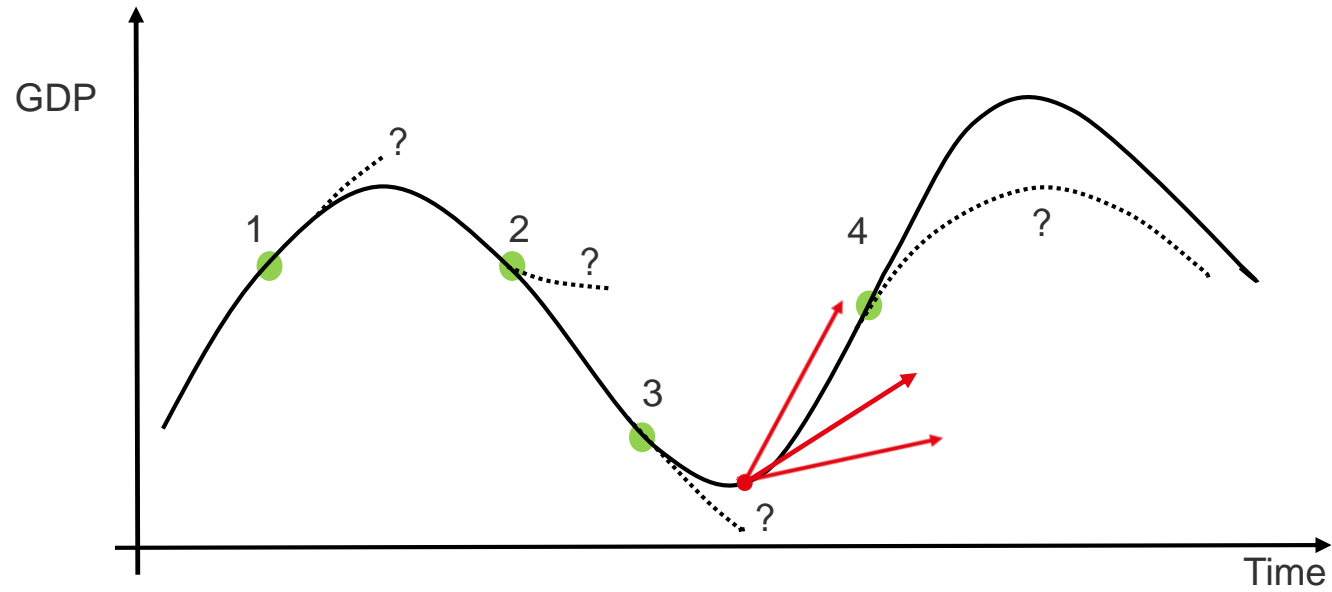
ECL provisions over time, Day 1



ECL provisions over time, Day 2



Predicting the future



IFRS 9 - Guidance

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Home > Resource > Financial > Banking > COVID-19 and IFRS 9 expected credit losses for banks

COVID-19 and IFRS 9 expected credit losses for banks

The subjective nature of IFRS 9 Financial Instruments means banks are facing difficult decisions when it comes to applying the standard in a world grappling with the health and economic impacts of coronavirus.

Banks can play a key role in ensuring individuals and businesses survive the crisis and are positioned to resume economic activity through the transmission of government support and additional relief measures.

The key financial reporting challenge is how they distinguish between support measures which impact on credit risk over the expected life of financial assets vs those which address temporary liquidity constraints.

The International Accounting Standards Board (IASB), The Basel Committee on Banking Supervision (BCBS), the European Securities and Markets Authority (ESMA) and financial services regulators have also issued statements about how the principles in IFRS 9 may be applied to the situation created by COVID-19. These are linked below.

Key considerations

[ICAEW's Financial Services Faculty](#) outlines the following considerations should be borne in mind for Q1 2020 reporting and beyond.

1. Forecasting and multiple economic scenarios

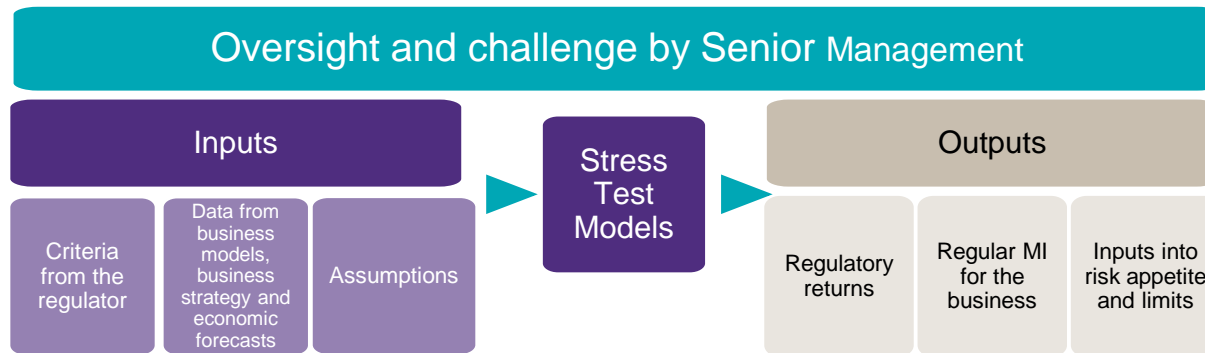
IFRS 9 requires preparers to use reasonable and supportable forward-looking information, obtained without undue cost or effort in shaping their multiple economic scenarios. The effects of COVID-19 make it difficult to obtain information and to exercise judgement.

a) The recovery may not be v-shaped, and banks must use their judgment about the number of and severity of economic scenarios.

Whilst stress tests have been based on the assumption of a 'V' shaped stress and recovery, and regulators have previously anticipated a post-COVID recovery in 2020, it is not currently clear if the global economy will return to previous levels until 2021 or what the "new normal" might look like. Society and the goods and services it

<https://www.icaew.com/technical/financial-services/banking-sector/covid-19-and-ifrs-9-expected-credit-losses-for-banks>

Building the scenario – using Principle 4 from Basel



Idiosyncratic / Market (Systemic) risk & Combined

Stress testing scenarios should address one of two types of risk factor, idiosyncratic and systemic.

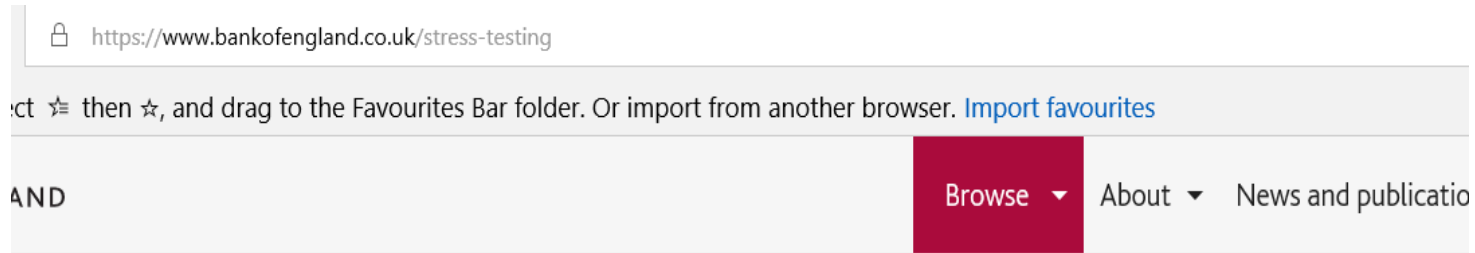
- Systemic risk refers to scenarios which are market driven and may affect all organisations, for example Brexit.
- Idiosyncratic risks are those which are specific to a particularly type of business, such as Russian banks operating under regulatory restrictions.
- Combined scenario that takes into account a combination of the Systemic and Idiosyncratic variables

Selecting an appropriate range of scenarios and models is crucial to understanding vulnerabilities and risk interactions across the business. Building the scenario can be time consuming and requires input from a wide range of areas within the organisation.

Key elements required to build scenarios include:

- A realistic methodology/approach
- Justifiable assumptions
- Effective challenge by senior management
- Ability to reproduce scenarios at short notice
- Ability to apply the output of scenarios to day-to-day risk management
- Alignment with regulatory expectations and parameters
- Ability to tease out elements of the business (eg portfolios) which are particularly sensitive to various macroeconomic factors

Sources for Scenarios

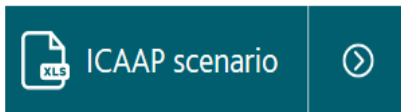


Scenarios for banks and building societies not part of concurrent stress testing

The PRA has published two stress-test scenarios for banks and building societies to use which are not part of the existing annual stress testing exercise.

These scenarios will be published together annually. They are a guide and a benchmark of severity for firms designing their own scenarios. By publishing two different scenarios, we aim to encourage firms to consider the type, characteristics and severity of stress which their business model is vulnerable to.

We published our most recent scenarios on 28 March 2019. They are here:

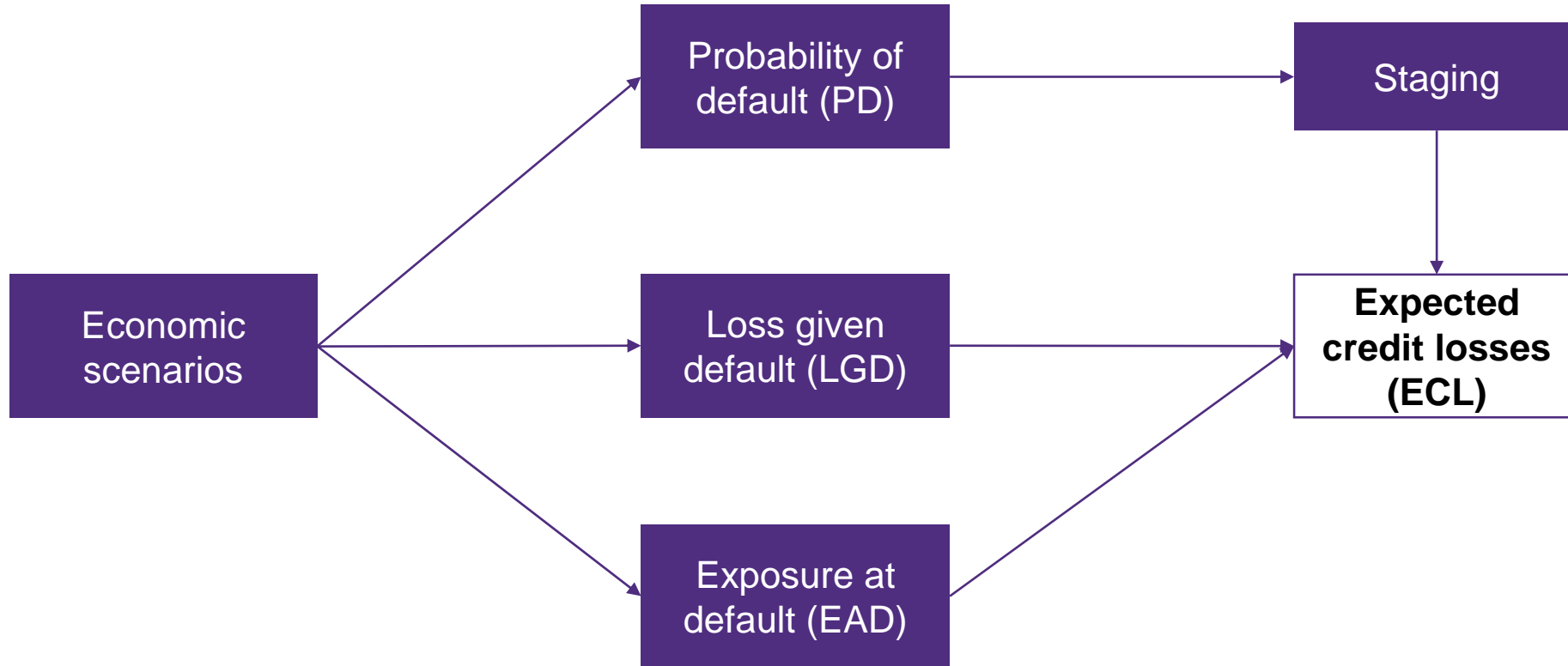


Latest forecasts – April 2020



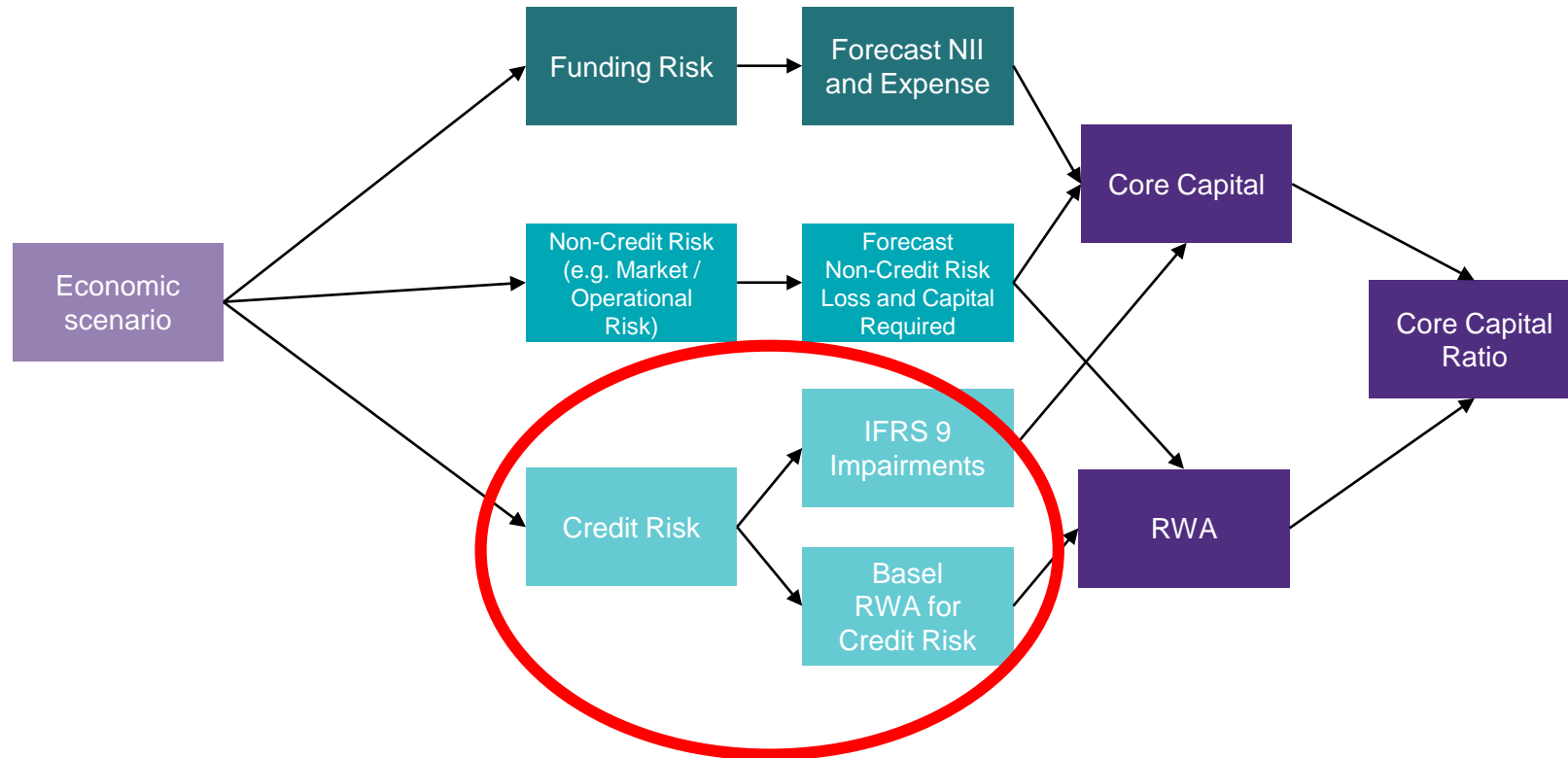
Forecasts for the UK economy: a comparison of independent forecasts

ECL model structure – the basics

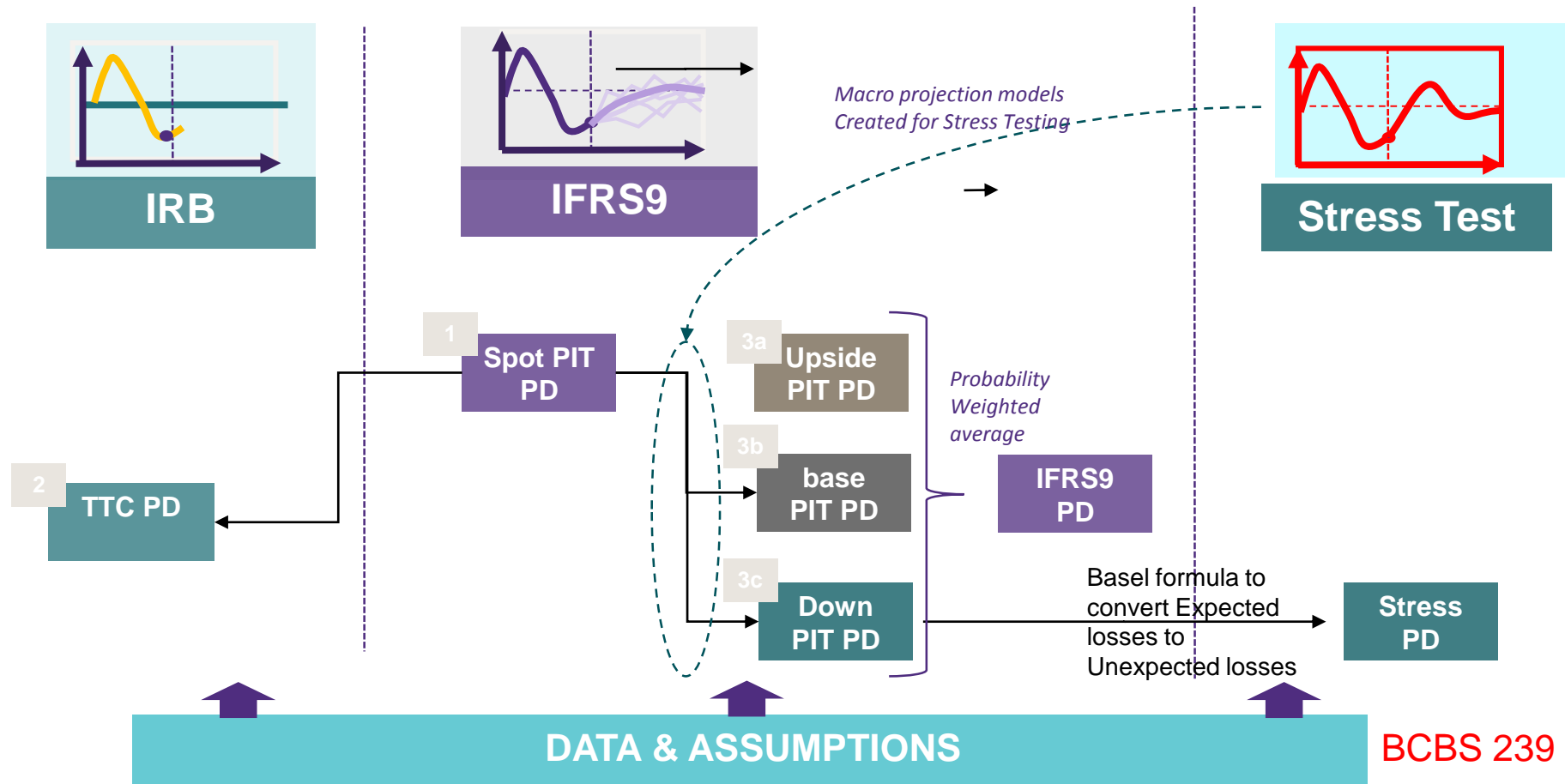


Understanding the relationship or sensitivity between the individual variables (e.g. GDP, Unemployment etc) within the Economic Scenarios and their impact on the PD, LGD and EAD are key

End-to-End 'IFRS9-IRB-Stress test' process



Link between IRB + IFRS 9 + Stress Testing



SS3-18 Model Risk Management



PRA (UK) – ‘Model risk management principles for stress testing’ (April 2018)

PS 7/18 “The principles are intended to be relevant to all model types, not only those used in a stress-testing context. In future, the PRA will consider whether it should further extend the principles to be applied to other types of models.”

Principle 1

Banks have an established **definition of a model** and maintain a **model inventory**

Principle 2

Banks have implemented an **effective governance framework, policies, procedures and controls to manage their model risk**

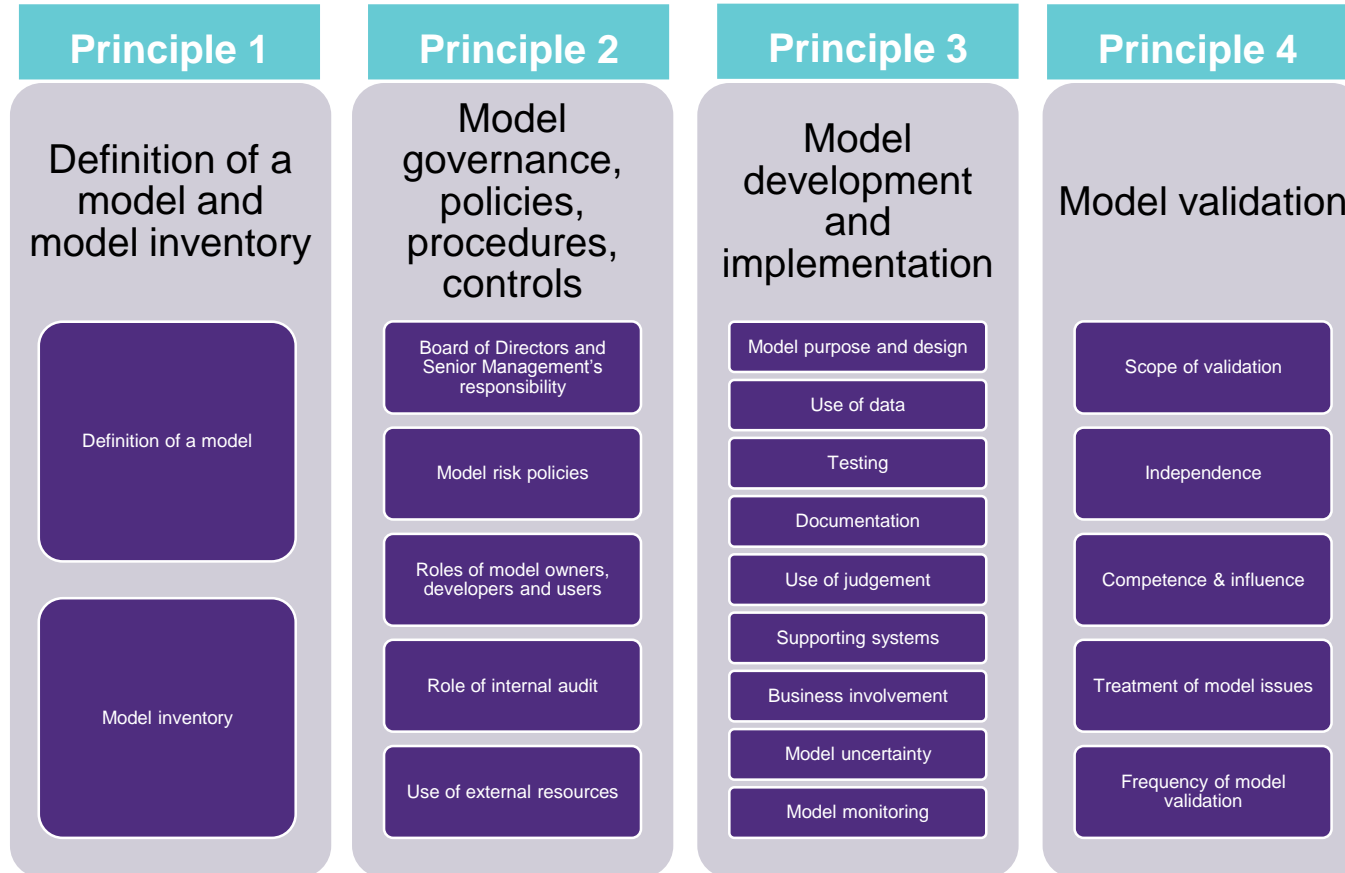
Principle 3

Banks have implemented a robust **model development and implementation process**, and ensure **appropriate use of models**

Principle 4

Banks undertake **appropriate model validation and independent review** activities to **ensure sound model performance** and **greater understanding of model uncertainties**.

PRA 'Self-assessment' reported in ICAAP - 21 Data Points





The devil is in the detail

Model risk management principles for stress testing – PRA publication – April 2018:

PS 7/18 “It is not the PRA’s intention that Boards should understand the statistical and mathematical underpinnings of models. However, both senior management and the Board should ensure that they possess a general understanding of the most material models, the uncertainty around judgements, where the model is expected to work well and in what circumstances it is likely to break down.”

Board of Directors & Senior Management’s responsibility	P2.2 The Board of Directors AND Senior Management are expected to provide challenge to model outputs and understand model capabilities, the model limitations , and the potential impact of model uncertainty for the most material models and the aggregate outputs
Model inventory	P1.2 Model Inventory – should also include all model uses and direct or material dependencies ie models that depend or use the output of other models
Model purpose and design	P3.1 Model purpose and design – model results should be supported by a comparison with alternative theories / approaches or assessing sensitivities of changes in model inputs
Competence and influence	P4.3 Competence and influence – banks should consider whether people performing validation have the necessary knowledge, skills, and expertise to perform model validations
Role of internal audit	P2.4 Role of internal audit – internal audit should assess the overall effectiveness of the model risk management framework. Internal audit should evaluate and independently verify whether model risk management practices are comprehensive, rigorous, and effective

Speech by Andrew Bailey – November 2015

What does a Board need to understand? Try the following:

- key elements of model design;
- significant assumptions and expert judgements;
- key sensitivities; and
- significant limitations and uncertainty in the model.

To restate, **the challenge is to reduce complexity to simplicity**, so that Board members feel that they understand:

- where is the model expected to work well;
- in what circumstances is it likely to break down;
- is the overall model output credible;
- what “moves the dial” in terms of key assumptions or judgements; and
- are those assumptions and judgements reasonable?

Managing Climate Change RISKS

SS3-19 – enhancing Bank’s and Insurer’s approaches to managing the financial risks from climate change

To summarise PRA expectations cover:

1. **Governance**
2. **Risk management**
3. **Scenario analysis**
4. **Disclosure (refer to TCFD framework below)**

Figure 2

Core Elements of Recommended Climate-Related Financial Disclosures



Governance

The organization's governance around climate-related risks and opportunities

Strategy

The actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning

Risk Management

The processes used by the organization to identify, assess, and manage climate-related risks

Metrics and Targets

The metrics and targets used to assess and manage relevant climate-related risks and opportunities



PRA expectations on scenario analysis

Supervisory Statement | SS3/19
Enhancing banks' and insurers'
approaches to managing the
financial risks from climate change
April 2019



1. The PRA expects firms to **conduct scenario analysis** to inform their **strategic planning** and determine the impact of the financial risks from **climate change** on their overall risk profile and business strategy. The PRA considers the **ORSA for insurers, and the ICAAP for banks**, to be useful frameworks within which to consider the financial risks from climate change.
2. The PRA expects a firm's scenario analysis to address a range of outcomes relating to **different transition paths to a low-carbon economy, and a path where no transition occurs**
3. The scenario analysis should, where appropriate, include a:
 - **short-term assessment** which sets out the firm's exposure to the financial risks from climate change from its existing **business planning horizon**
 - longer term assessment of the firm's exposure, based on its current business model, of a range of different climate-related scenarios. For example: scenarios based around average global temperature increases consistent with, or in excess of 2°C. **The PRA expects the time horizon of this long-term assessment to be in the order of decades.**

TCFD guidance on Scenario analysis sets out expectations on governance around scenario creations – assumptions, data, analytical tools and validations [similar to Model Risk Mgt]



Key considerations during Covid-19

Key prudential considerations during Covid-19

1. Re-engage the Board and consider **rerunning the Stress Tests** [ICAAP and ILAAP] to measure impact on Capital
2. ICAAP Stress Testing of 3 to 5 year horizon view needs to be broken into the immediate **12 month view** and then adjusting back to mean historic trends. Review the 2020 Business Plan (Income + Funding + Collateral + Expense impact e.g Furloughed staff) with a bigger focus on IFRS 9 – in effect giving a 12 month viability view - Consider using the HMT Scenarios to focus on the 12 month scenario
3. Revisit the **Recovery Plan**, Key Risk Indicators and Risk Appetite limits
4. Ensure the **understanding of the parameters and how they impact credit risk is thorough** – e.g. GDP sounds important but does it have an effect vs something like unemployment or HPI. Also consider the lag effect of parameters – e.g. GDP dip versus impact on employment versus impact on ability to meet payments
5. Operational issues on COVID-19 – Credit bureau impacts as a result of individuals not requesting holidays (all products are not getting holidays) – **will this feed into mortgage models and cause disturbances on predictive powers**



22 April 2020

EBA statement on additional supervisory measures in the COVID-19 pandemic

Considering the ongoing COVID-19 outbreak, and given that financial institutions are required to make every effort to comply with EBA Guidelines in accordance with Article 16(3) of the EBA Regulation¹⁰, the EBA calls on financial institutions:

1. To ensure that financial institutions have adequate internal governance and internal control framework (including firm-wide risk management framework) **in place for operational resilience** (business continuity, ICT and security risks management), including involvement of management body and senior management in effective decision-making and priority setting;
2. To ensure appropriate **ICT and security risk management**, focusing on the mitigation of the most significant ICT risks, the management of relevant areas such as information security and monitoring, ICT operations and business continuity management (including third party providers), taking into account the evolving environment;
3. To take the necessary measures to ensure the capacity of **their IT systems support** their most critical activities, including those enabling their customers to carry out their operations remotely;
4. To stay vigilant in their **cyber security monitoring and measures**, as the current situation might pose additional cyber threats;
5. To ensure **effective crisis communication** measures with all relevant internal and external stakeholders, including appropriate engagement with customers in light of potential additional cyber-crime activities or operational disruptions;
6. To monitor and **seek assurance on the level of compliance of their third party providers with the financial institution's security objectives, measures and performance targets**;
7. To ensure that the **business continuity plans are up to date and adapted**, including considerations related to potentially longer-term nature of the measures applied for COVID-19.

Your presenter from Grant Thornton



Shuvo Banerjee

**Head of Risk and Finance
Assurance, Retail Banking**

E: shuvo.banerjee@uk.gt.com

T: [+44 \(0\)20 7865 2096](tel:+44(0)2078652096)

He is a UK Chartered Accountant and experienced Head of Audit (including LBG and RBS) with over 20 years of Assurance experience. Currently at Grant Thornton he leads Retail Banking Assurance work in Risk and Finance.

The Assurance work has included Enterprise Wide Risk Management (PRA-initiated review), Credit Risk, Recovery and Resolution Planning, Compliance and Transaction monitoring frameworks, Financial and Regulatory Reporting and Model frameworks, including IFRS 9 and Stress Testing – referring to Basel, European Banking Authority (EBA), European Central Bank guidance or other Industry best practice where applicable



Any questions?

Future webinars and events

- Upcoming Webinars

- 7 May, 10:00 – 11:00, COVID-19 and Financial Services
- 1 June, 12:00 – 12:30, Reform and enhance culture: a practical approach
- 26 June, 11:00 - 12:00, Five questions boards should ask about cyber security

- 2020 Schedule

- We have a full webinar listing on topics for Banking, Insurance and Investment Management
- Go to **[icaew.com/fsfevents](https://www.icaew.com/fsfevents)**



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