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

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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.