

A more detailed look at portfolio stress-testing

By Quintin Rayer | Feb 13, 2017



In a previous article Quintin Rayer gave a brief overview of portfolio stress-testing. This follow-up article looks more closely at what portfolio stress-testing is, what it can and cannot do and offers a definition.

Introduction

To recap, extreme market moves can negatively impact portfolios in ways which may not be captured by conventional risk measures; while diversification breakdown may mean that portfolio values are not protected. With guidance, an investment manager may be able to use stress-testing to estimate the impact on your clients' portfolios and arrange for appropriate restructuring to limit the downside. Typically stress-testing may look at significant historical market events, or scenarios that reflect particular concerns.

Essentially, portfolio stress testing helps to identify and quantify risks and so can give some reassurance as to how portfolios might respond to specific market outcomes or other concerns.

So what is portfolio stress-testing?

Financial advisers will be aware of the stress testing regulators have applied to banks and financial institutions to see how resilient their balance sheets would be to renewed market crisis. It may be less obvious that conceptually similar approaches can be applied to their own portfolios. Portfolio stress testing provides a useful mechanism for advisers to work with portfolio managers to ensure their portfolios are better positioned to protect against particular market concerns.

Investment managers associate a range of activities with stress-testing, including looking at potential portfolio downside risk, or using methods to estimate responses under difficult ('stressed') conditions. However stress-tests are not guaranteed to identify the actual impacts of future events on a portfolio.

Stress tests are designed to determine the likely portfolio response to adverse developments, to help identify weak points so that preventative action can be taken. A typical focus is on key risks, such as credit, market risk and liquidity [1], [2].

A definition of portfolio stress-testing might be [3]:

- » A method for the quantification of potential future extreme, adverse outcomes in a portfolio of financial instruments.
- » A palliative for the anxiety that is experienced by managers with significant risk exposures.

This definition brings out some key points. Quantitative estimates of stress test outcomes are required, in monetary terms, while stress tests do not provide statistical estimates of outcome probabilities. The stressed scenarios explored indicate potential future outcomes under extreme conditions.

Further, a scenario is not a stress test unless the outcome is bad for the portfolio. After all, if a proposed scenario turns out to have an outcome that increases portfolio value, this would demonstrate that the scenario in question is of little concern. So stress testing helps identify potential problems, but does not, of itself, resolve what to do about them. This means it may be palliative (reducing pain but not offering a cure) by reassuring manager, adviser and client if no outstanding issues are detected. On the other hand, it does not provide the solution about how to address any problems that have been identified. Nor does it say whether the selected tests identify all key areas of portfolio weakness.

This is where an adviser can play an important role by working with the investment manager to add value in terms of interpreting test results against portfolio objectives.

For stressed scenarios that have little impact on a portfolio, it reassures that the event may be of lesser concern than feared. Conversely, if a portfolio looks to be badly impacted, an adviser can work with the manager to see that the portfolio is restructured to make it more resilient.

This helps demonstrate that advisers and investment managers are working hard to protect portfolios and clients can be reassured that robust investment processes are in place.

References

[1] M. Crouhy, D. Galai and R. Mark, *The Essentials of Risk Management*, 2nd ed., New York: McGraw-Hill Education, 2014.

[2] M. Choudhry, *An introduction to Value at Risk*, London: Wiley Publishing (with CISI), 2013.

[3] B. Schachter, "Stress testing," in *The Professional Risk Managers' Handbook*, vol. III, C. Alexander and E. Sheedy, Eds., Wilmington, DE: PRMIA Publications, 2004.

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