Panel calls for various researchers to band together to create an economic policy dashboard

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(Phys.org)—A widely disparate group of scientists and other individuals engaged in modeling and economic research has banded together to call for building a new kind of business model intended to help forecast financial meltdowns, such as occurred in 2008. They have written a paper together and have had it published as a Perspectives piece in the

journal *Science*—in it they are asking others in other areas of study to join the effort to help forge a path to developing a product that might help foresee troubling economic indicators and in so doing perhaps provide a way to prevent serious problems in the future.

As the group notes, to date no tool, model or human being is capable of predicting the type of collapse that occurred in 2008, which contributed heavily to what became known as the Great Recession, and that problem has many people in the financial community on edge, including Andrew Haldane, one of the authors of the paper and chief economist for the Bank of England. He and his colleagues point out that current models are built to approximate the actions of a single rational player, which clearly does not account for the many irrational acts of many in the financial business world—and that has to change.

They authors also note that over the past few decades a lot of work has been put into creating models (many based on complexity theory) that have proved useful in other pursuits, such as weather forecasting—they write that they believe the time has come to look for contributions from experts in a variety of fields to come together to see if it might not be possible to create such a model for the global financial system.

Key to such a program would be network analysis and behavioral modeling tools—both have proven able to offer useful forecasting given the right set of inputs. With finance, the group acknowledges, such inputs might be more difficult to gather due to the sometimes fuzzy nature of financial interactions between various players; but that does not mean it cannot be done, they propose that it should not be impossible to isolate various tipping points, and to create agent-based computer models which take as inputs actions by some of the most important agents in the field, i.e. individuals who exert strong influence in the financial world and use that information to provide an economic dashboard that would highlight looming problems.

Abstract

Traditional economic theory could not explain, much less predict, the near collapse of the financial system and its long-lasting effects on the global economy. Since the 2008 crisis, there has been increasing interest in using ideas from complexity theory to make sense of economic and financial markets. Concepts, such as tipping points, networks, contagion, feedback, and resilience have entered the financial and regulatory lexicon, but actual use of complexity models and results remains at an early stage. Recent insights and techniques offer potential for better monitoring and management of highly interconnected economic and financial systems and, thus, may help anticipate and manage future crises.

Press release

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