

# Futures contract

[Literature](#), [Russian Literature](#)



A formal treatment of this issue is provided by Easley, O'Hara, and Carnivals (1998), who allow the participation of informed traders in the option market to be decided endogenously in an equilibrium framework. In their model, informed investors choose to a "pooling equilibrium" trade in both the option and the stock market. When the leverage implicit in options is large, when the liquidity in the stock market is low, or when the overall fraction of informed traders is high. Our main empirical result directly tests whether the stock and option market are in the pooling equilibrium of Easley, O'Hara, and Carnivals (1998).

Using option trades that are initiated by buyers to open new positions, we form put-call ratios to examine the predictability of option trading for future stock price movements. We find predictability that is strong in both magnitude and statistical significance. For our 1990 through 2001 sample period, stocks with positive option signals (i.e., those with lowest quintile put-call ratios) outperform those with negative option signals (i.e., those with highest quintile put-call ratios) by over 40 basis points per day and 1% per week on a risk-adjusted basis.

When the stock returns are tracked for several weeks, the level of predictability gradually dies out, indicating that the information contained in the option volume eventually gets incorporated into the underlying stock prices. Although our main empirical result clearly documents that there is informed trading in the option market, it does not necessarily imply that there is any market inefficiency, because the option volume used in our main test is initiated by buyers to open new positions, which is publicly observable. Indeed, information-based models [e.g., Glisten and Milord

(1985); Easley, O'Hara, and Carnivals (1998)] imply that prices adjust at once to the public information contained in the trading process but may adjust slowly to the private information possessed by informed traders. As a result, the predictability captured in our main test may well correspond to the process of stock prices gradually adjusting to the private component of information in option trading. Motivated by the differing theoretical predictions about the speed at which prices adjust to public versus private information, we explore the predictability of publicly errors nonpublic observable option volume. For Journal that 25, example, July 2002, the Wholesaler reported theChicagoBoardOptions was "unusual activity" options shares Whet, pharmaceuticals investigating trading in Madison, which tactical based increase trading volume earlier NJ, giant superintendence's month. Option occurred before release a government bathe study peptic days American Medical Association documented a heightened abreast risk heart cancer, coronary of the who disease, strokes, bloodspots women had benefiting Whitey's hormone-replacement drug years. Preemptor many 872 innovation Delimitation Following previous empirical studies in this area [e. . , Easley, O'Hara, and Carnivals (1998); Chain, Chunk, and Font (2002)], we use the Lee and Ready (1991) algorithm to back out buyer-initiated put and call option volume from publicly observable trade and quote records from the Chicago Board Options Exchange (CUBE). We find that the resulting publicly observable option signals are able to predict stock returns for only the next one or two trade days. Moreover, the stock prices subsequently reverse which raises the question of whether the predictability from the public signal is a manifestation of rice pressure rather than informed trading.

In an abbreviated analysis which includes both the public and the nonpublic signals, the nonpublic signal has the same pattern of information-based predictability as when it is used alone, but there is no predictability at all from the public signal. This set of findings underscores the important distinction between public and nonpublic signals and their respective roles in price discovery. Further, the weak predictability exhibited by the public signal suggests that the economic source of our main result is valuable private information in the option volume rather than an inefficiency across the stock and option market.

Central to all information-based models is the roles of informed and uninformed traders. In particular, the concentration of informed traders is a key variable in such models with important implications for the innovativeness of trading volume. Using the PIN variable proposed by Easley, Kiefer, and O'Hara (1997) and Easley, Heavner, and O'Hara (2002) as a measure of the prevalence of informed traders, we investigate how the predictability from option volume varies across underlying stocks with different concentrations of informed traders.

We find a higher level of predictability from the option signals of stocks with a higher prevalence of informed traders. <sup>2</sup> Although the theoretical models define informed and uninformed traders strictly in terms of information sets, we can speculate outside of the models about who the informed and uninformed traders might be. Our data set is unique in that in addition to recording whether the initiator of volume is a buyer or a seller opening or closing a position, it also identifies the investor class of the initiator. We find

that option signals from investors who trade through full-service brokerage houses discount brokerage houses.

Given that the option volume from full-service brokerages includes that from hedge funds, this result is hardly surprising. It is interesting, however, that the option signals from firm proprietary traders contain no information at all about future stock price. Given stocks with smaller PINs could drive the returns on stocks, results higher than those from stocks. Show that is not the case. Even this signals smaller predictability option PIN result remains intact controlling after particular, 73 studies in 2006 movements.

In the framework of the information-based models, this result suggests the market is primarily for hedging purposes. Finally, a unique feature of the MultiMate stock and option setting is the availability of securities with differing leverage. Black (1975) asserted that leverage is the key variable which determines whether informed investors choose to trade in the option market, and Easley, O'Hara, and Carnichael (1998) demonstrated that under a natural set of assumptions this is indeed the case. Motivated by these considerations, we investigate how the predictability documented in our main test varies across options with differing degrees of leverage. We find that option signals constructed from deep out-of-the-money (TOM) options, which are highly leveraged contracts, exhibit the greatest level of predictability, whereas the signals from contracts with low leverage provide very little, if any, predictability. The rest of the article is organized as follows. In Section 1, we synthesize the existing theory literature and

empirical findings and develop empirical specifications. We detail the data in Section 2, present the results in Section 3, and conclude in Section . 1.

Option Volume and Stock Prices 1. 1 Theory The theoretical motivation for our study is provided by the voluminous literature that addresses the issue of how information gets incorporated into asset prices. In this subsection, we review the theoretical literature with a focus on insights that are directly relevant for our empirical study. In particular, we concentrate on the linkage between information genre? Dated by the trading process and the information on the underlying asset value, the role of public versus private information, and the process of price adjustment. 4

The issue of how information gets incorporated into asset prices is central to all information-based models. Although specific modeling approaches differ, information gets incorporated into security prices as a result of the trading behavior of informed and uninformed traders. In the sequential trade model of Glisten and Milord (1985),