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Order aggressiveness of different broker-types in response to monetary policy news

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ABSTRACT

This paper examines the pattern of order aggressiveness, and the determinants of this pattern for institutional and retail brokers in the interval around monetary policy announcements. Utilizing a high-frequency dataset, with broker identifiers for each order submitted on the ASX over the period Dec 2007–Dec 2014, I identify a sharp increase in the number of orders submissions in the period following RBA announcements. Orders are more aggressive, and more abundant, when there is less information for investors to digest. On average, retail orders are more aggressive and are exclusively concerned with the likelihood of order execution. The submission decision of institutional brokers is more nuanced and evolves over time as market conditions change and information arrives. I also recognize differences in order aggressiveness attributable to firm-size and industry.

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1. Introduction

Stock market investors face an important trade-off when entering orders into a limit order book. Market orders (or marketable limit orders) have the advantage of immediate order execution, but at the price of higher execution costs. On the other hand, limit orders present price improvements but have an increased risk of non-execution. This study investigates the pattern of order aggressiveness of institutional and retail brokers, and the factors that determine this pattern, in the period around monetary policy announcements by the Reserve Bank of Australia (RBA).

A broad literature has attempted to empirically examine this choice of order placement and aggression level. [Biais et al. \(1995\)](#); [Rinaldo \(2004\)](#); [Hall and Hautsch \(2006\)](#); [Aitken et al. \(2007a\)](#), and [Duong et al. \(2009\)](#) are among those that identify a relationship between order aggressiveness and market depth, bid-ask spreads and volatility. [Griffiths et al. \(2000\)](#) find that

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aggressive orders have a large price impact but smaller opportunity costs than passive orders; such price impacts are amplified by order size, firm size, and market volatility. Lo and Sapp (2010) find that information asymmetry and liquidity play an important role in the choice of order aggressiveness. This study contributes to this discussion by focusing on the period around monetary policy announcements. The institutional setting surrounding such announcements is interesting to study since there is likely to be a low level of information asymmetry prior to the announcement. Therefore, any trading advantage, and difference in the order submission process, will likely arise as a result of the ability to interpret announcements, and the speed in implementing investment decisions.

Sakar and Schwartz (2009) infer motives for trade initiation on the basis of market sidedness, which is determined by the correlation between buy-side and sell-side trade initiations (an increased (decreased) correlation indicated that trading is more two-sided (one-sided)). They argue that trading motivated by asymmetric information generates more one-sided markets, whereas trading motivated by differential information/beliefs leads to more two-sided markets. Results suggest that more two-sided markets are observed after news releases, especially when the news surprises are large; such markets are generally, but not always, associated with lower order imbalance.

If the same patterns are realised in the period around monetary policy announcements, then we may expect to see declining order submission prior to the announcement, and more two-sided markets following the announcement. Order aggressiveness of retail traders should not expect to be influenced by the presence of a monetary policy announcement, although this is contrary to the results reported here. The order aggressiveness expected by informed institutions is unclear; Aitken et al. (2007b) suggest they should be more aggressive where an information advantage is perceived, while Bloomfield et al. (2005) suggest a lower level of aggression through the use of limit orders. The empirical results presented in this paper are more supportive of the latter argument.

Understanding the order submission process is important since it can provide insights into market efficiency, and the conditions under which liquidity is supplied and demanded by market participants. Additionally, being cognizant of the determinants of order submission strategies allows optimization, which Harris (1998) suggests will result in lower transaction costs and higher portfolio returns. Since macroeconomic news in general, and monetary policy news in particular, has a significant bearing on the stock market, it is intuitive to expect that policy news may also be a factor influencing the appropriate level of order aggression. It is possible that proximity to such news, which has a significant impact on volatility, may induce panic in investors who may then be less concerned with price and more concerned with execution certainty, the result being more aggressive orders. Alternatively, investors may be concerned with getting “picked-off” in a fast-moving market and so make greater use of less aggressive limit orders.

Through the use of Australian data, which has unique properties regarding the identification of brokers and the centralization of trading, I am able to gain an insight into this important process that will be applicable to monetary policy events elsewhere, and to macroeconomic news more generally. Using an empirical set-up that is closest to that of Ranaldo (2004) and Duong et al. (2009), I find the following key results. First, there is a sharp increase in order submission as market participant assimilate information in the period immediately following RBA target rate announcement. The scale of the jump in orders dependent on both the magnitude and direction of the surprise component of the announcement; orders are more aggressive, and more prevalent, when there is less information for participants to digest (for instance when the target rate is predictably unchanged). Second, there is a distinction in the order submission choice for institutional and retail brokers. Institutional brokers are concerned with both the likelihood and cost of order execution. Aggression of order submission is reduced whenever the likelihood of execution is improved, or the cost of execution (e.g. bid-ask spreads) rises.

The dynamic order submission process for institutional brokers is consistent with the evolving liquidity provision of Bloomfield et al. (2005), the possibility of information asymmetry, and the desire to avoid being “picked-off” (Foucault, 1999). A simple experiment suggests that an information advantage is the most likely explanation. On the other-hand, retail brokers appear to be solely concerned with certainty of execution and thus are more aggressive. Third, there is a variation in the observed order submission pattern, and the determinants of that pattern, for large-cap firms on one-side and mid-cap and small-cap on the other. Similarly, there is a difference for financial and non-financial firms, with institutional (retail) brokers acting more aggressively in stocks of financial (non-financial) firms. Finally, both institutional and retail orders are rational to the extent that there is less willingness to buy (sell) ahead of target rate decisions which are expected to produce falling (rising) share prices. That is, when the rates are expected to increase (decrease) then buy (sell) orders are less aggressive.

The remainder of this paper is organized as follows: Section 2 highlights the salient literature in this field. Section 3 discusses the data utilized in the empirical analysis, and describes the process by which brokers are classified, orders aggressiveness is categorized, and RBA target rate surprises are determined. Section 4 presents the empirical analysis and Section 5 discusses the implications of the results. Section 6 concludes the paper.

2. Literature Review

Most models of trading behaviour assume a homogeneous interpretation of information. However, it is possible that information asymmetry may arise owing to the release of public information such as macroeconomic announcements or important corporate announcements (e.g. earnings, takeovers, or bond rating changes). Chae (2005) investigates trading volume in the period around corporate events and demonstrates that, consistent with decreasing volume in periods of high adverse selection costs, trading volume is negatively (positively) correlated with levels of information asymmetry before (after) scheduled announcements. This is consistent with Bessembinder et al. (1996) who report a higher level of market activity when opinions diverge,

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