How do Markets React to (Un)expected Fundamental Shocks? An Experimental Analysis

Wael Bousselmi[(1)], Patrick Sentis[(1)], Marc Willinger[(2)]

ABSTRACT

We perform a market experiment to investigate how prices react to the new information. Specifically, we study experimentally the impact of expected/unexpected fundamental value shocks in an asset market. Subjects were involved in two consecutive experimental markets, market 1 and market 2, with a constant fundamental value as in Noussair et al. (2001). Market 2 is similar to the one studied by Weber and Welfens (2007) in which the fundamental value is stochastic.

The experiment consisted of two treatments (T1 and T2). Market 1 was identical in both treatments.

T1: *Expected fundamental shock*: at the beginning of market 2, subjects are aware of the fundamental value process. They are also informed that a random shock will arise in period 8. The shock can be upward or downward. They discover the direction of the shock at the end of period 8.
T2: *Unexpected fundamental shock:* at the beginning of market 2, subjects are aware of the fundamental value process. They are **not informed** that a random shock will arise in period 8. At the end of period 8 a message read aloud by the experimenter announced that a new redemption value was set.

Up to now we conducted mainly T1 sessions (**eight** independent groups of nine subjects) and two sessions for T2 **(four** independent groups of nine subjects, more sessions will be organized in the coming weeks). For T1 we implemented a positive shock in **four groups** and a negative shock in the remaining **four**. For T2 we implemented a positive shock in **two groups** and a negative shock in the remaining **two**.

We observe under-reaction to expected fundamental shocks in three groups out of eight, over-reaction in four groups out of eight and no reaction in one group. Following a positive shock in T1, prices over-react in three groups out of four and under-react in one group. Following a negative shock in T1, prices under-react in two groups of four and over-react in one group. There is no obvious reaction in the remaining group. In addition, we observe under-reaction to unexpected fundamental shocks in two groups out of four and over-reaction in other two groups. Following a positive shock in T2, prices over-react in the two groups. Following a negative shock in T2, prices under-react in the two groups. Price bubbles (median and/or mean price above the fundamental value) are frequently observed, but are of limited magnitude.

Keywords: Experimental asset market, under-reaction, over-reaction, price bubble.

(1) ISEM, Université de Montpellier
(2) LAMETA, Université de Montpellier