

# A simple financial market model with chartists and fundamentalists: market entry levels and discontinuities

Fabio Tramontana (Università di Pavia)

Laura Gardini (Università di Urbino)

Frank Westerhoff (Università di Bamberg, Germany)

## ABSTRACT

Within the last 15 years, major stock markets around the world have shown a quite turbulent and rather unpleasant behavior. What becomes immediately clear is that these markets are highly volatile also with respect to their daily price variability. The magnitude of the most extreme price fluctuations as well as the overall level of volatility is simply stunning.

Given the negative impact such stock market dynamics may have for the real economy, it is quite important to understand what is driving these markets. Since a few years, agent-based financial market models address this important issue. These models study the interactions between heterogeneous market participants which rely on simple technical and fundamental trading rules to determine their orders. It should be noted that the key building blocks of these models are supported by empirical evidence.

The contribution of this paper is as follows. First, we develop a simple one-dimensional discontinuous piecewise-linear agent-based financial market model. Within our model, prices are driven by the trading activity of heterogeneous speculators which rely on technical and fundamental trading rules. Second, we survey some analytical results we have obtained for some of these models. Third, we try to calibrate a stochastic version of our model such that it matches the dynamics of actual financial markets.