



Short-selling with a short wait: Trade- and account-level analyses in Korean stock market

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ABSTRACT

We examine the day trading short-selling trades, which are initiated and closed on the same day. Using the proprietary dataset, which covers the comprehensive trading records at the trade- as well as account-level in Korean stock market, we show that the day trading short-selling is pervasive, accounting for 42% of total shorted shares, and that the individual day traders in general make positive profits from short-selling even when transaction costs are considered. We further investigate the timing of short-selling and the covering transactions and find that traders who short stocks in the morning and hold the position longer, and those who short stocks with high intraday volatility earn higher profit. In addition, we find that day traders make profits by executing numerous trades to exploit short-term small price fluctuations. Lastly, we compare the profitability of day trading short-selling with that of day trading long-selling and show that the former shows the superior performance to the latter.

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1. Introduction

Day trading refers to the trading that is initiated and closed on the same day. With the development of Internet and technology and a long bull market in the US in the 1990s, day trading continues to grow so that it represents a large portion of trading volume (Barber et al. (2004), Linnainmaa (2005)). Barber et al. (2004), citing Tunick (1999), wrote that day trading volume accounted for about 15% of daily trading volume in Nasdaq in 1999. The prevalence of day trading is not restricted to the US, but is a global phenomenon. Linnainmaa (2005) shows that 49% of the total order-flows from individual traders or 63.8% of total turnover comes from day trading in Finnish market. Barber et al. (2014) show that trading by day traders account for 17% of all trading volume on Taiwan Stock Exchange over 1992 to 2006. Given the growing importance of day trading, a large body of empirical studies examines the relationship among day trading, volatility and the profitability of day trading (Battalio et al. (1997), Garvey and Murphy (2005), Harris and Schultz (1998) and Linnainmaa (2005)). Short-selling is the sale of borrowed shares, which should be paid back to the lenders in the future. Diether et al. (2009) find that short-selling represents 24% and 31% of the daily trading volume on the NYSE and Nasdaq, respectively, in 2005. While both types of investors, day traders and short-sellers, play an important role in the financial market, only small number of research provides empirical evidence on the issue of day traders who implement the short sale trades.

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To fill this gap, we examine in this paper the short-selling trades that are initiated and closed on the same day (henceforth, “day trading short selling”). Specifically, we examine the profitability and the trading strategy of day trading short selling. Little academic research has been conducted on this issue not because of a lack of interest but because of a lack of short selling data, which includes information about short covering transaction. We overcome this data problem by examining the proprietary dataset, which covers the comprehensive trading records of individual day traders who engage in short sale trades in Korean stock market. The proprietary dataset in this study, which is provided by the Korea Exchange (KRX), contains detailed information on short-selling trades together with that on short covering transactions. Hence, using this data, we can identify the realized short-selling profits by matching each short sale with its covering transactions. To the best of our knowledge, this is the first paper to examine the comprehensive day trading short selling activities for a relatively long period of time of twenty six months from August 1, 2007 to May 31, 2010, after excluding the short-selling ban periods from October 1, 2008 to May 31, 2009).²

As pointed out by Barber and Odean (2001), we do not have much information about day traders' trading strategies, because their trading records are not usually open to public. Some of them may provide liquidity in the stock market, while others try to profit from short-term price fluctuation, which may have an impact on stock volatility. Earlier evidence finds that day traders, especially retail traders, do not outperform other retail traders with longer investment horizon. Barber et al. (2014) find that over 99% of day traders experience losses in Taiwan, while only <1% of the day traders earn positive abnormal returns after considering the transaction cost. Contrast to the literatures that show that day traders generally lose money, Harris and Schultz (1998) investigate the profitability of trading through Small Order Execution System (SOES) and find that SOES bandits generate positive profit. In addition, Garvey and Murphy (2005), by examining the profitability of day trading for 15 proprietary stock trading teams on both long and short position, find that day traders generate the positive trading profit by trading based on short-run order flow and price fluctuation, a strategy which is distinguished from that based on fundamental information. Regarding the profitability of individual investors, Barber and Odean (2001) investigate the performance of retail traders and find that individual investors generally lose money. Grinblatt and Keloharju (2000) show that individual investors underperform institutional investors in Finland. Although short-selling trading strategies are well studied in the previous literature (Boehmer et al. (2008) and Diether et al. (2009)), the actual profitability of short-sellers has not been examined in the literature with the exception of Lee et al. (2014), who studies the profitability of short-selling in Korean stock market using proprietary dataset that includes information about short-covering transactions. By examining both day trading and short-selling activities, we provide evidence of the strategies of day traders as well as their profitability in their short-selling trades.

In this paper we pursue the following research questions. To provide additional evidence on the mixed results in the previous literature regarding the profitability of day trading, we first show whether the short sellers are profitable when their round-trip trades are completed within the same day. The previous studies show that day trading is generally unprofitable (Barber et al. (2004), Linnainmaa (2005)), and it is also the case in Korea (Lee et al. (2007)). Hence, showing positive profitability of day trading short-selling relative to the market, as measured by market-adjusted returns, would be sufficient to show the superior performance of day trading short-sellers to that of non-short-selling day traders. Second, we investigate the strategies used by day trading short-sellers and their ability to time their trades. Third, motivated by Barber and Odean (2001) and Chung et al. (2009), who show that day trading increases with stock volatility, we investigate whether the short-sellers take advantage of intraday price fluctuations or whether their trading causes stock market volatility. Fourth, since day traders typically take profits by executing numerous trades betting on small price movements in stocks (Harris and Schultz (1998)), we examine the frequency of short-selling trading and compare the day trading short-selling pattern with the normal day-trading pattern.

We focus on individual day traders in this paper for the following reasons. First, individual short-sellers in Korea account for 15% of total shorted shares while the number is <2% in the U.S. (Lee et al. (2014)), suggesting that individual short-sellers are non-negligible trading group in Korea. Second, individual investors are regarded as noise traders while day traders and short-sellers are known to be speculative and sophisticate traders, respectively. Thus, whether individual investors can earn positive profits from short-selling trades, especially in the trades of in-and-out shorting, remains as an open question in the literature on individual investors. Third, as stated by Campbell et al. (2001), for some stock, idiosyncratic volatility may also be influenced by small individual investors who are engaged in day trading, suggesting that individual day traders play an important role in the stock market.

Our main results show that day trading short-selling accounts for 42% of total shorted shares, suggesting that day trading short-selling is very prevalent in short-selling market in Korea. In addition, individual day traders make profits from short-selling even after accounting for transaction costs and the trading with longer holding time in a day earns them higher profits. We further investigate the timing of short-selling and find that traders who short stocks in the morning and hold the position longer and those who short stocks with high intraday volatility earn higher profit. Lastly, consistent with the previous studies, we find that day traders make profits by executing numerous trades betting on small price movements in stocks. In sum, our results suggest that individual short-sellers earn positive profits from in-and-out shorting and the profits are higher for the shorts that are initiated in the morning and are held longer in a given day or for those that are made when the intraday volatility is high.

Lastly, we compare the profitability of day trading short-selling with that of day trading long-selling. We find that day trading is more popular for short-selling than for long-selling and is generally more profitable for short-selling. Interestingly, we find that the day trading long-selling becomes less profitable as the number of trades increases, showing sharp contrast with the case of

² Garvey and Murphy (2005) examine the profitability of day trading for 15 proprietary stock trading team on both long and short positions from March 8 to June 13, 2000. The sample period of Harris and Schultz (1998) is less than one month.

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