

Firm Reputation and Insider Trading: The Investment Banking Industry

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Firm reputation is an important concern among investment banks. This study examines insider trading of the investment banking industry to determine whether the concern for firm reputation can effectively restrain insider behavior. We find that in the early aftermarket post initial public offering, investment banks act to support the initial price levels of their IPOs but insiders refrain from exploiting their privileged position in this period. For the five-year post-IPO period, however, the results indicate that insiders may have acted on privileged information. We find the cumulative abnormal returns are significantly positive (negative) following insiders' report of buying (selling) activities. The results further show that insiders of prestigious investment banks are less likely to trade on inside information, voluntarily or involuntarily, than those of the less-prestigious investment banks.

Introduction

Reputation is an important issue among investment bankers. Hayes (1971) showed that the investment banking industry is subject to a rigid hierarchy that ties an investment bank's reputation to its influence in the industry. According to Hayes (1971), those investment banks in the upper bracket of this hierarchy (e.g., Morgan Stanley & Co.; Goldman, Sachs & Co.; Salomon Brothers, Merrill Lynch White Weld; and First Boston Corp.) enjoy a more prestigious and lucrative position than their counterparts in the lower bracket (e.g., Wall Street West, Inc.). It was suggested that investment banks would aggressively defend their place in the hierarchy, even to the point of pulling out of profitable deals.¹ Unfortunately, the junk bond fiasco of the mid 1980s, the market rigging activities of Salomon Brothers,² and the lawsuits

¹ See *Wall Street Journal*, January 15, 1986, page 1.

² For details, see *Wall Street Journal*, January 13, 1991.

about the losses suffered by some major corporations in trading financial derivatives under the advice of their investment bankers,³ have tarnished the reputation of the investment banking industry.

The above-mentioned incidents may represent one-time events tarnishing the reputation of the investment banking industry. If reputation is so important in the investment banking industry, however, it will be a surprise to observe systematic activities that undermine the public's confidence in the industry. This paper examines insider trading of investment banks to determine the effectiveness of firm reputation in restraining members of the investment banking industry from systematically exploiting their superior information regarding their own firms. This study tracks insider trading of the investment banking industry over a five-year period after an investment bank has gone public. In short, we study insider-trading activities in the short run⁴ (the 60-day interval after going public) and in the long run (the five-year period after IPO). If reputation of an investment bank is as important as suggested by Hayes (1971), then insider trading of the investment banking industry should not show systematic pattern of abnormal profits. In the extreme, it is possible that we do not observe any insider activity among investment banks.

Our results, similar to those of Ruud (1993), show that investment banks engage in activities to support the price of their IPOs in the early aftermarket. There is no strong evidence of insiders taking advantage of the price support in the immediate aftermarket, however, as revealed by the small number of insider trades recorded in the Securities and Exchange Commission (SEC) reports. For the three-year period after going public, we find evidence that investment bankers buy common stocks of their own companies more often than they sell. An analysis of abnormal insider trading activities, similar to the one performed by Karpoff and Lee (1991), shows insiders are net buyers during the first month following the IPO, as well as in 11 of the first 36 months of trading after the IPO. Abnormal net sale activity only occurs occasionally. Despite evaluation of cumulative excess returns after adjusting for market movements showing that insiders buy (sell) before significant positive (negative) excess returns are observed, the results show that insiders of prestigious investment banks are less likely to trade on inside information than insiders of the less-prestigious investment banks. Hence, it appears that the concern for reputation

³ For example, Proctor and Gamble Inc., Air Products and Chemical Inc., Dell Computer, Gibson Greetings Inc, Mead Inc., among others, had significant losses related to trading financial derivatives. *The Washington Post* of May 3, 1994 reports a detailed summary.

⁴ Findings regarding short-run insider trading have to be interpreted with caution because insiders are usually not allowed to sell their holdings during a 60- to 180-day lock-up period. Nevertheless, if insiders' purchases (which are not forbidden) during this short-run interval show systematic abnormal profits, then it may be an indication that insiders have taken advantage of their information. We thank an anonymous reviewer regarding the potential effect of the lock-up period.

has a binding effect on prestigious investment banks rather than the less prestigious members of the industry. This observation persists even after controlling for firm size and liquidity of the stock. It is also found that the insider-trading activities of prestigious investment banks are significantly less than those of other industries. On the other hand, we do not observe any significant difference between the insider trading of less-prestigious investment banks and those of other industries.

Firm Reputation and Insider Trading

A priori, if insiders trade legally without relying on privileged information, then the reputation of an investment bank should have no relationship with the trading activities of its insiders. Similarly, if the disclosure requirements imposed by the Securities and Exchange Commission (SEC) are effective in prohibiting insiders from trading on privileged information, then there should be no difference between insider trading and outsider trading. Numerous prior insider trading studies that examine insider trading activities reported to SEC cast doubt on the effectiveness of SEC regulations in stopping corporate insiders from trading on the basis of their special information. For example, Seyhun and Bradley (1997) examine reported insider transactions and document significant sales by the insiders of firms filing for bankruptcy petitions prior to the filing date. They say that the significant sell-off by insiders does raise potential questions regarding managements' incentives to maximize shareholder wealth. Lin and Howe (1990) examine insider transactions reported to SEC by 1828 firms between 1975 and 1983 also conclude that insiders close to the firm trade on valuable information. Keown and Pinkerton (1981), in alleging that insider trading is widespread, point out that about 50 percent of the price gain experienced by a target firm's stock price occurs before an actual takeover announcement. The literature has ample evidence casting significant doubt on the effectiveness of the disclosure requirements of SEC in deterring information-based insider trading. Moreover, Pettit *et al.* (1996) find evidence suggesting insiders can successfully circumvent regulations designed to prevent the exploitation of private information. John and Narayanan (1997) further show that the disclosure regulations of SEC create incentives for informed insiders to manipulate the market. In sum, the above-mentioned studies suggest that even the ex-post reporting requirements imposed by SEC do not eliminate the possibility that insiders trade on their privileged information. Hence, one cannot eliminate the possibility that insiders of the investment banking industry also trade on their privileged information even though all the transactions are reported to the Securities and Exchange Commission. One may argue that the professionals of Wall Street are more adept in investing their own funds (including exercising stock options and diversifying personal portfolios); however, it is difficult to conceive that even members of the investment banking industry could systematically earn abnormal profits in a market that is semi-strong efficient. If insiders trade on their privileged information, then reputation of an

investment bank would have an impact on insider trading. In this event, we can expect the reputation of an investment bank to exert a constraint on improper insider trading activities of its employees. We expect insider trading activities of the more prestigious investment banks to be less likely to show systematic patterns of abnormal profits; whereas those of the less-prestigious investment banks more likely to show systematic patterns of abnormal profits.

Insiders' information advantage could occur at various stages in the history of a corporation. One major point at which insiders may possess a significant information advantage is when a firm goes public. The investment banking industry presents a unique and interesting situation to study the behavioral aspect of insiders because, in many cases, investment banks also underwrite their own security offerings (issuer and underwriter are the same entity). This situation rules out the possibility that underpricing of an IPO is due to information asymmetry between issuer and underwriter as argued by Baron (1982). In addition, this situation also rules out the possibility of an information leakage to the public by the underwriter. In other words, self-underwritten IPOs of investment banks represent a unique situation in which the information asymmetry occurs only between the IPO issuing firm and the investors.⁵ It will be tempting for insiders not to take advantage of their information advantage. Examining the short-run post-IPO insider activity of the investment banking industry represents an interesting situation to examine Hayes' (1971) assertion that reputation is an important concern of the industry.

If reputation of an investment bank is as important as suggested by Hayes (1971), it would be a surprise to observe insiders taking advantage of their superior information systematically in the long run. Therefore, we would expect to see less insider trading in the investment banking industry because of voluntary restraint. In addition, insider trading of the investment banking industry should not be consistently profitable. While the short-run insider trading immediately after the IPO represents an interesting case for testing the insiders' struggle between maintaining firm reputation and exploiting the maximum degree of information advantage, the long-run insider trading reveals the true effectiveness of the concern for firm reputation in the investment banking industry in a systemic manner. Insider trading activities over the first five years after initial public offering therefore are tracked to see if the information advantage enjoyed by insiders of the investment banking industry leads to persistent unusual insider trading behavior in the long run.

Existing studies on insider trading provide inconclusive results regarding the motives for insiders to trade. Lories and Niederhoffer (1968), Jaffe (1974), Finnerty (1976), and Rozeff and Zaman (1988) conclude that insiders have traded on their own information and earned abnormal returns. Givoly and Palmon (1985), however,

⁵ SEC filing requirements and the road shows prior to an IPO may help reduce the information asymmetry; nevertheless, they are not equivalent to full information disclosure.

argue that corporate insiders do not trade on inside information. In this study, we do not intend to find the motives for insider trading in the investment banking industry. We are primarily interested in examining empirically the pattern of insider trading activities in the investment banking industry. As argued by Hayes (1971) and observed by Carter and Manaster (1990), prestigious investment bankers act differently from their less prestigious counterparts in the industry; therefore, it is possible that the insider trading activities of the two groups of investment bankers are also different. *A priori*, we expect insiders of the more prestigious investment banks to have more self-restraint in conducting their trading activities.

Data and Methodology

Data

To achieve our goal of studying short-run and long-run insider trading behavior, we require that each investment bank has gone through the IPO process in our study period. We search the "Directory of Corporate Financing" of the *Investment Dealer Digest* between 1980 and 1991 to obtain our sample of investment bank IPOs. The study period starts after 1975 because insider-trading data before 1975 are not available in the dataset provided by the U.S. National Archives and Records Service. The study period stops in 1992 because we need five years of insider trading data after the IPO. The "Directory of Corporate Financing" shows that there were no investment bank IPOs between 1980 and 1982. Our final sample of 28 IPOs, albeit small, nevertheless represents the entire population over the study period. In all the offerings the issuer participated significantly (as lead manager) or insignificantly (as one of the dealers) in the underwriting process. Data on insider trading are collected from the *Ownership Research Services* (ORS) tapes. These tapes contain the data reported in the "Official Summary of Security Transactions and Holdings" (forms 3 and 4). In the study, insiders are directors, officers, and owners of 10 percent or more of the stock of the company.

Methodology

There are three parts in our empirical analysis. First, we examine the initial returns pattern of the investment bank IPOs to detect if the underwriters have taken deliberate actions to influence the early price movements. Ruud (1993) and Hanley *et al.* (1993) have found that underwriters engage in price support activities after the IPO for a short time period. The existence of a price support activity has important repercussion on the relationship between the issuer and investors. Members of the issuing firms, given their prior knowledge that price support may occur, may exploit their superior information and engage in unusual insider trading. While the lock-up period prohibits insider selling, purchases are not forbidden in general.

The second part of the analysis involves an analysis of insider trading activity. First, frequency distributions of insider activities are tabulated for the first 60-day

period (short run) and also for the five-year period (long run) after the IPO. The frequency distribution of insider trading is examined to determine the existence of systematic trading patterns. Second, the insider activities are analyzed to see if there are any abnormal patterns. The method of detecting abnormal insider trading is based on Karpoff and Lee (1991) and is reported in Appendix A.

Finally, we perform an analysis of cumulative excess returns. Following Lin and Howe (1990), market-adjusted cumulative returns are examined to determine whether insiders trade on privileged information. Because Carter and Manaster (1990) suggest prestigious investment banks and less-prestigious investment banks may behave differently, we examine the insider trading activities of the two groups separately. *A priori*, we expect the more prestigious investment banks to have more self-restraint regarding their insider trading activities.

Results

Initial Price Support

Table 1 gives the results of the investigation of deliberate price support pursued by underwriters, the issuers themselves. Descriptive statistics of the distributions of cross-sectional returns for one day, five days, 10 days, 15 days, 20 days, and 25 days are reported. We examine these returns distributions in order to determine how the shape of the returns distribution has changed in the early aftermarket. According to Ruud (1993), initial price support by underwriters would lead to a nonsymmetric returns distribution with a truncated negative tail and a fat positive tail. The distribution will become more symmetric as the price support is gradually lifted.

Table 1—Distribution of Log Returns: $R_t = \log(P_t/P_0)$

	Day 1	Day 5	Day 10	Day 15	Day 20	Day 25
Mean	0.0839	0.1010	0.0294	0.0118	-0.005	-0.019
Median	0.0385	0.0488	-0.001	-0.040	-0.053	-0.067
Minimum	-0.431	-0.510	-0.504	-0.575	-0.652	-0.724
Maximum	0.5653	0.5108	0.5068	0.4726	0.4726	0.4365
Standard Deviation	0.1977	0.2079	0.2587	0.2700	0.2935	0.3139
Skewness	0.2087	0.2171	-0.046	-0.049	-0.037	-0.284
Kurtosis	2.2842	1.2939	0.1283	0.2107	0.4241	0.0751
P-value	0.0042*	0.0174*	0.3109	0.3643	0.6479	0.8784

*Normality rejected at 1 percent

Returns are measured as the $\log(P_t/P_0)$ where P_t is the market price at time t and P_0 is the offering price. The first day return is a positive 8.39 percent. The positive holding period return persists from day one until day 15, then it turns negative at day 20. According to Ruud (1993), the persistence of positive returns in the early aftermarket may have been caused by underwriters' deliberate price support. As shown in Table 1, the positively skewed returns distributions in the early aftermarket and the change to negatively skewed distributions later implies a gradual removal of under-

Table 2—Insider Trading of a Sample of Investment Bank IPOs over the First 60-Day Period

Panel A. Number of Transactions

Day*	Purchases		Sales	
	Directors	Officers	Directors	Officers
1	1	0	0	0
5	1	0	0	0
7	1	0	0	0
10	1	0	0	0
13	1	1	0	0
21	1	0	0	0
28	0	3	0	0
33	0	1	0	0

Panel B. Selected Summary Statistic

	# Trades	Average # Shares	Minimum	Maximum
Directors	6	7,000	500	38,000
Officers	5	1,000	300	1,500

*No insider trading on other days

writer price support. Similarly, the gradual decline of the excess kurtosis of the return distributions is another indication of the removal of price support over time. As the underwriters lift their price support gradually, the range of returns distributions shows a downward movement. That is, the minimum returns over the first 20 days become more and more negative, whereas the maximum returns also become less pronounced. A test for normal distribution rejects those of day 1 and day 5 at the one percent significance level.⁶

Insider Trading Activities

We find evidence of price support among the investment bank IPOs. This implies that insiders are given profitable opportunities. This section investigates whether insiders take advantage of these opportunities. We perform a short-run and a long-run analysis based on the frequency distributions of trades by type of insider and type of transaction. Table 2 reports the frequency distribution of the insider trading during the first 60 days after the IPO. Only four firms have reported insider purchases over this period, and there are few transactions. The SEC records 11 purchases (six by directors and five by officers), and no insider has sold during this period. Table 1 shows evidence of underwriter price support during the first 10 days approximately (the median return turns negative on day -10), but only four insider purchases are reported over this 10-day period. Based on these four trades alone, it is hard to conclude that insiders deliberately take advantage of their knowledge of the

⁶ The return patterns in Table 1 may have been expected because multi-day returns ($R_t = \log(P_t/P_0)$) converge to a normal distribution due to the central limit theorem and independently of any other effect such as the removal of underwriter price support. In unreported results, when returns are measured as ($R_t = \log(P_t/P_{t-1})$), similar patterns of returns distribution are observed.

initial price support. In addition, the average volume of the insider purchases over the first 60-day period is not alarmingly large. Excluding the one purchase of 38,000 shares by a director on day seven, the average of the remaining 10 transactions is less than 1000 shares. It is possible that the insiders voluntarily restrain themselves from insider trading during this initial period after IPO. On the other hand, the lack of insider selling activities over the 60-day period post-IPO has to be interpreted with caution. The existence of price support immediately after IPO, as found in Table 1, implies that the issue could be overvalued. The lack of insider selling may merely reflect that insiders' incentive to sell the overvalued issue is curtailed by regulatory constraint (lock-up period).

Table 3—Insider Trading for a Sample of Investment Bank IPOs, First Five Years After IPO

Month	Purchases		Sales	
	Trades	Shares	Trades	Shares
1	6	42,500	0	0
2	5	4,500	0	0
3	0	0	0	0
4	1	57,500	0	0
5	7	10,600	0	0
6	8	22,200	0	0
7	9	30,200	0	0
8	7	30,000	4	58,900
9	14	40,500	0	0
10	3	112,000	0	0
11	23	47,100	0	0
12	16	57,500	0	0
Summary				
Year 1	99	454,600	4	58,900
Year 2	103	3,014,850	57	16,288,860
Year 3	191	2,189,384	68	9,089,300
Year 4	56	230,200	157	3,417,000
Year 5	65	292,600	59	918,000

Table 3 provides the frequency distribution of the insider activities for the 60-month period after the IPO. There are 514 purchases and 345 sales reported to the SEC. On an event-time basis, the data do not show any significant clustering in insider activity in any particular month. Insider activity in terms of the number of trades reveals that insiders buy (99 transactions) about 25 times more frequently than sell (four transactions) within the first year after the IPO. In the second and third year, the number of purchases are about two (103 versus 57 transactions) and three (191 versus 68 transactions) times larger than that of sales respectively. In year four, the trend is reversed, with the number of sales almost three times the number of purchases (157 versus 56). In year five, there is no major difference between purchase and sales in terms of number of trades. In general, the data show several distinct patterns. First, insiders of investment banks buy common stocks of their own firms

Table 4—Analysis of Abnormal Insider Trading

Month	Abnormal Activity
1	-12.13*
2	-2.12
3	-1.73
4	-0.23
5	-4.29*
6	-3.80*
7	-0.94
8	-1.22
9	-1.29
10	-2.43*
11	-3.06*
12	-2.33*
13	-2.23*
14	-0.74
15	5.57*
16	-1.49
17	0.08
18	-3.10
19	-1.43
20	-1.64
21	-0.53
22	0.64
23	-1.44
24	-4.82*
25	-4.24*
26	-4.72*
27	-2.22
28	-2.73*
29	-3.96*
30	-0.87
31	0.64
32	-1.74
33	-0.53
34	-2.61
35	-0.73
36	-7.92

*Significant at 5 percent

(negative sign = net insider purchase; positive sign = net insider sale)

more frequently than sell. Only in 17 of the 60 months after IPO do we find insiders selling more often than purchasing. The number of insider purchases is fewer than nine per month, and the number of insider sales is fewer than six per month. Another pattern from Table 3 is that insiders rarely sell in the first 12 months after their firms go public. The SEC recorded only four sales within the first 12 months. It is plausible that insiders are restricted either voluntarily or involuntarily from selling the common stocks of their own firm after the firm goes public. Third, even though insiders buy more frequently than sell, Table 3 reveals that, in terms of volume, insiders buy in smaller lots (average per purchase is 17,377 shares) but sell in much

larger quantities (average per sale is 58,784 shares). This may suggest that investment bankers react more strongly to bad news than good news.

Results in Table 4 show whether the insider trading activities are abnormal relative to another normal period (years four and five). Of the first 36 months following the IPO, only one month (month 15) shows significant abnormal net insider sales (the mean-adjusted insider trading has a positive sign) whereas 31 months (12 are significant) show net insider purchases. It is unclear why insiders of investment banks buy more often than sell. One possibility is that some of the purchases are related to the stock options in their compensation packages. This is probably why the average size of the purchases is small relative to that of sales. It is also possible that the concern for firm reputation causes insider to sell less frequently and sell only when there is significant bad news. This explains why Table 3 shows that insiders buy in smaller lots and sell in relatively large lots.

Analysis of Abnormal Returns

Following Lin and Howe (1990), profit potentials of investment bankers' insider trading is evaluated by examining the cumulative abnormal returns available to insiders over the 30-day and 60-day intervals after insiders have sold or purchased. Abnormal return is computed as actual stock return on day t minus the return on the CRSP equal-weighted market index on the same day. The average abnormal return on day t is obtained by averaging across the firms in the sample. Average abnormal returns are summed to yield a cumulative abnormal return. The test statistic is computed according to the methodology of Lin and Howe (1990). Numerical results of cumulative abnormal returns to insiders for day (1,30) and day (1,60) are reported in Table 5. Patterns of the cumulative abnormal returns for insiders of all the investment banks, the prestigious investment banks, and the less-prestigious investment banks are reported in Figures 1, 2, 3, 4, 5, and 6, respectively.

Figure 1 shows the cumulative abnormal returns available to insiders of all investment banks (the entire sample) before and after their insiders have made purchases. Stock prices drop significantly before insiders of investment banks make purchases. While many other studies also document that insider purchases usually occur after share price declines, Panel A of Table 5 shows that significant positive cumulative abnormal returns of 0.48 percent (t -value is 3.06) are observed for the period day (1,30) after insiders have purchased. After insiders have purchased, they enjoy abnormal profit that is statistically significant. This systematic pattern of abnormal profit may be an indication that insiders of the investment banking industry have relied on privileged information for their trading activities. The cumulative abnormal returns for the period day (1,60), however, are -1.62 percent (t -value is -9.96). Despite the implication that abnormal returns have turned negative between day 30 and day 60, it is possible that insiders may have sold during this

Table 5—Cumulative Excess Returns

Panel A: All Investment Banks		
Event Period	Insider Sales Returns (%) ¹	Insider Purchases Returns (%)
(1,30)	-1.93 (-11.06) ²	0.48 (3.06)
(1,60)	-3.90 (-21.35)	-1.62 (-9.96)
Panel B: Prestigious Investment Banks ³		
Event Period	Insider Sales Returns (%)	Insider Purchases Returns (%)
(1,30)	-1.53 (-8.35)	-2.48 (-4.87)
(1,60)	-2.52 (-12.96)	-7.03 (-10.67)
Panel C: Less-Prestigious Investment Banks		
Event Period	Insider Sales Returns (%)	Insider Purchases Returns (%)
(1,30)	-1.96 (-6.18)	0.78 (4.71)
(1,60)	-5.39 (-17.52)	-1.07 (-6.43)

¹ Cumulative market-adjusted returns. t-statistics computed as in Lin and Howe (1990)

² t-value in brackets

³ Prestige of an investment bank is determined by the rank order of Carter and Manaster

period of negative returns. Nevertheless, the positive price run-up in the first 30 days after insiders have purchased is a possible indication of trading on privileged information. Figure 2 reports cumulative abnormal returns available to insiders of all investment banks (the entire sample) before and after insiders have sold. Figure 2 shows that after insiders have sold, share prices of investment banks decline substantially. As revealed in Panel A of Table 5, significant negative cumulative abnormal returns of -1.93 percent (t-value is -11.06) and -3.90 percent (t-value is -21.35) are found over the 30-day and 60-day intervals after insiders have sold. The results show that insiders of investment banks have sold their holdings at a high price. This is also an indication that insiders of investment banks may have traded on inside information. This is consistent with the results reported in Lories and Niederhoffer (1968), Jaffe (1974), Finnerty (1976), and Rozeff and Zaman (1988).

Hayes (1971) and Carter and Manaster (1990) suggest that prestigious and less-prestigious investment banks may behave differently. Hence, we compare insider trading of the prestigious investment banks with that of the less-prestigious investment banks. Using the ranking system developed by Carter and Manaster (1990), investment banks with a rank score of at least eight are considered prestigious.⁷ Those with a rank score of seven or less are classified as less-prestigious investment banks. An analysis of cumulative abnormal returns for each of the two groups is conducted and reported in Panels B and C of Table 5. Figure 3 to Figure 6 report the patterns of the abnormal returns.

⁷ Carter and Manaster (1990) use an underwriter's position in the tombstone announcements of public security offerings to determine the rank of the underwriter. Those at the top, but below the lead underwriter, are the most prestigious and are listed in alphabetical order. The most prestigious is assigned a rank score of 9.0, and the least prestigious has a rank score of 0.

Figure 1—All Investment Banks Cumulative Daily Excess Return Before and After Insider Buys

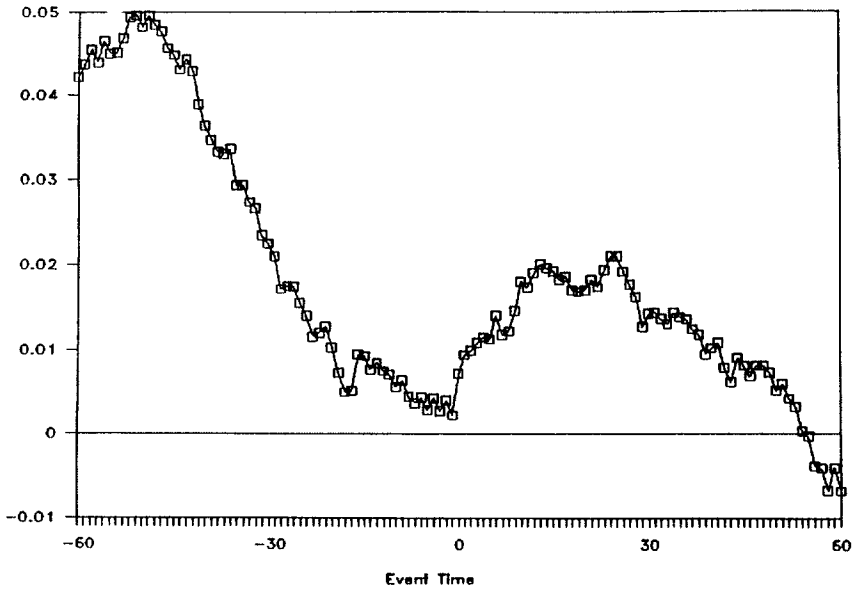


Figure 2—All Investment Banks Cumulative Daily Excess Return Before and After Insider Sells

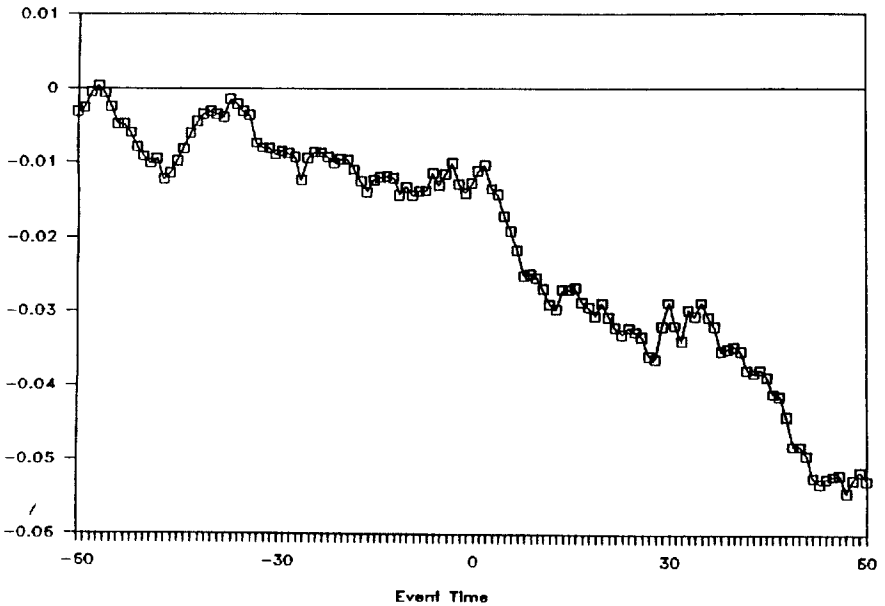


Figure 3—Prestigious Investment Banks Cumulative Daily Excess Return Before and After Insider Purchases

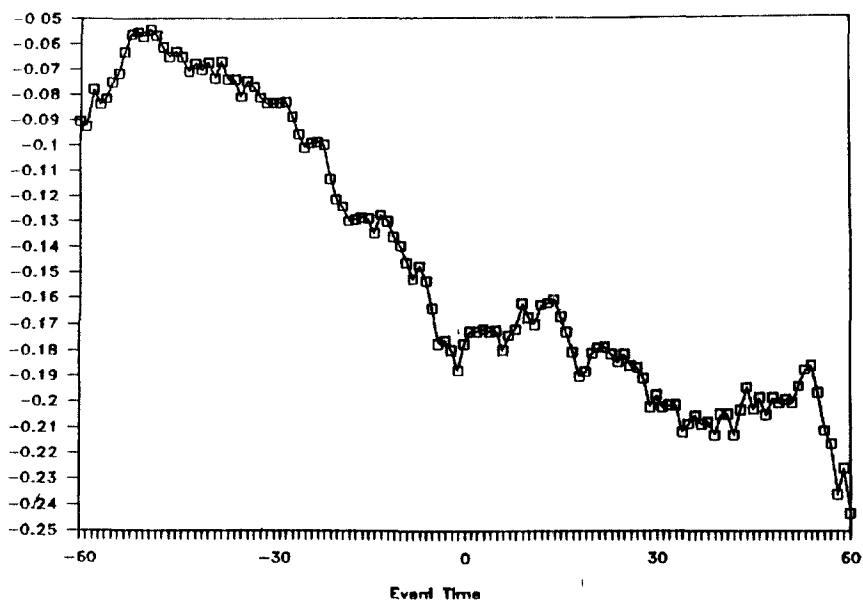


Figure 4—Prestigious Investment Banks Cumulative Daily Excess Return Before and After Insider Sales

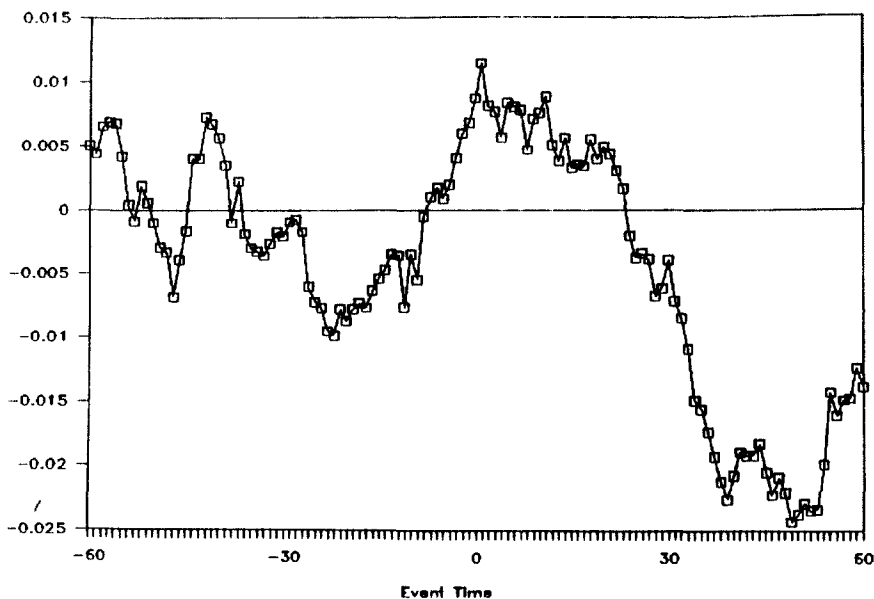


Figure 5—Less-Prestigious Investment Banks Cumulative Daily Excess Return Before and After Insider Purchases

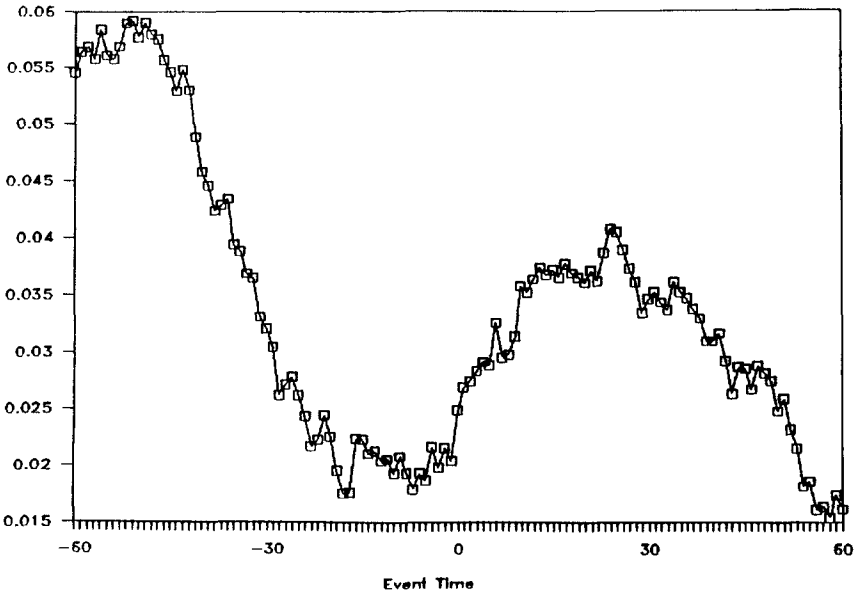
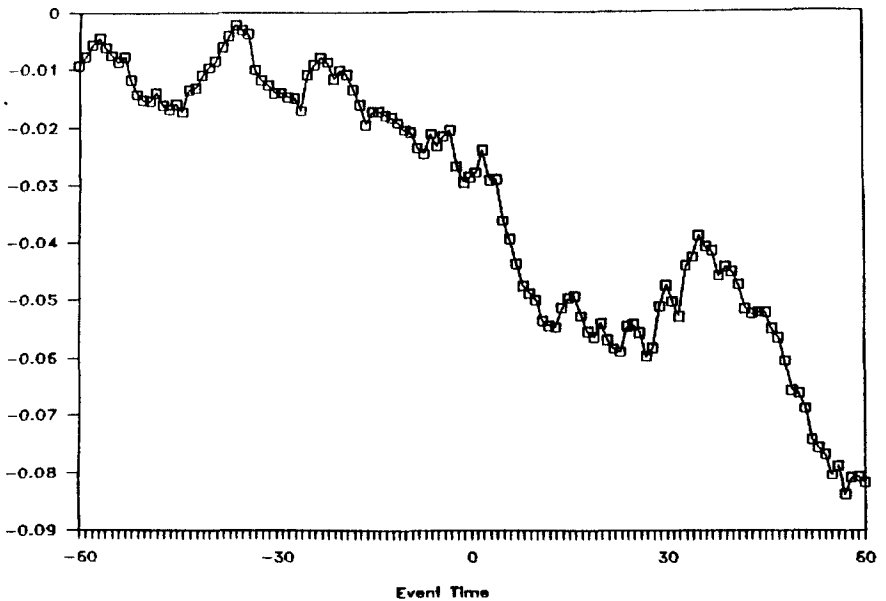


Figure 6—Less-Prestigious Investment Banks Cumulative Daily Excess Return Before and After Insider Sales



Regarding the purchases made by insiders of prestigious investment banks, Figure 3 shows that the cumulative abnormal returns available to the insiders keep declining almost during the entire 60-day interval after insiders have purchased. Consistent with this observation, Panel B of Table 5 reports that significant negative cumulative abnormal returns of -2.48 percent (t-value is -4.87) and -7.03 percent (t-value is -10.67) are found over the 30-day and 60-day intervals after insiders of prestigious investment banks have purchased. Insiders of prestigious investment banks do not enjoy abnormal returns after they have purchased. The opposite is true regarding the sales made by insiders of prestigious investment banks. Figure 4 shows that the cumulative abnormal returns gradually level and then decline precipitously over the 60-day interval after insiders of prestigious investment banks have sold. Panel B of Table 5 reports that significant negative cumulative abnormal returns of -1.53 percent (t-value of -8.35) and -2.52 percent (t-value is -12.96) are found over the 30-day and 60-day intervals after insiders of prestigious investment banks have sold. These results suggest that insiders of prestigious investment banks have sold at a high price. Given that the cumulative abnormal returns are both negative after insiders of prestigious investment banks have purchased and sold, however, the pattern may indicate that insiders of prestigious investment banks may not have fully exploited their information advantage.

Finally, regarding the purchases made by insiders of the less-prestigious investment banks, Figure 5 shows that the cumulative abnormal returns increase dramatically after insiders have purchased, despite the trend reversal in the second half of the first 60-day period. Panel C of Table 5 reports that significant positive cumulative abnormal returns of 0.78 percent (t-value of 4.71) are found over the first 30-day interval after insiders of less-prestigious investment banks have purchased. The cumulative abnormal returns over the first 60-day period are -1.07 percent (t-value is -6.43). It is possible that the insiders have already sold their holdings after day 30 when the abnormal returns turn negative. Nevertheless, the positive price run-up in the first 30 days after insiders of less-prestigious investment banks have purchased is a possible indication of trading on privileged information. On the other hand, Figure 6 shows that the cumulative abnormal returns are negative after insiders of less-prestigious investment banks have sold. Panel C of Table 5 reports that significant negative cumulative abnormal returns of -1.96 percent (t-value of -6.18) and -5.39 percent (t-value is -17.52) are found over the 30-day and 60-day intervals after insiders of less-prestigious investment banks have sold. Insiders of less-prestigious investment bank have sold at a high price.

In summary, the findings in Table 5 and Figures 1 through 6 suggest that insiders of the more prestigious investment banks are less likely to trade on inside information than insiders of the less-prestigious investment banks. This is conceivable because the reputation capital at stake is much larger for prestigious investment banks.

Other studies have found that factors such as firm size and liquidity of stock also affect insider trading. In order to confirm that the firm reputation of an investment bank has an important impact on its insider trading activities, we perform a simple regression to control for firm size and stock liquidity. Specifically, we regress net insider trading volume on firm size, trading volume of the stock, and a (0, 1) dummy variable representing the reputation of an investment bank. The (0, 1) dummy has a value of 0 if the investment bank is less prestigious; and it has a value of 1 if the investment bank is prestigious. The regression results are presented in Panel A of Table 6. As revealed in Table 6, it is found that the (0, 1) dummy has a coefficient of -1.35 (t-value is -2.38). That is, prestigious investment banks have insider-trading activities significantly less than those of the less-prestigious investment banks. This result is consistent with our earlier hypothesis that the reputation of an investment bank exerts constraint on the trading activities of its insiders.

Table 6—Firm Reputation and Insider Activity

Panel A: Effect of Firm Reputation on Insider Trading after Controlling for Selected Variables (Reputation dummy is a (0, 1) dummy variable. It has a value of 0 if the investment bank is a less prestigious bank. It has a value of 1 if the investment bank is prestigious. Firm size is measured as the log of total assets. Stock liquidity is measured as the log of the trading volume of the stock on the day when insider activity occurs.)

Regression: Insider Trading = $\alpha_0 + \alpha_1 \text{Reputation Dummy} + \alpha_2 \text{Firm Size} + \alpha_3 \text{Stock Liquidity}$

Intercept	Reputation Dummy	Firm Size	Stock Liquidity	R ²
8.06 (4.11)*	-1.35 (-2.38)**	2.17 (3.33)*	0.08 (5.07)*	0.18

* Significant at the 1 percent level

** Significant at the 5 percent level

Panel B: Test for Difference in Means/Medians Between Insider Trading Activities of Investment Banks and Those of Other Industries

	Difference in Means (t-test)	Difference in Medians (Mood test)
All Investment Banks Versus Other Industries	-0.12	-1.19
Prestigious Investment Banks Versus Others	-2.22**	-4.38**
Less-Prestigious Investment Banks Versus Others	1.09	1.56

** Significant at the 5 percent level

To further confirm the effect of firm reputation on insider trading of investment banks, we perform simple parametric tests (t-test) for difference in means and non-parametric tests (Mood test) for difference in medians to see if the insider trading activities of the investment banking industry are different from those of other industries over the study period. Test statistics for the comparisons are reported in Panel B of Table 6. On the whole, there is no difference between the insider trading activities of the investment banking industry and those of other industries. The means and medians do not show any significant difference. When investment banks are divided into prestigious and less-prestigious investment banks, however, the results in Panel

B show that only insiders of the prestigious investment banks trade less frequently than those of other industries. This is true of both the mean and the median. On the other hand, there is no difference between the insider activities of less-prestigious investment banks and those of firms in other industries. The result is consistent with our earlier conjecture that reputation has a more effective constraint on restraining insider trading of the prestigious investment banks because larger stakes are involved.

Conclusion

This study examines insider-trading activities of the investment banking industry. By tracking insider-trading activities over a five-year period after an investment bank goes public, this study intends to find whether the concern for firm reputation effectively restrains investment bankers from exploiting their information advantage. The results show that investment bankers may have traded on privileged information; however, it appears that they voluntarily or involuntarily refrain from exploiting their information advantage during the aftermarket period immediately following the IPO. Over the entire five-year period, the results show that cumulative abnormal returns are positive (negative) after insiders of the investment banking industry have purchased (sold) common stocks of their own firms. The results also show that insiders of prestigious investment banks are less likely to trade on inside information than insiders of less-prestigious investment banks.

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Appendix A: Measures of Abnormal Activities

The Karpoff and Lee (1991) methodology is used to determine if insider-trading activity is abnormal. The measure of abnormal insider trading is the own mean-adjusted net trading measure, NT_{jkt} , which is computed as follows:

$$(1) \hat{\phi}_{jk} = (1/L_j) \sum_{t=W_1} Nt_{jtk}$$

$$(2) NT_{jtk} = S_{jtk} - B_{jtk}$$

where S_{jtk} (B_{jtk}) is the aggregate number of sellers (buyers) of insider type k for company j during trading month t . The types of insiders are directors, officers, and owners of 10 percent or more of the company. NT_{jtk} stands for net trades (number of sales - number of purchases) and represents net sellers when NT_{jtk} is positive and net buyers when negative. ϕ_{jk} is the own mean-adjusted net trading measure for each firm by type of insider k . This measure is computed using insider trading in the firm outside the event period, W_j , ($t + 37, \dots, t + 60$). The event period covers insider trading during the 36 months after the offering of the IPO ($t = 0$ to $t = +36$ where $t = 0$ is the offering day of the IPO). L_j is the number of months used to estimate ϕ_{jk} . The mean abnormal number of net trades, MNT , is computed for each period and for each type of insider as follows:

$$(4) MNT_{tk} = (1/n_{tk}) \sum_{j=1}^n (NT_{jtk} - \phi_{jk})$$

where n_{tk} is the number of firms in month t that have trading activity by insider k . The variance used in the test statistic is computed as follows:

$$(5) S_{jtk} = S_{jk} = [1 + (1/L_{jk})] * [1/(L_{jk} - 1)] \sum_{t=W_1} NT_{jtk} \cdot \phi_{jk}$$