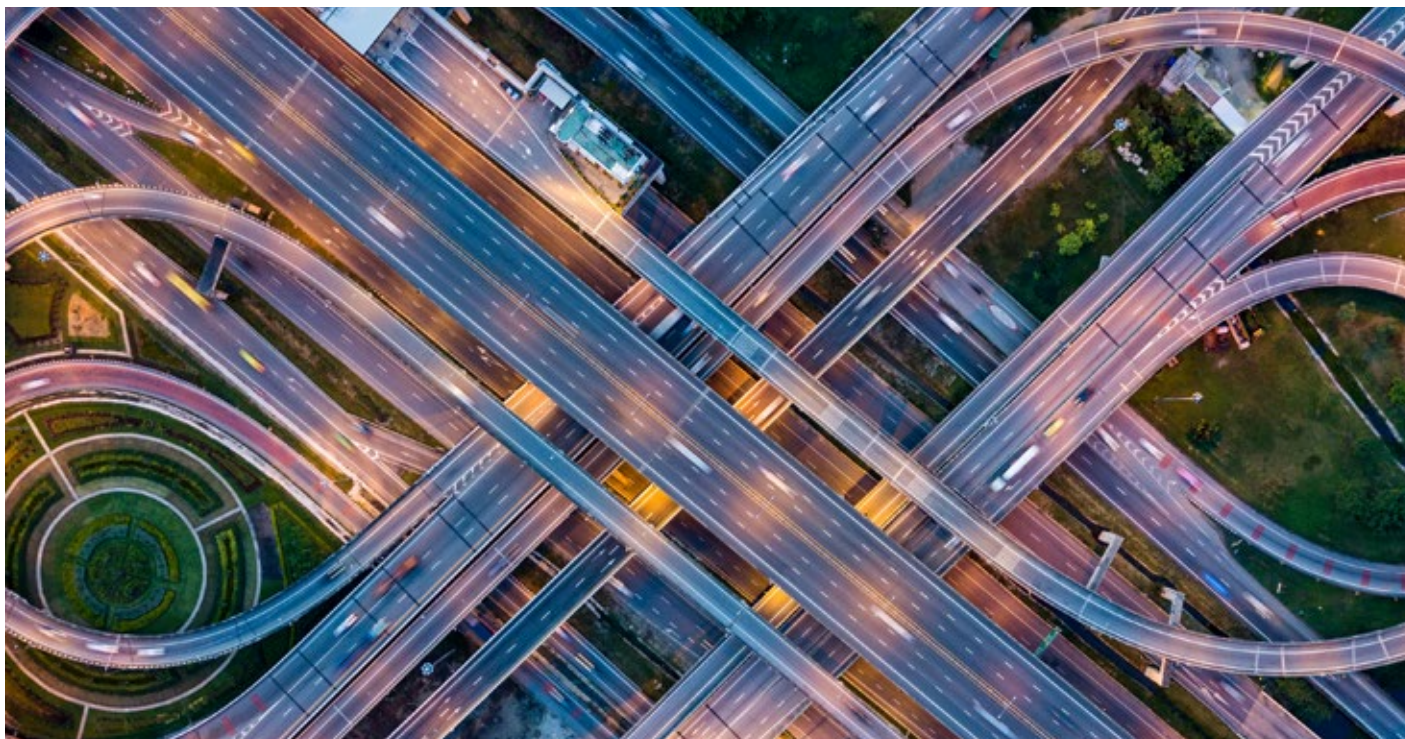




The evolution of stress testing

Unlock one integrated balance sheet





Executive summary

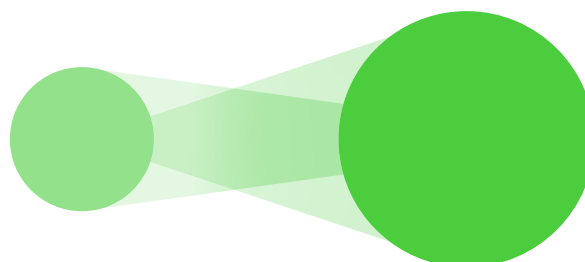
The global banking industry is at an inflection point with its approach to stress testing. Over three decades, institutions have built sophisticated software stacks to satisfy waves of regulation. Those tools have sharpened risk oversight, but they've also entrenched a structural weakness: they assume stable correlations and historical patterns that break down precisely when they're needed most, and they were built in silos that mirror the organisational divide between the trading book and the banking book.

The proliferation of standardised rules has produced convergence in how institutions view and quantify risk. That uniformity, while helpful for comparability, homogenises behaviour and concentrates blind spots, leaving the whole industry exposed to the same failure modes. As markets, banks and supervisors grow more confident in shared models, leverage builds and systems become more fragile. From a Minskyan perspective, some form of systemic disruption is not a possibility but an eventuality.

The 2026 environment has made this concrete. The ECB's geopolitical reverse stress test now requires directly supervised institutions to reason backwards from a capital outcome – identifying firm-specific scenarios capable of depleting CET1 by at least 300 basis points – and to map the transmission across credit, market, liquidity and business-model risk simultaneously. The Strait of Hormuz crisis demonstrated the same dynamic in live conditions: an energy-price shock that propagated into held policy rates, wholesale funding stress, energy-sector credit

deterioration and deposit repricing within 48 hours, hitting the trading book and the banking book at once. A framework that stresses each book in isolation cannot capture this.

This paper, written from the perspective of FIS as a provider of enterprise risk solutions, argues for a root-and-branch reform of stress testing built on a single principle: integrate the trading book and the banking book under shared stress scenarios, on a common data layer, with no reconciliation gap between them. In the FIS architecture, the trading book is served by FIS[®] Enterprise Risk Suite (formerly Adaptiv) for market risk, counterparty credit risk, FRTB, SA-CCR and XVA, and the banking book by FIS[®] Balance Sheet Manager for ALM, IRRBB/CSRBB, liquidity, IFRS 9 ECL and ICAAP capital. Modern cloud computing, microservices and AI-driven analytics now let banks turn a detailed crisis narrative into quantitative results across both books in hours rather than weeks. Stress testing can finally move from a periodic regulatory exercise to a continuous, strategic discipline that asks: how bad can it get – and do we have a plan to survive it?



1. The 2026 risk landscape: Why fragmented stress tests fall short

Global risks are multiplying and mutating faster than legacy risk models can absorb. Recent years have delivered a sequence of shocks that break decisively from historical patterns. A major geopolitical conflict in Europe turned energy markets into a system-wide stress test for the financial sector, forcing wholesale revision of supply-chain and inflation assumptions. Central banks such as the Bank of England have developed climate scenario analyses spanning physical and transition risk. The pandemic showed how a real-economy shock can freeze markets overnight and require interventions far outside any pre-existing scenario set.

The Strait of Hormuz crisis of early 2026 crystallised the pattern. The functional closure of a chokepoint carrying roughly a fifth of globally traded oil and a comparable share of LNG simultaneously triggered an energy-price shock, central-bank decisions to hold rates against expected cuts, wholesale funding stress, energy-sector credit deterioration and deposit repricing pressure – within two days. For Asia-Pacific banks, through which the great majority of Hormuz crude flows, this was operational reality, not a tail exercise. Institutions needed to rerun market risk, IRRBB, liquidity and credit scenarios together, at speed, from one consistent data set. Most could not, because their trading-book and banking-book engines didn't share a scenario or data layer.

Digital and AI-driven finance compounds the problem. Crypto-assets and stablecoins promise new liquidity but introduce wrong-way risk and run dynamics; a loss of confidence in a major stablecoin could drain deposits and disrupt payment flows across markets. Algorithmic and AI-driven strategies can amplify volatility through feedback loops absent from traditional models, while cyber and operational failures have become first-order risk factors capable of precipitating financial stress in their own right.

Crucially, these fast-moving shocks sit on top of slower, structural shifts that conventional stress tests capture poorly. Deglobalisation and the fragmentation of supply chains, a tariff regime that ratchets rather than spikes, structurally higher and stickier inflation, and the multi-decade repricing implied by climate transition all reshape the balance sheet gradually – through migrating credit quality, shifting deposit behaviour, changing funding costs and eroding margin – over quarters and years rather than days. A credible framework has to hold both horizons at once: the instantaneous revaluation of an acute market shock and the multi-period drift of structural change. This is precisely where the trading/banking-book divide becomes decisive. The trading-book engine revalues positions instantaneously under an acute shock; the banking-book engine projects NII, EVE, liquidity and ECL forward across multiple periods under behavioural assumptions. Run on a shared scenario, the two together model a crisis that arrives fast and an economy that reshapes slowly – within one consistent view, rather than two unreconciled ones.

Key limitation of traditional models

Regulatory stress tests – CCAR/DFAST in the U.S., EBA exercises in Europe – typically prescribe a handful of adverse scenarios centred on macro variables and credit losses. Internal market-risk models revolve around VaR and Expected Shortfall computed under broadly normal conditions, with occasional stressed-VaR add-ons. All of this assumes past correlations and loss distributions will roughly hold. Real crises show they do not: correlations collapse under stress and losses far exceed VaR-based expectations. Before 2008, many banks relied on VaR models that badly underestimated simultaneous large moves in housing, credit spreads and funding liquidity; when those moves arrived, the assumption that diversification would cap losses proved false.

The ECB's 2026 reverse stress test is the supervisory response to exactly this failure. It's a qualitatively different demand from forward stress testing: it requires backward reasoning from a defined capital depletion across the full risk spectrum within a

single, coherent model. Banks running siloed point solutions face a structural credibility gap – they cannot demonstrate, from one set of inputs, how a correlated shock moves through trading P&L, counterparty exposures, banking-book NII and EVE, liquidity buffers, expected credit loss and regulatory capital in tandem. A narrow test of trading-book VaR or loan-book credit loss in isolation is no longer an acceptable picture of resilience.



2. From regulatory drill to strategic tool: The case for a root-and-branch rethink

After more than a decade of regulation-led effort, the centre of gravity of stress testing is shifting. The post-2008 regimes – CCAR/DFAST, EBA – were built primarily to ensure banks held enough capital for a severe recession. Banks responded with large teams and complex models to meet 'reg-on-reg' demands. That work strengthened balance sheets and embedded discipline, and by the 2020s stress testing was an institutionalised, recurring process worldwide. But something was lost along the way: the earlier ethos of using scenarios to challenge strategy and surface hidden vulnerabilities, rather than to satisfy a formula.

Bankers who began their careers in the 1990s remember stress testing as a principles-based practice – an exercise in asking 'what are we most afraid of, and can we survive it?' rather than completing a static checklist. Today's novel risks, from AI to crypto to climate to geopolitics, cannot be assessed by any fixed formula; they demand imaginative scenario design and a willingness to interrogate what would break the business model. Regulators are pushing in the same direction: the U.S. Federal Reserve has supplemented its standard scenarios with exploratory ones, and Fed leadership has argued that multiple scenario types guard against the complacency of optimising to a single predictable test. The ECB's reverse stress test is the most explicit formalisation yet of the 1990s question – 'how bad can it get?' – turned into supervisory requirement.

With the peak of new rule-making (Basel III, Basel 4, FRTB) largely behind the industry, banks can now reorient substantial risk capabilities toward more holistic and creative use. The objective is to treat stress testing not as an annual report card, but as a continuous discipline that informs decisions at the highest level. Boards and senior management should drive the scenario agenda, not merely consume its output, demanding tests tied to strategy and emerging concern. Done well, stress testing reveals concentrations and fragilities conventional measures miss, and identifies the business lines that remain resilient under extreme conditions – intelligence that informs growth strategy as much as defence.



Return to fundamentals

Reclaiming the original purpose doesn't mean abandoning quantitative rigour; it means combining rigorous analytics with narrative imagination. Risk teams should be empowered to design bespoke scenarios that probe breakpoints even where they fall outside regulatory or historical precedent – for example, central banks forced to hike rapidly into a fresh inflation surge while a cyber-attack paralyzes payment systems. Running such narratives through the entire balance sheet, across both books, gives a far richer view of potential damage and forces the contingency questions stress testing was always meant to raise: do we hold the capital and liquidity to withstand the storm, and how would we respond? Clinging to static correlation matrices and past loss distributions is the plausibility trap. Banks must instead plan for both the fast, non-linear shock and the slow structural regime shift – neither of which respects historical precedent.



3. Building a holistic stress testing framework: Key dimensions

To meet this environment, stress testing must span the whole institution and keep pace with real-world volatility. The defining architectural choice is to drive both books from a single balance sheet model and a shared scenario engine – the trading book through

Enterprise Risk Suite, the banking book through Balance Sheet Manager – so that one scenario produces market P&L, counterparty and XVA impacts, NII and EVE, LCR and NSFR, ECL uplift and capital depletion from the same inputs, with no manual reconciliation. The table below contrasts that integrated approach with the fragmented practice it replaces.

Legacy siloed approach

Fragmented by risk type or division. Market, credit and liquidity risk are stressed separately under unaligned scenarios, with little account of how a market shock flows into credit or funding.

A few prescribed scenarios. Typically 'severe recession plus a trading shock,' updated infrequently. Narrative links between events are omitted; scenarios feel artificial and disconnected from management's real concerns.

Siloed data and models. Separate systems run on separate datasets and assumptions, making scenarios hard to align and reconciliation risk unavoidable. Some risks are modelled qualitatively or not at all; historical relationships are assumed to hold even in stress, understating tail risk.

Scope of coverage



Scenario design and library



Data and models



Integrated stress testing (trading + banking book)

Enterprise-wide and balance-sheet-wide. A single scenario covers trading-book P&L, banking-book credit and interest-rate risk, counterparty exposures and XVA, liquidity and funding strain, and operational and reputational impact concurrently. Shocks propagate across the institution, exposing contagion between business lines.

Narrative-driven and dynamic. Scenarios are coherent crisis narratives – a Hormuz-style energy shock with held rates and funding stress, or a reverse stress test reasoning back from 300bps CET1 depletion – not mechanistic single-factor shocks. A living stress library spans historical recreations, hypothetical extremes, reverse tests and multi-period structural pathways (deglobalisation, tariff regimes, climate transition), updated as new risks emerge.

Common data layer, shared engine. Positions, exposures, collateral and liquidity metrics flow into one model so every output – trading risk, IRRBB/CSRBB, ECL, capital – uses identical shock assumptions. Credit-Adjusted ALM bridges interest-rate and credit-adjusted cash flows in a single view. Models are chosen for plausibility under regime shifts, not just normal-market fit.

Legacy siloed approach

Slow, on-premise batch. Large stress tests run quarterly or annually under compute constraints, relying on aggregation and linear approximation to stay feasible. Results take days or weeks, arriving too late to inform fast-moving events; minimal AI/ML and little real-time flexibility.

Technology and execution



Integrated stress testing (trading + banking book)

Elastic, high-performance compute. A cloud-ready, microservices architecture (E-BSM elastic compute on AWS) allows full balance-sheet recalculation within hours of a shock and scenario runs on demand. Parallel and in-memory processing enable full revaluation under stress; AI/ML accelerates pricing and helps explain results in natural language.

A compliance obligation. Engagement is driven by regulatory expectation rather than decision-making. Output is a voluminous filed report; insights rarely feed day-to-day risk-taking or strategy.

Governance and use



Strategic and board-driven. Stress testing anchors risk governance and strategic planning. Boards review scenarios and results to set risk appetite, plan capital and liquidity contingency, and test plausible "what-ifs." The ECB reverse stress test runs through ICAAP, where the integrated model is the reference implementation.

The capability set behind this framework has matured rapidly. CSRBB is now fully supported within the IRRBB framework, with a complete EBA regulatory reporting package; Basel 4 output-floor modelling supports capital optimisation across IRB portfolios, business lines and entities; and pre-deal pricing exposed through a REST API embeds FTP, liquidity cost and credit spread directly into front-office origination – closing the loop between enterprise stress analytics and the revenue decisions that shape the balance sheet being stressed.

4. Conclusion: Reclaiming stress testing for a new era

Shifting supply chains, tariff reversals, extreme weather and intensifying geopolitical conflict are no longer separate tail risks – they arrive together, at speed, and move through every part of the balance sheet at once. The ECB's reverse stress test and the Hormuz crisis have, between them, made the supervisory expectation and the operational reality identical: banks must be able to run an integrated, enterprise-wide stress in hours, from one consistent data set, across both the trading and banking books. It's time for institutions to modernise their risk engines accordingly.

As a leading technology partner to financial institutions worldwide, FIS understands both the challenge and the opportunity. With Enterprise Risk Suite governing the trading book and Balance Sheet Manager the banking book – backed by 600+ clients across 40+ jurisdictions and more than 30 years of client-driven development – institutions gain the architecture the 2026 environment demands: a single scenario engine, a common data layer, and no reconciliation gap. Stress testing becomes a value-driving process that informs capital allocation, liquidity planning, pricing and portfolio strategy, rather than a cost centre that files a report. The outcome is resilience you can evidence and strategic insight you can act on.

The way forward

To stay resilient amid uncertainty, banks need genuinely holistic stress testing: break down the silo between the books, invest in elastic technology, and build a culture that takes 'unthinkable' scenarios seriously. Do that, and stress testing shifts from periodic regulatory ritual to a continuous strategic discipline. One that illuminates hidden dangers before they crystallise into crisis, and lets the institution answer, with evidence, the only question that ultimately matters: how bad can it get, and do we have a plan to survive it?

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Our **technology** powers the global economy across the money lifecycle.

Money at rest

Unlock seamless integration and human-centric digital experiences while ensuring efficiency, stability, and compliance as your business grows.

Money in motion

Unlock liquidity and flow of funds by synchronizing transactions, payment systems, and financial networks without compromising speed or security.

Money at work

Unlock a cohesive financial ecosystem and insights for strategic decisions to expand operations while optimizing performance.

About FIS

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