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**Neeraj T Vijay\*** (nvijay@masonlive.gmu.edu), 6 Stearrett Drive, Newark, DE 19702. *Effects of Momentum Trading on Asset Prices.*

Geometric Brownian motion is a standard model used for asset pricing. We amend this model by considering an agent-based variant that introduces market participants who try to profit from recent price trends.

Let  $r(t)$  be the log-price and consider an agent  $i$  who bought the asset at time  $\omega$ . Then the agent will sell when

$$|r(t) - \max_s r(s)_{\omega \leq s \leq t}| \geq d_i$$

for some threshold value  $d_i > 0$ . Similarly an agent  $j$  who sold the asset at time  $\tau$  will change position and buy when

$$|r(t) - \min_s r(s)_{\tau \leq s \leq t}| \geq d_j.$$

When the changes in agent position are fed back into the price, cascades of buying and selling result in large and sudden price moves that are similar to those that occur in real financial markets. The model can be described as a stochastic dynamical system on the positive real line and variations of it will be used to model illiquid markets such as the housing market. (Received September 25, 2012)