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Insider transfer trading of banking companies around exchange listing

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Abstract

This paper examines insider transfer trading of banking companies before and after their listing on the Taiwan Stock Exchange. During the pre-listing period, we uncover significantly negative abnormal returns after insiders announce their plans to transfer stocks, as well as significant price reversals following the subsequent disclosure of unfulfilled transfers. However, after listing, we observe little market response to the initial announcement, and nor is any price revision observed for partial/no transfer information. For both periods, the substantial increases in turnover provide further evidence on the flow of information from insider trading. Additionally, the propensity and profitability of insider transfers are documented. Overall, empirical results indicate that dissemination of information on insider transfer trading before listing can negatively influence the stock price, while information on insider transfers posted after listing attracts only limited attention. Consequently, the evidence is consistent with the implications associated with the managerial timing of listing decisions.

JEL classification: G14; G21

Keywords: Insider trading; Bank listings; Information content; Emerging market

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1. Introduction and overview

The issues of exchange listing, firm performance, and market reaction around listing have been extensively examined in the finance literature.[1] Typically, the announcement of an exchange listing is associated with significant positive abnormal returns for OTC firms, which then generally experience negative abnormal returns following the listing. The favorable returns during the application and pre-listing period are frequently attributed to expectations of increased liquidity as well as to signaling effects, whereas the negative abnormal post-listing returns phenomenon has been referred to as the "post-listing puzzle." McConnell and Sanger (1987) examine several explanations for the post-listing puzzle, but none of these explanations can account for the drift.[2] Dharan and Ikenberry (1995) document that poor post-listing performance appears related to manager timing of their listing applications. Evidence by Webb (1999) also supports the opportunism hypothesis that managers can select optimal times for listing. However, Cheng (2005) uses calendar-time returns in the matched four-factor regressions (the three Fama–French factors plus momentum) and finds no underperformance of new-listing stocks in the post-listing period. The results are consistent with the pseudo market timing hypothesis by Schultz (2003), who argues that managerial actions that coincide with peaks in their firm's stock prices do not necessarily mean that the managers can forecast the overall market. Instead, managers can tell when their firms' stock prices are high, and by taking actions at these times, there can be the appearance of foresight. Butler et al. (2005), who extend the analysis of Schultz (2003), also support this argument. The issues related to exchange listing thus still appear to be under debate.

The question at the heart of this debate is: why do firms choose to be exchange-listed? Managerial considerations may provide several reasons for moving trading to an organized exchange, including the desire to gain prestige and visibility (Van Horne, 1970; Merton, 1987; Kadlec and McConnell, 1994), to signal confidence in the future prospects of the firm (McConnell and Sanger, 1984; Ying et al., 1977), and to improve stock liquidity (Christie and Huang, 1993; Kadlec and McConnell, 1994). Regardless of the motivation, the switch is generally defended on the grounds that shareholders will benefit from the listing. However, the post-listing puzzle makes one question the claim that shareholders benefit from exchange listing.

Given the possibility that managers are acting strategically in their own self interest, it is interesting to explore how insiders,[3] including managers, behave and how markets respond to their transfer trades. Do insiders act on negative information regarding the

[1] See Van Horne (1970), Ying et al. (1977), Grammatikos and Papaioannou (1986a, 1986b), Sanger and McConnell (1986), McConnell and Sanger (1987), Baker and Edelman (1991), Edelman and Baker (1990, 1993, 1994), Dharan and Ikenberry (1995), and Webb (1999), etc.

[2] McConnell and Sanger document the post-listing phenomenon and investigate several possible explanations, including issuance of new stocks immediately after listing, insiders dumping their stocks after listing, the study period, outlier observations, the original trading locale of the newly listed stocks, the peculiarities of the exchange where the stock becomes listed, and the correction of an overreaction that occurred on the announcement of the impending listing. However, no full explanation is discovered.

[3] According to the regulation in Taiwan, insiders include directors, managers, or shareholders holding more than ten percent of the outstanding shares. See Section 3.1 for further exposition.

managerial timing of listing around the peaks in stock performance? Do insiders know about and even exploit the real implications of an exchange listing, perceiving that such a listing may not necessarily improve firm prospects? While the market reaction to exchange listing is well understood, little is known about the related insider activities. In particular, does insider transfer of stocks provide any insight into the valuation of firms changing trading marketplace? The purpose of this paper is to empirically address these questions.

The general belief that insider trading activities may provide useful signals for firm valuation comes from the informational advantage enjoyed by insiders over other market participants. Previous research supports this point, as evidence shows that insiders typically benefit from their actions (Jaffe, 1974; Finnerty, 1976; Seyhun, 1986; Rozeff and Zaman, 1988; Lin and Howe, 1990; Lakonishok and Lee, 2001). Insiders can even predict abnormal shifts in future stock prices (Seyhun, 1986, 1988, 1992), and know about future firm-specific events, including bankruptcy (Seyhun and Bradley, 1997), corporate earnings announcements (Penman, 1982; Elliot et al., 1984), dividend initiations (John and Lang, 1991), seasoned equity offerings (Karpoff and Lee, 1991; Gombola et al., 1999), stock repurchases (Lee et al., 1992), and takeover bids (Seyhun, 1990). According to the opportunism argument of Dharan and Ikenberry (1995), the private information relating to management timing for listing before a decline in performance presents opportunities for personal trading by these insiders. Ostensibly, insiders buy when they have "favorable" private information and sell when they have "unfavorable" information. However, insiders also trade for portfolio adjustment and liquidity reasons. While insiders do have an incentive to sell preceding exchange listing due to the significantly positive abnormal returns experienced by these firms, any profits from the sale may disappear should such an excellent pre-listing performance fail to materialize. The incentives associated with insider transfer trades thus differ before and after listing. Since firms experience significant poor post-listing performance, insiders are also motivated to sell their holdings to avoid losses following exchange listing.[4] These explanations, if supported by the data, suggest that the observed trading gains (losses) from insider transfer trades during the pre- (post-)listing period are still consistent with the managerial timing hypothesis.

Over the past several years, the Taiwan Stock Exchange (TSE) has been attempting to lure OTC companies to list themselves on the main board. Many OTC firms have been tempted by the loosening of the restrictions on TSE listing, especially firms in the banking industry. These privately-held banks were mostly established following the deregulation of the banking sector in the early 1990s and began to move from the OTC market to the TSE since 1997. The moves of these firms, together with the unique disclosure regulations in Taiwan that require the revelation of both planned and unexecuted insider transfer trades, enable an investigation of insider trading around exchange listing. Since most of the related studies use data from the US, our tests also shed light on the nature of insider transfer trades around exchange listing in an emerging market.

[4] Dharan and Ikenberry (1995) find the post-listing drift is more severe in magnitude and longer in duration. The negative drift is generally absent beyond month 36.

Investigating the implications of insider selling before and after exchange listing is useful for stock investors, market analysts, government officials and regulators. As insider trading helps in price discovery (Cornell and Sirri, 1992), investors can develop effective trading strategies by utilizing the information content of the transfer activities of insiders. Besides, insider trading provides a useful leading indicator of future economic prospects (Seyhun, 1988), which means that analysts can gain the ability to time markets by knowing the return patterns of insider transfers. Moreover, officials and regulators can consider more appropriate disclosure rules for insider transfer trades.

Unlike previous studies on exchange listing and insider trading,[5] we focus on insider transfer trades of banking companies both before and after listing. Our investigations thus enable the comparison of whether the information effects of insider transfer trades differ significantly between the two periods. Additionally, the abnormal returns of these trades are calculated for both periods over three event windows: the pre-transaction announcement window, which is a three-day interval beginning from the initial announcement of planned transfers by insiders; the transaction window beginning from the fourth day after the initial announcement and lasting for one month long during which insiders are permitted to trade; and the post-transaction announcement window, which is also a three-day interval after the announcement of unfulfilled transfers of stocks by insiders within three days of the expiration of the transaction period. In this way the price behavior can be monitored and analyzed over the entire event periods. Furthermore, because trading volume is positively associated with the information flow (Karpoff, 1987), the trading volume of stocks around these dates is also examined. Hence, by investigating market responses over these event windows, this study expands the literature on the role of insider trading and insider information around exchange listing.

Our analysis indicates that market participants consider the planned transfer of stocks by insiders before listing, when publicized, to be a negative signal for future bank prospects; but later, when insiders report their unfulfilled transfers of stocks following the expiration of the transaction period, market participants revise their forecasts. However, announcements of insider transfer trades after listing cause somewhat weaker price reactions and thus have less information value. Additionally, a significant increase in trading volume turnover is detected around the time that insiders announce planned transfers of stocks during both periods. Our results also reveal that cumulative abnormal returns over the permitted transaction month are significantly positive in the pre-listing period, and significantly negative in the post-listing period. It suggests that an exploitable profit opportunity may exist for investors to trade on insider trading information around exchange listing. These findings demonstrate that public information on insider transferring activity of banking companies provides an additional signal to the market regarding exchange listing announcements.

[5] A related paper by Lamba and Khan (1999) examines the aggregate trading activities of insiders before exchange listing and delisting and finds that insiders exploit their private information by purchasing or postponing the sale of stocks before listing, whereas insiders are net sellers of their stocks preceding delisting. However, Lamba and Khan do not empirically analyze the price effects of insider trades nor involve the analysis in the post-listing period, as we do here.

The remainder of this paper is organized as follows. Section 2 discusses the research questions and the empirical hypotheses, as well as presents the regulations for insider trading in Taiwan. Section 3 then describes the data and methodology, while Section 4 presents the empirical findings. Finally, Section 5 summarizes the main conclusions and implications.

2. Research questions and hypotheses

In Taiwan, the disclosure regulations for insider trading are described in the securities ordinance. According to the *Securities and Exchange Act* (Articles 22-2 and 25), insiders who want to sell their stock holdings on the open market must file their planned transfers with the regulatory authority in advance. Also, insiders must wait for at least three days following the filing before trading their stocks. Additionally, if insiders do not complete the planned transfers of stocks during the permitted transaction period (which is a one month interval beginning from the 4th day following the filing), they must still report any unfulfilled stock transfers within three days of the expiration of the transaction period.

Under this unique regulatory environment in Taiwan, we explore the information content of insider transfer trading for banking firms around exchange listing, and study whether the market regards insider activity as useful information for evaluating exchange listing decisions. To fully understand insider transfer trading and its information impact on the market requires considering the effect of post-transaction announcement for unfulfilled stock transfers since this effect may confirm or weaken the signals previously released by insiders in their initial announcements of their planned sales. The post-transaction announcement of unfulfilled transfer is a special rule of insider trading regulation in Taiwan. It provides an opportunity to explore the market response to the signals which are not fulfilled by the follow-up actions. Consequently, the best way to examine the nature of the information from insider transfer trades surrounding exchange listing is to thoroughly investigate how market participants react to the pre-transaction announcement of planned transfers of stocks by insiders, as well as to the post-transaction announcement of unfulfilled transfers of stocks by insiders, and whether the reactions differ between the pre-listing and post-listing periods.

Based on the above discussions, this article tests the following hypotheses regarding the informational role of insider selling and insider timing ability for banking stocks before and after exchange listing. We take the perspective that insider trading is one of the most direct signals conveying private information to the market, and that it can provide additional information which may reinforce the announcing effect of exchange listing. If this is true, the information content of the listing announcement cannot be fully understood without studying concurrent insider selling behavior. Given that the pre-listing period is usually characterized by positive abnormal returns, we hypothesize that if the pre-transaction announcement of planned insider transfer trades during this period acts as a negative signal and conveys new information about the future prospects of the forthcoming exchange listing, the stock price should decrease. However, when insiders reveal the information related to their unfulfilled stock transfers with the post-transaction announcement upon the expiration of the transaction period, market participants may revise their forecasts regarding

the firm prospects and consequently, stock price reversals should be observed. Thus the following hypotheses are proposed:

H_1. *There will be a* negative *stock price reaction to the* pre-transaction *announcement of planned insider transfer of stocks in the pre-listing period.*

H_2. *There will be a* positive *stock price reaction to the* post-transaction *announcement of unfulfilled insider transfer of stocks in the pre-listing period.*

In contrast, general investors, noting the apparent decline in firm value following exchange listing, may not consider the pre-transaction announcement of planned insider transfer to be surprising. Hence, no marked price effect will be observed. Similarly, when the post-transaction announcement is made regarding unfulfilled transfer of shares by the insider, such an announcement is unlikely to be considered good news. Therefore, a revised stock price effect is less likely. Accordingly, the following hypotheses are developed:

H_3. *Compared with the* negative *stock price reaction in the pre-listing period, there will be a* smaller *stock price reaction in the post-listing period to the* pre-transaction *announcement of planned insider transfer of stocks.*

H_4. *Compared with the* positive *stock price reaction in the pre-listing period, there will be a* smaller *stock price reaction in the post-listing period to the* post-transaction *announcement of unfulfilled insider transfer of stocks.*

Furthermore, given the disclosure of information regarding unexecuted transfer trades, our interest lies in the relationship between the announcement effect and the level of the originally announced shares being actually transferred by insiders. In this case, conditional on H_2 and H_4 being supported, the following can be hypothesized:

H_5. *In the pre-listing period, the post-transaction announcement of insiders having executed none of the planned transfers will entail a* stronger positive *price reaction than the post-transaction announcement of insiders having executed part of the planned transfers.*

H_6. *In the post-listing period, the post-transaction announcement of insiders having executed none of the planned transfers will entail a* stronger *price reaction than the post-transaction announcement of insiders having executed part of the planned transfers.*

Finally, similar to the findings in the literature with extraordinary positive returns before listing and poor performance after listing, the following profit patterns over the permitted transaction month are anticipated for insider transfer trades:

H_7. *Over the permitted transaction month for insider transfer trades,* positive *abnormal returns will occur in the pre-listing period, and* negative *abnormal returns will occur in the post-listing period.*

Evidence confirming these hypotheses would support the view that insider transfer activity based on future return prospects is also widespread and informative in the banking sector.

3. Data and methodology

3.1. Sample banks and data description for insider transfer trades

The sample exchange listings in the banking industry and the announcement dates for their listing applications are collected from the Taiwan Stock Exchange (TSE) for the period from January 1997 through December 2003.

The *Securities and Exchange Act* (Article 22-2) defines insiders as directors, managers, or shareholders with holdings exceeding ten percent. Insider transfer trade data are obtained from the database of the Taiwan Economic Journal (TEJ) and the Market Observation Post System (MOPS)—the online service sponsored by TSE. The TEJ database contains all insider transfer records subject to disclosure regulated by the *Securities and Exchange Act* (Articles 22-2 and 25). These records include the report dates (pre-transaction announcement date and, if any, post-transaction announcement date), the names of the insiders, the nature of the transfer (open market, gift, private placement, and so on), the positions of the insiders, and the number of shares involved (shares owned, shares of planned transfers and, if any, shares of unfulfilled transfers). Our analysis includes voluntary open market transfers of shares by insiders in banking firms listed from 1997 to 2003. All transfer trades occurring within the one year period on either side of the listing date are included because it takes, by regulation, more than a year for a firm to actually be listed after announcing its board decision to do so. The one-year window allows the thorough comparison of the price effect of insider transfer trading during both the pre-listing and post-listing periods. We exclude transactions with insufficient data for stock returns and trading volumes. The final sample consists of 145 open market transfer trades (68 in the pre-listing period and 77 in the post-listing period) from 17 banking firms. Additionally, to study the various impacts of insider transferring behavior on stock price, we divide the transfer trades into three groups, completely fulfilled, partially fulfilled and completely unfulfilled, based on the degree to which insiders execute their planned transfer trading. Panel A of Table 1 shows the outlines of the sample groups. 69% (47/68) of the pre-listing planned transfers and 79% (61/77) of the post-listing planned transfers are actually fulfilled during the permitted transaction period.

Panel B of Table 1 displays the mean and median characteristics of the insider transfers for various sample groups. On average, 1,665,000 shares are filed for transfer by insiders in each trade with an average stock price of NT$18.85 on filing day. The planned transfer to holding ratio (shares filed for transfer divided by shares owned by insiders before filing) and unfulfilled transfer ratio (shares of unfulfilled transfers divided by shares filed for transfer by insiders) average 37.9 and 19.8% respectively. Similar data are also provided in the panel for the pre- and post-listing sample trades. We note that the unfulfilled transfer ratio is higher in the pre-listing period than in the post-listing period, (26.4 vs. 14%), possibly a result of its informational role. And the average stock price on the filing day

Table 1
Sample descriptive statistics for insider transfer trades during 1997–2003

Panel A. Sample outline

Group classification	No. of events
Total announcements of planned insider transfer of stocks	145
Pre-listing announcements of planned insider transfer of stocks	68
Fulfilled insider transfers	47
Unfulfilled insider transfers	21
Partially fulfilled insider transfers	10
Completely unfulfilled insider transfers	11
Post-listing announcements of planned insider transfer of stocks	77
Fulfilled insider transfers	61
Partially fulfilled insider transfers	10
Completely unfulfilled insider transfers	6

Panel B. Mean and median characteristics for insider transfer trades

Sample characteristics	Sample groups					
	All transfer trades ($N = 145$)		Pre-listing trades ($N = 68$)		Post-listing trades ($N = 77$)	
	Mean	Median	Mean	Median	Mean	Median
Shares filed for transfer by insiders (thousands)	1665	250	858	250	2,378	250
Stock price on filing day (NT dollar)	18.85	18.40	22.19	22.00	15.90	16.00
Planned transfer to holding ratio	37.9%	29.2%	35.9%	29.3%	39.6%	29.1%
Shares of unfulfilled transfers (thousands)	323	0	357	0	294	0
Unfulfilled transfer ratio	19.8%	0	26.4%	0	14.0%	0
Shares owned by insiders before filing for transfer trade (thousands)	7717	1790	4912	891	10,195	3410
Shares owned by insiders after filing for transfer trade (thousands)	6052	1042	4054	464	7817	2680

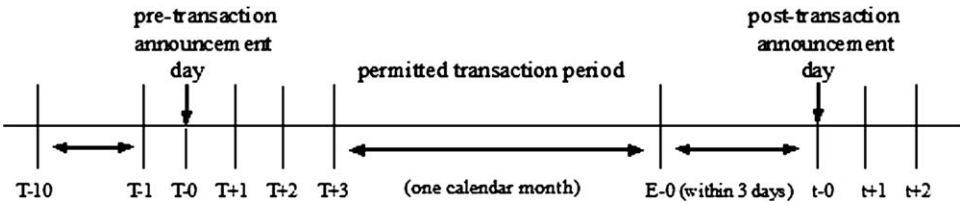
Notes. The sample includes 145 planned insider transfer trades reported within one-year period on either side of the listing date from 1997 to 2003. Panel A presents their group classification for both pre-listing and post-listing periods, including completely fulfilled, partially fulfilled and completely unfulfilled announcements, based on the degree to which insiders execute their planned transfers. Panel B shows the mean (median) for a variety of characteristics for insider transfer trades. Planned transfer to holding ratio is defined as the number of shares filed for transfer divided by the number of shares owned by insiders before filing. Unfulfilled transfer ratio is defined as the number of shares of unfulfilled transfers divided by the number of shares filed for transfer by insiders. If insiders do not file the post-transaction reports, it means that insiders have completely fulfilled their planned transfers and the number of shares of their unfulfilled transfers is set equal to zero. N indicates sample size.

drops markedly from NT$22.19 to NT$15.90 after listing, reflecting normal findings on exchange listing.

3.2. Methodology

The primary methodology employed to measure the magnitude and timing of market reaction to the announcement of insider transfer trade is based on the market-adjusted returns model. A particular attraction of this model is that it can avoid the controversial beta estimation. Daily stock returns and trading volumes are obtained from the TEJ's daily

price files. The banking industry index is used as the proxy for the market, and the abnormal returns are calculated as the returns in excess of this index. As shown in the following timeline, the event dates are defined as:



$T-0$: the pre-transaction announcement day, which is when insiders file with the authority for the planned transfer of stocks to be executed during the permitted transaction period.

$E-0$: the expiration day of the permitted transaction period, which is one calendar month after $T+3$, for insiders to transfer.

$t-0$: the post-transaction announcement day, which is when insiders file with the authority disclosing any unfulfilled transfers and must be within three days of the expiration day $E-0$.

For any transfer plans reported by insiders of the sample banks within one year either before or after listing, abnormal returns are calculated daily from $T-10$ to $t+2$.

Furthermore, we examine daily turnover (trading volume divided by shares outstanding) over the five intervals, that is, ($T-10$ to $T-1$), ($T-0$ to $T+2$), ($T+3$ to $E-0$), ($t-10$ to $t-1$), and ($t-0$ to $t+2$). Notably, volume turnover is used rather than trading volume to prevent unusually high trading volumes in a few large stocks from disproportionately biasing the volume effect. Following Davidson III et al. (1996), the volume turnover data are converted into an average daily volume turnover for each insider transfer trade for each interval. The average daily volume turnover of transfer trades by insiders during each interval is calculated as a percentage of the average daily volume turnover for the entire period form $T-10$ to $E-0$, or to $t+2$ if there is any post-transaction disclosure. Pair-wise comparisons among five intervals of the mean average daily volume turnover are conducted using the Tukey and Scheffe tests.

4. Results

4.1. Excess returns of exchange listings

We first examine daily excess returns of sample banks moving from the OTC to the TSE to determine whether these banks experience positive abnormal returns before listing and negative abnormal returns after listing. Table 2 lists descriptive statistics for the sample banks. The cumulative abnormal returns (CARs) from the application announcement to the actual listing day and CARs over the 250 days before listing are 4.35 and 7.71%, both significant at the 0.1 and 0.05 levels, respectively. Meanwhile, the CARs over the 30, 50, 150, and 250 days following the listing reach −6.16, −7.67, −6.41, and −8.67%, all significant at the 0.1 level or better. The findings are further verified by the declines in market value after listing. The present results are consistent with the evidence from previous research regarding exchange listing.

Table 2
Statistics of cumulative abnormal returns for sample banks around exchange listing during 1997–2003

	Mean (Std. Dev.)	Median	Minimum	Maximum
Cumulative abnormal returns over 50 days before application (%)	−2.47 (1.41)	−1.08	−12.62	4.49
Cumulative abnormal returns over the period from application to listing day (%)	4.35 (2.34)	4.94	−19.04	20.60
Cumulative abnormal returns over 250 days before listing (%)	7.71 (3.44)	6.59	−12.95	45.5
Cumulative abnormal returns over 30 days after listing (%)	−6.16 (2.93)	−3.04	−30.18	7.93
Cumulative abnormal returns over 50 days after listing (%)	−7.67 (3.97)	−3.46	−39.02	13.15
Cumulative abnormal returns over 150 days after listing (%)	−6.41 (3.55)	−5.07	−36.35	29.99
Cumulative abnormal returns over 250 days after listing (%)	−8.67 (4.56)	−11.90	−44.75	37.87
Market value over one year period before listing (NT $billions)	21,785 (1767)	23,110	13,503	36,463
Market value over one year period after listing (NT $billions)	18,743 (1502)	16,619	9351	30,192
Firm age on listing day (years)	7.73 (0.725)	6.50	5.83	14.25

Notes. This table shows that, after banks applied for the exchange listing, the cumulative abnormal returns are positive for various periods before listing and negative for various periods after listing. Some characteristics of sample banks are also included. Cumulative abnormal returns are calculated based on 17 bank listings during 1997–2003. Figures in parentheses are standard deviations.

4.2. Abnormal returns of insider transfer trades in the pre-listing and post-listing periods

Table 3 exhibits how the information on insider transfer trades gets disseminated to the market during the pre-listing and post-listing periods. Specifically, average cumulative abnormal returns (CARs) around the pre-transaction announcement day ($T - 0$) and the post-transaction announcement day ($t - 0$) are examined for both the pre-listing and post-listing transfer samples. In part I of Table 3, the CARs for the ten-day period prior to the pre-transaction announcement day ($T - 10$ to $T - 1$) reach 3.39 and 2.70% for pre-listing and post-listing planned transfer trades, respectively, significant at the 0.01 level in both cases. In contrast, part II of Table 3 reveals that the ten-day CARs prior to the post-transaction announcement day ($t - 10$ to $t - 1$) equal −0.95 and −0.18% for the pre-listing and post-listing unfulfilled transfer trades, respectively, and neither is significant at traditional levels. These results indicate that sales by insiders are accompanied by unusually good stock performance and deterred by negative abnormal returns. Thus on average the insiders are selling stocks on price increases.

4.2.1. Test of hypotheses H_1 through H_4

Stock performance is then examined over a three-day interval after insiders report their planned transfer trades to the regulatory authority. The return pattern of these stocks represents the market response to the initial public disclosure of insider transfer information, which is reported online and in real time by the "Market Observation Post System"

Table 3
Mean cumulative abnormal returns (CARs) for insider transfer trades in the pre-listing and post-listing periods—Test of hypotheses H_1 through H_4

Various event windows	Panel A: In the pre-listing period			Panel B: In the post-listing period		
	N	Mean	t-statistic	N	Mean	t-statistic
I. Pre-transaction announcement interval						
CAR($T-10$ to $T-1$) for all planned insider transfers	68	3.3931	3.516***	77	2.6962	2.912***
CAR($T-0$ to $T+2$) for all planned insider transfers	68	−1.0257	−2.048**	77	−0.0416	−0.103
II. Post-transaction announcement interval						
CAR($t-10$ to $t-1$) for unfulfilled insider transfers	21	−0.9538	−1.121	16	−0.1775	−0.144
CAR($t-0$ to $t+2$) for unfulfilled insider transfers	21	0.9757	1.752*	16	−0.5456	−0.855

Notes. Abnormal returns are examined over a ten-day period prior to the pre-transaction announcement day ($T-10$ to $T-1$), a three-day period after the pre-announcement but before allowing to trade ($T-0$ to $T+2$), a ten-day period prior to the post-transaction announcement day ($t-10$ to $t-1$), and a three-day period after the post-transaction announcement day ($t-0$ to $t+2$). In the pre-listing period, the data exhibit significantly negative abnormal returns after insiders announce their planned transfers, in contrast to the positive CARs before the announcements. Meanwhile, significant price reversals following the subsequent disclosure of unfulfilled transfers are observed. However, announcements of planned insider transfers after listing cause somewhat weaker price reactions, and nor is any price revision observed for unfulfilled transfers. N indicates sample size.

* Indicate statistical significance at the 0.1 level.
** Idem., 0.05.
*** Idem., 0.01.

(MOPS). Part I of Table 3 shows that the three-day CAR over the pre-transaction announcement days ($T-0$ to $T+2$) for all planned insider transfers before listing is significant (−1.03%), compared with being insignificant (−0.042%) for the cases following the listing. These results are consistent with our anticipation in hypotheses H_1 and H_3, indicating that the market participants appear to treat the pre-transaction announcement of planned transfers by insiders before listing as a negative signal regarding the future prospects of the exchange listing, while after listing the market pays only limited attention to the release of planned insider transfer trades.

However, part II of Table 3 indicates that the abnormal return around the post-transaction announcement days ($t-0$ to $t+2$) for unfulfilled insider transfers before listing is positive and significant (0.98%). The dramatic reversal in stock price movement for banks with unfulfilled insider trades preceding listing suggests that as soon as insiders disclose that they did not transfer shares as initially reported, the information on insider transfers gets fully revealed to the market, thus finally confirming the message contained in the pre-transaction announcement by insiders. As a result, market participants revise their forecasts of firm prospects about the impending exchange listing. The phenomenon is consistent with hypothesis H_2. Investors consider insider transfer information preceding listing valuable in determining stock prices. On the other hand, after listing, the abnormal return (−0.55%) during the post-transaction announcement days is found to be more negative than that during the pre-transaction announcement period (−0.042%). This evidence

suggests that knowledge of the unfulfilled insider transfers released following the listing will not improve investor perceptions of firm future prospects when continuously experiencing negative abnormal returns. It also supports our hypothesis H_4 that the market shows less reversal response (an insignificant −0.55%) to the post-transaction announcement in the post-listing time, compared with that (a significant 0.98%) in the pre-listing time.

4.2.2. Test of hypotheses H_5 and H_6

To study whether the market response to the post-transaction announcement of unfulfilled insider transfer varies with the level of insider transferring behavior during the transaction month, we analyze the CARs over the post-transaction announcement period ($t-0$ to $t+2$) for two subgroups divided by the level of execution in their planned transfer trading (that is, completely unfulfilled subgroup and partially fulfilled subgroup). Part II of Table 4 shows that before listing, insiders having executed none of the planned transfers (the completely unfulfilled subgroup) and having executed only part of the planned transfers (the partially fulfilled subgroup) experience three-day CARs ($t-0$ to $t+2$) being 1% (t-value = 0.99) and 0.95% (t-value = 2.20), respectively. Despite the greater price effect of the former, the difference is not statistically significant and thus does not support hypothesis H_5. On the other hand, after listing, the CARs ($t-0$ to $t+2$) are −1.18% (t-value = −1.17) for completely unfulfilled transfers and −0.17% (t-value = −0.21) for partially fulfilled transfers. The difference between the two values is statistically insignifi-

Table 4
Mean cumulative abnormal returns (CARs) for subgroups of insider transfer trades in the pre-listing and post-listing periods—Test of hypotheses H_5 and H_6

Various event windows	Panel A: In the pre-listing period			Panel B: In the post-listing period		
	N	Mean	*t*-statistic	*N*	Mean	*t*-statistic
I. Pre-transaction announcement interval						
CAR($T-0$ to $T+2$) for fulfilled insider transfers	47	−0.2072	−0.361	61	0.3134	0.683
CAR($T-0$ to $T+2$) for unfulfilled insider transfers	21	−2.8576	−3.227***	16	−1.3950	−1.819*
II. Post-transaction announcement interval						
CAR($t-0$ to $t+2$) for partially fulfilled transfers	10	0.9460	2.198*	10	−0.1650	−0.207
CAR($t-0$ to $t+2$) for completely unfulfilled transfers	11	1.0027	0.987	6	−1.1800	−1.177

Notes. Abnormal returns are examined over the pre-transaction announcement days ($T-0$ to $T+2$) for two subgroups of planned insider transfers—fulfilled and unfulfilled, as well as over the post-transaction announcement days ($t-0$ to $t+2$) for two subgroups of unfulfilled insider transfers—completely unfulfilled and partially fulfilled. The results show that in both periods, the three-day CAR ($T-0$ to $T+2$) of unfulfilled subgroup is significantly more negative than that of fulfilled subgroup, suggesting that the extent to which insiders execute their planned transfers appears related to the market response to the announcement of their planned transfer trades. However, within the unfulfilled transfers, the difference between CAR ($t-0$ to $t+2$) of partially unfulfilled subgroup and that of completely unfulfilled subgroup is not significant. *N* indicates sample size.

* Indicate statistical significance at the 0.1 level.

*** Idem., 0.01.

cant and also does not support hypothesis H_6.[6] The results indicate that investors appear responding to the announcement of unfulfilling the planned sales by insiders, but not to its details such as the level of unexecuted transfers.

4.2.3. Test of hypothesis H_7

To examine whether the profit opportunities for insider transfer trades in the pre-listing period differ from those in the post-listing period, we analyze the CARs over the transaction interval ($T + 3$ to $E - 0$) for all planned insider transfers, fulfilled insider transfers, and unfulfilled insider transfers. In Table 5, the CAR ($T + 3$ to $E - 0$) for all planned insider transfers before listing is a significant 2.70%, compared to a significant but negative −2.00% after listing. Figure 1 clearly displays the contrast between CARs ($T + 3$ to $E - 0$) for the pre-listing and post-listing transfer samples. The figure indicates that the pre-listing samples of planned insider transfers experience overall gains over the transaction period, while the profits over the transaction period for the post-listing samples are generally negative up to the expiration day. Furthermore, insiders that subsequently fulfill (do not fulfill) their planned transfers before listing obtain mean CAR of 3.33% (1.28%) as measured over the transaction period. In contrast, the transaction period CAR following the listing is −1.98% (−2.07%) for the fulfilled (unfulfilled) trades. These return patterns precisely correspond to those of sample banks, as described in Section 4.1, with predominantly positive abnormal returns before listing and the consistently negative abnormal returns following listing, and all agree with hypothesis H_7. Additionally, the CARs during the transaction period for insider transfer trades appear to be related to insider transferring behavior, that is,

Table 5
Mean cumulative abnormal returns (CARs) for insider transfer trades in the pre-listing and post-listing periods—Test of hypothesis H_7

Event window	Panel A: In the pre-listing period			Panel B: In the post-listing period		
	N	Mean	t-statistic	N	Mean	t-statistic
Transaction interval						
CAR($T + 3$ to $E - 0$) for all planned insider transfers	68	2.6967	2.500**	77	−1.9976	−2.045**
CAR($T + 3$ to $E - 0$) for fulfilled insiders transfers	47	3.3318	2.877***	61	−1.9773	−1.723*
CAR($T + 3$ to $E - 0$) for unfulfilled insiders transfers	21	1.2755	0.540	16	−2.0748	−1.162

Notes. This table reveals that CARs over the permitted transaction month ($T + 3$ to $E - 0$) are significantly positive in the pre-listing period, and significantly negative in the post-listing period. Additionally, the CARs during the transaction month for insider transfer trades appear to be related to insider transferring behavior, that is, whether insiders fulfill their planned transfers completely or only partially. N indicates sample size.

* Indicate statistical significance at the 0.1 level.

** Idem., 0.05.

*** Idem., 0.01.

[6] We also use regressions to retest hypotheses H_5 and H_6, where the dependent variable is CAR($t - 0$ to $t + 2$) and the independent variable is the unfulfilled transfer ratio (see note 7), with control of firm size (log of market value). The results are qualitatively similar.

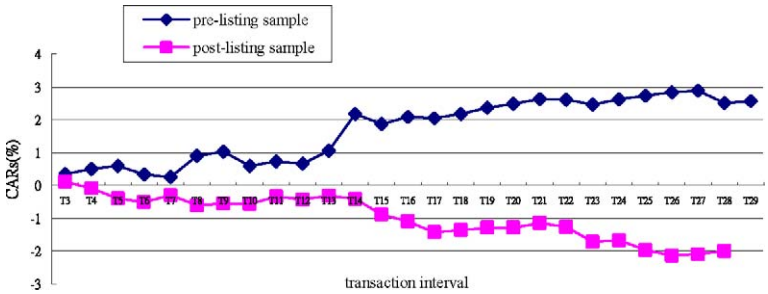


Fig. 1. Mean cumulative abnormal returns (CARs) over the transaction interval for all planned insider transfers. *Notes*. The observations consist of 68 planned insider transfers over 27 trading days in the pre-listing period, and 77 transfers over 26 trading days in the post-listing period. This figure indicates the dramatic difference that the pre-listing samples experience overall gains over the transaction interval, while the abnormal returns of the post-listing samples are generally negative.

whether they fulfill their planned transfers completely or only partially. Restated, the transaction month profits for fulfilled transfers are greater than those of the unfulfilled subgroup in the pre-listing period. Similarly, in the post-listing period, the transaction month losses for fulfilled transfers are smaller than those of the unfulfilled subgroup. This phenomenon suggests that the information content of insider transferring behavior may provide an exploitable profit opportunity for holders of soon-to-be-listed banking companies.

4.2.4. Extended test of insider transferring behavior

Notably, insiders appear to selectively execute their planned transfer trades during the transaction period only when the market reaction to the pre-transaction announcement does not result in a substantial decline in price. It is particularly evident in part I of Table 4 which demonstrates the abnormal returns around the pre-transaction announcement days ($T-0$ to $T+2$) grouped by insider transferring behavior (whether completely fulfilled or not). In the pre-listing period, the three-day CAR ($T-0$ to $T+2$) for the sub-sample of completely fulfilled transfers is an insignificant -0.21%, compared to a significant -2.86% for the sub-sample of unfulfilled transfers (including partially fulfilled and completely unfulfilled trades). In the post-listing period, CAR ($T-0$ to $T+2$) for the completely fulfilled subgroup is positive but insignificant (0.31%), while CAR ($T-0$ to $T+2$) for the unfulfilled subgroup is negative and significant (-1.40%). These results demonstrate that the extent to which insiders execute their planned transfers appears to depend on the market response to the announcement of their planned transfer trades.

To explore further, we use an OLS model to test the link between CAR of the pre-transaction announcement period ($T-0$ to $T+2$) and the degree of execution by insiders in their planned transfer trading. The results are listed in Table 6. Specifically, the unfulfilled transfer ratio (shares of unfulfilled transfers divided by shares filed for transfer) is calculated as a proxy for the degree to which insiders execute their transfer trading.[7] Insiders are required to report the unfulfilled portion of their planned transfers, so we use the

[7] Please see panel B of Table 1 for the exposition of unfulfilled transfer ratio.

Table 6
Regression results of the unfulfilled transfer ratio on CAR over the pre-transaction announcement interval ($T-0$ to $T+2$)

Sample groups	Intercept	CAR($T-0$ to $T+2$)	N	Adj. R^2	Prob > F
1 For the pre-listing sample trades	0.233***	−0.303**	68	0.078	0.012
	(4.60)	(−2.59)			
2 For the post-listing sample trades	0.139***	−0.206*	77	0.048	0.105
	(3.86)	(−1.91)			
3 For all combined pre-listing and post-listing sample trades	0.185***	−0.265***	145	0.064	0.001
	(6.11)	(−3.29)			

Notes. Regression results show that the CAR ($T-0$ to $T+2$) is negatively and significantly related to the dependent variable, the unfulfilled transfer ratio, which is measured by the ratio of the number of shares of unfulfilled transfers to the number of shares filed for transfer by insiders. This supports the view that insider's transferring behavior may depend on the market reaction to the announcement of planned insider transfers. N indicates sample size. Figures in parentheses are t-statistics.

* Indicate statistical significance at the 0.1 level.
** Idem., 0.05.
*** Idem., 0.01.

unfulfilled ratio as explanatory variable to see whether the CAR ($T-0$ to $T+2$) is related to insider's post-transaction report. By regressing the unfulfilled transfer ratio on CAR of the pre-transaction announcement period ($T-0$ to $T+2$), the model shows that the CAR ($T-0$ to $T+2$) is negatively and significantly related to insider transferring behavior. This result supports the view that, to some degree, insider transferring behavior depends on the reaction of the stock price to the pre-transaction announcement of planned transfers of stocks by insiders.[8]

Overall, the findings indicate that the information content of pre-listing insider transfers contrasts markedly with that of post-listing insider transfers. The former directly impacts the stock prices of banks in association with exchange listing announcements, while the latter shows less connection. The response of the stock price to the information content of insider transfer trades depends on the announcement type (pre-transaction announcement of planned insider transfers or post-transaction announcement of unfulfilled insider transfers) and timing (pre- or post-listing). An explanation of any differences in the price effect between pre- and post-listing insider transfers might focus on the fact that the pre-(post-)listing period is generally characterized by positive (negative) abnormal returns, and on the perception that insider transfer activity (subject to disclosure regulation) is one of the most important and direct signals available for conveying private information to the market, and consequently such public signals provide additional information content consistent with and reinforcing the implications of the managerial timing of listing decisions. Thus, the comparisons help corroborate that the information on pre- and post- listing insider transfer trades is perceived differently by the market.

[8] Since the intercept is significantly positive in all regressions, it indicates that some other important factors beyond the pre-transaction announcement period CAR ($T-0$ to $T+2$) also impact insider transferring behavior.

4.3. Volume turnover of insider transfer trades in the pre-listing and post-listing periods

The information value associated with the pre-listing and post-listing insider transfer trades is further examined using the volume turnover tests depicted in Table 7. The first column lists the average daily volume turnover for each interval, while the second column displays the average daily volume turnover for each interval calculated as the percentage of the average daily volume turnover during the entire period. The results from both computation procedures for volume turnover are nominally and statistically consistent.

The overall results demonstrate that the volume turnover increases during the pre-transaction announcement days ($T-0$ to $T+2$), and then decreases during the permitted transaction period and the post-transaction announcement period. For the pre-listing (post-listing) insider transfer samples, the average daily volume turnover during the pre-transaction announcement period ($T-0$ to $T+2$) is 1.245 (1.266) times the average daily volume turnover for the entire period, and clearly exceeds that during all the other intervals. This rise is consistent with the point that public information on insider transfer trading creates investor desire for portfolio readjustment. The results suggest that the released in-

Table 7
Average daily volume turnover of insider transfer trades in the pre-listing and post-listing periods

Intervals	Panel A. In the pre-listing period			Panel B. In the post-listing period		
	N	Average daily volume turnover	Average daily volume turnover[a]	N	Average daily volume turnover	Average daily volume turnover[a]
($T-10$ to $T-1$)	68	0.4215^{B}	$1.1097^{A,B}$	77	$0.3598^{A,C}$	$1.1502^{A,C}$
($T-0$ to $T+2$)	68	0.5107^{A}	1.2448^{A}	77	0.3821^{A}	1.2659^{A}
($T+3$ to $E-0$)	68	0.3843^{B}	0.9721^{B}	77	0.2923^{C}	0.9961^{C}
($t-10$ to $t-1$)	21	0.4082^{B}	0.8723^{B}	16	0.1892^{B}	0.9084^{B}
($t-0$ to $t+2$)	21	0.3756^{B}	0.8645^{B}	16	0.1498^{B}	0.8039^{B}
ANOVA F-statistic		1.083	4.277^{***}		2.484^{**}	4.353^{***}

Notes. Volume turnovers (trading volume divided by shares outstanding) over 5 event intervals are converted into an average daily volume turnover for each insider transfer trade in each interval. These intervals include a ten-day period ($T-10$ to $T-1$) prior to the pre-transaction announcement day, a three-day period ($T-0$ to $T+2$) over the pre-transaction announcement, a one-month period ($T+3$ to $E-0$) over the permitted transaction time, a ten-day period ($t-10$ to $t-1$) prior to the post-transaction announcement day, and a three-day period ($t-0$ to $t+2$) over the post-transaction announcement. The average daily volume turnover for each interval is computed as a percentage of the average daily volume turnover for the entire period from $T-10$ to $E-0$, or to $t+2$ if there is any post-transaction disclosure. ANOVA is used to test for the null hypothesis that average daily volume turnover is equivalent among five intervals. The letters indicate when pairs of means are significantly different at the 0.05 level using the Tukey test. The Scheffe test confirms these results. When the letters are the same for a pair in the column, it means that we cannot reject the null hypothesis of equal means. We can reject the null when the letters are different. For example in the third column, the average daily volume turnover during ($T-0$ to $T+2$) is marked with an A, while a B is marked for interval ($T-10$ to $T-1$). We thus reject the null of equal means for this pair. This table shows that the volume turnover increases during the pre-transaction announcement period ($T-0$ to $T+2$), and then decreases during the permitted transaction period and the post-transaction announcement period. This is consistent with the point that public information on planned insider transfer trades is associated with increased trading activities. N indicates sample size.

[a] As a percentage of the average daily volume turnover for the entire period.

** Indicate statistical significance at the 0.05 level.

*** Idem., 0.01.

formation on planned insider transfer trades is associated with increased trading activities and is consistent with the leading indicator hypothesis proposed by Givoly and Palmon (1985) that insider trading triggers additional transactions by other investors.

4.4. Further tests

To determine whether the tests could be biased by the methodology employed, this paper considers the sensitivity of the results to the variations in testing implementation. First, as an alternative to the market-adjusted returns model, we also measure the abnormal returns using the market model. The parameters of the market model are estimated based on daily returns for 250 days ($T = -260, -259, -258, \ldots, -11$) before the initial announcement day using the return index of the banking industry as the proxy for the market. The results thus obtained resemble those generated using the market-adjusted returns model, and hence, are not reported here.[9]

Secondly, we note from Tables 3 and 4 that the significant CAR ($T - 0$ to $T + 2$) of all planned insider transfers before listing (68 samples) may be driven by a small subset of unfulfilled transfers (21 samples). We plot the distribution of CARs ($T - 0$ to $T + 2$) for 47 sub-samples of fulfilled transfers and find that after excluding 4 extreme samples which are away from the mean with more than three standard deviations, the mean CAR ($T - 0$ to $T + 2$) becomes a significant -1.04%.[10] Consequently, we believe that the significance of CAR ($T - 0$ to $T + 2$) for all of the transfers is characteristic of the transfers in general. Due to the small number of samples available for study, we are reluctant to exclude any sample. However, if we apply the same criteria of sample selection for other subgroups, the results obtained are the same as those reported here.[11]

Furthermore, we measure the changes in trading volume turnover in the same fashion as Harris and Gurel (1986) by adjusting for changes in overall market volume on any given day. However, we use volume turnover rather than trading volume in the measurement. The turnover ratio is calculated as follows:

$$\textit{Turnover Ratio} = \frac{TR_{ik}}{TR_{mk}} \cdot \frac{TR_m}{TR_i} \tag{1}$$

where

TR_{ik}: volume turnovers of security i corresponding to each insider transfer trade in interval k, k in ($T - 10$ to $T - 1$), ($T - 0$ to $T + 2$), ($T + 3$ to $E - 0$), ($t - 10$ to $t - 1$), or ($t - 0$ to $t + 2$);

TR_{mk}: volume turnovers of the banking industry in interval k;

[9] The results described but not reported in this section are available from the authors upon request.

[10] Despite the CAR ($T - 0$ to $T + 2$) for the subgroup of fulfilled insider transfers before listing being significantly negative after excluding extreme samples, this negative price effect is still significantly weaker than that for the subgroup of unfulfilled transfers before listing.

[11] We have also used the non-parametric Wilcoxon sign rank statistics to retest Hypotheses H_1 through H_7, and found no inconsistencies with the parametric tests reported in this paper. The results are available from the authors upon request.

TR_i: average volume turnover of security i corresponding to each insider transfer trade over the period from $T - 70$ to $T - 11$ before the pre-transaction announcement day;

TR_m: average volume turnover of the banking industry over the period from $T - 70$ to $T - 11$ before the pre-transaction announcement day.

A turnover ratio of unity indicates no abnormal volume turnover, while a turnover ratio exceeding unity indicates an abnormally high turnover during the interval k relative to previous normal days. The results show that volume turnover increases as predicted following the announcement of planned insider transfer trading, and then declines during the permitted transaction period and the post-transaction announcement period. The mean volume turnover ratios for the interval ($T - 0$ to $T + 2$) are tested to significantly exceed 1 for both the pre-listing and post-listing insider transfer samples. The volume turnover patterns obtained by Eq. (1) are almost identical to those described above, and are consistent with the notion that insider trading is closely followed by the market, since insiders are believed to trade stocks for personal gains based on private information (Seyhun, 1986).

5. Summary and conclusions

Testing market response to insider transfer trades during the pre- and post-listing periods provides further understanding of bank exchange listing decisions. By examining whether the market reaction to revealed insider transfer behavior differs markedly between the two periods, the information content of insider trading can be explored in detail. Significant positive abnormal returns are found for the several days preceding the announcement of planned insider transfer trades during both the pre- and post- listing periods. This evidence indicates the timing ability of insider decisions, and supports the claim that insiders sell stocks when they are overvalued. Compared with the insignificant negative price effects for the pre-transaction announcement of planned insider transfer trading and for the post-transaction announcement of unfulfilled insider transfer trading in the post-listing period, the significant negative stock price reaction to the pre-transaction announcement and the significant positive stock price reaction to the post-transaction announcement in the pre-listing period manifest that insider selling before listing affect market prices and probably indicate the assessment of insiders regarding the prospects of listing on the national exchange. Since banking firms experience exceptional stock returns before listing and suffer poor post-listing stock performance, the insider transfers themselves reveal information consistent with, and reinforcing that associated with the managerial timing of listing decisions. Furthermore, corresponding increases in trading volume turnover are observed immediately following the announcement of planned insider transfers, providing additional evidence regarding information flow on insider transfer trading.

Exploring the link between the CAR of the pre-transaction announcement period and subsequent insider transferring behavior strongly supports the notion that the degree to which insiders execute their transfers depends on how the stock price reacts to the announcement of planned insider transfer trades. Furthermore, this paper demonstrates that typical insiders in banking firms who sell in the pre-listing period avoid likely losses from

delaying the sales until the post-listing period. Specifically, we find that the magnitude of the profits (losses) over the transaction period for insider transfer trades is associated with the degree to which insiders execute their planned transfer trading (complete transfer versus incomplete transfer). The present evidence further reinforces the point that real time investor knowledge of insider transfer activity can facilitate more orderly price movements and more efficient reflection of private information in stock prices. These findings imply that the efficiency with which insider transfer trading around exchange listing deserves examination. Consequently, we believe that these results should encourage regulators to establish a more substantial and timely disclosure policy relating to the identification of insider actions.

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