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Price Manipulation by Intermediaries

Serkan İmişiker, Rasim Özcan & Bedri Kamil Onur Taş

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ABSTRACT

In this study, we investigate two main research questions using unique individual trade level data from the Istanbul Stock Exchange (ISE; renamed Borsa Istanbul in January 2013): (1) Do brokers conduct manipulative trades in the ISE? (2) Do these brokers gain returns from their manipulative behavior? We examine the trade-based “pump-and-dump” price manipulation scheme. Using the complete intraday trading history of stocks listed on the ISE over the 2003–6 period, we find that a significant percent of the trades conducted by brokers can be identified as consistent with the pump-and-dump price manipulation scheme, and brokers that conduct more pump-and-dump trades earn marginally higher profits.

KEY WORDS:

broker behavior market structure trade-based manipulation

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Notes

1. This period is analyzed because the governing board of the Capital Markets Board of Turkey (CMBT) provided us access to the ISE data set only for these years. The committee ruling number 759 dated July 12, 2007, provides the details on the conditions that the ISE data set would be made available for research conducted by the authors. The ruling states that the account numbers will be changed by the information technology (IT) department of CMBT without changing the uniqueness of each account number to assess anonymity. In addition, the ruling mentions that the data set can only be accessed at the premises of the CMBT in Ankara, Turkey.

2. They analyze only the trades in year 2005.

3. Every broker does not trade in all of the stocks. That is why the number of cases is smaller than 1,172 × 269 = 315,268.

4. We first calculate the percentage of manipulative trades in a case. Then we calculate the mean of these percentages. One might wonder about the percentage of manipulative trades among all trades. We could only calculate the average percentages because of computer limitations. The size of the complete data set is more than 40 GBs. Thus, we separated the data set into cases.

5. As stated by Khwaja and Mian (2005), “if there is more frequent and heavier trading in stock j, then on average all brokers in stock j have a lower PRIN” (219).

6. Since there are many brokers and fewer stocks, a broker might only buy or only sell a stock in a day. The algorithm of Khwaja and Mian (2005) identifies these trades in line with the pump-and-dump scheme. They argue that if a broker is intermediating on

behalf of several independent investors, he would be both buying and selling the stock on the same day because it is unlikely (though possible) that different investors would all want to collectively buy (or collectively sell) on a given day.

7. Returns are calculated using average daily stock prices as in Khwaja and Mian (2005). We do not present empirical analysis of biased returns in the article for the sake of compactness. The results are available from the authors upon request.

8. The Istanbul Stock Exchange (IMKB in Turkish) merged with the Istanbul Gold Exchange and the Turkish Derivatives Exchange under the new brand “Borsa İstanbul” in April 2013.

9. The CMBT committee ruling number 759 dated July 12, 2007 provides the details on the conditions that the ISE data set would be made available for research conducted by the authors.

10. In the ISE, after a stock split, if the relevant firm has any potential to pay dividends to its shareholders, newly issued stocks are traded separately from the old ones. They are merged after the payout of dividends is realized. Until then, the new and the old stocks can be traded with different market prices. After the merge, they are traded at a single price. This procedure makes it impossible to calculate the profits of brokers for these specific stocks since we do not have the exact names of the stocks. In other words, we do not know the names of the stocks but just the identification numbers assigned by the DPSI Department of the CMBT to provide anonymity of the data set. Therefore, we eliminate all of the stocks that are subject to the merge process. This elimination is conducted by the DPSI Department of the CMBT since we could not have access to the original data set with stock names.

11. As indicated previously, the occurrence of a principal trade does not certainly indicate a manipulative behavior. The percentage of principal trades is used to order brokers for each stock.

12. Similar to Khwaja and Mian (2005), the top and bottom 1 percent outliers in broker profits are excluded from the data set. This accounts for 7,235 observations that are excluded. The regression analysis is conducted with 220,895 observations.

13. There are several factors that determine the stock returns. Besides the pump-and-dump scheme implemented by brokers, the systematic factors might drive returns. Atilgan and Demirtas (2013) and Bali et al. (2009) show that higher order moments are

important in determining expected stock returns. Specifically, they empirically present the positive relationship between stock returns and value at risk (VaR). To examine the effect of higher order moments on stock returns, we calculate the skewness, kurtosis, and VaR of aggregated return series for all brokers and for brokers with high PRIN scores. These statistics are available from the authors upon request. The skewness statistic for all brokers is −6.42, and −11.59 for high PRIN brokers, indicating that returns are right skewed . The kurtosis statistics of both return series are very high. Hence, the series are highly leptokurtic. The skewness and kurtosis of returns of high PRIN brokers are significantly higher than those of returns of all brokers. This result shows that brokers who heavily conduct pump-and-dump trades operate in stocks with fatter tails.

14. One can control for broker characteristics by including broker fixed effects in the regressions. Regressions with broker fixed effects show that the results of Tables 4 and 5 do not change when this alternative regression specification is used. The broker fixed effects regression results are available from the authors upon request.