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Short-term under/overreaction, anticipation or uncertainty avoidance? Evidence from India

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ABSTRACT

We examine the short-term price behaviour of three, size-conditioned Indian stock market indices, in response to informational shocks. A standard mean-adjusted returns model as well as the GJR-GARCH specification point towards underreaction to negative events in the medium and small capitalization indices. Also, the pre-event coefficients are generally negative and statistically significant, regardless of the sign of the shock, thus ruling out information leaks. We uncover a stable abnormal volatility pattern which increases monotonically a few days before the shock before suddenly decreasing in magnitude on the event day and beyond. We suggest uncertainty avoidance as a potential explanation of these features. The results are fairly robust across alternative event selection procedures, time, and size-conditioned shocks.

1. Introduction

The basis of an ever-increasing behavioural finance literature is the idea that psychological biases on the part of investors systematically impact decision making and therefore asset prices in a predictable manner. In other words, at the very core of behavioural finance is the attempt to establish a direct link between documented psychological biases and resilient, (ideally) arbitrage-prone price patterns in financial markets. In this vein, underreaction and overreaction, two pervasive regularities (Barberis et al., 1998) are often at the forefront of the anomalies literature. Conceptual conservatism defined as the human tendency to cling to existing beliefs in the face of challenging new evidence (Nissani, 1994)

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partly underscores the idea of underreaction to events. Similarly, representativeness, defined as the tendency to view events as representative of a specific class, partly underscores the idea of overreaction. Less vehiculated is perhaps the idea of uncertainty avoidance, defined as the extent to which a culture programs its members to feel uncomfortable/comfortable in unstructured or surprising situations (Hofstede, 2001). The underlying dimension here is the tolerance for ambiguity, which can be found in individuals and which, in identical situations, leads some to feel more pressed for action than others (Hofstede, 2001). Cyert and March (1963) claim that people in uncertainty-avoiding cultures emphasize short-run reaction to short-run feedback rather than anticipation of long-run uncertain events, and solve pressing problems rather than develop long run strategies. This study proposes to analyze these ideas in the context of the Indian market over the period 2003–2010.

Recently, this approach has attracted renewed attention but its research has been limited to either various developed markets (Spyrou et al., 2007; Rieks and Lobe, 2008) or a large group of countries (Mazouz et al., 2009). There are very few (if any) studies focusing solely on key emerging markets. The starting point in these studies is the idea that a broad market index will adjust quickly and fully to shocks, regardless of their magnitude. As such, no persistent patterns, in the form of cumulative abnormal returns, are to be observed around market event days. The results generally point towards some form of market inefficiency. Spyrou et al. (2007) provide evidence that medium and small capitalization indices significantly underreact to both positive and negative shocks for several post-event days. They claim that this underreaction is still unaccounted for after the usual risk-factors, calendar effects, and bid-ask biases are considered. Their interpretation is that investors process extreme negative news optimistically and extreme positive news pessimistically, an idea raised in the past (Schnusenberg and Madura, 2001). Lasfer et al. (2003) also document short-term underreaction following both positive and negative news. They also differentiate between developed and emerging markets in terms of the amplitude of such a response.

While studies such as Spyrou et al. (2007) compute the cumulative abnormal returns (CARs) based on a simple mean-adjusted returns model, Mazouz et al. (2009) employ both OLS regressions and an asymmetric GARCH in order to investigate the CARs following size-conditioned market shocks. The results differ across methodologies. As such, the OLS method provides strong support for return continuations following positive and negative market shocks with absolute values between 5% and 10%. There is also country-specific evidence of overreaction (return reversals) for very large positive and negative shocks. However, when a GJR-GARCH model is employed, market efficiency seems to prevail, particularly for medium and large shocks.

Whatever research has been done on India on under/overreaction, it generally follows the popular approach of Jegadeesh and Titman (1993) and investigates the possibility of momentum and overreaction in class-conditioned stock returns (winners vs losers) over 3–24 months, without concern for short-run reaction to market shocks. As such, Rastogi et al. (2009) find that over a period of 3–12 months, there is evidence of underreaction and momentum profits in all size-conditioned portfolios. The only analysis of the Indian market's immediate response to market shocks has been so far only indicative, being part of a much broader study of global or regional behaviour. Within such context, Mazouz et al. (2009) uncover little evidence of market inefficiency except perhaps as a response to very large negative shocks (beyond 10% in absolute value), to which the market appears to overreact.[1] However, this result is not conditioned on the average market capitalization of the stocks making up the index. Also, the study investigates a dataset which ends in December 2005, thus avoiding a period of unprecedented growth in the Indian market as well as the impact of the recent global financial crisis. Equally, the scope of the study is to document the presence of under/overreaction across 10 major Asian countries conditioned on the size of the shocks, without concern for the particulars of such phenomena in every country. This leaves unanswered a series of questions which the present study attempts to address.

The choice of India is somewhat self-explanatory. India's economy is the eleventh largest in the world by nominal GDP and the fourth largest by PPP (purchasing power parity).[2] For 2009/2010, India's

[1] This evidence is endorsed by the asymmetric Garch approach but contradicted by the OLS approach.
[2] https://www.cia.gov/library/publications/the-world-factbook/rankorder/2001rank.html.