

The evolution of complex systems theory and the advancement of econophysics methods in the study of stock market crashes

ABSTRACT

This paper traces the origin and development of the complex systems theory over the course of history, up to its latest advancement in the study of stock market crashes. The trail of the theory's fuzzy evolution is expansive that covers the ground of the complexity epistemology, natural science and computer science. A meticulous review is undertaken to distinguish the complex systems theory from another seemingly overlapping theory of the chaos systems. The paper recounts how researchers from cross-disciplines, particularly from the econophysics have banded together to consolidate and diffuse the application of the complex systems theory in the economics and further discusses the methodological contribution of the econophysics in the area of stock market. To date, the complex systems theory and the methodologies from the econophysics are well-established as the frontier for studies in stock market bubbles and crashes.