

Can Trading behaviours of Institutional Investors signal M&A Quality? Taiwan Evidences

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This study investigates the relationship between institutional investors trading and the acquirers' announcement effect of mergers and acquisitions (M&As). We try to test if trading behaviors of institutional investors predict M&A quality of acquirers. The sample firms are acquiring firms listed in Taiwan which announced merger and acquisition between 2003 and 2012. We use cumulative net buying of three types of institutional investors including foreign institutional investors, mutual funds, and local dealers to examine acquirer's short-run stock performance around the announcement date of M&As. Methodologies of event studies are adopted and regression models are used to find explanatory factors to Announced Cumulative abnormal returns (CARs). The analysis of empirical evidences reveals three findings: First, cumulative net buying of institutional investors is positively related to the short-run stock performance of acquirers. Second, acquirers with increase in institutional holdings prior to the merger and acquisition have better short-run stock performance than acquirers with decrease in institutional holdings. Third, the relationship between cumulative net buying of foreign institutions and the announcement effect of acquirers is significantly positive while cumulative net buying of mutual funds or brokers has no significant relations with the short-run stock performance of acquirers.

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1. Introduction

The important role of institutional investors is growing rapidly worldwide and thrives in more developed economies (Khorana et al., 2005). The steady increase in institutional block holdings over the past few decades has led academics and practitioners to question whether institutional investors actively monitor management or merely “vote with their feet” by exiting poorly performing companies. An examination of the performance of mergers and acquisitions (M&A) appears to deliver consistent evidence in support of the monitoring hypothesis. Chen, Harford, and Li(2007) show that concentrated holdings of independent, long-term institutions are associated with better merger performance. Gasper ,Massa, and Matos (2005) find that acquirers held by institutions with low turnover rates perform better after the merger than those held by short-term institutional investors. Several other papers also note that institutional ownership is associated with better post-merger performance (see Martin, 1996; Bae, Kang, andKim,2002; Kang,Kim,Liu,andYi,2006). However, Amrita Nain and Tong Yao (2013) discover that several mutual fund stock selection skill measures strongly predict the post-merger performance of corporate acquirers even after controlling for possible shareholder monitoring.

This study investigates the relationship between institutional trading and the announcement effect of merger and acquisition. The research is based on acquiring firms listed in Taiwan which announced merger and acquisition between 2003 and 2012. We use cumulative net buying of three representative institutional investors including foreign institutions, mutual funds, and local security dealers to examine acquirer’s short-run stock performance around the announcement of merger and acquisition.

We have three findings. First, the results indicate that cumulative net buying of total institutional investors is positively related to the short-run stock performance of acquirers. The evidences are consistent with previous studies using concentrated holding of institutional investors as explanatory variable. However, the implications are different. Since we use net cumulative net trading shares as explanatory variable, the results tend to support the argument that overall institutional investors have superior investment skills (rather than stronger monitoring role) in selecting firms conducting value-enhancing M&A deals. Second, the relationship between cumulative net buying of foreign institutions and the announcement effect of acquirers is significantly positive while cumulative net buying of mutual funds or local dealers has no significant relationship with the short-run stock performance of acquirers. The findings support the argument that foreign institutional investors have better skills than local institutional investors in

discovering firms with good managers conducting good quality M&A deals especially at emerging markets such as Taiwan. Third, acquirers with increase in institutional holdings prior to the merger and acquisition have better short-run stock performance than acquirers with decrease in institutional holdings. The evidence further support the argument that net trading directional information of overall institutional investors can signal M&A quality.

The rest of the paper is structured as follows. Section 2 discusses the literature and defines the hypotheses. Section 3 presents the data, descriptive statistics, and test models. Section 4 discusses the empirical results. The conclusions are in Section 5.

2. Literature review and hypotheses development

There are at least four theories to predict the relations between institutional trading and acquirers' M&A performance.

Monitoring theory

In examining mutual fund proxy voting records, Davis and Kim(2007) find that typical mutual fund families passively vote in favor of proposals put forth by corporate management. However number of studies identify the significant influence that institutional investors have on firms' decision making, and particularly on the US M&As (Stulz et al.,1990; Ambrose and Megginson, 1992; Chen et al., 2007; Ferreira et al., 2010).

An examination of the performance of mergers and acquisitions (M&A) appears to deliver consistent evidence in support of the monitoring hypothesis. Chen, Harford, and Li(2007) show that concentrated holdings of independent, long-term institutions are associated with better merger performance. Gasper ,Massa, and Matos (2005) find that acquirers held by institutions with low turnover rates perform better after the merger than those held by short-term institutional investors. Several other papers also note that institutional ownership is associated with better post-merger performance (see Martin, 1996; Bae, Kang, andKim,2002; Kang,Kim,Liu,andYi,2006). These M&A studies propose that institutional shareholders, particularly long-term and independent institutions, influence management in to striking value-enhancing merger deals.

Catering theory

The second hypothesis deals with the catering effect. Stein (1996) makes the argument that the manager who is maximizing short-horizon investors' wealth, that

is, catering to short-horizon investors, will be interested in maximizing the current stock price, even in the absence of market-timing considerations. Catering theories argue that since institutional investors can influence corporate decisions by making their preferences known through their stock holdings and respective trading, firms adjust their strategic investment proposals to cater to their institutional investors (Hartzell and Starks, 2003; Tihanyi et al., 2003). Fama and Jensen (1983) and Walsh and Seward (1990) show that external governance mechanisms play an important role in curbing managerial opportunism. Moreover, institutional investors provide effective external monitoring of firms' management (Bushee, 1998; Almazan et al., 2005; Chen et al., 2007).

Investment skills theory

Although studies examining after-expense net returns of funds find that active funds on average do not outperform their passive counterparts (Jensen, 1968; Gruber, 1996; Carhart, 1997). Amrita Nain and Tong Ya (2013) show that the commonly observed correlation between institutional investor ownership and the success of mergers is partly driven by active stock picking. Several mutual fund stock selection skill measures strongly predict the post-merger performance of corporate acquirers even after controlling for possible shareholder monitoring. These findings are stronger for funds with characteristics more indicative of active stock picking. Moreover, firms held by funds with higher stock selection skills are more likely to subsequently become acquirers, suggesting that the mutual fund skill set includes the ability to identify acquirers with value-enhancing acquisition opportunities.

Stock liquidity and monitoring incentive

Different shareholder groups may not have aligned interests in the firm's developing and investment strategies, due to increased risks and organizational complexity (Tihanyi et al., 2003). Hoskisson et al. (2002) find that different types of institutional investors have heterogeneous preferences for corporate innovation that affect corporate governance and strategy.

A liquid stock market allows large investors to benefit from monitoring via informed trading, leading to more monitoring and overcoming the free-rider problem (Admati et al., 1994; Maug, 1998; Johnson and Greening, 1999). Another argument predicts a tradeoff between liquidity and control: higher liquidity makes block holders' voice less pertinent, as they can more easily exit their positions with little or no impact on price when confronted with a negative signal. Roosenboom, et al (2013) find a negative and statistically significant relation between stock liquidity and acquirer

returns

If we assume that most of institutional investors are long-term view, independent, have good selection skills and corporate managers care about institutional investors' expectation, we will expect to see the following hypothesis is empirically supported.

Hypothesis 1 : Net cumulative trading shares of overall institutional investors are positively related to acquiring firms' announcement returns.

Informational advantage vs. investment sophistication

Domestic investors can have a significant edge in stock trading (Kang and Stulz, 1997; Choe et al., 1999) and enjoy informational advantages (Dvorak, 2005) over foreign investors. However, Chen et al. (2009) find that foreign investors are more sophisticated in processing information than domestic investors, in line with Seasholes (2004) who finds that foreign investors perform significantly better compared to domestic investors when trading in shares of large firms in emerging markets. Moreover, foreign institutional investors can help improve firm performance, reduce capital expenditures, and fill the information gap between cross-border acquirers and targets, hence, potentially promoting changes in corporate governance (Gillan and Starks, 2003; Ferreira and Matos, 2008). Croci et al. (2012) and Fernandes et al. (2013) find that foreign institutional investors have a significant impact on CEO compensation, suggesting that foreign institutional investors can affect firm policy and decision making. Foreign institutional ownership enjoys long-run strategic information advantages compared to local investors, as foreign institutional ownership is strongly and positively related to both contemporaneous and subsequent firm performance (Grinblatt and Keloharju, 2000; Dvorak, 2005). Huang and Shiu (2009) find that firms in Taiwan with high foreign institutional ownership outperform those with low foreign institutional ownership. Meanwhile, foreign institutional investors can help improve firm performance and deduct capital expenditures (Gillan and Starks, 2003; Ferreira and Matos, 2008), reduce cultural distances, transaction costs and information asymmetries, and contribute to international investments (Ferreira et al., 2010)

Hypothesis 2. Acquiring firms with positive net buying of foreign institutional investors have a higher announcement return.

3. The Methodology and Model

3.1 Data sources and sample design

The initial data source is from M&A database of SDC Platinum (Securities Data Corporation). The sample period is 10 year data from January, 2003 through December. We adopt the following screening criteria to narrow down to the feasible sample data:

1. Acquiring firms are listed at Taiwan stock exchange.
2. Only considering controlled shares deals, that is, excluding minority share deals.
3. Considering deal materiality, we excluding deal size is less than US\$100 million.
4. Excluding M&A deals of financial service industry owing to its special characteristics (e.g. highly-leveraged)
5. Only one M&A event is selected if a firm adopts more than one M&As during announcement event window.
6. Only accounting data, stock trading data, and institutional trading data (including Qualified Foreign Institutional Investors, QFII, Mutual Funds, and Security Dealers) can be collected from Taiwan Economic Journal database

After screening, the final sample firms size is 193 as shown in Table 1.

Table 1
Sample firms screening process

Sample years 2003~2012	Sample Size
1. Raw sample firms	1638
2. Acquiring firm is a listed firm at Taiwan Stock exchange	340
3. Types of deal is either merger, asset acquisition, majority share acquisition, or tender offer. The data of deal information can be found.	293
4. Deal amount is greater than 100 million US dollar	277
5. Either acquiring or target firms are not at financial industry sector.	210
6. Accounting and stock trading data are available during estimation and event announcement periods	193

Data source: SDC database

Table 2 shows that during 10 year period (2003 to 2012), excluding deals undertaking by financial service firms, there are at least 10 more than US\$100 million deals conducted by Taiwan listed firms. The number of M&As does not

show upward or down trend, which is supported by different M&A waves owing different industry shocks during different time period. Also, The nearly 60% completed ratio of Taiwan M&A deals after M&A announcement reveals the uncertainty of M&A deals.

Table 2
Descriptive statistics of sample firms

Year	<u>Number of deals</u>		<u>Completed or not</u>		
	Number	Percent	Completed	under process	Withdrawal
2003	18	9.33%	13	5	0
2004	11	5.70%	7	4	0
2005	25	12.95%	16	6	3
2006	20	10.36%	10	10	0
2007	18	9.33%	8	10	0
2008	19	9.84%	10	9	0
2009	16	8.29%	11	3	2
2010	30	15.54%	18	12	0
2011	12	6.22%	8	4	0
2012	24	12.44%	16	8	0
Total	193	100.00%	117	71	5

Data source: SDC database

Table 3 shows that distribution of deal characteristics such as domestic or cross-border deal, target firm is listed or private firm, industry-related deal or not. The Taiwan M&A deals are mainly domestic deals (67%), industry-related (56%), and target firms are privately-held firms (75%).

Table 3

Deal characteristics of sample deals

Year	Cross-border or domestic deal		Industry-related		Target firm	
	<u>Cross-border</u>	<u>Domestic</u>	<u>Related</u>	<u>not-related</u>	<u>listed</u>	<u>Private</u>
2003	6	12	12	6	2	16
2004	3	8	6	5	2	9
2005	6	19	19	6	13	12
2006	4	16	8	12	7	13
2007	7	11	11	7	5	13
2008	7	12	14	5	4	15
2009	5	11	10	6	5	11
2010	15	15	13	17	3	27
2011	5	7	4	8	5	7
2012	6	18	11	13	3	21
Total	64	129	108	85	49	144

Note: Two digits of SIC code is used to judge industry relatedness. If two digits of both acquiring and target firms are the same, the deal is judged as related deal.

3.2 Research models and variables definitions

3.2.1 Event Study Methodology

This study adopts event study approach (Brown and Warner (1980)) to measure acquiring firms' short-term announcement returns. Announcement return is estimated as cumulative abnormal returns (i.e. CARs). Announcement data is collected from SDC database. We use (-1,+1), (-2,+2),(-3,+3) to calculate various CARs. The estimation period used for estimating normal return is (-150,-30). There are at least two methods are used to estimated normal returns – one is market model (which treat beta times market return as a stock's normal return) , another one is market adjusted model (which treat market return as a stock's normal return). We run CARs and regression using both models since we can tell which model is superior to estimate a stock's normal return.

3.2.1 Regression models

This study uses OLS as estimation model and uses CARs as dependent variable to test the following three hypotheses:

Model 1 is used to test Hypothesis 1 : Net cumulative trading shares of overall institutional investors are positively related to acquiring firms' CARs.

Model 1:

$$\begin{aligned} \text{CAR} = & \beta_0 + \beta_1 \text{PTNB} + \beta_2 \text{SIZE} + \beta_3 \text{BTM} + \beta_4 \text{ROA} + \beta_5 \text{D}_{\text{PUB}} + \beta_6 \text{D}_{\text{REL}} \\ & + \beta_7 \text{D}_{\text{CRO}} + \beta_8 \text{D}_{\text{COMP}} + \sum_{i=1}^9 \beta_{9i} \text{D}_{\text{YEAR}} + \sum_{j=1}^5 \beta_{10j} \text{D}_{\text{IND}} + \varepsilon_i \end{aligned}$$

Model 2 is used to test hypothesis 2: net trading shares of various institutional investors have different linkage to acquiring firms' CARs.

Model 2:

$$\begin{aligned} \text{CAR} = & \beta_0 + \beta_1 \text{PFRNB} + \beta_2 \text{PMFNB} + \beta_3 \text{PBKNB} + \beta_4 \text{SIZE} + \beta_5 \text{BTM} + \beta_6 \text{ROA} \\ & + \beta_7 \text{D}_{\text{PUB}} + \beta_8 \text{D}_{\text{REL}} + \beta_9 \text{D}_{\text{CRO}} + \beta_{10} \text{D}_{\text{COMP}} + \sum_{i=1}^9 \beta_{11i} \text{D}_{\text{YEAR}} \\ & + \sum_{j=1}^5 \beta_{12j} \text{D}_{\text{IND}} + \varepsilon_i \end{aligned}$$

Model 3 is used to test hypothesis 3: Net trading (dummy variable) of institutional investors is significantly linked to CARs of acquiring firms no matter which estimation models or event windows are used.

Model 3:

$$CAR = \beta_0 + \beta_1 D_PTNB + \beta_2 SIZE + \beta_3 BTM + \beta_4 ROA + \beta_5 D_PUB + \beta_6 D_REL + \beta_7 D_CRO + \beta_8 D_COMP + \sum_{i=1}^9 \beta_{9i} D_YEAR + \sum_{j=1}^5 \beta_{10j} D_IND + \varepsilon_i$$

Where variables definitions are as below:

PTNB	Net cumulative trading shares of overall institutional investors during (-90,-30) period before M&A announcement date, divided by outstanding shares of acquiring firms estimated at date which is 90 days before announcement date
PFRNB	Net trading shares of foreign institutional investor during (-90,-30) period before M&A announcement date, divided by outstanding shares of acquiring firms estimated at date which is 90 days before announcement date
PMFNB	Net trading shares of mutual funds during (-90,-30) period before M&A announcement date, divided by outstanding shares of acquiring firms estimated at date which is 90 days before announcement date
PBKNB	Net trading shares of security dealer during (-90,-30) period before M&A announcement date, divided by outstanding shares of acquiring firms estimated at date which is 90 days before announcement date
D_PTNB	Net trading (dummy variable) of institutional investor, equal to 1 if net trading shares of overall institutional investors during (-90,-30) period before M&A announcement date is net buying; equal to 0 if net trading shares of overall institutional investors during (-90,-30) period before M&A announcement date is net selling.
Control variables	
SIZE	Refer to Schulman, Thomas et al. (1996), Acquiring Firm size, estimated as log of total asset at year-end

prior to M&A announcement date

BTM	Book value of total assets divided by market value of equity plus book value of debts, estimated at the year-end prior to M&A announcement date.
ROA	Return on Asset estimated at the year-end prior to M&A announcement date.
D _{PUB}	Dummy variable, equal to 1 if the target firm is listed, otherwise equal to 0.
D _{REL}	Dummy variable, equal to 1 if both acquiring firm and target firm are industry-related, which is estimated by the same two-digits SIC code, otherwise equal to 0.
D _{CRO}	Dummy variable, equal to 1 if the deal is cross-border deal, otherwise equal to 0.
D _{COMP}	Dummy variable, equal to 1 if the deal is completed, otherwise equal to 0.
D _{YEAR}	9 dummy variables for each calendar year of 10 years
D _{IND}	5 dummy variables for each industry category of six sample industries.

4. The findings

4.1 Announcement returns of acquiring firms

There exist significant positive announcement return of acquiring firms no matter what event window (-1,+1), (-2,+2), (-3,+3) are used and which estimation models (market model vs. market adjusted model) are used (Table 4). The results are consistent with previous M&A studies at emerging markets, but quite different with previous studies using US data. Most US studies discover that acquirers' announcement return is not significantly different from zero. What contribute to emerging market's value-enhancing M&A deal is needed for further investigation. .

Table 4
 CAR test for announcement
 returns of acquiring firm

Event window	Mean	Stand. Error	Median	Stan. Dev.	t-statistics	Sample size
Panel A --market model						
(-1,+1)	1.18%	0.2902	0.6780	3.989	4.07***	189
(-2,+2)	0.93%	0.3431	0.5977	4.6786	2.72***	186
(-3,+3)	1.18%	0.4052	0.6758	5.5117	2.92***	185
Panel B -- Market adjusted model						
(-1,+1)	1.11%	0.2801	1.0228	3.8514	3.95***	189
(-2,+2)	0.94%	0.3380	0.8581	4.6094	2.77***	186
(-3,+3)	1.20%	0.3832	0.9798	5.2399	3.14***	187

Note:* stands for 10% significant level; ** 5% significant level; *** stands for 1% significant level.

4.2 CAR difference between two acquiring firm sample - net buying vs. net selling of institutional investors

Through analysis of Table 5, we discover that acquiring firms with net buying of institutional investors show stronger positive announcement returns than acquiring firms with net selling of institutional investors. Comparing with acquiring firms with net selling of institutional investors produce insignificant positive announcement return, acquiring firms with positive net buying of institutional investors produce significant positive announcement returns (at 1% significant level). The results support the argument that net buying trading of institutional investors signals good management quality of the firm and can predict the success of acquiring firm's M&A investment actions.

Table 5

CAR difference between two acquiring firm sample -- net buying vs. net selling of institutional investors

Event window	Net buying	Net selling	CAR difference
Panel A --market model			
CAR(-1, +1)	(N=105)	(N=84)	
	1.6246***	0.6234*	1.0013*
p value	(<0.0001)	(0.081)	(0.0864)
CAR(-2, +2)	(N=103)	(N=83)	
	1.4004***	0.3561	1.0442
p value	(0.002)	(0.237)	(0.1306)
CAR(-3, +3)	(N=102)	(N=83)	
	1.4526***	0.8547*	0.5979
p value	(0.005)	(0.077)	(0.4645)
Panel B -- Market adjusted model			
CAR(-1, +1)	(N=105)	(N=84)	
	1.6865***	0.3813	1.2441***
p value	(<0.0001)	(0.185)	(0.0202)
CAR(-2, +2)	(N=103)	(N=83)	
	1.6440***	0.0592	1.5848**
p value	(0.000)	(0.453)	(0.0193)
CAR(-3, +3)	(N=103)	(N=84)	
	1.5649***	0.7603*	0.8045
p value	(0.001)	(0.097)	(0.2975)

Note:* stands for 10% significant level; ** 5% significant level; *** stands for 1% significant level.

4.3 Analysis of regression results

Since other control variables influencing M&A announcement returns have not yet be considered, the CAR mean difference test results shown here is preliminary, further regression analysis is needed.

Results of Model 1 in Table 6 show that the impact of trading of Institutional investors on CAR of acquiring firms using event window (-1, +1). Net cumulative trading shares of overall institutional investors (symbolized by PTNB) are positively linked to CARs of acquiring firms no matter which estimation model is used. That is, acquiring firms with more net cumulative buying shares produce

higher announcement returns. Results of Model 2 show that only net cumulative trading information of foreign institutional investors (symbolized by PFRNB) can produce significant positive CARs. Trading information of either mutual funds or security dealers cannot significantly relate to positive CARs. The results are to support the argument that foreign institutional investors with better investment skills (comparing with other two institutional investors) to invest firms with good management undertaking value-enhancing M&A deals.

Table 6

Trading of Institutional investors and CARs of acquiring firms using event window (-1, +1)

CAR(-1,+1)	Market model(N=189)		Market adjusted model(N=189)	
	Model 1	Model 2	Model 1	Model 2
PTNB	11.268*		11.395**	
	(1.79)		(2.34)	
PFRNB		11.959*		12.338**
		(1.66)		(2.14)
PMFNB		7.05		7.91
		(0.57)		(0.72)
PBKNB		28.537		18.152
		(0.78)		(0.53)
SIZE	-0.501**	-0.492**	-0.604***	-0.595***
	(-2.35)	(-2.27)	(-2.98)	(-2.89)
BTM	-1.065	-1.016	-2.260**	-2.221**
	(-1.21)	(-1.14)	(-2.21)	(-2.15)
ROA	-2.672	-2.61	-10.140***	-10.183**
	(-1.41)	(-1.36)	(-2.61)	(-2.60)
PUB	-1.698**	-1.671**	-1.862**	-1.855**
	(-2.13)	(-2.08)	(-2.52)	(-2.48)
REL	-0.076	-0.062	0.022	0.021
	(-0.12)	(-0.10)	-0.04	-0.04
CRO	-1.377*	-1.430*	-1.181*	-1.230*
	(-1.92)	(-1.94)	(-1.77)	(-1.79)
COMP	-0.158	-0.18	-0.279	-0.292
	(-0.26)	(-0.29)	(-0.49)	(-0.51)
Intercept	11.171***	11.036***	13.950***	13.813***
	(2.79)	(2.72)	(3.59)	(3.51)
D_YEAR	Yes	Yes	Yes	Yes
D_IND	Yes	Yes	Yes	Yes
R ²	0.1778	0.1793	0.2386	0.2393
Adj. R ²	0.0689	0.0592	0.1377	0.1279

Note: * stands for 10% significant level; ** 5% significant level; *** stands for 1% significant level.

When we expand the event window to (-2,+2), only regression using market adjusted model shows significant relationship between net trading of overall or foreign institutional investors and CARs (see Table 7). When we expand the event window to (-3,+3), there is no significant relationship (see Table 8). The possible explanations are other influencing factors beyond (-1,+1) are not controlled and beta is time-varying when we expand to wider event windows. Another explanation is that investors over-optimistic react to M&A deals shortly, then stock price return to fair value.

Table 7

Trading of Institutional investors and CAR of acquiring firms using event window (-2, +2)

CAR(-2,+2)	Market model(N=186)		Market adjusted model(N=186)	
	<u>Model 1</u>	<u>Model 2</u>	<u>Model 1</u>	<u>Model 2</u>
PTNB	7.257 (1.19)		15.142** (2.57)	
PFRNB		8.352 (1.16)		16.511** (2.37)
PMFNB		3.736 (0.27)		13.073 (0.97)
PBKNB		7.622 (0.17)		-7.88 (-0.18)
SIZE	-0.571** (-2.22)	-0.560** (-2.14)	-0.674*** (-2.69)	-0.671*** (-2.64)
BTM	-1.754 (-1.37)	-1.718 (-1.32)	-2.162* (-1.73)	-2.173* (-1.72)
ROA	-8.019* (-1.66)	-8.110* (-1.66)	-11.419** (-2.43)	-11.676** (-2.46)
PUB	-3.080*** (-3.30)	-3.085*** (-3.27)	-3.086*** (-3.41)	-3.142*** (-3.44)
REL	0.749 -1.02	0.74 -1	-0.028 (-0.04)	-0.069 (-0.10)
CRO	-1.816** (-2.16)	-1.867** (-2.17)	-1.482* (-1.82)	-1.525* (-1.83)
COMP	-0.636 (-0.90)	-0.643 (-0.90)	-1.055 (-1.53)	-1.045 (-1.50)
Intercept	13.126*** (2.68)	12.941** (2.60)	15.074*** (3.15)	15.035*** (3.10)
D_YEAR	Yes	Yes	Yes	Yes
D_IND	Yes	Yes	Yes	Yes
R ²	0.1979	0.1983	0.2258	0.2278
Adj. R ²	0.0897	0.0788	0.1213	0.1126

Note:* stands for 10% significant level; ** 5% significant level; *** stands for 1% significant level.

Table 8

Trading of Institutional investors and CAR of acquiring firms using event window (-3, +3)

CAR(-3,+3)	Market model(N=187)		Market adjusted model(N=187)	
	<u>Model 1</u>	<u>Model 2</u>	<u>Model 1</u>	<u>Model 2</u>
PTNB	1.11 (0.15)		10.213 (1.47)	
PFRNB		1.267 (0.15)		10.469 (1.29)
PMFNB		0.355 (0.02)		15.084 (0.96)
PBKNB		4.009 (0.07)		-45.181 (-0.91)
SIZE	-0.579* (-1.85)	-0.576* (-1.80)	-0.521* (-1.74)	-0.546* (-1.79)
BTM	-2.602* (-1.67)	-2.59 (-1.64)	-1.569 (-1.06)	-1.723 (-1.15)
ROA	-6.573 (-1.12)	-6.564 (-1.11)	-5.257 (-0.93)	-5.757 (-1.01)
PUB	-3.956*** (-3.51)	-3.949*** (-3.46)	-3.972*** (-3.80)	-4.119*** (-3.90)
REL	-0.025 (-0.03)	-0.023 (-0.03)	0.144 -0.17	0.063 -0.07
CRO	-1.696* (-1.67)	-1.706 (-1.64)	-1.588* (-1.68)	-1.553 (-1.61)
COMP	0.024 -0.03	0.02 -0.02	-0.299 (-0.37)	-0.268 (-0.33)
Intercept	12.264** (2.05)	12.212** (2.00)	11.598** (2.02)	12.053** (2.07)
D_YEAR	Yes	Yes	Yes	Yes
D_IND	Yes	Yes	Yes	Yes
R ²	0.1646	0.1646	0.1763	0.1828
Adj. R ²	0.0512	0.0393	0.0658	0.0617

Note: * stands for 10% significant level; ** 5% significant level; *** stands for 1% significant level.

Table 9 shows the net trading (dummy variable) of institutional investors (symbolized by D_PTNB, equal to 1 if net trading shares of overall institutional investors during (-90,-30) period before M&A announcement date is net buying; equal to 0 if net trading shares of overall institutional investors during (-90,-30) period before M&A announcement date is net selling.) is significantly linked to CARs of acquiring firms no matter which estimation models or event windows are used.

Table 9

Net trading (dummy variable) of institutional investors and CARs of acquiring firms

	Market model			Market adjusted model		
	N=189 (-1, +1)	N=186 (-2, +2)	N=185 (-3, +3)	N=189 (-1, +1)	N=186 (-2, +2)	N=187 (-3, +3)
D_PTNB	1.497** (2.21)	1.458** (2.00)	1.353 (1.54)	1.437** (2.45)	1.963*** (2.77)	1.436* (1.73)
SIZE	-0.466** (-2.20)	-0.563** (-2.21)	-0.578* (-1.86)	-0.581*** (-2.87)	-0.648** (-2.60)	-0.512* (-1.72)
BTM	-1.177 (-1.34)	-2.038 (-1.59)	-2.975* (-1.91)	-2.457** (-2.39)	-2.419* (-1.93)	-1.809 (-1.22)
ROA	-2.202 (-1.29)	-8.746* (-1.82)	-7.249 (-1.24)	-10.845*** (-2.79)	-12.376*** (-2.64)	-5.945 (-1.05)
PUB	-1.665** (-2.10)	-3.074*** (-3.32)	-3.925*** (-3.51)	-1.870** (-2.53)	-3.109*** (-3.45)	-3.988*** (-3.82)
REL	-0.079 (-0.13)	0.698 (-0.96)	-0.016 (-0.02)	-0.021 (-0.04)	-0.074 (-0.10)	0.103 (-0.12)
CRO	-1.266* (-1.77)	-1.682** (-2.01)	-1.592 (-1.58)	-1.072 (-1.60)	-1.335 (-1.64)	-1.523 (-1.62)
COMP	-0.191 (-0.31)	-0.727 (-1.03)	-0.116 (-0.14)	-0.31 (-0.54)	-1.112 (-1.61)	-0.357 (-0.44)
Intercept	10.196** (2.58)	12.754*** (2.63)	12.201** (2.05)	13.296*** (3.43)	14.279*** (3.00)	11.250* (1.97)
D_YEAR	Yes	Yes	Yes	Yes	Yes	Yes
D_IND	Yes	Yes	Yes	Yes	Yes	Yes
R ²	0.186	0.2103	0.1765	0.241	0.2308	0.1803
Adj. R ²	0.0781	0.1037	0.0646	0.1404	0.127	0.0704

Note: * stands for 10% significant level; ** 5% significant level; *** stands for 1% significant level.

5. Summary and Conclusions

Previous studies (e.g. Chen, Harford, and Li(2007), Gasper ,Massa, and Matos (2005)) show that concentrated holdings of independent, long-term institutions are associated with better merger performance. Several other papers also note that institutional ownership is associated with better post-merger performance (see Martin, 1996; Bae, Kang, and Kim,2002; Kang, Kim, Liu, and Yi,2006). We use Taiwan data and have three findings. First, the results indicate that cumulative net buying of total institutional investors is positively related to the short-run stock performance of acquirers. The evidences are consistent with previous studies using concentrated holding of institutional investors as explanatory variable. However, the implications are different. Since we use net cumulative net trading shares as explanatory variable, the results tend to support the argument that overall institutional investors have superior investment skill in selecting firms conducting value-enhancing M&A deals. In this study, we are not able to test monitoring hypothesis since we do not use concentrated holding information of institutional investors for empirical test. Second, the relationship between cumulative net buying of foreign institutions and the announcement effect of acquirers is significantly positive while cumulative net buying of mutual funds or local dealers has no significant relationship with the short-run stock performance of acquirers. The findings support the argument that foreign institutional investors have better skills than local institutional investors in discovering firms with good managers conducting good quality M&A deals especially at emerging markets such as Taiwan. Third, acquirers with increase in institutional holdings prior to the merger and acquisition have better short-run stock performance than acquirers with decrease in institutional holdings. The evidence further support the argument that net trading directional information of overall institutional investors can signal M&A quality.

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