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Impact of short selling restrictions on informed momentum trading: Australian evidence☆

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ABSTRACT

We examine the impact of short selling restrictions on the momentum strategy returns of Australian equities during the Global Financial Crisis (GFC). Momentum strategy is based on a long position in a winner portfolio comprising of the previous 10% best-performing stocks and a short position in a loser portfolio comprising of the previous 10% worst-performing stocks. We find that momentum strategy during the GFC are less profitable compared to the pre-GFC period. Momentum returns are negatively correlated to the short sales restrictions, and that loser portfolios rather than winner portfolios drive this result. These momentum returns are robust to transaction costs and liquidity effects. An explanation is that the imposition of the short selling restrictions by the Australian Securities and Investments Commission from September 2008 to May 2009 may have moderated the ability for momentum traders to profit from the short sale of loser portfolios. However, informed momentum profits are attributable to the loser portfolio across the holding periods of 3 to 12 months, which implies that informed institutional traders take advantage of their private information to overcome adverse selection costs. This enables them to short sell their loser portfolios and carry out their momentum trading strategies.

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1. Introduction

Jegadeesh and Titman (1993) find that momentum strategies are profitable in equities markets in the US over the short to medium horizons (3 to 12 months). In the UK stock market, Hon and Tonks (2003) find evidence of momentum profits and point out that momentum profits are robust after controlling for factors such as risk, size and book-to-market ratio. In particular, Demir et al. (2004) find that momentum strategy returns in Australian equities from 1990 to 2001 are significantly greater than the returns found in other overseas markets, even after controlling for size and liquidity differences between stocks. Li et al. (2014) re-examine the momentum effect over stocks within the S&P/ASX 200 Index from 2001 through 2010, and conclude that momentum profits exist but are not highly significant.

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Meanwhile, firm-specific conditions like systematic risk, size, book-to-market value, earnings per share and price-earnings ratio have been offered as explanations for momentum profits.² Chordia and Shivakumar (2002) demonstrate that economic expansionary periods may be important in explaining the profits in the US equities market, but it is inconclusive whether momentum profits are positive or negative during contractionary periods. Ali and Trombley (2006) find that the level of momentum returns of US stocks for the period from 1984 to 2001 is positively related to short sales constraint, and that loser portfolios rather than winner portfolios drive this result.

As such, we posit that momentum profit is negative during the GFC (Global Financial Crisis) and that it is significantly related to losses from loser portfolios rather than from winner portfolios. This may be explained by the imposition of the short selling restrictions common across many financial regulatory authorities around the world. The performance of momentum strategies relies on the ability to short sell the loser portfolio, which comprises previously underperforming equities. Hence, it is inevitable for momentum traders to deal with the short selling bans during the GFC period or short selling constraints in other periods. Momentum profits derived from the loser portfolios assume that worst performing stocks are first short sold followed by their repurchase after their price drops. As a result, we expect the short selling regulations to restrict the profitability of the loser portfolios.

An important point of distinction between Ali and Trombley (2006) and our paper is that they define “the probability that the loan fee for a stock is relatively high” as a proxy for short sales constraint. In contrast, our study focuses on the effects of the short selling ban and short sales constraint. Moreover, our data sample covers Australian equities data from July 2001 to December 2011 with a particular focus on the short selling restrictions imposed by Australian Securities and Investments Commission (ASIC) from September 2008 to May 2009 during the height of the contractionary period of the GFC.

Diamond and Verrecchia (1987) find that under short selling restrictions, prices tend to reflect more private information, and more uninformed traders leave the market than informed traders. They further find that short selling restrictions increase informed short selling. Kolasinski et al. (2013) test the findings of Diamond and Verrecchia (1987) in the context of the GFC, and they present supporting evidence that short selling restrictions and short selling bans in the US stock market both increase the proportion of informed (versus uninformed) short selling. We draw on Stoll (1989) to measure the level of information asymmetry using the ASC (adverse selection cost) component of the spread, which compensates dealers for the losses they may suffer when trading with well-informed traders. Similar to Kolasinski et al. (2013), we focus on a short selling restriction period (22nd September 2008 to 25th May 2009) which contains a ban period (22nd September 2008 to 19th November 2008) followed by a constraint period (20th November 2008 to 25th May 2009). During the ban period all stocks were banned from naked short selling and covered short selling. Subsequently, the constraint period consisted of less restrictions where the covered short sale of non-financial stocks was allowed.

Our second hypothesis is that during the GFC short selling restriction period, momentum profits is related to significantly higher levels of informed trading and that the level of informed trading is different between winner portfolio and loser portfolio. During this period, the level of uninformed momentum traders will reduce due to the heightening of liquidity and market risks as well as ASCs. In contrast, informed institutional traders³ is expected to take advantage of their private information to profit from momentum trading strategies.

We employ the $J \times K$ trading strategies introduced by Jegadeesh and Titman (1993) to analyse the profits of momentum strategies during the GFC in the Australian equities market from July 2001 to December 2011. We find that the momentum profits for the whole sample period are significantly positive for both short-term (3 and 6 months) and medium term (9 and 12 months) holding periods. During the short selling restriction period of September 2008 to May 2009, momentum profits are reduced relative to the pre-GFC period, for both short-term and medium term holding periods. For instance, for the 3×6 and 9×12 strategies, momentum returns are 1.71% and 1.81% during the pre-GFC period, respectively. In comparison, momentum returns are -0.19% and 0.60% during the GFC period for the same strategies. During the GFC period, short-term holding period returns of the loser and winner portfolios are shown to be negative for the short-term formation periods, with both loser and winner portfolio returns negatively significant at the 1% level for the 3×3 strategy.

We then examine whether the short selling restriction increases institutional informed trading and their momentum profits. Results show that the interaction between loser portfolio and the probability of informed trading (PIN), as defined by Easley et al. (1996), is significantly positive. This suggests that informed momentum profits are attributable to the loser portfolio persisting during both short-term (3 to 6 months) and medium-term (9 to 12 months). Thus, we suggest that short selling restriction may have a significant impact on informed momentum profits. Consequently, we test the change in the level of informed momentum trading during the short selling restriction period. Specifically, we find that the PIN increases more for banned firms and loser portfolio during the short selling restriction period.

Moreover, we test the liquidity of short- to medium-term momentum strategies. Results show that the higher short-term (relative to longer term) momentum returns may be explained by the liquidity effect. Further regression analysis shows that after controlling for liquidity, short-term loser portfolios are related to informed trading during the short selling restriction than that during other periods. Adverse selection costs are shown to increase (from 0.38 to 0.44) for banned firms during the short selling constraint period relative to the pre-restriction period.

The remainder of the paper is organised as follows. Section 2 describes the data and methodologies used in this study. Section 3 provides the descriptive statistics and discusses the momentum profits and the regression results. Section 4 concludes.

² For example, see Chan (1988), Jegadeesh and Titman (1995), Conrad and Kaul (1998), Barberis et al. (1998) and Daniel et al. (1998).

³ Yan and Zhang (2009) show that institutional investors are better informed during the short-term periods and that they trade actively to exploit their informational advantage.

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