Behavioural breaks in the heterogeneous agent model: the impact of herding, overconfidence, and market sentiment

Jiří Kukačka, Jozef Barunik

(Submitted on 16 May 2012)

The main aim of this work is to incorporate selected findings from behavioural finance into a Heterogeneous Agent Model using the Brock and Hommes (1998) framework. In particular, we analyse the dynamics of the model around the so-called `Break Point Date', when behavioural elements are injected into the system and compare it to our empirical benchmark sample. Behavioural patterns are thus embedded into an asset pricing framework, which allows to examine their direct impact. Price behaviour of 30 Dow Jones Industrial Average constituents covering five particularly turbulent U.S. stock market periods reveals interesting pattern. To replicate it, we apply numerical analysis using the Heterogeneous Agent Model extended with the selected findings from behavioural finance: herding, overconfidence, and market sentiment. We show that these behavioural breaks can be well modelled via the Heterogeneous Agent Model framework and they extend the original model considerably. Various modifications lead to significantly different results and model with behavioural breaks is also able to partially replicate price behaviour found in the data during turbulent stock market periods.

Subjects: **Computational Finance (q-fin.CP)**
Cite as: **arXiv:1205.3763 [q-fin.CP]**
(or **arXiv:1205.3763v1 [q-fin.CP]** for this version)

Submission history

From: Jozef Barunik [view email]
[v1] Wed, 16 May 2012 19:04:03 GMT (489kb,D)

Which authors of this paper are endorsers?