

Evolution

Authors



Joy Hart

Director, Enterprise Risk Solutions

Joy Hart is a director at Moody's Analytics. She has more than 10 years of financial services experience in a variety of areas. As a product management director, she currently focuses on development of portfolio risk management tools.



Ed Young,

Senior Director, Enterprise Risk Solutions

Ed Young is a senior director at Moody's Analytics. He structures solutions that bring together capabilities across the company to support robust capital planning and stress testing processes. His primary focus is on clients in the banking and insurance sectors globally.

The Ongoing Stress Testing Evolution: Leveraging a Required Investment

BY JOY HART AND ED YOUNG

Stress testing is no longer merely about regulatory compliance. Financial institutions with effective stress testing frameworks can now use these comprehensive programs to identify and evaluate emerging risks, make better strategic decisions and improve their capital planning processes

Over the past eight years, institutions have spent an enormous amount of time, energy and capital to meet the stress testing expectations set by regulators. Given the sizable investment, it is no surprise that enterprise stress testing remains a topic of conversation for many banks.

Now that many firms have built a baseline that meets regulatory expectations, executives are beginning to ask more business-related questions, such as, "How do we use this investment and leverage the models to make better tactical and strategic decisions?"

When organizations have a well-designed stress testing framework and tools in place, meeting regulatory expectations becomes simply a by-product of much more powerful risk management and strategic planning activities. Banks that have such a framework in place can turn their focus to answering strategic questions about their balance sheet composition and risk/return trade-offs.

The notion of applying a forward-looking macroeconomic stress scenario to balance sheet and income statement projections was not common practice when the Fed initiated its seminal stress test for large banks in 2009. Since then, however, enterprise stress testing has emerged as a cornerstone of the risk management program for any large bank (more than \$50 billion in assets) in the US. It requires management to synthesize the many risks a bank faces in a tangible, easily understood format, while also encouraging internal process automation.

Given the importance of stress testing, most large banks have developed dedicated teams or appended groups to their risk function in order to facilitate these activities. On the other hand, many mid-sized banks (between \$10-50 billion in assets) have not developed stress testing processes that can provide meaningful business intelligence.

Since mid-sized banks in the US are only required to [produce stress test scenarios annually](#), many have struggled to justify the investment required to develop a recurring stress testing process to run on a routine basis. Indeed, many mid-sized banks have budget constraints and

must ask employees from within the business units — who are already stretched too thin — to go through this annual exercise.

Thankfully, improvements in technology and quantitative modeling are now helping to justify a smaller required investment in technology with a larger business case for integrating stress testing processes with strategic planning. As new accounting expectations start requiring banks to project expected credit losses over the life of each loan, there is an additional use case for investing in the underlying data and models.

In this article, we will explore the maturation of enterprise stress testing processes and how mid-sized firms can use investments in stress testing to make better business decisions.

Regulatory Mandate: The Formative Years of Enterprise Stress Testing

In response to the financial crisis, US regulators initially developed requirements for enterprise stress testing to help confirm that each large bank had enough capital to remain solvent during future crises, thus instilling confidence. In the years that followed, regulators continued to pressure banks to improve their processes to ensure they could produce credible results under the small group of scenarios.

Banks have continued to invest in their processes to meet these rising expectations. Much of the early focus was on improving the precision of the modeled outputs (both loss models and revenue projections) and on the internal controls that support the process. These improvements were imperative to establishing a baseline of precision for the projected capital ratios used by regulators to ensure the safety and soundness of each bank.

What's more, [these foundational steps helped to foster the credibility and consistency of the results that are disclosed by each bank to the broader market](#). Investments in improving models and internal controls were, in fact, paramount in ensuring banks would be able to publish results that were as accurate as possible.

Looking for Additional Value

The cost of compliance with banking regulations for large and mid-sized banks has increased significantly since the financial crisis. While enhanced enterprise stress testing processes have been a great tool to improve the safety and soundness of

individual banks, as well as the resiliency of the financial system, they have put a significant dent into firms' risk management budgets.

A quick glance at the return on equity (ROE) of the US commercial bank market provides some context on the clear need to increase profitability wherever possible, including from investments in stress testing processes:

- » The average ROE of a US commercial bank dropped from approximately 15% from 1993 to 2006 to 9% from 2012 to 2016.

However, processes are now maturing, and established and approved methodologies are allowing the industry to coalesce around a standard for loss and resource estimation approaches. This evolution has allowed risk managers to begin to address the following question: "How do we get timely and meaningful information out of our stress testing investment?" Today, in the hyper-competitive world of banking, the firms that learn how to leverage their stress testing processes to make better business decisions will garner a distinct competitive advantage.

Risk managers have always been concerned with risks the external environment imposes on their portfolio. Chiefly, banks have focused on the direct and indirect impact of significant market changes. As stress testing has become more mainstream, that thinking has shifted to focus on the broader economic conditions.

To understand and manage exposures profitably, many banks have employed a range of quantitative models and expert judgment to mitigate potential losses. These models, however, are rarely able to translate portfolio exposures directly to their potential impact on quarterly earnings. This shortcoming leaves risk managers struggling to bridge a gap and explain to senior management the tangible implications of portfolio risk metrics.

A properly designed stress testing framework can help with the portfolio exposures/earnings impact translation, without increasing the cost of complying with regulatory requirements. The benefits of an improved capital planning program with strategic planning capabilities can even turn an initial cost into an ongoing strategic investment.

Let's now quickly explore how a well-designed stress testing program can benefit risk management and strategic planning at a bank.

Integrating Stress Testing into Broader Risk Management

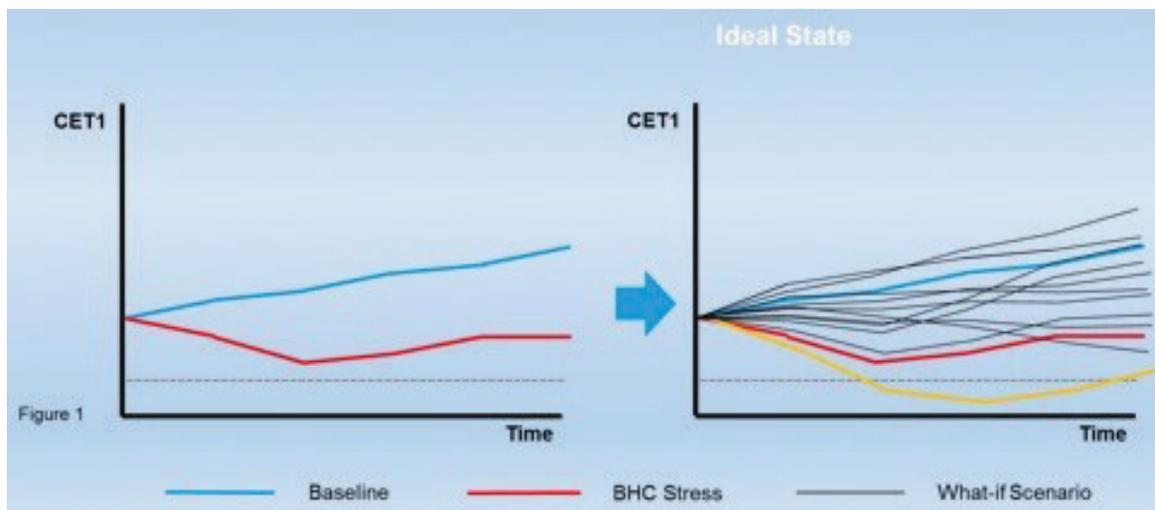
Once a bank has set up a stress testing program that can easily be used on a recurring basis, it can be integrated into the firm's standard risk management framework. When running a stress test exercise quarterly (or more frequently), results can help the organization highlight emerging risks and identify and express the potential impact of changes to the external environment.

Enhancements in technology now allow banks to consider the balance sheet and potential earnings impact of a wide range of possible economic scenarios. This ability to quickly examine "what-if" scenarios in minutes give banks a powerful tool to evaluate emerging risks and to receive early warning indicators about changes to the firm's risk profile.

The ability to capture a wide range of risks, understand their potential impact and synthesize the results into pro-forma financial statements can substantially improve the capital planning process. Many large banks have begun to incorporate the results of the economic scenarios the Federal Reserve publishes — as well as their own bank holding company (BHC) stress scenarios — into their strategic planning processes. Being able to contemplate a large range of scenarios (i.e., beyond just BHC scenarios) can provide bank management with additional perspective and information to improve business decisions — but only when it is feasible to complete the analysis in a timely manner.

Figure 1 (below) illustrates the additional information a robust stress testing framework can offer to improve capital planning decisions.

Figure 1: The Impact of Robust Stress Testing on a Bank's Capital Planning



Through analyzing additional scenarios, the bank depicted in Figure 1 identified a possible vulnerability (the yellow scenario path) that breached an established CET1 capital limit (the grey dotted line). This situation was not uncovered by the firm's BHC-stressed scenarios. Without the additional scenario analysis, the bank would not have appropriately incorporated necessary remediation plans or considered strategies to avoid the breach event.

Improving Business and Strategic Planning

Whether a financial institution is developing a five-year plan or contemplating a possible strategic merger or acquisition, strategic planning has always been an integral part of management. However, legacy processes often struggle to integrate (adequately and formally) the firm's current and prospective future risk profiles into the process.

For instance, many mid-sized firms face challenges with integrating a range of possible future economic environments and quantitatively gauging their financial impact on strategic initiatives. Moreover, the process for understanding the implications of the economic environment on a potential acquisition remains a struggle for many banks.

Advances in stress testing methodology and technology can solve many of these problems and provide results quickly and efficiently. Banks that are armed with this new information will gain a competitive advantage over firms that ignore the benefits of a well-designed stress testing framework.

These benefits can also improve coordination and flows of information across the silos of an organization. Today, the

impact of ongoing strategic initiatives — such as loan or deposit pricing strategies in different economic environments — can be assessed in minutes instead of months.

Access to this additional information is a significant competitive advantage that will enable your bank to be nimble and optimize its growth strategy.

A Jumping Off Point for Further Breakthroughs

A decade after the tumultuous economic times of the great recession, advances in balance sheet management are arming risk managers with significantly more information to consider and mitigate potential risks. Regulators' focus on capital planning and stress testing has led to enhanced methods to translate economic conditions into potential losses.

Now that many banks have invested in improved data capture and credit risk parameters, they are searching for ways to leverage these enhanced capabilities. The analytic improvements, coupled with advances in technology, are paving the way for banks to find new and innovative ways to use stress testing platforms for additional business intelligence.

Much of the innovation will need to be less focused on regulatory expectations and more on creating incremental business value. This new impetus for advancing risk management will lead to exciting new breakthroughs and competitive advantages for the firms that embrace the opportunity.

CONTACT DETAILS

Visit us at moodyanalytics.com or contact us at a location below.

AMERICAS

+1.212.553.1653

clientservices@moody.com

EMEA

+44.20.7772.5454

clientservices.emea@moody.com

ASIA (EXCLUDING JAPAN)

+852.3551.3077

clientservices.asia@moody.com

JAPAN

+81.3.5408.4100

clientservices.japan@moody.com

© 2018 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. AND ITS RATINGS AFFILIATES ("MIS") ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MOODY'S PUBLICATIONS MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S PUBLICATIONS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

MOODY'S CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS OR MOODY'S PUBLICATIONS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT INTENDED FOR USE BY ANY PERSON AS A BENCHMARK AS THAT TERM IS DEFINED FOR REGULATORY PURPOSES AND MUST NOT BE USED IN ANY WAY THAT COULD RESULT IN THEM BEING CONSIDERED A BENCHMARK.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process or in preparing the Moody's publications.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any rating, agreed to pay to Moody's Investors Service, Inc. for appraisal and rating services rendered by it fees ranging from \$1,500 to approximately \$2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moody.com under the heading "Investor Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657 AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors. It would be reckless and inappropriate for retail investors to use MOODY'S credit ratings or publications when making an investment decision. If in doubt you should contact your financial or other professional adviser.

Additional terms for Japan only: Moody's Japan K.K. ("MJKK") is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly-owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO. Moody's SF Japan K.K. ("MSFJ") is a wholly-owned credit rating agency subsidiary of MJKK. MSFJ is not a Nationally Recognized Statistical Rating Organization ("NRSRO"). Therefore, credit ratings assigned by MSFJ are Non-NRSRO Credit Ratings. Non-NRSRO Credit Ratings are assigned by an entity that is not a NRSRO and, consequently, the rated obligation will not qualify for certain types of treatment under U.S. laws. MJKK and MSFJ are credit rating agencies registered with the Japan Financial Services Agency and their registration numbers are FSA Commissioner (Ratings) No. 2 and 3 respectively.

MJKK or MSFJ (as applicable) hereby disclose that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MJKK or MSFJ (as applicable) have, prior to assignment of any rating, agreed to pay to MJKK or MSFJ (as applicable) for appraisal and rating services rendered by it fees ranging from JPY200,000 to approximately JPY350,000,000.

MJKK and MSFJ also maintain policies and procedures to address Japanese regulatory requirements.