

# Peer stock short interest and future returns

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## ABSTRACT

Firm-level monthly short interest is positively and significantly related to the returns of firms that compete in the same product markets. This finding is robust to standard controls and cannot be explained by industry momentum, industry lead-lag relationships, or industry information spillover effects. Short interest also contains information about the fundamentals of competing firms. Trading cost reductions are an important driver for trading a firm's competitors rather than the firm's own stocks. Our findings suggest that short sellers' trades play an important role in the price discovery of competing firms, beyond their direct effects documented previously.

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## 1. Introduction

Informed traders influence contemporaneous and future security prices. Depending on both the aggressiveness of the informed traders and the amount traded, prices will converge more or less quickly to the new equilibrium price. These dynamics are quite well understood (Kyle, 1985). However, firms are not independent entities and information signals other than the ones from its own trading environment potentially affect their stock prices and improve the price discovery. While recent studies point out that order flows containing industry or market wide information can contemporaneously affect the return of more than one security (Tookes, 2008; Pasquariello and Vega, 2013), relatively little is known about whether and how informed trading in stocks of competing firms affects a firm's own stock price. To narrow this gap, we study information transmission between economically linked stocks through informed trading on firm specific information.

Our experiment involves studying the effect of trades of short sellers, who are generally considered to be well-informed traders, on the future share prices of product-market competitors. Controlling for firm and industry characteristics, we show that short interest in a particular stock, despite its *negative* effect on its own future price, is significantly and *positively* related to future returns and earnings surprises of the closest competitor. We define the closest competitor as a firm's closest neighbor in terms of product market share. Accounting for about two thirds of the average absolute effect of short interest, cross-price impact of a firm's short position is economically large. Using only stocks in the top short-interest quintile, a trading strategy that goes short in the competitors of the least-shortest quintile of stocks and long in the competitors of the most-shortest quintile earns a significant 71 basis points per month, or 8.52% per year.

We conjecture that cross-price impacts arise because stock market frictions, especially short selling constraints, prevent short sellers from fully trading on their information. In the presence of short selling constraints, short sellers find it costly to trade on all their information using stocks of only one firm, so that part of their information is revealed through their trades in competing firms. To test this conjecture, we examine the role of short selling constraints and find that more binding constraints appear to let traders prefer a long position in the competing firm. Specifically, standard measures of shorting costs—such as the absence of listed put options, small firm size, and high idiosyncratic volatility—are all associated with greater cross-price impacts. Thus the cross-price impact increases when a firm has higher shorting costs.

The positive cross-firm impact suggests that the information content is competitive and firm specific, rather than industry-wide. These results are robust to controlling for industry-wide short interest, further supporting this view. Moreover, industry short interest has no effect on future returns. Indeed, the economic link as a close competitor is crucial in finding the positive cross-firm effect. We demonstrate the importance of this economic link by running simulations in which we randomly select firms from the same or from other industries, rather than identifying close competitors. In contrast to Pasquariello and Vega (2013), who look at trading in general rather than at short selling, we find no cross-price impact for economically unrelated firms. Instead, the strength of the economic link between two firms drives our results. Moreover, the results are not short-term price impacts that are later reversed. We show that the cross-price impact survives up to one year, and the competing firm's short interest predicts future earnings surprises. Both results lend support to the premise that the cross-firm effect is driven by informed trading stemming from firm specific information.

We focus on the price impact across product-market competitors for two reasons. First, as formalized by Tookes' (2008), product market competition provides incentives for trading in competing firms.<sup>1</sup> In a competitive environment, firm-specific news that improves the value of one firm can negatively affect the value of other firms, and vice versa. For example, the success of a car manufacturer with a particular model is likely to reduce sales for competing models, or a pharmaceutical company's breakthrough drug will reduce the sales of competing drugs. In this setting, when short sellers obtain firm-level information for a company, they can infer the impact of that same information for the firm's competitor, and can strategically choose to split their trades between the firm and the competitor to minimize the overall costs of short selling.

To examine this idea empirically, we focus on short positions around analyst recommendation downgrades, known to be important events with negative price reactions (Womack, 1996; Barber, Lehavy, McHichols, and Trueman, 2001). We isolate cases in which an analyst downgrade occurs in a firm, while its competitor does not experience such an event. We find that prior to analyst downgrades, short interest increases in the event firm. Contemporaneously, short sellers decrease their short positions in the firm's competitor before the downgrade even though the competitor does not have any such event over a twelve-month window around the downgrade announcement. This finding suggests that short sellers can extract useful information that was originally about one firm to take a position not only in the affected firm but also in its competitors.

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<sup>1</sup> In her model, informed traders decide to trade privately obtained information about a firm's future production costs either in that firm's stock or in the stock of competitors in an oligopolistic market. Empirically, using a small sample of earnings announcements, she shows that non-announcing firms' order flows, measured over short term intervals such as five minutes, contain information about the announcing firm.

Second, short sellers can hedge their positions by taking an opposite position in a close competitor when trading on their information in a stock. If short sellers cannot fully exploit their information in a stock due to short selling constraints, then their hedge positions in a close competitor would signal part of their information. It should be noted that, in this second mechanism, short sellers' trade in a particular stock is still motivated by information and they trade in the close competitor for hedging purposes. Nonetheless, in either strategic trading or hedging mechanisms, short sellers are more likely to trade in close product-market competitors. This provides us a natural experimental that allows us to test our view that short sellers' information is partially revealed through their trades in close competitors.

There are several reasons for focusing on short interest to examine the information flow across competing firms. First, a substantial literature demonstrates that short sellers are typically informed traders and that their trades predict future stock prices and fundamental firm specific information.<sup>2</sup> Second, short sellers have superior information processing skills, being able to distinguish between bad news and seemingly neutral or positive news (Engelberg, Reed, and Ringgenberg, 2012). Third, because low levels of short interest predict significantly higher returns and upcoming good news (Boehmer, Huszar, Jordan, 2010; Akbas, Boehmer, Erturk, and Sorescu, 2013), short sellers are also good at avoiding upcoming good news. Therefore, short interest is also informative about a simultaneous long position that short sellers might take in a competing firm. This argument suggests that short sellers also trade on positive information.

We assess the robustness of our findings by showing that our results are not sensitive to using different industry classifications, alternative ways of defining competing firms, and using a

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<sup>2</sup> Among others see Diether, Lee, and Werner, 2009; Boehmer, Jones, and Zhang, 2008; Asquith, Pathak, and Ritter, 2005, Christophe, Ferri, and Angel, 2004, Christophe, Ferri, and Hsieh 2009; Karpoff, 2010, Akbas, Boehmer, Erturk, and Sorescu, 2013.

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