



Stress Testing: a Bank's Perspective



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ABSTRACT

In a context which is increasingly volatile and unpredictable, with new challenges emerging on a continuous basis, it is important that both banks/financial institutions and supervisors keep a good view on possible, more or less likely outcomes so that they are prepared by building a more resilient financial sector. By being prepared for different outcomes banks can safeguard their future capital base in a way that allows them to continue their activities such as lending to the economy. Stress testing is a key tool in this respect and its importance will only grow.

For banks it's important to look beyond the business as usual and to be prepared for multiple, especially adverse outcomes. Forward looking assessments of the risk profile and capital situation allow to timely manage potential issues that might arise from the execution of the business plan and from developments in the (economic) environment in general.

Although banks aim for strong capitalization, it is recognized that under stress part of the capital buffers can be eroded. An important element in deciding on the size of the capital buffer is that it should be sufficiently high in order to be able to accommodate the impact of an sufficiently severe adverse scenario. Next to a sound capital position to withstand stress, financial institutions should also generate sustainable (financial) returns over a longer time horizon. Only this way they can safeguard their future capital base in a way that allows them to continue their activities such as lending to the economy.

Banks have an important role in society and stress testing ensures that banks can continue to fulfil this role, even in adverse conditions. The recent COVID-19 crisis showed that banks were well prepared and resilient.

Stress testing helps in creating awareness on the possible outcomes of uncertain events. This is important as it triggers discussion on possible actions banks can take to mitigate these adverse scenarios.

As such, stress testing is an important element in bank's risk management frameworks and tools. It requires a solid governance, good data capabilities and adequate forecasting tools and methodologies.



Stress testing is a core element in assessing a financial institution's resilience in adverse conditions and a core component of sound risk, capital and liquidity management

In order to have a good view on the range of possible outcomes of adverse events, an adequate number of stress tests should be performed to:

- cover all material risks an institution is exposed to;
- have enough variety in the outcomes;
- have enough variety in the methodologies;
- have enough variety in the severity of the scenarios.

This calls for a balanced stress testing mix, which needs to be described in a proportionate stress testing plan. In order to make sure that all material risks are appropriately covered in the stress testing plan, an analysis of key vulnerabilities is indispensable when updating the stress testing mix. This refers to, among others:

- top risk drivers for the relevant risk types;
- top risks as identified during the yearly Risk scan exercise;
- top economic risks as assessed by the chief economist;
- risk concentrations in the P&L and (off-) balance sheet, in funding sources & liquidity;
- insights from Pillar 2 calculations (economic internal view informing the normative view);
- insights from local entities, identifying local vulnerabilities (key vulnerabilities of the entities);
- vulnerabilities from a financial conglomerate (FICO) point of view (e.g. concentration risks, contagion risks);
- insights from previous stress testing exercises.

Next to risk type specific stress tests, integrated stress testing is an important tool to assess to what extent a financial institution's capital is adequate to cover its risks, whether its profit generation is sustainable, etc. under various conditions. Integrated stress testing complements stress testing per risk type, as it looks at the interaction and combined impact of stress across multiple risk types, including interaction and feedback loops between stresses on financial indicators.

Integrated stress tests:

- calculate a scenario-consistent impact on the capital, performance and/or liquidity position considering the interdependence between different key risk drivers (cross risk type);
- vary in severity, from relatively mild to severe or even extreme;
- are linked to specific processes (yearly planning exercise, recovery planning, ...), but they can also be instigated on an ad hoc basis, in view of e.g. emerging risks. Early 2020 the world was exposed to such an emerging risk: Covid-19. At that time not a lot of information on drivers, impact, etc... was available. Hence stress testing, covering a range of possible outcomes was an important tool to assess the potential impact on KBC.

Regardless of its application, four iterative process steps can be distinguished in every stress test:



Proportionality is a key principle in internal stress testing: depending on the scope and purpose of the exercise, the process can either be “heavy” (e.g. integrated stress test) or “light” (e.g. sensitivity on one P&L line). Proportionality relates to all aspects of stress testing (e.g. resources, data quality, verification, documentation, level of sophistication, etc...).

1. Stress test identification and set-up

Any stress test, be it a financial or non-financial stress test, should have a clear objective. Stress testing can be used for:

- identification of weaknesses and vulnerabilities;
- assessing the evolution of the risk profile;
- challenging business plans (results under other conditions than base case);
- underpinning of capital and liquidity adequacy;
- underpinning of the sustainability of the business model;
- ...

Stress testing encompasses multiple methodologies (or combinations thereof):

- Sensitivity analysis: stress test measuring the potential impact of a specific single risk driver or simple multi-risk drivers (e.g. the impact of an operational risk event on the P&L);
- Scenario analysis: stress test comprising a set of risk drivers which are aligned in an internally consistent way. Scenarios can be based on past events (‘historical scenarios’) or constructed by experts (‘hypothetical scenarios’). There is clearly a grey zone between sensitivity and scenario analysis. Correct labelling of stress tests in this respect is however not relevant: it is more important that users of the stress test results are aware which risk drivers have been stressed and which not;
- Reverse stress testing starts from the identification of a pre-defined outcome (e.g. points at which an institution business model becomes unviable, or at which a limit is breached) and then explores scenarios and circumstances that might cause this to occur.

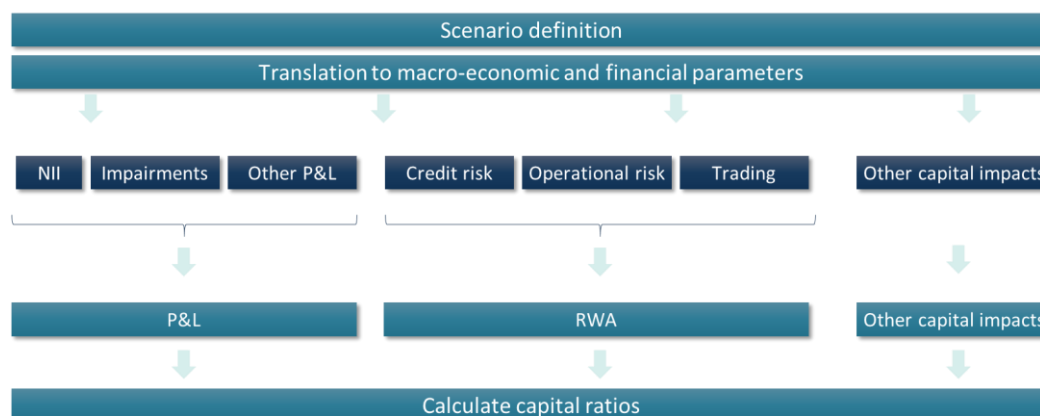
It is important that all stakeholders are aligned at this point of the stress test and that expectations are clear.

2. Calculation and analysis

The second step is calculation and analysis and pertains to the actual execution of the stress test.

In first instance a scenario is to be drafted which describes the stress test. If the scenario involves projections of macroeconomic/financial parameters the economic department is involved to determine the scenario parameters. Afterwards this scenario is to be translated into concrete impacts on risk drivers (credit quality, operational losses, lapse rates, etc...).

In the third step the actual stress test calculations are performed and consolidated in order to end up with a complete view on the capital (or liquidity,...) position of the bank after stress.



3. Reporting

A sound stress testing process supports adequate decision-making by installing a systematic reporting on relevant stress tests to the appropriate management body. Stress test reports should be to-the-point and easy-to-understand with the aim of triggering discussion.

4. Response and follow-up

Based on the outcome of the stress test, it needs to be decided whether a response (mitigation) is required or not. The plausibility of the scenario and its impact are key considerations in this respect. Mitigation can include e.g.:

- changing or refining of risk appetite and limits;
- buying protection or insurance for risks that can be immunized;
- hedging the position / getting out of the position;
- defining action / contingency plans;
- strategic planning / reconsideration of business decisions;
- installing more intense monitoring.

When considering the impact of mitigation, second-round or feedback effects should be considered, where relevant. These are spill over effects caused by the responses of individual institutions to an external shock, which – in aggregate – generally amplify the original shock, thereby causing an additional negative feedback loop.



Climate risk

It's important that the balanced stress testing mix of a bank is dynamic and that it allows for changes in the type of stress tests that are performed.

Environmental, social, and governance (ESG) issues as well as their associated opportunities and risks are becoming more and more relevant for society and for financial institutions. ESG risks, with a special focus on climate risk, are top of mind at KBC.

Climate risk has been identified as a top risk for some years now. Top risks are identified during a yearly group-wide exercise to identify and assess financial and non-financial top risks, i.e. risks that keep managers "awake at night" and can significantly impact KBC's business model, financial stability and long-term sustainability.

Climate risk is given a lot of attention and data & methodologies are starting to be developed. Currently there are no industry methodologies in place yet to address these risks.

KBC is gradually integrating ESG risks in all existing risk management processes. The development of a fully-fledged approach for climate-related and environmental risk is a gradual process: we are taking a step-by-step approach where follow-up actions are defined based on the insights gained from our previous actions/analyses and dependent on the availability of e.g. data and methodologies.

KBC is incorporating climate risk in its stress testing and sensitivity analysis. The upcoming EU wide climate stress test will be an important learning opportunity for KBC and the sector as a whole in this domain.

In this stress test, KBC sees challenges in data collection (eg. EPC or Greenhouse Gas emission data) and forecasting. The main challenge for banks lies within translating those scenarios into concrete impacts on sector level or even counterparty level. Another challenge will be the projection of our balance sheet over a long term. KBC has to make an evaluation how its balance sheet will be composed in 2030, 2040 and 2050. This is certainly not an easy exercise, knowing that climate risk has so many different angles in which it can trickle in.

Nevertheless KBC agrees this stress test will be valuable, as it will help in creating:

- awareness both within individual banks and within the sector;
- understanding how climate risk can impact individual banks and the economy as a whole;
- insights on how impacts can be measured and could be acted upon.

Stress testing is a key element in the regulatory toolkit

Regulators regularly impose stress tests on financial institutions, e.g. EBA stress tests for banks and EIOPA stress tests for insurers. In such regulatory stress tests (parts of) the scenario, assumptions and output templates are imposed by the regulator.

At the same time, regulators put more and more emphasis on the internal stress testing capabilities of financial institutions, positioning stress testing as a ‘business as usual’ tool in decision-making and risk management.

EBA stress test

The EBA stress test is performed every two years and has some key determining factors:

- No hurdle rate, i.e. not a ‘pass or fail’ test;
- 3 year projections (base and adverse scenario);
- Constant balance sheet assumption.

All banks use the same imposed scenario and methodology. Banks can use own models for some projections, but subject to challenge from EBA/ECB, combined with imposed caps and floors.

These caps and floors and methodological constraints reduce the relevance of this exercise from a bank’s perspective. It is rather a challenge for the bank’s data collection capabilities: Are banks able to deliver in a qualitative and timely manner? In each submission up to 250.000 data points have to be delivered. These data requests are non-standard (e.g. in this EBA stress test COVID related data (e.g. info on moratoria). This poses each year a challenge for KBC and the banking sector to deliver this data in a qualitative manner, certainly within the strict and challenging timings imposed.

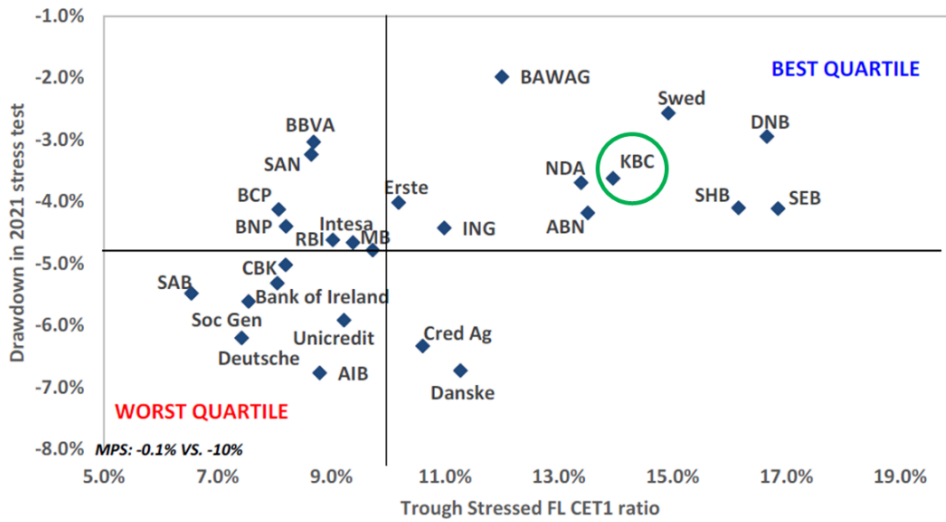
Taking into account the constrained approach, the outcome of this stress test has limited internal use vs the internal stress tests, which have a similar setup and are performed internally each year. The outcome of the regulatory stress test is mainly used for benchmarking with other institutions.

That does not mean that banks have no incentive to perform well in the stress tests. To the contrary. The outcome of the stress test is input for the yearly SREP (supervisory review and evaluation process). In this process the capital targets for banks are decided.

The quantitative outcome of the stress test directly links to the Pillar 2 Guidance (P2G) target. ECB provided more disclosure where banks end up by using a bucketing approach. This new ECB disclosure implies ranges to determine the P2G, but remains a black box to some extent: two banks in the same ‘risk quantile’ could have a significantly different capital requirement, one from the other.

The qualitative scoring of the stress test: ‘how did individual banks perform the stress test?’ e.g. data quality, cooperation,... is supposed to impact the Pillar 2 Requirement (P2R) capital target. Currently there is an opaque link on how this influences the P2R. More transparency from ECB towards the banks on how this P2R is exactly determined and how the outcome of the stress test impacts this is warranted.

The outcome of the stress test is also disclosed to the market, which is another incentive for banks to tackle this stress test in a qualitative manner. This year’s stress test confirms that KBC is one of the best capitalized banks in Europe. The impact of the adverse scenario is less pronounced for KBC than for most other banks of the EBA universe. This graph shows that KBC both in drawdown of CET1 and in the absolute minimum of CET1 in the stress scenario scores very good and is located in the best quartile.



Source: EBA, Autonomous

KBC advocates a balanced, proportionate way forward. Current initiatives from EBA to construct a 2-legged approach, where

- the first leg would largely cover today’s approach and
- the second leg banks would be less constrained and be able to make more use of their internal models

are not supported by KBC. This will create additional workload, reconciliation without much added value. KBC asks ECB rather to look banks’ individual stress testing capabilities.

The regulatory stress test exercises put a high demand on resources in banks and on the side of ECB and EBA as well. We have to be vigilant this workload does not increase further and that banks keep sufficient headroom to organize internal stress testing exercises.

Stress testing is here to stay

Stress testing is here to stay. Especially in a context which is increasingly volatile and unpredictable, with new challenges emerging on a continuous basis, it is important that both banks/financial institutions and supervisors keep a good view on possible, more or less likely outcomes so that they are prepared by building a more resilient financial sector. Stress testing is a key tool in this respect and its importance will only grow. As such it can be concluded that stress testing is an important risk management tool, both used by banks internally and by regulators to assess the health of a bank. Going forward, this will remain in place as only one thing is certain: *“The future is uncertain.”*