

Bubbles and traders behaviours analysis in SumWEB stock market experiments

Alessandro Cappellini

University of Turin, Sanpaolo IMI, piazza San Carlo 156, 10121 Torino, Italy

Corresponding author e-mail: cappellini@econ.unito.it

SumWEB (SUM Web Economic Behaviour) is a web application stock market simulation based on Pietro Terna's SUM (Surprising (Un)realistic Market).

The prices formation and the order enqueueing rules were directly adopted from MTA (Mercato Telematico Azionario, the Italian Stock Exchange).

The simulation was mainly designed to introduce humans inside the simulation itself using the avatar technique. With this conception we are able to build a bridge between pure ACE (agent-based computational economics) approach and experimental economics.

The aim of our work is to investigate both the behaviours of human traders and of the artificial agents.

Main results derive from a two weeks long experiment with 152 human subjects and from simulations with only artificial agents. In the experiment they could choose to invest in three different stocks or in a future on market index.

We focused data analysis on extreme prices fluctuations also know as "bubbles" and "crashes".

We used a dynamic CAPM approach in order to underline the difference occurred in beta parameter, and also analysed abnormal volatility in prices volumes and returns.

Finally we would like to underline the importance of the population composition (specially without humans), and of the market rules used which matching mechanism can deeply modify market results.