Baidu news coverage and its impacts on order imbalance and large-size trade of Chinese stocks

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A R T I C L E   I N F O

A B S T R A C T

In this paper, we introduce a novel proxy for media coverage by employing the number of news appeared in Baidu News and investigate its impacts on order imbalance and large-size trade in the Chinese stock market. By dividing the trading periods into news periods (np) and no news periods (nnp), the empirical results show that (1) trading volume in the nnp is significantly larger than that in the np; (2) large-size trade in the nnp is significantly larger than that in the np; and (3) the difference of order imbalance in nnp and np is less significant compared with large-size trade. Taken together, these results suggest that there exists institutional trading in the trading periods without media coverage.

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1. Introduction

Interest in the relationship between media coverage and the stock market has been on the rise in recent years (Klibanoff et al., 1998; Chan, 2003; Tetlock, 2007; Fang and Peress, 2009; Engelberg and Parsons, 2011; Zhang et al., 2016; to name just a few). The center issue behind this investigation is that media outlets play an important role in diffusing information to a large amount of individual investors. On the other hand, studies on the determinants of trading volume consistently expound trading volume as a parsimonious representation of information and provide evidence for various theoretical models on the information-volume relationship (Tauchen and Pitts, 1983; Varian, 1985; Admati and Pfleiderer, 1988; Harris and Raviv, 1993; Wang, 1994; Hong and Stein, 2007). Thus, it would seem natural to investigate the impact of media coverage on trading volume. In this paper, we argue that the number of news appeared in Baidu News can be utilized to appropriately represent media coverage and it has implications on the microstructure of trading volume in the Chinese stock market.

The aim of this paper is to investigate the impact of media coverage on order imbalance and large-size trade. The rationale for focusing on these two variables is that both the order imbalance and the large-size trade are the key factors influencing the security prices. The order imbalance can alter returns by means of forcing the market maker to re-adjust

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Fig. 1. An illustration of Baidu News. This figure gives an illustration of the Baidu News with the search of Baoshan Iron & Steel Co. Ltd. We search the Chinese name of the stock and Baidu News reports the number of relevant news containing the name. In this case, Baidu News reports that "Baidu News finds 8 related news containing the keyword you searched" (the Chinese sentence in the blue ellipse). Besides, due to the advanced setting, we could obtain the news only appeared in trading periods, i.e., from 9:30 a.m. to 11:30 a.m. and from 13:00 p.m. to 15:00 p.m. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

their inventory as well as generating the autocorrelations in returns (Chordia et al., 2002; Chordia and Subrahmanyam, 2004). Besides, large-size trade is always viewed as the signal of informed trading by various theoretical models (Grundy and McNichols, 1989; Kim and Verrecchia, 1991) and its correlations with the return volatility are empirically investigated by Chan and Fong (2000).

The contribution of this paper is two-fold. Firstly, unlike existing studies focusing on the impact of media coverage on return premium (Chan, 2003; Fang and Peress, 2009), information asymmetry (Grullon et al., 2004; Blankespoor et al., 2014), causal effect (Engelberg and Parsons, 2011; Zhang et al., 2013), aggregated trading volume (Peress, 2014) and pricing mechanisms (Barber and Loeffler, 1993; Zhang et al., 2016), we give the first piece of evidence on the impact of media coverage on the order imbalance and large-size trade. In that sense, this paper complements the earlier findings with micro-level evidence. Secondly, we can separate the trading periods into news periods and no news periods by employing the news appeared in Baidu News as the proxy for media coverage. Baidu News[1] is a news service provided by Chinese largest search engine and it retrieves news from more than 500 websites. Thus, compared with the headlines (Fang and Peress, 2009), our proxy is more comprehensive. Besides, given the advanced setting of Baidu News, we could obtain the news only appeared in trading periods (see Section 2). Therefore, it provides us with a unique opportunity to investigate the impact of order imbalance and large-size trade in news periods and no news periods, respectively. While other studies always focus on the impact of the magnitude of media coverage and ignore the market dynamics in the no news periods, i.e., periods without media coverage (Chan, 2003; Fang and Peress, 2009), we aim to make a clear comparisons of the market dynamics, i.e., order imbalance and large-size trade, between news periods and no news periods.

The remainder of this paper is organized as follows. Section 2 describes the data and the variables. Section 3 presents the empirical findings on the order imbalance and large-size trade. Section 4 performs the robustness and Section 5 concludes.

2. Data and variables

The media coverage is obtained from the Baidu News. Fig. 1 gives an illustration with the search of Baoshan Iron & Steel Co. Ltd. We search the Chinese name of the stock and Baidu News reports the number of relevant news containing the name. In this case, Baidu News reports that "Baidu News finds 8 related news containing the keyword you searched" (the Chinese sentence in the blue ellipse in Fig. 1). We use the number of related news as the proxy for media coverage for

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[1] The function of Baidu News is exactly the same as Google News. Zhang et al. (2014) and Shen et al. (2016) also employ the Baidu News, but they expound it as the information flow and explain the volatility clustering of stock returns.