MARKET STRUCTURE

Investor Psychology and Security Market Under- and Overreactions

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The authors propose a theory of security market under- and overreactions based on two well-known psychological biases: investor overconfidence and biased self-attribution. Their theory implies that investors overreact to private information signals and underreact to public information signals. The authors show that short-run positive return autocorrelations can be a result of continuing overreaction. These short-run effects, however, must eventually be followed by a long-run correction. Thus, short-run positive autocorrelations can be consistent with long-run negative autocorrelations.

In recent years, a body of evidence on security returns has presented a sharp challenge to the traditional view that securities are rationally priced to reflect all publicly available information. Numerous studies have found security market underreaction to public announcements concerning stock splits, tender offer and open market repurchases, analyst recommendations, dividend initiations and omissions, seasoned issues of common stock, earnings surprises, previous insider trades, and venture capital share distributions. Other studies have discovered short-term momentum and long-term reversal patterns, excess volatility in prices relative to changes in fundamentals, and abnormal stock price performance

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in the opposite direction of long-term earnings changes. The authors offer a behavioral model based on imperfect investor rationality in an effort to help explain some of the anomalous patterns that exist in securities markets.

The model is based on investor overconfidence and variations in confidence arising from biased self-attribution of investment outcomes. The authors assume that investors will systematically underestimate the forecast error surrounding their estimate of a security's intrinsic value. According to the model, this behavioral flaw causes investors to overestimate the precision of their private information signals but not the information signals publicly received by all. Therefore, investors, and consequently stock prices, will overreact to private information signals and underreact to public signals.

The model also reflects that as individuals observe the outcomes of their actions, public information confirming the individuals' actions results in increased confidence but that information disconfirming the actions of individuals causes confidence to fall only modestly, if at all. This finding suggests that public information can trigger further overreaction to a private signal. This continuing overreaction causes momentum in security prices, but this momentum is eventually reversed as further public information gradually draws the price back toward fundamentals. Thus, biased self-attribution implies short-run momentum and long-term reversals.

The authors' theory offers an alternative explanation to the phenomenon of post-event abnormal returns following the release of public information. The authors argue that market underreaction to new public information is neither a necessary nor a sufficient condition for such event-based anomalies. Rather, these abnormal returns may be generated by continuing investor overreaction to pre-event private information. For example, post-earnings-announcement drift may be a continuing overreaction to pre-event information triggered by the earnings announcement to pre-event information.

The authors' work also contrasts with the extant noise-trading

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approach to security markets. The noise-trading model generally posits that variability in prices arises from unpredictable trading that is unrelated to valid information. In contrast, the authors' model is based on the premise that an important class of mistakes by investors involves the misinterpretation of valid private information. Therefore, the model endogenously generates trading mistakes that are correlated with fundamentals. The advantage of this structure is that it provides predictions about the behavior of asset prices that depend on the particular cognitive error assumed.

Moving beyond the confines of the formal model, the authors expect the effects of overconfidence to be more severe in less liquid securities and assets, such as real estate. The authors also argue that return predictability will be strongest in firms with the greatest information asymmetries, which, in turn, implies greater inefficiencies in the stock prices of small companies.