

Informed and Uninformed Brokers and Execution Costs

Andrew Lepone,* and Jun George Li

Discipline of Finance, The University of Sydney Business School

Abstract: Recent literature shows that anonymity reduces the size of the bid-ask spread. However, market quality indicators such as the bid-ask spread provide average measures, and do not indicate the overall result of anonymous trading. Using a proprietary dataset and the removal of broker IDs on the Australian Stock Exchange (ASX), this study examines the effect of anonymity across informed and uninformed brokers. While total execution costs are lower across all brokers, informed brokers have a disproportionately larger reduction. Anonymity causes greater incidence of misidentification, where informed traders are classified as uninformed, and uninformed traders are classified as informed.

1. Introduction

Broker identifiers started in floor-traded markets. As floor-traded markets around the world head towards automation, broker identifiers are disappearing. Broker IDs, or rather the removal of them, is commonplace for exchanges around the world. With the exception of the Korean market, which introduced broker identifiers, stock exchanges are moving to anonymity, a move which is often linked to the decision of other markets that have gone anonymous.

The Australian Stock Exchange (ASX) removed broker IDs on 28 November, 2005. While exchanges have been quick to unite in anonymity based on greater market quality, a number of investors raised concerns regarding the removal of broker IDs on the ASX, citing a competitive disadvantage in their absence. Similar concerns are conveyed in the ASX Market Reform Consultation Paper, where a majority of fund managers preferred more transparency over less. The removal of broker IDs is likely to affect different brokers in a different manner. The recent empirical literature, however, focuses predominantly on the market-wide effects of anonymity, citing improved market quality indicators such as lower bid-ask spreads (e.g. Foucault, Moinas and Theissen, 2007; Comerton-Forde, Frino and Mollica, 2005; Comerton-Forde and Tang, 2009; and Frino, Gerace and Lepone, 2008). These results are market-wide averages, and ignore the effects of anonymity on different market participants.

This study fills the literature gap by disentangling from the averages the effect of anonymity on informed and uninformed brokers. Brokers are the natural unit of analysis for broker IDs because they are the only ones with access to them. Broker IDs affect the ability of brokers to work their order flow. If information asymmetry exists between brokers, then anonymity will impact on these participants differently. Due to constraints on the availability of broker-level data, literature is limited to market quality indicators such as the bid-ask spread. This study makes use of a unique dataset made available from the ASX, which includes the identities of brokers in every transaction. As a consequence of the approach used, this study is the first to examine the execution ability of brokers around changes in anonymity.

2. Method and Results

This study examines one calendar year before and after the removal of broker IDs from the ASX on 28 November, 2005. Data used in this study comes from a proprietary dataset that contains stock code, date, time, trade price, trade volume, the buyer broker ID, and the seller broker ID. Two classical price impact measures are used in the analysis: the 'total price effect', and the 'temporary price effect', also commonly

known as the price reversal. As proxies to these measures, the returns from the open to trade and from the trade to the close are used. These are adjusted by the returns of the prevailing All Ordinaries Index.

Stocks are separated into four groups based on their daily closing market capitalisation; the top 100 stocks, 101-200, 201-500, and 501+. There are in total 12,026,685 market orders sampled in Table 1; 6,096,641 of which are purchases, and 5,930,044 are sales. Table 1 shows that across all stocks on average (results ungrouped by market capitalisation), open to trade returns are significantly reduced for both buys and sells. For purchases (sales), average change in open to trade returns pre- and post-anonymity is -0.0362% (0.0220%). Changes in trade to close returns for purchases (sales) are 0.0091% (0.0098%). For results grouped by market capitalisation, open to trade returns also appear to decrease significantly, with the exception of sales in the top 100 stocks (which increased), and purchases in the 501+ stock group (with a statistically insignificant change).

Broker IDs are informative when they reveal to the market the identity of market participants who are perceived as being informed. The market is more likely to follow the trades of these participants if they believe that this strategy will earn higher returns. It is plausible that the removal of broker IDs affects different brokers differently, depending on their level of information. Previous literature, together with the earlier findings, document lower execution costs after the removal of broker IDs.

Brokers are separated into two groups based on the market's perception of their quality. For this purpose, a list of the top ten brokers from the 2005 Business Review Weekly East Coles Best Brokers Survey is obtained. In this survey, brokers are ranked in three categories based on their research, trade execution, and market making abilities. Literature shows that research reports provided by equity analysts are informative and valuable (e.g. Womack, 1996; Barber, Lehavy, McNichols and Trueman, 2001; Gleason and Lee, 2003, and Jegadeesh, Kim, Krische, and Lee, 2004). Given the larger number of equity analysts for these brokers, and the amount of order flow they receive, these brokers are more likely to be informed than other brokers operating in the market. These ten brokers are therefore classified as the 'top brokers' group, with the remaining brokers classified as the 'other brokers' group.

Trades are classified into those conducted by 'top brokers' and 'other brokers'. Table 2 reports that in total there are 5,322,602 market orders from 'top brokers' and 6,704,083 from 'other brokers'. The trades of 'top brokers' appear to be concentrated in the top 200 stocks, with the bottom two stock groups only accounting for 12.64% of all their trades. Table 2 also reports the mean open to trade, and trade to close returns for the two broker groups in the pre- and post-anonymity regimes. Similar to Table 1, results are further partitioned by market capitalisation groupings.

When examining the results ungrouped by market capitalisation, there is a significant (at 5%) reduction in the mean open to trade returns for both broker groups in both buys and sells. For the purchases (sales) of 'top brokers', open to trade returns change on average by -0.0379% (0.0271%), while for 'other brokers', this change is -0.0047% (0.0107%). Open to trade results by market capitalisation groups convey similar information, albeit with more variation. For trade to close returns (ungrouped by market cap), the average size of price reversals for 'top brokers' (in both buys and sells) has significantly increased (at the 1% level) in the post-anonymity period. The same results, however, are not seen in the trade to close returns of 'other brokers', where the average size of price reversals for purchases has decreased, and no significant change is seen in the price reversal of sales. When examining results partitioned by stock groups, trade to close returns draw similar conclusions, but once again, with a larger degree of variation.

3. Conclusion

Using a unique dataset from the ASX with broker identifiers, this study examines the effect of anonymity on informed and uninformed brokers. If information asymmetry exists between brokers, it is expected that anonymity impacts these participants differently. While recent literature focuses on market-wide effects, this study examines brokers anonymous trading. Consistent with prior literature, we show that total execution costs decrease on average. However, the total price effect for large and reputable full-service brokers appear to experience a much larger proportional reduction in comparison to other less informed brokers. Our findings also indicate that anonymity reduces the market's ability to infer information from trades. This is

evident from larger price reversals for the trades of the large full-service brokers. Conversely, the trades of the less informed brokers face a case of ‘mistaken identity’, evident from lower price reversals.

4. References

- [1] Barber, B.; Lehavy, R.; McNichols, M.; and Trueman, B. (2001). “Can Investors Profit from the Prophets? Security Analyst Recommendations and Stock Returns”, *The Journal of Finance*, 56(2), 531-563.
- [2] Comerton-Forde, C.; Frino, A.; and Mollica, V. (2005). “The impact of limit order anonymity on liquidity: Evidence from Paris, Tokyo and Korea”, *Journal of Economics and Business*, 57, 528-540.
- [3] Comerton-Forde, C.; and Tang, K.M. (2009). “Anonymity, Liquidity and Fragmentation”, *Journal of Financial Markets*, 12, 337–367.
- [4] Foucault, T.; Moinas, S.; and Theissen, E. (2007). “Does Anonymity Matter in Electronic Limit Order Markets?”, *The Review of Financial Studies*, 20, 1707-1747.
- [5] Frino, A.; Gerace, D.; and Lepone, A. (2008). “Limit order book, anonymity and market liquidity: evidence from the Sydney Futures Exchange”, *Accounting and Finance*, 48(4), 561-573.
- [6] Gleason, C.A.; and Lee, C.M.C. (2003). “Analyst Forecast Revisions and Market Price Discovery”, *The Accounting Review*, 78(1), 193-225.
- [7] Jegadeesh, N.; Kim, J.; Krische, S.D.; and Lee, C.M.C. (2004). “Analyzing the Analysts: When Do Recommendations Add Value?”, *The Journal of Finance*, 59(3), 1083-1124.
- [8] Womack, K. L. (1996). “Do Brokerage Analysts’ Recommendations Have Investment Value?” *Journal of Finance*, 51, 137–167.

Table 1: Market-Wide Execution Costs

This table reports the mean effect of anonymity on market-wide execution costs.

Market Capitalisation Group	No. Trades		Open to Trade				Trade to Close			
	Pre	Post	Pre (%)	Post (%)	Change (%)	P-Value	Pre (%)	Post (%)	Change (%)	P-Value
All										
<i>Buys</i>	6,096,641	8,948,628	0.2476	0.2114	-0.0362	0.0000	-0.0689	-0.0598	0.0091	0.0000
<i>Sells</i>	5,930,044	9,251,660	-0.1887	-0.1667	0.0220	0.0000	0.0507	0.0605	0.0098	0.0000
Top 100										
<i>Buys</i>	3,692,401	5,348,716	0.0192	-0.0283	-0.0475	0.0000	-0.0344	-0.0410	-0.0066	0.0000
<i>Sells</i>	3,546,344	5,417,018	-0.0745	-0.0885	-0.0139	0.0000	0.0291	0.0319	0.0028	0.0000
101-200										
<i>Buys</i>	1,076,979	1,591,805	0.0919	0.0584	-0.0336	0.0000	-0.0535	-0.0431	0.0104	0.0000
<i>Sells</i>	1,070,471	1,795,198	-0.1852	-0.1531	0.0321	0.0000	0.0601	0.0966	0.0365	0.0000
201-500										
<i>Buys</i>	854,208	1,282,208	0.4182	0.3466	-0.0715	0.0000	-0.0802	-0.0460	0.0342	0.0000
<i>Sells</i>	849,005	1,347,760	-0.4505	-0.3220	0.1285	0.0000	0.1147	0.1167	0.0020	0.3955
501+										
<i>Buys</i>	473,053	725,899	2.077	2.074	-0.0026	0.8291	-0.3524	-0.2590	0.0934	0.0000
<i>Sells</i>	464,224	691,684	-0.5900	-0.5115	0.0785	0.0000	0.0772	0.0821	0.0049	0.4971

Table 2: Broker Execution Costs

This table reports the mean effect of anonymity on informed and uninformed broker execution cost.

Market Capitalisation Group	No. Trades		Open to Trade				Trade to Close			
	Pre	Post	Pre (%)	Post (%)	Change (%)	P-Value	Pre (%)	Post (%)	Change (%)	P-Value
Panel A: Top Brokers										
All										
<i>Buys</i>	2,671,722	4,425,549	0.0970	0.0591	-0.0379	0.0000	-0.0275	-0.0376	-0.0101	0.0000
<i>Sells</i>	2,650,880	4,840,587	-0.1690	-0.1418	0.0271	0.0000	0.0349	0.0578	0.0230	0.0000
Top 100										
<i>Buys</i>	1,826,119	2,879,794	0.0308	-0.0150	-0.0458	0.0000	-0.0234	-0.0354	-0.0119	0.0000
<i>Sells</i>	1,786,965	3,068,813	-0.0942	-0.0869	0.0073	0.0000	0.0179	0.0310	0.0131	0.0000
101-200										
<i>Buys</i>	515,162	927,098	0.1026	0.0525	-0.0501	0.0000	-0.0442	-0.0469	-0.0027	0.1051
<i>Sells</i>	521,423	1,073,181	-0.1906	-0.1374	0.0532	0.0000	0.0460	0.0977	0.0518	0.0000
201-500										
<i>Buys</i>	273,569	526,234	0.2530	0.2320	-0.0210	0.0000	-0.0156	-0.0353	-0.0196	0.0000
<i>Sells</i>	280,239	605,653	-0.4212	-0.3055	0.1157	0.0000	0.1060	0.1177	0.0117	0.0004
501+										
<i>Buys</i>	56,872	92,423	1.421	1.449	0.0286	0.2929	-0.0622	-0.0273	0.0349	0.0711
<i>Sells</i>	62,253	92,940	-0.9970	-0.9383	0.0587	0.0206	0.1074	0.0935	-0.0139	0.4347
Panel B: Other Brokers										
All										
<i>Buys</i>	3,424,919	4,523,079	0.3650	0.3604	-0.0047	0.0239	-0.1012	-0.0815	0.0197	0.0000
<i>Sells</i>	3,279,164	4,411,073	-0.2047	-0.1939	0.0107	0.0000	0.0635	0.0635	0.0000	0.9886
Top 100										
<i>Buys</i>	1,866,282	2,468,922	0.0078	-0.0438	-0.0516	0.0000	-0.0452	-0.0475	-0.0023	0.0001
<i>Sells</i>	1,759,379	2,348,205	-0.0545	-0.0905	-0.0360	0.0000	0.0404	0.0330	-0.0074	0.0000
101-200										
<i>Buys</i>	561,817	664,707	0.0822	0.0665	-0.0156	0.0000	-0.0620	-0.0379	0.0241	0.0000
<i>Sells</i>	549,048	722,017	-0.1801	-0.1765	0.0037	0.1384	0.0735	0.0950	0.0214	0.0000
201-500										
<i>Buys</i>	580,639	755,974	0.4960	0.4264	-0.0696	0.0000	-0.1106	-0.0535	0.0571	0.0000
<i>Sells</i>	568,766	742,107	-0.4650	-0.3355	0.1295	0.0000	0.1190	0.1159	-0.0032	0.3122
501+										
<i>Buys</i>	416,181	633,476	2.1662	2.1651	-0.0011	0.9330	-0.3920	-0.2928	0.0992	0.0000
<i>Sells</i>	401,971	598,744	-0.5270	-0.4452	0.0818	0.0000	0.0725	0.0803	0.0078	0.3192