Boston University Physics Colloquium

Are there quantitative mathematical laws underlying financial markets?

Given the complexity of human behavior, it might seem unlikely that social institutions such as markets might obey quantitative laws that in any way resemble those of physics. Financial markets provide an ideal setting to search for such laws, as we have billions of records of human decision making in a highly constrained context, where there are sometimes reasons to believe that factors other than human psychology may dominate the outcomes. I will review efforts over the last decade to find such laws, and will give several examples that appear to have some credibility. These include regularities in the way supply and demand flow in and out of a market, in the size distribution of trades, the response of prices to trades, the distribution of investment fund sizes, and a conjectured equation of state relating the accumulation of trading orders to the statistical properties of price fluctuations. I will also discuss some of the attempts to make quantitative theories to explain these laws, which mix ideas from physics with standard theories in economics.

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September 23, 2008 (Tuesday) at 3:30pm (Refreshments at 3:15pm)

SCI 107, Metcalf Science Center, Boston University

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