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Permanent price impact asymmetry of trades with institutional constraints ☆

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ABSTRACT

Dynamic institutional trading constraints related to capital, diversification, and short-selling asymmetrically affect the incorporation of new information as reflected in the permanent price impact of their trades. The sign of the permanent price impact asymmetry between institutional buys versus sells is positive at the initial stage of a price run-up and reverses due to changing constraints with a prolonged price run-up in a stock. Idiosyncratic volatility, analyst forecast dispersion, trading intensity, price dispersion, and bullish market conditions further sharpen the initial asymmetry, as well as its reversal after a price run-up.

1. Introduction

The rapidly evolving literature on institutional trading has instigated a debate over the direction and cause of the asymmetry in the permanent price impact of institutional buys and institutional sells. The permanent price impact reflects the information content of institutional trades, which can be an indication of the quality of the institutions' research and their ability to exploit it profitably. As part of the price discovery process, new information about a stock's fundamentals gets impounded into the prices when investors trade. But the degree of the price impact is affected by the proportion of informed trading by institutions in the market, as not all institutions trade on their research and information due to various constraints.

Saar (2001) provides an intriguing theoretical model relating price history to asymmetric exploitation of information by institutions. The model challenges conventional wisdom about the positive sign of price impact asymmetry (higher price impact for institutional buys than for sells; see details in the literature review section) and describes the conditions under which the asymmetry can become negative. Normally institutions buy stocks with positive information and sell stocks when they have negative information. But they are not always able to implement trades because (a) institutions are reluctant to

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short sell when they do not initially hold the stock, which is true at the beginning of a price run-up associated with the initiation of buying activity[1]; (b) institutions are limited in their ability to borrow to invest, and thus face a capital constraint when buying at the later stages of a price run-up associated with the recent buying activity; and (c) institutions need to diversify their investments and are reluctant to add to positions in which they already have significant exposure from recent buying that creates the price run-up. Given these conditions, the Saar model shows that the history of stock price performance asymmetrically influences how institutions trade to benefit from their information and analysis. Specifically, the asymmetry of the permanent price impact, defined as the permanent price impact of buys minus the permanent price impact of sells, starts out positive but diminishes with the increasing length of a price run-up. With an extended price run-up, institutional sells are likely unconstrained and share values are revised downward because of their trades. Thus, the asymmetry of price impact might even be negative if the price run-up history is long enough. Saar's model further identifies the determinants of the asymmetry in the permanent price impact including informational variables such as idiosyncratic volatility, analyst forecast dispersion, trading intensity, and stock price dispersion. To the best of our knowledge, the results of these theoretical predictions on permanent price impact have not been tested empirically. We fill this gap by empirically testing the leading theoretical model (Saar, 2001), which highlights the importance of stock price run-up history in gauging the information content of institutional trades under varying constraints.

Our paper further advances the literature on price impact asymmetry that has made much progress since the seminal study on block trading by Kraus and Stoll (1972). More recent works include Chiyachantana et al. (2004) who provides important insights on the impact of market condition on the price impact asymmetry. Using data for the London Stock Exchange, Bozcuk and Lasfer (2005) show the importance of the trade size and the ownership level that results from the trade. The large block trades are likely to convey private information and the level of institutional monitoring. Specifically, large buy (sell) trades that result in a significant increase (decrease) in post-trade ownership are likely to signal positive (negative) information and an increase (a reduction) in the degree of potential monitoring. Using Ancerno data, Anand et al. (2012, 2013) document significant differences in trading costs across institutions, and the importance of trading style for execution quality. Anand et al. (2013) propose a measure of an institution's trading style that captures the institution's propensity to trade in the direction of the daily return in the stock. They show that there is important heterogeneity in institutions' trading style and the implications of this heterogeneity in institutions' participation in the post-crisis recovery patterns.

We present new tests of price impact asymmetry and its determinants using a sample of institutions tracked by Ancerno, who collectively conducted 242 million trades worth $20 trillion during our sample period of 2001–2012. Our primary findings can be summarized as follows. Price impact asymmetry varies significantly based on the history of stock price run-up, informational variables, market conditions, and firm-specific characteristics. Asymmetry is positive for stocks that are at the initial stages of price run-ups, and turns negative when stocks have an extended period of run-ups. Moreover, the information content of institutional trades appears to be the strongest when institutions are buying at the initial stage of price run-ups or selling after a prolonged price run-up. These results point to constraints faced by institutions in their ability to trade on price-sensitive information or research. We also establish a link between institutional price impact asymmetry and variables that measure firms' information environment or information asymmetry. For stocks with a higher degree of information asymmetry, price impact asymmetry is higher for shorter price run-ups. Conversely, after a long price run-up, we see a larger reduction in asymmetry in price impact (from positive to negative) for these stocks with a higher degree of information asymmetry. Proxies for information asymmetry such as idiosyncratic volatility and analyst forecast dispersion are important determinants of price impact in the incremental sense after conditioning for liquidity characteristics and contemporaneous market condition. Our work relates to the relationship between institutional trading activity and stock prices. Our results show that institutional buys are not always more informative than sells. Instead, institutional constraints related to capital, diversification, and short selling affect the information content of institutional trades.

To ensure that our results are robust and our net permanent price impact (NPPI) measure reflects the pure effects of institutional trades devoid of the effects of risk and other systematic factors, we employ an experimental design where we have an institutional trading treatment group and a no institutional trade (NIT) control group. This approach also helps rule out the possibility that price patterns unrelated to institutional trades drive our results.

Our results should be of interest to a wide audience, as institutions currently hold 74% of stocks (Bogle, 2008), compared to 8% about 50 years ago. With a large fraction of aggregate wealth under their management, institutions are frequently the marginal price-setting agents in securities markets. Therefore, an investigation of their trading behavior and trading impact is necessary to understand the dynamics of stock prices. Our characterization of institutional trading practices, and in particular the information advantage of institutions and their ability to exploit it, represents an important step forward in assessing the value added by institutions under varying circumstances.

We organize the remainder of the paper as follows. Section 1 presents a discussion of the literature and the development of the hypotheses. In Section 2, we describe the data and our research design. We discuss our findings and robustness tests in Section 3and conclude in Section 4.

[1] Institutions, particularly mutual funds, are averse to short sales due to the possibility of unlimited losses on short positions, and regulatory constraints set forth by the SEC (Hong and Stein, 2003).

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