

Abstract for an Invited Paper  
for the MAR10 Meeting of  
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**Economic Fluctuations and Statistical Physics: Quantifying Extremely Rare Events with Applications to the Present Worldwide Crisis<sup>1</sup>**  
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Recent analysis of truly huge quantities of empirical data suggests that classic economic theories not only fail for a few outliers, but that there occur similar outliers of every possible size. In fact, if one analyzes only a small data set (say data points), then outliers appear to occur as “rare events.” However, when we analyze orders of magnitude more data (200 million data points!), we find orders of magnitude more outliers—so ignoring them is not a responsible option, and studying their properties becomes a realistic goal. We find that the statistical properties of these “outliers” are identical to the statistical properties of everyday fluctuations. We report a recent discovery that the same laws govern the formation and bursting of large bubbles as tiny bubbles, over a factor of 1,000,000,000 in time scale. This work was carried out in collaboration with a number of colleagues, chief among whom are T. Preis, J. J. Schneider, X. Gabaix, V. Plerou, and P. Gopikrishnan.

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