

Abstract Submitted  
for the MAR07 Meeting of  
The American Physical Society

**Stochastic volatility of financial markets as the fluctuating rate of trading: an empirical study** CHRISTIAN SILVA, EvA Inc., VICTOR YAKOVENKO, University of Maryland — We present an empirical study of the subordination hypothesis for a stochastic time series of a stock price. The fluctuating rate of trading is identified with the stochastic variance of the stock price, as in the continuous-time random walk (CTRW) framework. The probability distribution of the stock price changes (log-returns) for a given number of trades  $N$  is found to be approximately Gaussian. The probability distribution of  $N$  for a given time interval  $\Delta t$  is non-Poissonian and has an exponential tail for large  $N$  and a sharp cutoff for small  $N$ . Combining these two distributions produces a nontrivial distribution of log-returns for a given time interval  $\Delta t$ , which has exponential tails and a Gaussian central part, in agreement with empirical observations.  
Reference: physics/0608299.

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Date submitted: 19 Nov 2006

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