



STRESS TESTING AND SCENARIO PLANNING

THE FUTURE IS NOT OURS TO SEE –
THE FUTURE IS OURS TO STRESS TEST

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“Que sera, sera. Whatever will be, will be. The future’s not ours to see. Que sera, sera.”

So sang Doris Day in 1956. She was right. We cannot know the future with certainty. Those lyrics went on to recommend an attitude of quiet equanimity to whatever may come our way.

Alas, business leaders cannot afford to take Ms. Day’s philosophical attitude towards the future. Their strategic plans, and the fortunes of their shareholders, are based on expectations about what will be.

If the chief executive officer of a car manufacturer expects the prices of gasoline and of diesel to diverge radically in the coming years, that will influence his plans. If a banker expects house prices to collapse, that will affect her plans. If a fashion designer expects orange to become the “new black,” that will affect his.

The success of a plan usually depends on future events that the planner cannot control. How should she respond to the fact that she also cannot be certain what these events will be? “Que sera, sera” won’t cut it with shareholders.

The most dramatic recent failure to see what was coming occurred in the banking sector. North American and European banks were highly leveraged and heavily exposed to property markets in the United States and Europe. Their plans assumed that property prices would not tank. But they did – in Nevada and Florida and Spain and other parts of the US and Europe. Many banks in the US and Europe collapsed or were bailed out with taxpayers’ money.

In the new, postcrisis banking regime, regulators demand that banks’ solvency be tested against several adverse “scenarios.” Things might turn sour in all sorts of ways. Given a bank’s exposures, and the actions it would take, how much would it lose in each of these scenarios, and would the bank remain solvent?

This “stress testing” has become highly sophisticated, estimating the effects of multifaceted macroeconomic scenarios on balance sheet and profit-and-loss line items. However, the full value of stress testing has yet to be captured by banks. The analysis can be used for much more than simply complying with prudent regulations. It can provide the foundation for rational strategic planning in a world where the future is uncertain.

THE HISTORY OF SCENARIO PLANNING

The challenge of making plans for an uncertain future is neither new nor unique to banking.

In the 1850s, the general staff of the Prussian army adopted scenario planning. Recognizing that military campaigns rarely proceed as anticipated, they decided it would be useful to have plans for the various scenarios that might unfold. This idea was revived a century later, by Herman Kahn at the RAND Corp.; he used it to devise scenarios and strategies at the height of the Cold War in the 1950s. It was not until the 1970s that scenario planning was adopted in the private sector, when Pierre Wack introduced it at Royal Dutch Shell.

In the 40 years since, a handful of corporations have adopted scenario planning. They seek to answer questions such as: What will we do differently if energy prices spike? Or how will we prepare for a reduction in emerging markets demand? But scenarios and their implications for the firm's balance sheet are painted only in broad brushstrokes. To date, their scenario analysis has involved little detail or numeric precision.

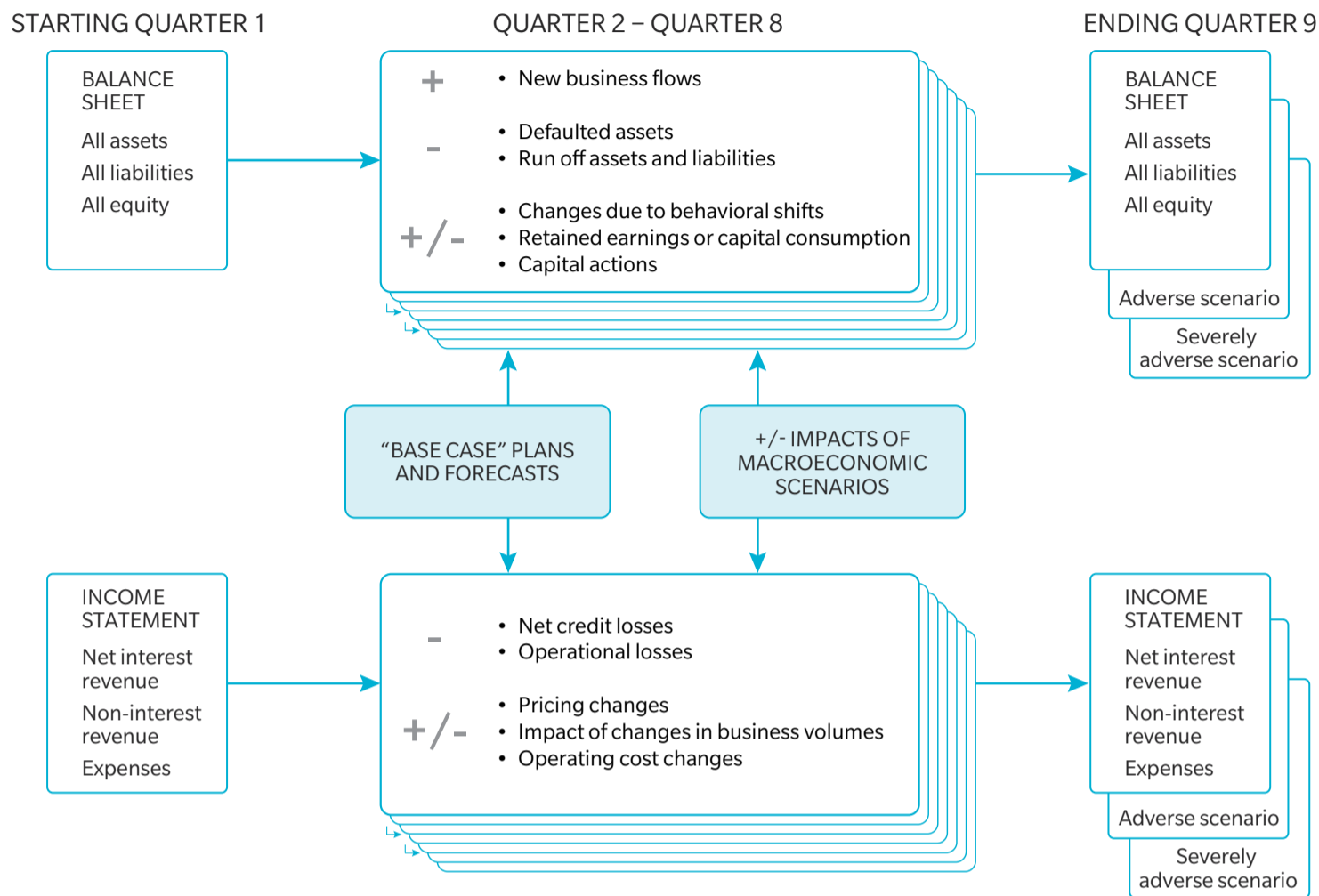
The global financial crisis, however, has prompted a great leap forward in scenario analysis at banks.

From 2007, unemployment in the US began to rise, house prices fell, and homeowners defaulted on their mortgages. Many banks began to run out of capital. Several ultimately became insolvent or survived only because they were bailed out with taxpayers' money.

Regulators recognized that, while it is useful to require banks to hold a certain level of capital during good times, it would be even more useful to understand how much capital banks will be left with if things go wrong – which can happen in so many different ways.

So, in 2009, the Federal Reserve launched the Supervisory Capital Assessment Program (SCAP), which later morphed into the Comprehensive Capital Analysis and Review program (CCAR). These programs, known as “stress tests,” require banks to forecast how every element of their balance sheets and income statements would behave over the next eight quarters, given a range of macroeconomic scenarios. These stress tests have taken scenario analysis to a whole new level of detail and precision. (See Exhibit 1.)

EXHIBIT 1: STRESS TESTING DATA FLOWS



Source: Oliver Wyman analysis

This advance in stress testing or scenario analysis is a significant achievement. But more progress must be made. Banks can conduct stress tests more efficiently. And they can make better use of stress tests in their planning.

THE FUTURE OF FINANCE INFRASTRUCTURE

Stress testing's data and analytical requirements are awe-inspiring: extremely granular balance sheet and income statement forecasts, across multiple quarters, with dozens of interconnected models estimating the impact of macroeconomic factors. Stress tests are methodologically challenging, time-consuming, and costly.

In the US, banks' initial efforts required extensive manual data gathering and a proliferation of spreadsheet modeling. They are now aiming to build sustainable, robust stress testing infrastructures.

The major elements of required infrastructure are:

- **Comprehensive balance sheet.**
A consolidated data source of record for granular, comprehensive balance sheet information.
- **Comprehensive income statement.**
A consolidated, granular source of record for profit and loss information.
- **Scenario-generation tools and processes.**
A means of identifying and articulating key macroeconomic and idiosyncratic risks, and formulating them as scenarios.
- **Suites of analytical and forecasting models.** Complex institutions usually require dozens of models to forecast "base case" results and how the results will be changed by various macroeconomic scenarios.
- **Data management tools.** An "input-output" layer which manages procurement and delivery of data from sources to analytical models, time stamps inputs and outputs, implements change controls, and establishes data lineages from outputs back to sources.
- **Synthesis tool.** A tool for aggregating analytical results to produce consolidated future balance sheets and income statements.
- **Robust model governance.** A management process for ensuring the validation, maintenance, and documentation of the dozens of models that comprise a bank's stress testing machinery.

Unfortunately, neither a data warehouse nor an asset-and-liability management platform nor one of the stress test systems introduced in recent years is likely to meet all of these requirements.

The ultimate solution for most institutions will be an intelligent combination of these components in a well-controlled, tightly integrated architecture. Crafting a robust architecture that meets these needs, while continuing to meet current execution challenges, will be difficult and expensive.

But it is worth the effort and money, because the upside is not just regulatory compliance. Advanced scenario analysis can significantly improve banks' strategic planning and, therefore, their financial performance.

SCENARIO-BASED STRATEGIC PLANNING

Strategic planning at banks suffers from characteristic shortcomings for which scenario analysis can provide a remedy:

- **Unrealistic expectations.** Plans used to justify investments often show “hockey stick” profit projections, with low current profits imagined to take off at some point in the future. Scenario analysis can show that such optimistic base-case expectations are vulnerable to a series of events that are well within the realm of the possible. This reduces risk-adjusted expected returns and thus encourages more prudent investment.
- **Inconsistent expectations.** One business unit may plan on an expectation that consumers will face financial pressure and switch to lower-priced products while another unit may ask for funding to introduce higher-priced luxury items. When such inconsistencies occur, the overall plan cannot be optimal. Such inconsistencies can be avoided by using the same set of scenarios in all expectations-based decisions, such as allocating investment and setting performance targets.
- **Insensitivity to market conditions.** Plans often pay little heed to market conditions and do not specify adjustments in response to variations in them. By thinking through the financial impact of various scenarios, banks can make contingency plans. This typically makes banks reluctant to “overcommit.” Planners who can see the downside of various scenarios will favor strategies that allow the bank to change direction quickly.

Besides these uses in strategic planning, stress tests can improve the measurement and reward of management performance. Like any other firm, a bank can do well (or poorly) not because of good management but simply because of an improving or, conversely, a worsening commercial environment. To evaluate the contribution of management, you need

Banks can improve their profits by systematizing the production of stress tests

to know how much results would have improved (or worsened) in the circumstances that unfolded, given some benchmark for managerial performance. Only with advanced stress testing can you evaluate management's real contribution to the bank's results and avoid paying bonuses on the basis of macroeconomic luck.

BANKING ON STRESS

No industry has shown more clearly than banking that business people cannot know the future with certainty. And no industry has responded with more intellectual rigor to this challenge to risk management.

The initial impetus for this progress has been the demands of regulators. But if banks can systematize the production of stress tests and build their outputs into their strategic planning, the long-term justification will be improved profits. Banks will not only reduce their losses and their capital costs; they will improve their investment decisions and their performance management.

Doris Day was right: Whatever will be, will be. But we do not know exactly what *will* be. The best a business strategist or planner can do is know what *might* be. The future is not ours to see. The future is ours to stress test.

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