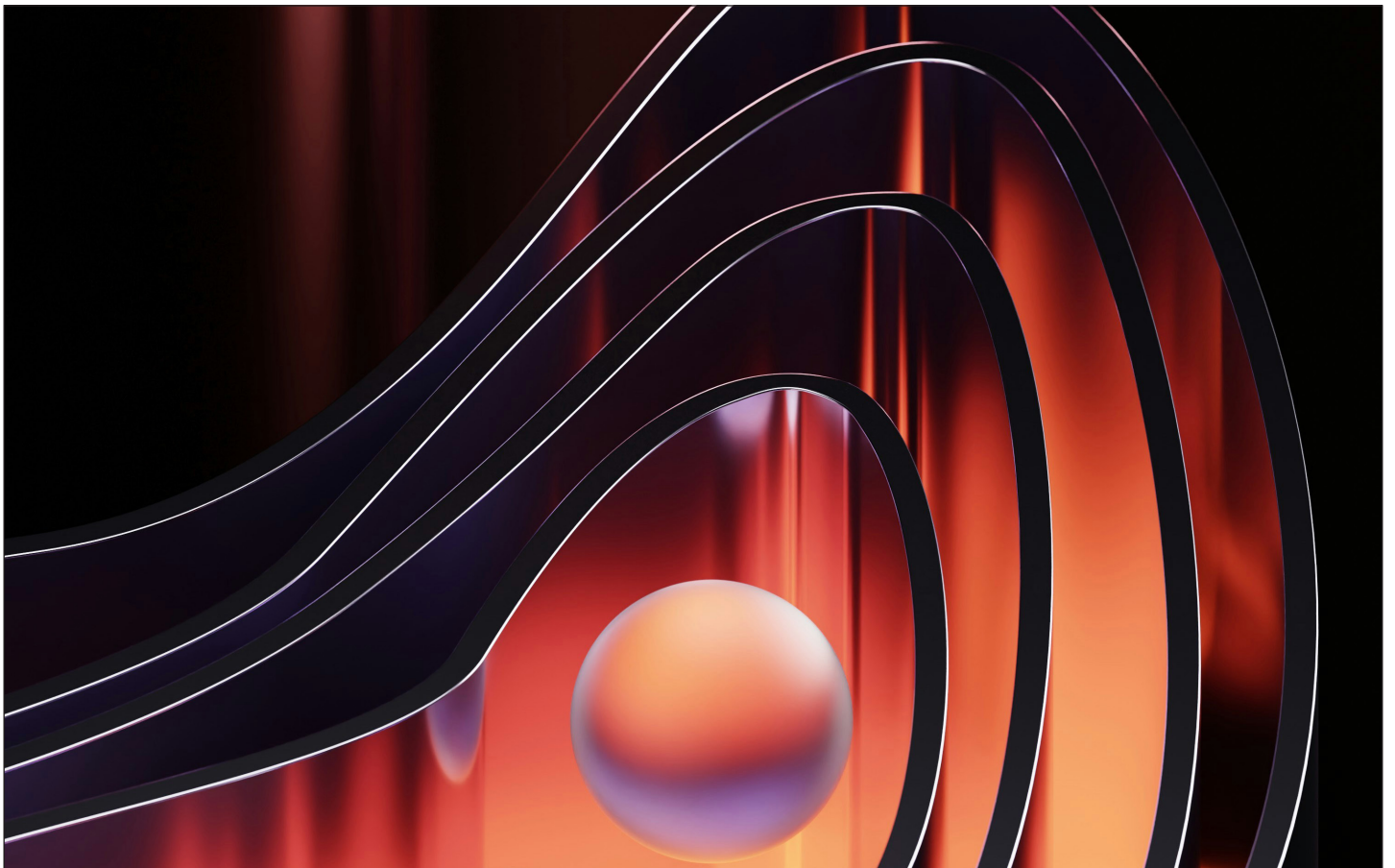


# Stress-testing for a new age of banking

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White paper



As banking regulations and supervision become more sophisticated, internal business demands grow more urgent and the risk landscape continues to evolve, banks are using stress-testing to fulfil supervisory requirements and inform strategic decision-making

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- **Ratings:** Moody's strives to be the global rating agency of choice for debt issuers and investors
- **Research and insights:** premier fixed income research business
- **Data and information:** a data business powered by one of the world's largest databases on companies (450 million and growing) and credit
- **Decision solutions:** three cloud-based software-as-a-service businesses serving mission-critical banking, insurance and know-your-customer workflows.

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# Responding to new risks

Banks worldwide are navigating a rapidly changing risk landscape. While concerns about capital adequacy were once paramount, in recent years non-financial risks – geopolitics, cyber security, physical risks and the energy transition – have also come to the fore.

Organisations that can anticipate and respond to these new risks in near-real time will be more agile and better positioned to grasp new growth opportunities. For many banks, the stress-testing capabilities that were developed in response to supervisory and regulatory requirements following the global financial crisis that began in 2007–08 present a way to do this. As such, bank leadership teams are finding that the results and insights generated by stress tests are becoming extremely useful for developing business and capital strategy, as well as for compliance.

As these new risks have emerged, supervisory stress-testing has also become more comprehensive in response. Financial regulators in Europe are using stress-testing to set banks' Pillar 2 guidance (Pillar 1 in the US) as part of the European Central Bank's Supervisory Review and Evaluation Process. And, as supervision has become more sophisticated in this respect, banks have had to strengthen their stress-testing capabilities.

Banks must also address the operational complexity of making stress-testing more meaningful, timely and actionable – whether for supervisory purposes or to satisfy internal business demands. Currently, there are challenges in areas including data gathering, modelling and timeliness. Banks must now rethink how they build, run and apply stress tests to both satisfy compliance requirements and produce these vital insights for strategic decision-making.

Stress-testing is not just about assuring supervisors that a bank can survive the next downturn. As regulators add physical risk and cyber risk testing requirements to the mix, it is becoming a key tool for decision-making and strategy.

## Addressing evolving stress-testing needs

“The history of stress-testing really starts with the first comprehensive programmes following the global financial crisis,” says Anant Saxena, former managing director, head of quantitative risk modelling, India at UBS. “At that time, it was a strictly regulatory exercise. That was essentially the first incarnation of the stress test.”

These programmes have since developed to address the widening scope of risks faced by banks worldwide. According to the World Economic Forum’s [Global Risks Report 2025](#), the top 10 risks organisations face today are largely non-financial – relating to the environment, geopolitics, society and technological change – compared with the financial or economic concerns that dominated the risk landscape 10 or 20 years ago. As a result, supervisors are no longer satisfied with banks monitoring credit- or financial-risk-only scenarios. They now expect banks to model these non-financial risks too.

“It’s no longer just about capital,” says Alain Laurin, senior director, industry practice lead – financial institutions at Moody’s. “Now the European single supervisory mechanism has undertaken stress-testing on physical risk [and] cyber security, and will continue looking into non-financial risks going forward. The scope of stress-testing is broadening in response to the new challenges the banking industry is facing. They need to be able to assess the potential impact of new risks on their activities, capital and profitability.”

**“When regulators run stress tests, they assess two things: whether there is sufficient capital to absorb shocks, and the capacity of the bank to run the stress test and provide accurate reports in a timely manner”**

Alain Laurin, Moody’s



Over the past decade or so, such exercises have begun to generate more internal value for banks as well. “The supervisory perspective hasn’t changed – if anything, it has probably [intensified]. But what has become much more interesting is the internal use of stress-testing and the linkage to risk appetite,” Saxena says.

Indeed, stress-testing has become “Probably the most potent tool banks have to generate a forward-looking risk assessment,” he adds. “Given the world we are living in, where geopolitical events are moving at quite a frantic pace and in a direction not seen in recent history, boards and senior management at banks really see the value of stress-testing as a forward-looking indicator and something to feed into the risk appetite of the firm.”

The value of stress-testing to internal teams has been enhanced by the more principles-based approach of regulators such as the UK Prudential Regulatory Authority, according to Milind Hajarnis, a senior executive with decades of regulatory transformation experience in stress-testing and capital planning at several banks worldwide. Consultations with industry on the development of stress-testing have made the results even more useful for internal insights, he says. As different jurisdictions continue to converge on this issue, Hajarnis says stress-testing will become an even more valuable strategic tool, particularly for larger or international banks with more complex needs.

## Meeting internal strategic demands

There are still differences between internal needs and supervisory expectations when it comes to stress-testing. “Internally, the interest is in gaining as realistic a view as possible. Regulators, for obvious reasons, want this tool to be used from a conservative risk assessment perspective,” UBS’s Saxena says. “The core backbone or infrastructure needed for stress-testing is probably 80–85% the same – it’s just the icing on the cake that can be two different flavours.”

Bank boards and senior leadership generally want scenario-based clarity from stress tests on when to scale lending, build reserves or hedge exposures, particularly in an increasingly uncertain world. So, as well as fulfilling supervisory expectations on monitoring the impacts of new risk types, stress-testing is informing banks’ forward-looking internal decisions on capital, portfolio strategy and risk appetite, with acceleration.

Hajarnis refers to the development of a “stress-testing ecosystem” within banks. So many teams have an interest in the process because of the insights it can deliver – whether it’s the board and its committees or the chief risk officer, chief financial officer, treasurer, risk committees or individual risk managers. “At the end of the day, capital and profitability go hand in hand,” he says. “So everyone wants to ensure capital adequacy. That is the reason for this exercise.”

Particularly in today’s uncertain economic environment, stress-testing results can provide vital information about how banks can prepare for economic and political shocks. Banks can also use the results for strategic decisions on everything from setting capital buffers and lending targets, to guiding portfolio allocation.

According to Saxena, pre-emptive scenario analysis can shape product launches, capital buffers and mergers and acquisitions, among other decisions. “Forward-looking stress results feed into dynamic risk-weighted asset [RWA] and liquidity plans,” he adds. “Stress-testing can show how much economic risk a bank can offset or offload for a given range of scenarios ... It can give a very strategic response, which provides a sense of comfort internally that – for a range of scenarios of varying severity – the bank is not taking too much risk, and that the RWA profile of the institution can be managed to a certain level of confidence.”

Looking at a range of scenarios in this way provides more actionable insights for internal use. This tends to be different to what is needed from a compliance point of view because regulators are typically more interested in the stability of the institution and of the wider banking system of which it forms a part.

Even though regulators and boards have different needs and interests when it comes to stress-testing, the process still produces valuable results for both parties.

## Tackling greater complexity

The broadening of the scope of risks and related stress-testing expectations and needs has also created more complexity for banks. The right data and models are needed to implement stress tests that produce accurate and timely results. In particular, the non-financial risks, such as physical risk and geopolitical instability, require more granular modelling, integrated workflows and new data types.

Data quality is a constant concern for banks as they strive to achieve completeness, accuracy and timeliness when it comes to stress-testing, Hajarnis says. For larger institutions in particular, aggregation can create headaches. Retrieving the data needed for stress-testing across borders, products, markets and legacy systems within tight timeframes is a “never-ending story” that creates quite a challenge for some banks, adds Moody’s Laurin.

“Supervisory stress-test exercises have often revealed shortcomings around banks’ data – for example, if they were unable to meet supervisors’ requests satisfactorily or on time,” he continues. “In other words, the stress-test exercise [continues to be] a useful tool to prompt improvements in this area.”

Saxena believes the latest data challenges are also solvable – with the right tools. “For data and data architecture, spending the right amount of dollars to get the technology right makes that a solvable problem.” Addressing this challenge at the data inception stage is key, he says, adding: “This is where a front-to-back system architecture can really help. Once a bank has a [reliable] source of data, which is typically owned by the originating team – most likely the front-office team – then everyone can use the same version.”

**“At the end of the day, capital and profitability go hand in hand. So everyone wants to ensure capital adequacy. That is the reason for this exercise”**

Milind Hajarnis

Modelling complexity, on the other hand, is a much more difficult challenge to solve, particularly when it comes to non-financial risks. A decade or more ago the stress-testing exercise was much simpler, involving perhaps a handful of different models. With the introduction of more non-financial risks, modelling complexity has increased and could now include hundreds of models for some firms. These models may also be siloed across credit, market, interest rate and operational risk functions.

Again, data is a challenge when it comes to non-financial risks. “When you assess your exposure to physical risk, for example, what can you rely on? There are no well-known, calibrated international benchmarks,” Laurin explains, adding that many concepts and metrics are still a “work in progress” for banks, making such exercises more complex.

Partly for this reason, translating default rates into a profit and loss, for example, is much easier than doing the same for something such as physical or cyber risk, which involves more subjective information and different types of models. “On the one hand, this will always require more expert opinion, it will always be more discussion-based and therefore banks will approach these models in different ways,” Saxena says. “On the other, for issues such as credit risk and market risk, there will be a higher degree of convergence in different banks’ approaches to modelling.”

Model complexity and data difficulties mean stress-testing can take months at many institutions. This runs the risk that insights will be obsolete by the time they’re ready. That can affect agility, particularly in more uncertain economic environments, by restricting internal decision-making capabilities and compliance processes.

As Laurin points out: “When regulators run stress tests, they assess two things: whether there is sufficient capital to absorb shocks, and the capacity of the bank to run the stress test and provide accurate reports in a timely manner.”

One way around the timeliness issue, according to Hajarnis, is to run an incremental update to assess the impact of a specific event. “When there is market volatility due to an event – for example, a geopolitical conflict or the recent US tariff changes – senior management will want to know the impact on a bank’s capital and risk profile, as will the regulators,” he says. “To remain as agile as possible, banks can continue working towards a month-end or quarter-end snapshot, but can also produce incremental insights. Rather than redoing the entire stress test, they can look at the specific change and what has been impacted.”

It is also important for banks to be aware of where to direct their resources, Saxena says. “If you have a plain vanilla equity-flow business just holding cash equities, the amount of computational power needed for multiple scenarios will be limited,” he explains. “Banks are becoming better at understanding this and working out where most of the non-linear risk is residing and spending the most computing power there to get faster results.”

**“The supervisory perspective hasn’t changed – if anything, it has probably [intensified]. But what has become much more interesting is the internal use of stress-testing and the linkage to risk appetite”**

Anant Saxena, UBS

Banks can also invest in ‘stress-testing as a service’ platforms to improve flexibility. It takes time to get to this point, but integration across all risk types would help address these modelling and data challenges. Banks that embed stress-testing into their operational processes in this way will also become more agile. At the same time, Hajarnis points out that this will also help satisfy regulators that a bank does not simply tick compliance boxes, but has created a robust stress-testing process that provides useful, accurate and timely insights into its risk profile.

## A changing risk management landscape

Banks have responded to the evolving requirements of stress-testing over the course of more than a decade by implementing new tools and capabilities. During this time, the act of stress-testing has expanded from being a compliance requirement to providing banks with vital information for decision-making and strategic planning.

The banks that are able to model and respond to new challenges such as physical risk, transition risk, geopolitical shocks and cyber disruptions in near-real time will be better positioned to defend their capital and seize growth opportunities.

Stress-testing is no longer about merely surviving the next downturn, but shaping a strategic path forward. As banks continue to face a rapidly changing and increasingly uncertain world, this capability will only become more valuable.

## Moody's integrated risk and finance solutions for stress-testing

Moody's integrated risk and finance solutions for stress-testing help banks address the operational, analytical and governance complexities discussed throughout this paper. By combining proprietary analytics, macroeconomic scenarios, advanced credit models and integrated workflows, Moody's delivers stress-testing capabilities that span multiple risk types – from credit and liquidity to physical and transition risks. This integrated approach allows banks to respond to shocks quickly, optimise capital and liquidity strategies, and confidently align stress-testing insights with their risk appetite, regulatory expectations and long-term growth objectives.

