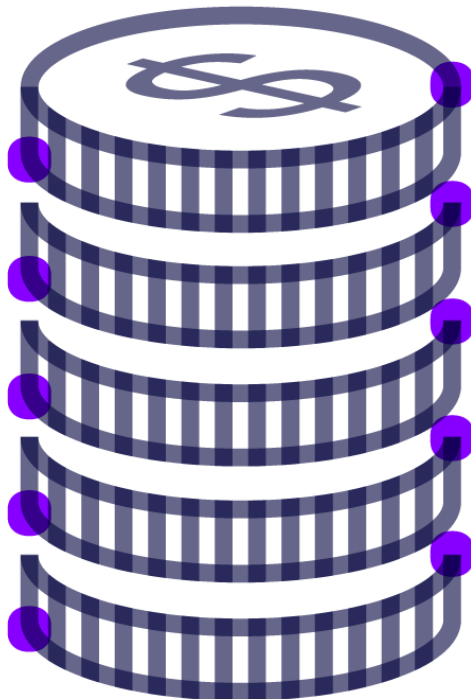


## CCAR benchmark 2019

### Summary report

October 2019





## Measurement & Data

### Topics covered:

[Stress testing](#)[Modelling](#)[Scenario analysis](#)[Forecasting methods](#)[Legal losses](#)[Idiosyncratic events](#)[Material risk identification](#)

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## About this report

This report summarises some of the key findings of the CCAR benchmark 2019, which is an annual study conducted in collaboration with ORX member and non-member firms. Twenty-five firms participated in this year's study.

The objective of this study was to provide participants with a benchmark of their CCAR operational risk modelling methods and outputs. The study also took a deeper look at other topics than it had in previous years, such as material risk identification processes.

To learn more about how to sign up to the CCAR benchmark 2020, please see page 5 of this report.

## Executive summary

The Comprehensive Capital Analysis and Review (CCAR) was implemented in 2009 and continues to present challenges to firms who are subject to it, in part driven by frequently changing regulatory expectations. These changes are reflected in the results of this benchmark, which collected industry data on submission ratios, forecasting inputs used, modelling approaches, material risks, scenario selection, and top challenges.

### Firms are looking to drive value in the process beyond regulatory requirements

In many cases, the baseline scenarios are derived from or aligned with financial planning forecasts, but the stressed scenarios serve another purpose. The results of stress testing can be too punitive to directly apply to internal financial planning, but firms are increasingly looking to use the inputs to inform the business and senior management of risks their banks may be facing. Most banks are using results to assist senior and financial management with decision-making, and results are finding their way into areas such as:

- Informing capital allocation
- Highlighting vulnerabilities
- Comparing against KRI metrics
- Enhancing other risk programs

Regardless of filing requirements, banks are increasingly seeking to use results for business strategies.

### Changes in submission requirements drives divergence

In previous years, we had observed an increased use of subject matter expert (SME) and scenario inputs over modelled inputs in CCAR submissions. However, this year was the first time that we had found the trend reverse for those who submitted to the Federal Reserve (the Fed). Those who were required to submit to the Fed showed greater consistency in their approaches and increased their use of models for two out of the three projections. This is a directional change in trend and presents more stable results compared to 2018.

In contrast, those who were not required to submit to the Fed this year appeared to be more flexible with their inputs. We observed:

- Flexibility in loss forecasting – resulting in less modelling
- Flexibility in data – shorter periods (may be linked to the above)
- Lower severe forecasting, wider range across participants

### Material risk identification and selection remains a focused challenge

Most firms agree that identifying their material risks is critical to their overall risk management and are actively working on this process. However, there are a variety of approaches used, and this is a clear area where more work could be done at an industry level. No standard practice exists, and many of those who participated in this study commented that it remains one of their top challenges.

### Scenario analysis and SME inputs are important for BAU activity

Scenario analysis and SME inputs activities are increasingly used to inform the business of potential risks, where outcomes can potentially be quantified and mitigated through the implementation of controls and action plans. This year, several banks expressed that the scenario process itself presents a series of challenges. Due to its largely qualitative nature, all aspects of the process – from resourcing to validation – were listed in the top challenges that banks are facing this year.

### Data issues continue to be a top challenge

Data remains a challenge for banks this year. It can be unreliable, unsuitable, and even missing entirely. Since models rely upon data, data quality can lead to a lack of confidence in whether the model outputs are as sound as they could be. Many banks expressed this was an area of current challenge and future work.

## Forecasting and analysis

### Forecasting

As part of this study, participants were asked to estimate the proportions of their loss forecasts that were comprised of models, expert input based on scenarios and input relying on other expert methods. The stress scenarios focused on in this study are: BHC Baseline, BHC Stressed, and FRB Severely Adverse.

In average this year's methodological choices show that Fed submitting firms were relatively consistent in their use of modelled and expert inputs in comparison to 2018. However, the use of other expert inputs (such as legal inputs or reasonably possible loss estimates) were not quite as similar, they showed some decrease in BHC scenarios but a slight increase in the FRB severely adverse scenario.

Firms who were not required to submit to the Fed increased their use of other expert inputs at a significant rate in their BHC scenarios, while decreasing the use of modelled inputs across all three scenarios.

### Modelling

Firms rely on various modelling approaches to estimate loss forecasts for submissions. Loss forecasting methodologies are based typically upon the use of both regression and SME input, although a few firms use other approaches such as structural models and a loss distribution approach (LDA). The process of selecting which models to include into the submission is a mixture of quantitative and qualitative approaches. A common approach is to select models from a variable pool to represent the appropriate risks; this is where business intuition and the expertise from SMEs takes on a more prominent role.

### Both internal and external losses are used in forecasting

Historical internal operational risk losses are used by almost all participants for all scenarios. Economic factors and expected outcomes of pending operational risk events are used more in adverse scenarios, but less in the BHC baseline. Most firms tend to use data going back between 10 and 20 years.

Over 90 per cent of firms use external loss data as part of preparing their CCAR submissions. External historical loss data is often used in scenario analysis workshops to complement and enrich internal loss data and helps workshop participants understand industry trends.

Alternative ways to use external loss data include either as direct model inputs or for benchmarking purposes. Several firms stated that they augment external loss data with their internal data where they lack sufficient observations for certain Units of Measure (UoMs). This is done to increase their pool of data points in order to ensure that their models are underpinned by a reasonable sample size.

### Macroeconomic Factors

A link between macroeconomic factors and operational losses were identified by most firms. Execution, delivery, and process management (EDPM) and External Fraud were the event types most often found to have a connection.

### Idiosyncratic events

Most banks don't differentiate between the concepts of idiosyncratic events and scenario analysis. But for those who do, they stated that idiosyncratic events are distinguished by being a higher level concept than an operational loss event, whereas scenario analysis is specifically used to stress operational losses.

It is a general requirement for firms to consider all their top material risks in their submissions. Idiosyncratic events satisfy this by looking at the types of activity the firm takes part in and the risks that are unique to them.

### Scenario analysis

All firms stated that they incorporate results from scenario analysis exercises into their CCAR submissions, and all firms plan to incorporate scenario analysis results into their future CCAR submissions as well. Firms were fully aligned on incorporating scenario analysis results into the BHC stressed scenario.

Scenarios can be used as an overlay to current modelling techniques to account for material risks which are not well captured elsewhere.

## Primary supports for quantified scenarios

Although there are several sources of information which can be used to support the quantified outputs from scenarios, firms strongly rely on a mixture of both internal and external data as supporting inputs for their scenario analysis. Risk and control self-assessment (RCSA) outputs are also commonly used to support CCAR, whereas, KRIs and proxy data are not as common.

## Risk Identification

There was some alignment between all firms when identifying material risks. Most:

- Assess risks in both normal and stressed conditions
- Consider both inherent and residual risks
- Link their material risks to their taxonomies
- Don't consider the effect of an operational risk on other risk types

In the cases where firms do project the link onto other risk types, they consider both credit and market risk. However, it should be mentioned that firms who do not submit to the Fed do so to a greater degree than those who did submit.

Taxonomy linkages were more frequently observed in firms who were required to submit. These firms typically link their taxonomies to material risk inventories, followed by either Basel categories or dual mapping, while those who did not submit rely on dual mapping, followed by material risk inventories. However, occasionally firms did not link their taxonomies, stating that as their taxonomy is currently in a period of frequent change so the alignment to modelling is difficult.

## Incorporating results into BAU

Regardless of whether CCAR must be submitted or not, banks are looking to leverage benefits from the efforts they put into the exercise for BAU activities.

Although the overall results themselves might be too punitive to use for BAU decisions, the inputs to the results are being used as a back test for other risk management programs. Several firms indicated that risk profiles, RCSAs, Material Risk Identification (MRI) processes and risk appetite programs are reliant on the inputs that are created for CCAR.

Nearly 70 per cent of firms commented that they are aiming to use the results from CCAR to drive management and strategic decision-making. Many firms acknowledge that it isn't a perfect process, but that they are attempting to use CCAR results as one of the tools to express risks associated with large-scale decisions.

## Top challenges

We asked participants to identify the top three challenges they faced when conducting CCAR this year and responses included:

- Integration to other areas of the business and support (including management)
- Idiosyncratic events or scenario analysis
- Data related issues

## Integration and support

The most common challenge facing banks was in getting the support, and engagement needed from other areas of the business. This even included management in some cases. Obtaining management buy-in is critical for the success of any program, and CCAR is no different. Related to this was the challenge of leveraging or integrating results and inputs with other areas of the business and other programs.

## Idiosyncratic events and scenario analysis

There are numerous challenges associated with idiosyncratic events and scenario analysis. The concern most often highlighted was if a scenario or idiosyncratic event should be included into submissions. How does a firm determine which risk goes into their projections, and how do they know if it was the right one, or, that their judgement was sound? Other challenges mentioned related to the qualitative nature of the practice. Ensuring severity estimates are sound, controlling bias, and engaging the right SMEs are concerns to many firms.

## Data issues

Each year, data remains one of the top challenges for firms. Data quality, availability, and transparency continues to be one of the top struggles that firms deal with. Working with inadequate data results in model outputs that contain a level of uncertainty, which firms are forced to defend during internal challenge and validation processes, as well as to regulators. That is why ensuring a high-quality data set with a large sample size is so vital.

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## Sign up for the CCAR benchmark 2020

This report is the outcome of an annual benchmark ORX has been running for several years. The next CCAR benchmark will begin in Q2 2020. Participants will receive a comprehensive project report and individualized factsheets benchmarking some of their responses to those of their peers for key answers.



To sign up, please contact [support@orx.org](mailto:support@orx.org).

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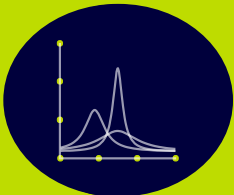
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