# Conning GEMS® Stress Test Scenarios

RISK SOLUTIONS | PRODUCT SHEET

*Stress testing and scenario analysis are part of the foundation of an effective enterprise risk management program. It serves as a crucial complement to stochastic modeling and is required or strongly encouraged by important regulatory regimes such as the NAIC ORSA and Solvency II. Since no one has a crystal ball, historical events provide one important basis for identifying and quantifying the impact of economic crises on the solvency and financial stability of a company. Historical stress testing has the advantage of being more easily interpretable than the hypothetical but plausible outcomes produced by stochastic modeling techniques. They are, therefore, a useful tool in communicating risk at the board level, to trustees, shareholders, regulators and policy holders, as well as benchmarking the performance of a stochastic model. The results are:*

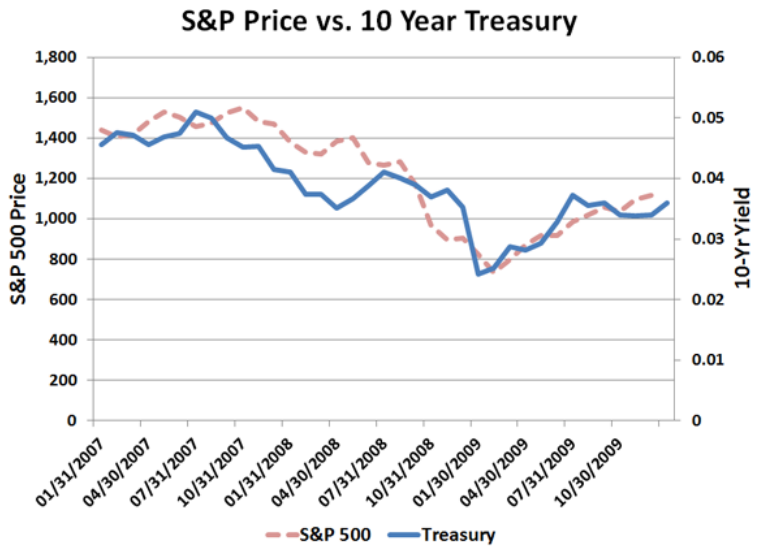
- *Easier to understand—you get one number, not a distribution*
- *Able to help ensure that the stochastic analysis is sufficiently robust*
- *Much easier to compare across different companies than stochastic analyses*

*Creating a robust and meaningful stress scenario requires market knowledge, modeling experience, and expert judgment. In developing these scenarios, Conning has identified a few key questions that need to be answered.*

## 1. When Did the Event Start?

When most people think about the 2008 Financial Crisis, they focus on the headline events, like the collapses of Indy Mac in July of 2008 and Lehman in September. However, for the capital markets, the changes started much earlier: treasury yields peaked in June of 2007, while the S&P 500 peaked in October (**see Table 1**).

**Table 1: When Did the Financial Crisis Start?**

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## Currently Available Scenarios

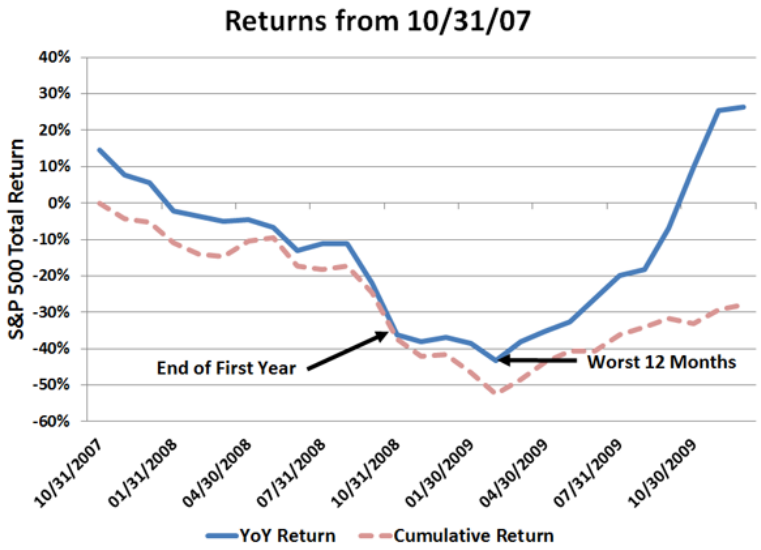
Conning has utilized its award-winning[1] GEMS® Economic Scenario Generator to develop a package of stress scenarios that currently simulates ten significant economic events over the past 100 years:

1. The 2008 Financial Crisis
2. The Great Recession
3. The European Debt Crisis
4. Black Monday
5. 1997 Asian Financial Crisis
6. 2011 US Debt Ceiling Crisis and Downgrade
7. 1994 US Interest Rate Spike
8. 1981 US Interest Rate Spike
9. The Great Depression
10. 1973–1974 Recession

## 2. How Long Did the Event Last, and What Happened Afterwards?

Unlike catastrophic events, financial events tend to play out over months or years (**see Table 2**). Therefore, we also need to develop a method for establishing the end of an event. Specifically, should the event end at the trough, or should it include the recovery? Furthermore, since these events are being incorporated into models that are projecting 5, 10 or even 50 years into the future, we will also need to develop a reliable method for incorporating what comes after the crisis ends.

**Table 2: When Did the Financial Crisis End?**

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## 3. How Would the Event Be Different Today?

For most of 2007, the 1-year Treasury yield in the U.S. was above 4%. By the end of 2009, it was down to 0.05%! Even now, the entire U.S. yield curve is near historic lows. So, what would happen to yields in a second financial crisis? Would they drop to -3 or -4%? Would they get stuck at 0%? Would there be ramifications for other assets (e.g., corporates, munis)?

## Conning's Solution

Not only does the GEMS® Stress Scenario package offer practical answers to all of these vital questions, it provides full documentation and transparency for our clients to share with their senior management team. Conning's economists, actuaries, and quantitative finance experts have decades of experience solving exactly these types of problems, and our GEMS® Stress Scenario package provides plausible, historically consistent, and defensible scenarios that can seamlessly integrate with and leverage your existing modeling platform.

## Stress Test Use Cases

Stress test analyses are often requested by senior management and members of a company's Board of Directors. These analyses can provide greater understanding of complex models, and, therefore, improve adoption across the organization.

Additionally, stress tests can serve as an important "reality check" on stochastic model results. In general, one would expect such historical stress scenarios to fall within the tails of distributions of results.

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## About Conning

Conning (www.conning.com) is a leading investment management firm with a long history of serving the insurance industry. Conning supports institutional investors, including insurers and pension plans, with investment solutions, risk modeling software, and industry research. Conning's risk management software platform provides deeper insights for decision making, regulatory and rating agency compliance, strategic asset allocation, and capital management. Founded in 1912, Conning has investment centers in Asia, Europe and North America.