Texas Tech University. Applied Mathematics Seminar.

INSTABILITY IS FUNDAMENTAL: THE ROLE OF INFORMATION IN NEW MARKETS

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Room: MA 016, Time: 4:00pm

ABSTRACT. New financial products are dicult to price. Often the products suffer through an initial period of price volatility as the market searches for an equilibrium value. Is this instability preventable (perhaps with more information or better financial regulation) or is it fundamental? Working within a canonical urn model, we show that this early-trading volatility is fundamental. We assume the existence of an urn with an unknown distribution of black and white balls. After each ball is drawn we adjust our guess by updating our beliefs We show how our beliefs over the ratio of black to white draws exhibits excess volatility in the first few periods, even when our initial beliefs are centered at the true value. We prove that under very weak conditions the updated estimates converge to the true ratio. For special cases we show that the mode is a much more convenient measure than either the mean or the median.

This is work that is due in large measure to Robert Martin, FRB of Governors; Bo He, UTSPH; Jennifer Emerson, TTU; and the proof of convergence (on which all of this is based) is due to Kendall Gillies, TTU.