

THE IMPACT OF M&As ON SHAREHOLDER WEALTH: EVIDENCE FROM TAIWANESE CORPORATIONS

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This study, using forty-six M&A events in Taiwan between 1987 and 1998, investigates the effects of M&As on shareholder wealth. The shareholders of the acquiring firms gain modestly positive abnormal returns around the announcement dates. We also distinguish M&As of different purposes, finding that M&As for technology-acquiring purposes are most favored by the market, while vertical M&As are detrimental to shareholder wealth.

I. INTRODUCTION

WHILE mergers and acquisitions (M&As) have been prevalent in the economically advanced Western countries, they have been relatively unpopular in Taiwan. This difference in enthusiasm toward M&As can be attributed to economic and culture characteristics. For example, in Taiwan M&As were unpopular partly due to a unique entrepreneurial business culture. This can be summed up in an old Chinese saying “better the head of a chicken than the tail of an ox,” meaning that Chinese people prefer to work for themselves or work at a company run by their family or relatives. Besides, many Taiwanese companies are under control of the founders or their families who are usually the top management and also the largest shareholders. M&As, friendly or hostile, are almost impossible without the approval of the management. However, during the past decade Taiwan embarked on financial deregulation and liberalization. It has come to face more intensive competition, and M&As have become an alternative strategy for internal growth. For instance, dozens of M&As have occurred among Taiwan’s large companies since the late 1980s, and the growing trend of M&As in the 1990s indicates that they are gaining momentum in Taiwan.

The purpose of this study is to investigate the effects of M&As on the wealth of shareholders in Taiwanese corporations by examining the latest data. Section II reviews the M&A activity in Taiwan. Section III reviews the literature on M&A studies in the United States, Japan, and Taiwan. Section IV describes the sample data and the methodology of this study. Section V shows the empirical results, and

in the last section we provide a brief summary and discuss the implications of this study.

II. M&As IN TAIWAN

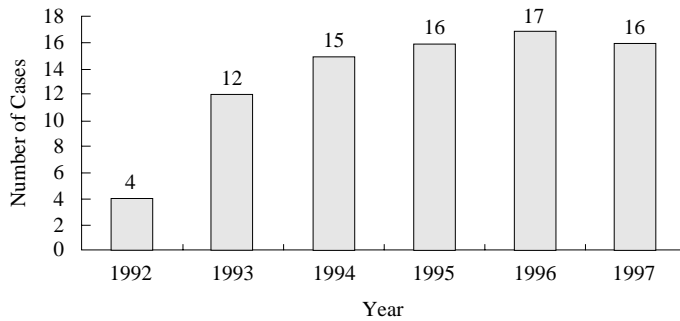
Until the 1990s there had been little M&A activity in Taiwan. There had been no formal or systematic statistics on M&As until 1992 when the Taiwan Free Trade Commission (FTC) was set up. One of the reasons for the few M&As was that most Taiwanese firms were small and medium-sized firms with limited financing capability for M&As. According to government statistics about 98 per cent of the firms in Taiwan are small and medium-sized enterprises (SMEs).

Some scholars point to a unique entrepreneurship culture among businessmen as a basic reason for the low M&A activity: the Taiwanese prefer not to work for other people. Such an independent spirit, they argue, makes managers feel it unacceptable to be merged or acquired, since that means full or partial loss of authority and control. This is reflected by the fact that most companies in Taiwan are SMEs. There are also few large-scale corporations in Taiwan, unlike in neighboring countries such as Japan and the Republic of Korea.

Since the late 1980s, however, as the Taiwan dollar persistently appreciated and the domestic capital market prospered, cash-abundant public corporations started to turn to M&As as an alternative to internal expansion. They searched for their M&A targets not only in the domestic markets but also in international markets. For example, Acer, one of the largest computer makers in the world, has been aggressive in acquisitions since the 1980s. A wave of M&As took place in the electronics industry in the late 1980s, and many of the participants were rapidly growing computer-related manufacturers. For its part, the government has been using tax incentives since the 1980s to urge small and medium-sized firms to merge, in an effort to achieve economies of scale. Smaller companies not above a certain size are not required to report to the FTC for consolidation activities, making small firms easier to merge. After the Asian financial crisis around 1997, concerns emerged about the financial health of the financial industry in Taiwan. In response the government has been working on drafting a new bill to encourage mergers among domestic financial institutions. This new bill will also serve as the legal framework for mergers among domestic financial institutions.

Under such circumstances, a great interest in M&As has arisen in Taiwan. This is reflected in the increasing number of M&As in recent years, though still quite small comparing to other advanced countries. Figure 1 shows the number of M&As approved by the FTC. In 1992 there were only four cases approved; however, the number rose to sixteen cases by 1997. Note that only those deals that could undermine competition in the market were required to apply for approval. Most M&As involving smaller SMEs did not have to apply for approval, and thus were not included in the statistics.

Fig. 1. The Number of M&As Approved by the FTC in Taiwan



Source: FTC (1993–98 issues).

III. LITERATURE REVIEW ON THE IMPACT OF M&As

An enormous amount of research has been dedicated to M&As in the developed Western countries, especially in the United States. Previous studies analyzing the stock prices around the announcement of an acquisition (event study method) all report similar findings: the acquired firms' shareholders enjoy significant positive excess returns, while the acquiring firms' shareholders receive at best modest excess returns (Jensen and Ruback 1983; Asquith 1983; Jarrell, Brickley, and Netter 1988). However, empirical studies investigating the accounting financial data show inconsistent results. Some find no or negative impacts on the earnings for the merging firms (Hogarty 1970; Bradford 1978; Ravenscraft and Scherer 1989). Some report positive effects on the profitability of the acquiring firms (Lev and Mandelker 1972; Smith 1990) or on productivity (Lichtenberg and Siegel 1990). The inconsistent accounting test results may be due to different measurement methodologies employed and different sample selections.

Japan, the largest economy in Asia, may have the most extensive literature on the effects of M&As in Asian countries. Empirical studies using accounting-based data generally report deteriorating postmerger performance for Japanese firms (Hoshino 1982, 1992; Muramatsu 1986; Odagiri and Hase 1989; Yeh and Hoshino 2002). However, studies using the event study method show that the shareholders of merging Japanese firms gain positive abnormal returns (Pettway and Yamada 1986; Pettway, Sicherman, and Yamada 1990; Kang, Shivdasani, and Yamada 2000; Usui 2001). In general M&As enhance the wealth of shareholders in Japanese firms more than that of shareholders in U.S. firms.¹ Another study by Pettway, Sicherman, and

¹ However, a study by Yeh and Hoshino (2001) using the latest evidence found that Japanese acquiring firms are associated with negative abnormal returns.

Spiess (1993) reports significant positive gains for shareholders of Japanese firms undertaking M&As in the United States.

As for Taiwanese M&As, several studies report positive abnormal returns for the shareholders of acquiring firms (Yen and Peng 1993; Huang and Huang 1995; Yeh and Hoshino 2000). However, the cumulated abnormal returns lack strong significance over the event period. Information on merged or acquired firms is unavailable because most of them are not publicly listed companies. On the other hand, accounting data tests report that merging manufacturing firms underperformed relative to a group of comparable firms after mergers (Yan 1991; Yeh and Hoshino 2000). Due to the limited number of M&As in Taiwan, sample sizes in these studies are quite small (no more than thirty firms) compared with U.S. and Japanese studies.

IV. THE SAMPLE AND DATA

This study is mainly concerned with *acquiring* firms, since many acquired firms are nonpublic companies and the financial data are unavailable. The M&A activity of Taiwanese corporations and initial announcement dates are identified mainly by searching the databases of newspapers, such as *Zinji ribao* (the economic journal). This study excludes those firms whose announcement dates are unidentified and whose shares are traded on the Taiwan Stock Exchange. Firms that experienced two or more instances of M&As are also excluded from the sample to avoid the problem of confounding events. Ultimately we obtain forty-six useful sample firms that announced M&As during 1987 to 1998. Table I.A shows the characteristics of the M&A events. The M&A events are spread quite equally over the investigated period, with twenty-one events announced in the 1987–93 period, and twenty-five events in the 1994–98 period. Most of the M&As ($n = 25$) were intended to expand the market. Other M&A motives include technology acquisition ($n = 6$), vertical integration ($n = 6$), and diversification ($n = 7$). The value of the entity acquired averages U.S.\$45 million. Table I.B shows the sectoral distribution of the acquirers. The majority of the acquirers were in the manufacturing sector where electronics ($n = 11$) and food ($n = 7$) industries had the most acquirers. The remaining acquiring firms were quite evenly spread across other industries.

To measure the effect of M&As on the acquiring firms' shareholder wealth, we employ the standard event study approach to calculate the abnormal returns. The daily stock return rate data for sample firm i (R_i) were collected from the Listed Stocks' Rates of Return Statistical Databank, and the Taiwan Stock Exchange (TSE) weighted stock index data from the Stock Market Statistical Databank.² The TSE

² The Listed Stocks' Rates of Return Statistical Databank and the Stock Market Statistical Databank were created jointly by the Ministry of Education and National Taiwan University in 1987 and have been maintained since then primarily to serve researchers (academic, governmental, and

TABLE I

THE CHARACTERISTICS OF THE M&A EVENTS ANALYZED IN THIS STUDY

A. The Characteristics of the M&A Events

	(No.)
Total M&As	46
M&As announced in the period 1987–93	21
M&As announced in the period 1994–98	25
M&As intended to expand market	25
M&As intended to acquire technology	6
Vertical M&As	6
Diversified M&As	7
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Average cost of the acquisition (U.S.\$)	45,091,013

B. The Sectoral Distribution of the Acquirers

	(No.)
In the cement industry	1
In the food industry	7
In the plastics industry	5
In the spinning industry	5
In the machinery industry	1
In the electrical appliance industry	2
In the chemical industry	2
In the glass industry	1
In the paper industry	1
In the rubber industry	2
In the car industry	1
In the electronics industry	11
In the construction industry	1
In the shipping industry	3
In the hotel industry	2
In other industries	1

weighted stock index data are used to compute the daily market return rate (R_m). For each firm i , the abnormal return for event day t (AR_{it}) is calculated as $AR_{it} = R_{it} - (\hat{a}_i + \hat{b}_i R_{mt})$, where R_{it} is the rate of return on firm i on event day t and R_{mt} is the rate of return of the market on event day t . The coefficients \hat{a}_i and \hat{b}_i are the ordinary least squares estimates of the intercept and slope of the market model regression $R_{it} = a_i + b_i R_{mt} + e_{it}$, where the estimation period is from $t = -230$ to $t = -31$ in relation to the initial announcement date of the M&A ($t = 0$). We define the initial announcement date ($t = 0$) as the date when the press reported the M&A for the first time.

Abnormal returns, AR_{it} , are then calculated for each firm for each day over the

increasingly, of private enterprises) in Taiwan. They are currently operated by a nonprofit organization, the Taiwan Economic Data Center (TEDC).

interval from $t = -30$ to $t = 30$. The cumulated abnormal return for firm i (CAR_i) from $t = \pi_1$ to $t = \pi_2$ is calculated as $CAR_i = \sum_{\pi_1}^{\pi_2} AR_i$.

The standardized cumulated abnormal return for firm i ($SCAR_i$) from $t = \pi_1$ to $t = \pi_2$ is $CAR_i / (\sqrt{L} \sqrt{1/(K-2) \cdot \sum_{t=-230}^{t=-31} AR_t^2})$, where L is the length of the window period $t = \pi_1$ to π_2 , and K is the length of the estimation period $t = -230$ to -31 . The average $SCAR$ for the N firms from event time period $t = \pi_1$ to π_2 is defined as $(1/N) \sum_{i=1}^N SCAR_i$. The corresponding test statistic for the hypothesis that $SCAR$ is zero, is as follows:

$$J = \left(\frac{N(K-4)}{K-2} \right)^{1/2} \overline{SCAR}.$$

J has approximately standard normal distribution.

V. THE EMPIRICAL RESULTS

A. Abnormal Returns

Table II documents the mean $SCAR$ for the forty-six acquiring firms over various event intervals. It can be seen that the $SCAR$ shows consecutively positive values from $t = -5$ to $t = 5$. On the date of announcement, acquiring firms gain an average of 0.17 per cent $SCAR$, which is not statistically significant. The three-day ($t = -1$ to 1) and five-day ($t = -3$ to 1) $SCAR$ are 0.19 per cent, also statistically insignificant. However, we observe higher $SCAR$ for event periods including more pre-announcement days. For example, the seven-day $SCAR$ from $t = -5$ to $t = 1$ is 0.32 per cent, which is significant at the level of 5 per cent. The larger abnormal gains in the pre-announcement period are possibly due to the leakage of merger proposals to the market before the press report. However, the $SCAR$ for the whole event period from $t = -30$ to $t = 30$ is 0.36 per cent, which is statistically significant.

How do we interpret this result? What can be said at this point is that the merging firms' shareholders gain modest returns in association with the press report of merger proposals. The market should have reasons to believe that a firm's value could be enhanced by achieving economies of scale or scope, because Taiwanese corporations are in general moderate in size compared to those in neighboring economies. For instance, the largest Korean company is sixteen times bigger than the largest Taiwanese firm, and for Japan, the figure is eighty times (*Economist* 1998). Taiwanese acquiring firms might have been operating at levels that fell short of achieving the potentials of economies of scale.

B. M&As of Different Motives

We separate the M&As according to their motives. Table III reports the three-day $SCAR$ ($t = -1$ to 1) for the four subgroups of acquiring firms. Firms which under-

TABLE II
THE STANDARDIZED CUMULATED ABNORMAL RETURNS (SCAR) AROUND
THE FIRST PUBLIC ANNOUNCEMENT OF THE M&As

Window Period	Mean SCAR (%)	P-Value (Two-Tailed)	Window Period	Mean SCAR (%)	P-Value (Two-Tailed)
-30	0.19	0.189	4	0.14	0.355
-29	-0.05	0.736	5	0.08	0.609
-28	-0.04	0.805	6	-0.20	0.174
-27	0.12	0.402	7	-0.14	0.343
-26	0.06	0.673	8	0.18	0.230
-25	0.24	0.100	9	0.00	0.996
-24	0.21	0.158	10	0.00	0.98
-23	-0.20	0.168	11	-0.10	0.501
-22	0.14	0.355	12	0.22	0.134
-21	0.24	0.106	13	-0.03	0.836
-20	0.20	0.178	14	0.17	0.264
-19	-0.24	0.104	15	0.23	0.125
-18	0.34	0.023	16	-0.22	0.131
-17	-0.03	0.865	17	-0.01	0.970
-16	-0.12	0.422	18	0.11	0.453
-15	0.21	0.164	19	0.06	0.672
-14	-0.11	0.443	20	-0.19	0.204
-13	-0.03	0.856	21	-0.21	0.149
-12	0.01	0.952	22	-0.04	0.808
-11	-0.01	0.941	23	-0.32	0.029
-10	-0.04	0.811	24	0.07	0.641
-9	-0.04	0.781	25	-0.03	0.860
-8	0.21	0.159	26	0.06	0.665
-7	0.45	0.003	27	0.27	0.073
-6	-0.02	0.912	28	0.15	0.320
-5	0.30	0.041	29	-0.47	0.002
-4	0.13	0.388	30	0.02	0.888
-3	0.04	0.805			
-2	0.06	0.707	-30 to 1	0.45	0.002
-1	0.11	0.445	-10 to 1	0.41	0.006
0	0.17	0.251	-5 to 1	0.32	0.029
1	0.05	0.739	-3 to 1	0.19	0.200
2	0.38	0.010	-1 to 1	0.19	0.195
3	0.06	0.669	-30 to 30	0.36	0.016

TABLE III
THE THREE-DAY SCAR (-1 TO 1) FOR M&As WITH DIFFERENT PURPOSES

	Mean (%)	Two-Tailed <i>t</i> -Statistic
M&As intended to expand markets	0.05	0.188
M&As intended to acquire technology	0.95	1.346
Vertical M&As	-0.20	-0.159
Diversified M&As	0.34	1.188

TABLE IV
REGRESSION OF *SCAR* ON M&A SIZE AND THE DUMMY VARIABLES FOR M&A PURPOSES:
THREE-DAY *SCAR* AND FIVE-DAY *SCAR*

	Regression of Three-Day <i>SCAR</i> (-1 to 1)		Regression of Five-Day <i>SCAR</i> (-3 to 1)	
Number of M&As	24		24	
<i>F</i> (Significance)	2.39 (0.087)		4.17 (0.014)	
Adjusted <i>R</i> ²	0.195		0.355	
		<i>P</i> -Value		<i>P</i> -Value
Constant	0.373	0.886	-1.671	0.520
Ln (Acquisition cost)	-0.02991	0.848	0.08617	0.578
Dummy variable for M&As intended to acquire technology	1.808	0.062	2.503	0.012
Dummy variable for vertical M&As	-1.836	0.089	-2.219	0.041
Dummy variable for diversified M&As	0.662	0.477	0.854	0.357

took M&As to acquire technology earn the highest abnormal returns. On the other hand, M&As for vertical integration are associated with negative abnormal returns. Between them are the groups of firms which undertook M&As to expand markets and to diversify, both of which gain positive returns. However, returns for these groups are all statistically insignificant.

We then regress the three-day as well as the five-day *SCAR* on the dummy variables for the different M&A motives and the amount of the acquisition investment. The results are reported in Table IV. The dummy variable for M&As aimed at market expansion is not included in the regression to avoid a perfectly linear relationship. Both regression results indicate that technology-acquisition M&As contribute to shareholder wealth, while vertical integration M&As destroy shareholder wealth. Note that these effects are in a relative sense, i.e., these two types of M&As have a positive (or negative) effect relative to market expansion M&As.

Tests in this section indicate that the market believed technology-acquisition M&As could enhance the firm's value more than M&As with other motives, while vertical integration M&As could destroy the firm's value.

VI. SUMMARY

This study examined the movement of announcement-associated stock prices for forty-six Taiwanese firms undertaking acquisitions between 1987 and 1998. It found that the merging firms gain modestly positive abnormal returns around the time of the press report of the merger proposals, but larger and statistically significant re-

turns over longer event periods. The evidence suggests that, on average, mergers and acquisitions are favored by the market, thus increasing shareholder wealth. This is consistent with most previous studies.

Looking at the motives behind M&As, it was found that most of the M&As were initiated to expand the market. Other motives included diversification, technology acquisition, and vertical integration. Our empirical study found that M&As for technology-acquiring purposes were associated with the highest abnormal returns, while vertical M&As were least favored by the market, ending up destroying shareholder wealth. The results make sense because acquiring advanced technology enhances a firm's competitiveness, leading to greater firm value. In fact, high-technology industries (such as the electronics industry) have been serving as the main driving force behind Taiwanese economic development in recent decades. M&As provide Taiwanese corporations with a faster and more cost efficient way of acquiring highly advanced technology that would otherwise required a longer length of time and more expenditures to develop in-house. Our empirical results also reinforce the Taiwanese government's efforts at industrial upgrading during the past decade. On the other hand, vertical M&As involve the vertical integration of a firm's businesses, which may be a more difficult task, particularly in integrating intangible human resources.

However, care must be taken in evaluating the effectiveness of mergers and acquisitions in improving a firm's efficiency. General conclusions about the effects on efficiency cannot be made solely on the basis of the short-term returns in this study. Previous studies of Taiwanese mergers using accounting data consistently indicate that the operating performances of merging firms subsequently deteriorated in the years after the merger. The inconsistency between stock-prices and the results of accounting performance studies suggests that potential synergies through mergers may exist, however, as Kitching (1967) suggests, "the mere existence of potential synergism is no guarantee that the combined operation will realize the potential." Changes in the business environment or market may be a reason causing the deteriorating postmerger performance. In fact, corporations are starting to pay attention to integration issues because of the unsatisfactory outcomes of previous mergers. For example, corporations are more aware of the difficult task of successfully integrating two firms with different business cultures, of compensation and promotion systems, organization structure, and labor unions. Mergers may also undermine employee morale. Difficulties in dealing with these issues can impede a merger that has potential synergy. One important implication for further research concerning M&As is to take the integration issues into consideration along with the human factors.

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