



Academics and industry unite

By AMANDA WHITE On 03/08/2012

The gargantuan impact of systemic risk in global financial markets has been corroborated by a consortium of industry and academics collaborating to provide independent quantitative research, insight and leadership on systemic risk.

Driven by director of MIT's Laboratory for Financial Engineering, Andrew Lo, senior managing director at State Street Global Markets, Jessica Donohue, and managing director for research and academic relations at Moody's, Roger Stein, the Consortium for Systemic Risk Analytics was founded to provide a platform for institutional investors, academics and industry experts to present and discuss new research and better quantify drivers of systemic risk.

Collaboration across the board Systemic risk has presented a major challenge for regulators funds managers, academics and investors who have relied on the diversification tenets of modern portfolio theory for their investment allocations.

"Systemic risk was never imagined by modern portfolio theory," Lo says. "Modern portfolio theory is now incomplete because of the complexity in financial markets."

Stein says much of the work involves dealing with the large volumes of incompatible data. He notes that, ironically, in some cases there can be too much information for investors and policy makers to evaluate. Much of the work that is now being done is about using new analytic techniques to rationalise and filter down information to something that is more actionable.

Donohue says in the end investors have to consider systemic risk in asset allocation and tactical asset allocation.

"We are creating relationships and my hope is that will result in

relevant measures and ways of thinking that will help investors better manage the turbulent environment,” Donohue says.

The consortium will seek to foster collaboration between academic and industry to research the interrelatedness of markets and the potential sources of systemic risk.

Bringing people together The aim of the consortium is to initiate bilateral conversations on these risks.

“We are driven by a sense of urgency. Systemic risk is not something that businesses are focusing on; it requires a collective effort. Contrary to popular belief, most financial services firms are not evil but are concerned about their impact on systemic risk and so are willing to share information about exposures in their portfolios,” Lo says.

An example of the work the consortium is doing is a “network map” that Stein and Lo developed to combine portfolio analytics and network analysis. The map outlines the relatedness of money market funds and the risks to them through exposures to non-US debt. In this case, Moody’s agreed as a one-off to provide the anonymised data to Lo and Stein. They then shared the results of their new analytic approach with the group, which included State Street, Moody’s academics as well as government organisations such as the Securities and Exchange Commission and the Office of the Comptroller of the Currency.

“The notion is to bring people together who wouldn’t otherwise talk to each other, and to do so in a way that expressly addresses issues of confidentiality and complexity,” Stein says.

More than just quants Lo has done much research on systemic risk, including a variety of measures and the relationships among markets and different investment holdings. “There is increasing correlation,” he says. “For example, in the hedge fund industry there is no corner that is undiscovered; all are crowded trades.”

The consortium is interdisciplinary, with Lo involving various departments of MIT in the research and discussion including physics, engineering and maths.

“Although much of the discussion focuses on financial data and analytics, we also talk about the impact of things like dependence on

key computer systems as being potential sources of systemic risk. It is an active debate," Stein notes.

State Street Global Markets, the investment research and trading arm of State Street Corporation, has produced a prolific amount of research and work through State Street Associates, its collaboration with leading academics.

Some of that work includes measures of systemic risk and turbulence in conjunction with Mark Kritzman, who also teaches at MIT. Similarly, Stein's focus has been developing approaches to extending quantitative credit measures for applications in systemic risk analysis.

Donohue says industry consortium members do not share proprietary information, but published works, such as those of Kritzman, could be applied to share insights with the group.

The consortium will have a public website and announce new members within the next month.