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Alissa M Stafford* (astaffo2@umd.edu). *In search of universal scaling functions in a financial market model.*

The standard models of economics and finance not only fail to predict sudden bubbles and crashes, they assume they cannot exist at all. This is because strong assumptions are made concerning the equilibrium nature of such systems and the absence of endogenous dynamics. This paper examines the endogenous dynamics of a non-standard market model in a preliminary attempt to understand the frequency with which bubbles and crashes occur. We identify 15 short time-intervals where significant price increases and decreases occur and focus upon the endogenous dynamics within them. Rescaling and averaging over these intervals identifies the average dynamical profile which in turn may help quantify the frequency of large financial and economic collapses. (This project was funded by the NSF REU at George Mason University) (Received September 11, 2012)