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Abstract

This study empirically examines whether mergers and acquisitions (M&As) by Japanese firms have positive wealth effects for the shareholders of the acquiring firms. We tested stock price performance at both the time of the initial announcement and the post-announcement period for 658 domestic and 73 cross-border control acquisitions announced in the period 2003 to 2010. The results indicate that M&As by Japanese firms enhance shareholder wealth. The wealth effects associated with acquisitions are mostly reflected at the time of the initial announcement, and are larger in cross-border acquisitions targeting developing countries and in acquisitions achieving full control of targets. We also show that a larger synergy is realized in horizontal acquisitions with full control of target firms. We provide evidence that acquisitions by Japanese firms are efficient investments, and that the stock market efficiently reflects this.

Keywords: Mergers and acquisitions, Japan, Corporate governance, Long-term performance

JEL classification: G14, G32, G34, L25

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1. Introduction

Although Japan had the second largest GDP in the world during the period from 2003 to 2010 analyzed in this paper, mergers and acquisitions (M&A) activities by Japanese firms in this century have thus far not been studied in depth. This is because M&A in Japan were not common until the late 1990s (see Kester (1991) and Kang et al. (2000) for earlier studies on this topic). However, from the late 1990s, M&A began to play an important role in restructuring industries in Japan. To provide a comprehensive account of the wealth effects of Japanese M&A, this study examines the performance of Japanese acquiring firms from 2003 to 2010, at the time of initial announcement and in the post-announcement period.

M&A have been important strategic measures for Japanese firms since the late 1990s, against the backdrop of a series of deregulations in a number of industries, a maturing domestic economy, and the introduction of rules to promote M&A. Not only domestic but cross-border acquisitions have increased in recent years, due to the long-lasting slow growth of the domestic economy and rapid economic growth in emerging markets. Since domestic and overseas acquisitions have potentially significant impacts on the shareholder wealth of firms involved, a number of studies have examined impacts on shareholder value at the time of acquisition announcement. These event-studies report that the stock prices of acquiring firms react positively at the time of announcement, although the means of abnormal returns are small, and range from 1% to 2% (Pettway and Yamada (1984), Kang, Shivdasani and Yamada (1993), Inoue and Kato (2006), Hanamura, Inoue and Suzuki (2011)).

In the meantime, no study has analyzed long-term returns in a large sample. Only a few studies of post-acquisition operating performance have involved large samples, and their results are mixed and inconclusive (Kruse et al. (2007) and Miyajima (2007, p363)).

Thus, to provide a comprehensive perspective on the performance of recent M&A conducted by Japanese firms, we analyze both stock price performance at the initial announcement and long-term stock price performance in the post-announcement period. While we primarily focus on stock price performance, we also analyze operating performance in the post-acquisition period to see if our results regarding stock returns are consistent with the operating performances after the acquisitions. Our sample consists of 667 domestic and 81 cross-border acquisitions in the period from 2003 to 2010.[1] We show that the Japanese stock market evaluates corporate events efficiently. Our main findings are that (1) abnormal returns at the announcement of acquisitions by Japanese firms are positive both for domestic and cross-border acquisition, (2) abnormal returns associated with acquisitions are mostly reflected at the time of initial announcement, (3) a positive correlation exists between announcement returns and post-acquisition stock returns, and there is no negative and significant correlation between stock returns and operating performance in post-acquisition period. Our results also indicate that the positive wealth effects for acquiring firms over the long term are primarily generated from the change of control of target firms that operate in the same business areas as the acquirers.

Our main contribution is to provide comprehensive evidence that recent Japanese M&A are efficient investments, although Japanese acquirers are slow to realize their synergy effects. One of the probable causes of this slow process of realization effects is the difficulty involved in implementing efficiency improvement plans such as asset reductions, since cash-flow return on total assets deteriorate by the acquisition but do not improve in the subsequent three year period.

[1] We analyze abnormal returns at announcement for the entire sample, but our sample number is reduced in our analyses of long-term performance due to data availability. We explicitly make this clear in such cases.

Our paper is structured as follows. In Section 2, we review existing literature. In Section 3, we develop our hypotheses. In Section 4, we describe our data and methodologies. In Section 5, we present descriptive statistics and empirical results. Section 6 concludes the paper.

2. Literature

2.1. M&A and Stock price performance

Andrade et al. (2001) have studied more than 4,000 M&A in the US from the 1970s to 1990s, and provide a comprehensive view of the motivations behind and performance of M&A in the US. They report evidence that M&A are firms' rational responses to specific changes in business environments, such as deregulation in an industry. This evidence supports theory of the firm by Coase (1937), which argues that firms adjust the boundaries of their businesses and operations to adjust to changes in market environments and minimize their transaction costs. If this is the case, M&A should be efficient investments on average, contributing to enhanced shareholder wealth. In fact, Andrade et al. (2001) show that M&A contribute to enhanced combined equity value in acquirers and targets. However, they show that the abnormal returns of acquirers in the three-year period after M&A announcements are negative. They mention that this long-term negative performance of acquirer shares could be affected by stock issuances, since the negative returns are only statistically significant in stock-for-stock deals. Therefore, they argue that there is no robust evidence that M&A, separately from the effects of stock issuances, have negative long-term returns in post-announcement periods.

In efficient markets, since the stock price of acquiring firms will fully reflect the expected wealth effects of M&A over a short period, abnormal returns associated with M&A should not be observed in long-term stock prices. However, in the US, several papers report that the long-term returns of acquiring firms after the announcements of deals are negative

(Agrawal, Jaffe, and Mandelker (1992), Rau and Vermaelen (1998)). This is considered to be counterevidence for the efficient market hypothesis. On the other hand, Fama (1998) points out that, unlike in tests of shareholder returns over short window periods, biases will arise from selections of the benchmark and model in estimating long-term normal returns. Thus, even when one finds abnormal returns in an analysis of long-term stock price performance after specific events such as M&A, it is difficult to judge whether the abnormal returns are due to the event in question or the misspecification of the benchmark and the model. Andrade et al. (2001) insist that shareholder returns in the short window around an announcement date are an appropriate indicator of the wealth effects of M&A.

2.2. Financial performance before and after M&A

Healy et al. (1992) analyze the 50 largest mergers in the U.S. from 1979 to 1985, and compare operating performance in the pre- and post-merger periods. They find that the operating performance of combined firms tends to improve after mergers. Andrade et al. (2001) conduct analysis of 4,256 mergers in the U.S. from 1973 to 1999 based on Healy et al. (1992) and report similar results, which are consistent with their findings of positive reactions in the stock market at the time of deal announcement.

Martynova et al. (2006) research 155 mergers from 1997 to 2001 in which both acquirers and targets are European or U.K. firms, and demonstrate four long-term financial performance indexes. According to them, the performance of combined firms is higher than the industry median of the firms before mergers, but declines after mergers. However, after controlling for industry and firm size, the decline becomes statistically insignificant.

The effects of M&A on the operating performance of the firms involved are difficult to interpret, since it is not certain when synergy effects

are realized, accounting figures are largely influenced by firm-specific factors, and it is difficult to define appropriate benchmarks. Despite this, it is worthwhile to examine operating performance, in order to confirm that stock price reactions to M&A do not contradict the fundamentals of the firms involved.

2.3. Comparison between domestic and cross-border M&A

One of the topics we focus on in this paper is the difference in performance between domestic and cross-border M&A. Cross-border M&A are increasing within the global M&A market. According to Erel et al. (2012), cross-border transactions made up 30% of M&A activity in 1998, while the figure had increased to 47% by 2007. The primary reason for this increase in cross-border activities is the international consolidation of product markets. Mitchell and Mulherin (1996) and Andrade et al. (2001) suggests that M&A activities are concentrated during specific periods within specific industries. In a progressively consolidating market, we expect an increase in cross-border M&A deals, especially within industries with reduced growth opportunities in their domestic markets. More specifically, the attractiveness of overseas acquisitions is enhanced when overseas targets give acquirers access to critical resources that cannot be obtained through domestic acquisitions. This increases the probability of creating greater shareholder value through cross-border acquisitions.

Moeller and Schlingemann (2005) have studied the reactions of the US stock market at the announcement of both domestic and cross-border acquisitions by US firms. They show that stock markets react more positively to domestic M&A than cross-border M&A, and that the reaction of stock markets to diversifying cross-border acquisitions is relatively negative. Their study also examines the effects on profitability (return on assets) over the five-year period after acquisition, and reports that effects from acquisitions are negative, which is consistent with reactions of the stock

market at the times of announcement. Also, they find positive correlations between abnormal returns at announcement and operating performance after acquisitions, and conclude that the reactions of stock markets at the times of acquisition announcement are efficient.

On the other hand, Goergen and Renneboog (2004) analyzed acquisitions by European firms from 1993 to 2000 and show that, even after controlling for different market environments, acquiring firms experience higher abnormal returns in cross-border deals. The shareholders of acquiring firms experienced a five-day average abnormal return of 3% from cross-border deals, while domestic deals' abnormal returns were not statistically different from zero. Thus, prior studies that have compared the performance of domestic and cross-border acquisitions have reported mixed results.

Ellis et al. (2011) analyzed a large sample of controlling acquisitions from 56 countries in 1990 and 2007, and report that, in the case of acquisitions of public firms through cash payments, cross-border acquisitions have larger abnormal returns than domestic acquisitions. They did not find a statistically significant difference between the abnormal returns of domestic and cross-border acquisitions in other types of deals. Ellis et al. (2011) find that the gains for shareholders of acquirers are generally higher if an acquisition is made in a country with poor corporate governance. Roughly 70% of their sample is made up of US and UK acquiring firms, and so their results mostly concern the performance of M&A in these two countries.

2.4. Empirical studies of Japanese M&A

Inoue and Kato (2006) have examined both short-term abnormal returns at announcement and long-term post-announcement returns of acquirers in domestic mergers and acquisitions between 1990 and 2002. They show that, unlike findings on US M&A, both short-term abnormal

returns of acquirers at announcement and the combined effects on market value of acquirers and targets are positive and significant. They report that horizontal acquisitions of financially sound target firms result in positive and significant abnormal returns for both acquirers and targets. They also report that the post-acquisition long-term performance of acquiring firms is insignificantly positive. However, they also explain that their results are not conclusive, since the sample for the test of post-acquisitions performance is small and they use a single factor model to estimate normal returns.

Miyajima (2007, p363) reports that 87 mergers of Japanese firms between 1990 and 2001 did not improve ROA significantly, although horizontal M&A improved post-acquisition ROA significantly. He interprets this result as consistent with the announcement returns reported by Inoue and Kato (2006).

Most prior studies have only analyzed domestic mergers and acquisitions, except in the research of Kang (1993) who studied acquisitions of American firms by Japanese firms from 1975 to 1988. This simply reflects the fact that there were only a small number of large-scale overseas acquisitions during the 1990s. Starting from roughly 2004, influential Japanese exporting firms began to expand their global presences by purchasing businesses abroad to overcome weak domestic demand.

A recent study by Ings and Inoue (2012) analyzes the shareholder wealth effect at announcement in domestic and cross-border cash-based acquisitions involving Japanese acquiring firms over the period from 2000 to 2010. The results reveal that cross-border acquisitions create larger returns for the acquirers' shareholders than domestic deals.

In summary, the empirical results of studies on Japanese M&A show that acquirers increase their own average shareholder value through acquisitions. However, whether M&A have any post-announcement abnormal returns or improve operating performance has not been conclusively addressed, due to limited samples and methodological problems

in existing studies. Thus, it is worthwhile to examine the performance of acquisitions by Japanese firms.

We have additional reasons to re-examine performance in M&A of Japanese firms. In the late 1990s, the Japanese government amended and introduced a number of M&A laws to promote M&A, as a means of restructuring Japanese industries that faced excess capacity and severe competition in the domestic market. Amendment of Commercial Law in 1999, the New Corporate Law of 2006, and the Financial Instruments and Exchange Law of 2007 were legal amendments to reduce the transaction costs of M&A. Given these developments, it is particularly interesting to research whether the performance of acquiring firms involved in deals in the 2000s is different from those in prior periods.

The first decade of this century was also a notable period of corporate governance reform in Japan away from bank-centered governance and toward market-oriented governance. Upon these reforms, some Japanese firms introduced independent directors on their board for the first time (Saito (2012)). Mutual shareholdings among Japanese firms and financial institutions decreased rapidly, while shareholdings by foreign institutions increased for high-performing Japanese firms. Thus, a major divergence in corporate governance occurred among Japanese firms. To date, the relationships between corporate governance and the performance of acquiring firms in Japan have not been studied.

3. Hypothesis development

This study aims to investigate the wealth effects of both domestic and cross-border acquisitions by Japanese firms. In particular, we attempt to show the sources of the wealth effects by investigating both announcement stock returns and post-acquisition performances. We empirically test three hypotheses, as described below.

Hypothesis 1: Acquisitions contribute to enhancing the equity value and improving the profitability of acquiring firms.

We predict that M&A increase the shareholder value of acquirers if the acquiring firms are rationally conduct M&A only when the deals contribute to the firm value, as discussed in Section 2.1. The expected sources of value maximization include minimizing the transaction costs of firms and utilizing the resources of the target firms more efficiently than under the incumbent management of the target firms. However, prior studies have revealed that this is not always the case, due to the agency costs of management (Jensen (1986)).

This study examines transactions for the period since 2003, when Japanese M&A practice became similar to those in the US, involving heavier deal traffic and higher control premiums (25.6% on average for domestic M&A) than in the period analyzed by Kang et al. (2000) and Inoue and Kato (2006). In fact, our sample shows that control premiums are much higher than that those reported by Inoue and Kato (2006), who analyzed M&A before 2002. With regard to this point, it is worthwhile to examine Hypothesis 1 in higher control premiums environment indicating heavier competition in M&A markets, and thus smaller wealth effects for acquirers. We examine this by three empirical approaches: abnormal return at announcement, long-term stock performance in the post-announcement period, and overall operating performance. This attempt is the first time in a study of Japanese M&A.

Hypothesis 2: Effects on the shareholder wealth of acquiring firms are stronger in horizontal acquisitions than in non-horizontal acquisitions.

Hypothesis 2 addresses an important theme related to the source of

wealth effects that has been repeatedly examined in prior studies. Under efficient managers whose objectives are to maximize firm value, M&A are conducted to strengthen the core businesses of firms through synergy effects, scale of economy, or access to business resources that acquirers do not have. These M&A are more likely to be observed in the same industry or in related business areas, and involve exactly the type of acquisitions addressed in Hypothesis 1. On the other hand, M&A can be carried out as a means of pursuing managerial private benefit through empire building and size maximization, which do not always lead to increases in firm value. These M&A are more likely to become diversifying acquisitions. Thus, we expect acquisitions in the same line of business, called horizontal acquisitions, to bring about stronger synergy effects. Morck et al. (1990) and Moeller et al. (2004) report that acquirers receive lower abnormal returns in diversifying acquisitions in the US. Inoue and Kato (2006) claim that positive and significant abnormal returns are only observed in horizontal M&A sub-samples.

Hypothesis 3: Effects of M&A on the shareholder wealth of acquiring firms are larger when management are monitored by outside director or by foreign investors or when management themselves hold higher shares.

As discussed in Hypothesis 2, management often seeks M&A to maximize firm size at the cost of shareholder interest since management can potentially obtain private benefit from such M&A (Jensen (1986)). To prevent this kind of agency problem, effective monitoring of management is called for. To examine effects of monitoring measures to reduce the agency problem of management, researchers test relationships between the potential monitoring measures against management and the wealth effects

of M&A. For example, Wang and Xie (2009) use a shareholder rights index as a proxy of good governance and show that shareholder returns from acquisitions in the US are higher for shareholders of both acquirers and targets when the difference in the index for the acquirer and target is larger. Similar results are reported for cross-border acquisitions by Ellis et al. (2011).

In this study, we use specific variables, instead of shareholder right index, that have been reported to correlate with the good corporate governance of firms in previous studies.[2] In particular, we use outside directors (see Byrd and Hickman (1992) and Saito (2012)), shareholding by foreign investors (Iwatsubo and Tonogi, (2007)), and shareholding by directors (see Ellis et al. (2011) and Saito (2008)).

In addition to testing above three hypotheses, we will also examine the importance of acquisitions of overseas business resources compared to acquisitions of domestic ones. Many practitioners argue that cross-border acquisitions have positive economic effects that surpass those of domestic acquisitions. Productive overseas facilities enable firms to achieve lower costs, direct marketing channels, and relationships with local governments or societies.

On the other hand, cross-border acquisitions are inevitably associated with specific costs, such as the high control premiums required of foreign acquirers (Rossi and Volpin (2004)), differences in corporate culture, and problems caused by asymmetric information related to target firms and local markets. Since cross-border acquisitions have both unique benefits and costs, the issue of whether cross-border acquisitions have higher wealth effects for Japanese acquiring firms should be addressed empirically. Since

[2] When authors were preparing this research, shareholder right index of Japanese firms is not developed.

wealth effects from cross-border acquisitions targeting firms in advance but matured developed-countries and growing but unstable developing countries might be different, we examine wealth effects of acquisitions of developed countries (G10 nations) and developing countries (nations other than G10) separately.

4. Methodology and sample selection

4.1. Methodology

Event studies of stock price have been the major method used to test the wealth effects of M&A in finance research, based on the efficient market hypothesis. The reactions of stock prices to new information are examined in terms of abnormal returns, which control the price movements of stock markets as a whole during the periods analyzed. In this study, to measure the short-term stock performance around the announcement of M&A, we conduct an event study analysis using both market model (1) and Fama-French three-factor model (2):

$$R_{it} = a_i + \beta_i R_{mt} + e_{it} \quad (1)$$

$$R_{it} - R_{ft} = a_i + b_i(R_{mt} - R_{ft}) + s_i SMB_t + h_i HML_t + e_{it} \quad (2)$$

Where R_{it} is the actual dividend-adjusted return for sample firm i on day t, R_{mt} is the value-weighted return on all Tokyo Stock Exchange (TSE) first and second stocks on day t, R_{ft} is the risk-free rate on day t, SMB_t (small minus big) is the average return on three small portfolios minus the average return on three big portfolios on day t, and HML_t (high minus low) is the average return on two value portfolios minus the average return on two growth portfolios on day t.

The estimation period is 250 trading days, dating back from 21 trading days before the announcement of M&A.[3] The abnormal returns (AR) of the sample for the event window are calculated as

$$AR_{i\tau} = R_{i\tau} - \left(\hat{a}_i + \hat{\beta}_i R_{m\tau}\right) \quad (3)$$

$$AR_{i\tau} = R_{i\tau} - \left\{\hat{a}_i + \hat{b}_i (R_{m\tau} - R_{f\tau}) + \hat{s}_i SMB_{\tau} + \hat{h}_i HML_{\tau}\right\} \quad (4)$$

The event period comprises 26 trading days, from five trading days before an announcement to 20 trading days after.

Some researchers have been skeptical about the assumption that, in an efficient market, stock prices reflects wealth effects of M&A in the short-term period around the announcement date (Shleifer and Vishny (2003)). Thus, we also analyze long-term abnormal returns in the post-announcement period. In this study, long-term abnormal returns of an acquiring firm after a deal announcement are examined by calendar time portfolio returns (CTP) and buy-and-hold abnormal returns (BHAR).

Fama (1998), Lyon et al. (1999), and Mitchell and Stafford (2000) argue that the calendar time portfolio approach offers some advantages over tests that employ either cumulative or buy-and-hold abnormal returns. First, it eliminates the problem of cross-sectional dependence among sample firms because the returns on sample firms are aggregated into a single portfolio. Second, the CTP method yields more robust test statistics in non-random samples. In fact, Mitchell and Stafford (2000) find that negative and significant long-term returns after M&A in the US by BHAR approach are not confirmed by CTP approach. Thus, we also employ mainly CTP to test long-term abnormal returns in the post-announcement period, and we use BHAR mainly in analyzing long-term returns of individual firms.

[3] We dropped sample firms if we could not acquire the return data for more than 100 trading days, dating back from 21 trading days before the announcement of M&A.

To calculate CTP, we implement the approach advocated by Fama (1998) and Mitchell and Stafford (2000). For each calendar month, we calculate the return on a portfolio composed of sample firms that had an event within a 12-, 24-, or 36-month calendar. The calendar time abnormal return on this portfolio was used to estimate the following regression:

$$R_{pt} - R_{ft} = a_p + b_p(R_{mt} - R_{ft}) + s_p SMB_t + h_p HML_t + \varepsilon_{pt} \quad (5)$$

Where R_{pt} is the average raw return for stocks in calendar month t, and where a sample stock is included if month t is within the event period (12, 24, or 36 months) following the announcement of M&A.

CTP is a method that examines abnormal return by constructing a portfolio of firms that have completed M&A. For example, in a three-year examination, we use a portfolio adjusted monthly, in order to include returns of firms that have been involved in events during those three years. This method enables us to avoid cross-sectional dependence among abnormal returns of sample firms. Under the efficient market hypothesis, as stocks react quickly to new information, they are predicted to perform in random walk and long-term abnormal returns are not predicted after the announcement of M&A.[4]

In BHAR, abnormal returns for τ months are measured as:

$$BHAR_{i\tau} = \prod_{t=1}^{\tau}(1+R_{it}) - \prod_{t=1}^{\tau}(1+E(R_{it})) \quad (6)$$

[4] We include the returns for the sample firms in CTP from the month after that in which the sample firms announced M&A, and do not include the returns of the announcement month (t=0). This implies that the long-term performance that we measure is removed from the effect of the stock performance around the announcement date (i.e., short-term performance).

Where R_{it} is the actual dividend-adjusted return for sample firm i in month t, and $E(R_{it})$ is the expected return for sample firm i in month t.

We adopt the 25 size/book-to-market reference portfolio returns as the expected returns on sample firms. These portfolios are formed in two steps. First, in August of year t, we rank all TSE first-section firms in our population by market capitalization. Size quintiles are then created based on these rankings for all TSE first-section firms. Second, within each size quintile, the firms are sorted into quintiles on the basis of their book-to-market ratios in year t-1. TSE second section and Japan Association of Securities Dealers Automated Quotations (JASDAQ) firms are placed in the appropriate size/book-to-market portfolio, based on their size in August and book-to-market ratios in year t-1.[5] We examine the abnormal returns of acquiring firms' stock against the benchmark portfolio for the periods of 12, 24, and 36 months after the announcement.

In this study, in order to examine whether stock price performance is consistent with the operating performance of firms, we also analyze the operating performance of acquirers three years before and after acquisitions. We use operating cash flow returns (OCFR) and operating cash flow margin (CF-Margin) as indicators of operating performance.

$$OCFR_{i,t} = CF_{i,t}/Asset_{i,t} \quad (7)$$

$$CF\text{-}Margin_{i,t} = CF_{i,t}/Sales_{i,t} \quad (8)$$

Where CF is operating profit plus depreciation, amortization, Asset is book value of total assets, and Sales is total sales of the firms respectively. The index i indicates firm i, while t indicates year t and can be changed from

[5] We follow Barber and Lyon's (1997) methodology for creating a reference portfolio. Due to the number of stocks in our population, we employ a quintile rather than a decline classification. Further, we reconstitute in August of each year, since the majority of shareholder meetings in Japan are held in May and June.

-3 to 3. In the following analysis, we address OCFR and CF-Margin after industry adjustment. To adjust for industry effects, we subtract the industry median OCFR (Cf-Margin) of each year from the OCFR (CF-Margin) of an acquiring firm. Thus, an OCFR (CF-Margin) after industry adjustment is the abnormal OCFR (CF-Margin) of an acquiring firm in year t.[6] We use the Nikkei industrial classification, which is most popular industry classification in Japan, to identify an acquirer's industry.

4.2. Data and sample

We collected our M&A sample from the M&A database of Thomson One Banker. We selected completed deals announced by Japanese firms in the period from 2003 to 2010. Our original sample consisted of 1,279 mergers and acquisitions.[7] Then, we removed samples that met the following criteria, in order to focus on economically important control acquisitions for acquirers:

- Transactions in which the transaction value exceeded ten billion yen (roughly equivalent to 100 million USD).
- Transactions where transaction value exceeded 3% of the total assets of the acquiring firms.[8]
- Transactions in which acquirers acquired 10% or more of the target shares and accumulated 20% or more of these shares as a result of the acquisitions.
- Acquisitions by financial institutions, including investment funds and REIT.

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[6] Healy et al. (2001) employ cash flow divided by market value of assets as operating return. However, this method decreases operating cash flow when companies buy attractive businesses and stock prices appreciate. To avoid this problem, we apply book value for this analysis.

[7] In the following sections, acquisitions should be understood to include both mergers and acquisitions.

[8] We have confirmed the robustness of our major results even when the threshold is changed to 1% and 5%.

- Samples for which stock price and financial data was not available, such as in cases in which the acquirer was a non-listed firm in Japan.

We also excluded transactions from our analysis of operating performance when any fiscal year within the five years before or after the deals lasted for less than 12 months. In addition, we excluded deals from our long-term stock return analysis when we could not obtain stock prices for longer than one year after the month following the date of the deal announcement. In these procedures, we also systematically excluded stock-transfer reorganization deals from long-term return analysis. In stock-transfer reorganizations, the acquirer and target establish a new holding company which becomes the 100% parent company of both the acquirer and target, and becomes the succeeding listing company. We call these deals as "Holding Co. Deals" in the tables, and show the results separately.

Since we could not obtain stock price data beyond December 2012 or financial data beyond the fiscal year ending March 2012 at the time when we prepared this paper, our sample size decreased for some tests of long-term performance. We have confirmed that our results remain unchanged even when we exclude 104 deals announced in 2009 and 2010, for which we could not obtain full stock prices or financial data.

We obtained financial data from Nikkei Needs Financial Quest and Needs Cges. Also, to measure stock performance, we use the stock price return data from the Portfolio Master of Financial Data Solutions. Finally, we obtained data on 667 domestic and 81 cross-border M&A at the time of announcement for abnormal return analysis. This sample size, to our knowledge, is much larger than those of previous studies focusing on Japanese M&A.

4.3. Descriptive statistics

Table 1 shows the descriptive statistics of our sample. Panel A

shows the deal characteristics of domestic and cross-border acquisitions separately. Cross-border deals account for 10% of the entire sample. Although cash deals (45%) and stock deals (55%) are roughly balanced in the domestic acquisition sample, cross-border acquisitions primarily involve cash deals. In both domestic and cross-border samples, more than 60% of target firms are non-listed firms. In the cross-border sample, nearly 40% of target firms are from non-Group of 10 (G10) nations.

The ratio of M&A in which acquiring and target firms belong to the same industry, as defined by the first two digits of their SIC codes, is 45% in domestic and 60% in cross-border M&A. In addition, manufacturing firms dominate cross-border acquisitions which is consistent with the relative strength of Japanese manufacturers in comparison to commerce and service industries. This implies that cross-border M&A are mainly selected by manufacturing firms to strengthen their own core business lines in overseas markets.[9] Japanese manufacturers in the period analyzed suffered from an appreciating Yen, weak domestic demand, and competition from overseas rivals in China, Korea, and Taiwan. They attempted to expand their businesses in overseas and restructure their businesses in a short period of time through cross-border acquisitions. This is consistent with the findings of Mitchell and Mulherin (1996) and Andrade et al. (2001), who mentioned that M&A are direct responses to specific changes in business environments in an industry.

*****Table 1 about here*****

Panel B of Table 1 shows information on deals, deal character, and the firms involved. The median firm age of acquiring firms was 36 for

[9] In cross-border acquisitions, 64% of acquisitions by manufacturing firms are horizontal deals within the same industry.

domestic M&A and 58 years old for cross-border M&A. That the age of cross-border M&A is higher than that of domestic M&A indicates that relatively mature firms expand their businesses overseas to seek new growth opportunities. However, book to price ratio, which is similar to reciprocal of Tobin's Q, is lower for cross-border acquirers, which indicate cross-border acquirers are relatively advanced in age but still have growth opportunities.

Cross-border acquirers are typically larger firms than domestic acquirers, in term of sales and total assets. The deal value of cross-border M&A is larger compared than that of domestic M&A. This means that cross-border M&A in our sample are concentrated in relatively large deals by large firms. If we look at target sales, we find that target firms are much smaller than acquirers.

The average share-holding of target firms by acquiring firms before acquisitions (often called "toeholds") is 8.8% in domestic M&A and 3.3% in cross-border M&A. However, the median stock-holding is 0% in both sub-samples. After acquisitions, acquirers hold roughly 90% of target shares in both domestic and cross-border deals. These deals' contents show that it is not typical for acquiring firms to obtain control of target firms through step transactions. This finding is different from that for the sample studied by Inoue and Kato (2006), of which 42% involved deals inside business groups with prior shareholding of more than 20%. This suggests that M&A in Japan are shifting from reorganizations within corporate groups, such as *keiretsu*, to control transactions beyond corporate groups.

Control premiums were higher in cross-border M&A than in the domestic M&A. The positive premiums indicate that target shareholders are better off in these deals. On the other hand, the higher premium payments in overseas acquisitions arouse stock market criticism that Japanese firms overpay for their cross-border acquisitions. This tendency is

not specific to Japanese firms. Rossi and Volpin (2004) have examined 45,686 global M&A in the 1990s, and report that the takeover premium of cross-border M&A is higher than that of domestic M&A. Conn et al. (2005), as for M&A by UK firms, find positive returns only in cases where the targeted firm is a privately held, and link this result to smaller overpayment in their subsample. The relation between shareholder returns of acquiring firms and the sizes of control premiums are also examined in this paper.

There are no significant differences in the ROAs (returns on total assets) of acquirers in domestic and cross-border deals. Thus, it is not likely that only more profitable firms can afford to conduct cross-border deals. On the other hand, the Foreign sales ratios and foreign-stockholding ratios of acquiring firms in cross-border M&A are higher than those in domestic M&A. This indicates that firms that conduct cross-border acquisitions are more internationalized in their businesses and ownership structures than acquirers of domestic M&A. Companies seem to decide the locations of investments based on their own business needs and the expectations of shareholders. This corresponds to the mentioned tendency of cross-border M&A to be concentrated in large established manufacturing firms. In other words, firms attempting cross-border acquisitions have typically gained enough experience to operate in overseas prior to making deals.

Lastly, the corporate governance systems of acquirers of domestic and cross-border deals seem to be slightly different from each other. As mentioned, foreign investor ownership is higher for acquirers of cross-border deals, while shareholding by board members is higher in acquirers of domestic deals. On the other hand, the ratio of the presence of at least one outside director among board members do not differ in the two subsamples. Roughly half of acquiring firms have no outside director among their board members. The debt ratios of acquirers of domestic and cross-border M&A are also not significantly different from each other.

In summary, the acquirers of domestic and cross-border M&A are

similar in their profitability. However, acquirers of cross-border acquisitions tend to be larger firms with more international experience than acquirers of domestic acquisitions.

5. Empirical results

5.1. Abnormal returns of acquiring firms

Table 2 presents the results of abnormal returns of acquiring firms at the time of acquisition announcement.

***** Table 2 about here*****

Cumulative abnormal returns (CAR) for the three days around the announcement date are all positive and statistically significant for the entire sample and in both the domestic and cross-border sub-samples.

Only in the subsample in which acquirers and targets establish new holding company after the deals, in which acquirers are delisted in the process and new holding company will be listed subsequently, CAR is negative but not statistically significant. We interpret that holding company structure is easy to manage after the acquisitions but stock market expects that it is difficult to create synergy under the structure, since integration of acquirers and targets tend to delay in such structure.

CAR for cross-border acquisitions are higher than those for domestic acquisitions, but the difference is statistically insignificant. This is consistent with the findings of Ellis et al. (2011). Relating to payment methods for proceeding, we do not observe significant differences in CAR between cash and stock deals.

The three days abnormal returns around the announcement date are 0.61% (0.60%) and 0.83% (0.85%), respectively for the market model (the Fama-French three-factor model), and both are positive and significant at the 1% level. Therefore, the announcement of acquisitions increases the

shareholder wealth of acquirers. This is different from the findings of Andrade et al. (2001), who report that the CAR for acquirers in the US are negative, but is consistent with the findings of prior studies that analyze Japanese acquirers, such as those of Kang et al. (2000) and Inoue and Kato (2006).

In terms of long-term stock performance in the post-announcement period, results are reported in Table 3.

*****Table 3 about here*****

Table 3 reports the results of both the time-series regression of value- and equal-weighted portfolio returns (CTP) of 12, 24, and 36 months starting in the month after announcement of M&A (Panel A) and BHAR of the same period as mentioned above (Panel B).[10]

In Panel A, the intercept a_p represents the mean monthly abnormal return in the event period. As seen in the table, monthly abnormal returns increase from 12 months to 36 months in the entire sample. However, we did not find any significant abnormal monthly returns either in the entire sample or in other subsamples. In sub-sample of cross-border acquisitions, monthly abnormal returns in equal weighted portfolio are insignificantly negative, which is not observed in value weighted portfolio from 24 to 36 months. This implies that cross-border acquisitions by smaller firms tend to perform poorly.

Panel B shows that means of BHAR of the entire sample is negative for 12, 24, and 36 months, but statistically significant in 10% level only for 24 and 36 months. In domestic acquisitions, we do not observe statistically significant negative returns. On the other hand, in cross-border

[10] Number of observation decreases as the analyzed period becomes longer due to data availability.

acquisitions, means of BHAR of 24 and 36 months are negative and significant. Mean of BHAR of 36 months of cross-border acquisitions is significantly lower than that of domestic acquisitions. The above mentioned results by CTP approach imply that the negative mean returns associated with cross-border acquisitions is mainly caused by acquirers with small market-cap.

As discussed in Section 4.1, the calendar time portfolio approach offers advantages over tests that employ buy-and-hold abnormal returns, since it eliminates the problem of cross-sectional dependence among sample firms and it yields more robust test statistics in non-random samples. Andrade et al. (2001) also obtain negative and statistically significant long-term returns by BHAR, but do not find significant returns by CTP. From those discussions, what we can say from long-term return analysis is that long-term abnormal returns after cross-border acquisitions tend to negative but are not statistically robust ones.

In addition, we did not observe overly negative returns for the stock deals, compared to the cash deals, either in the announcement or post-announcement period. These results are different from those reported by Andrade et al. (2001) and Mitchell and Stafford (2000), which involved negative long-term returns for stock deals. We will examine this issue further in multivariate tests.

In summary, acquiring firms have positive abnormal returns of approximately 2% at the announcement of both domestic and cross-border M&A. Although, cross-border acquisitions by smaller market-cap firms tend to perform poorly in post-acquisition period, we did not find robust evidence that the acquirers have abnormal returns in the subsequent period in the entire sample. These findings are consistent with the efficient market hypothesis. Overall, M&A by Japanese firms enhance their shareholder wealth, meaning that our Hypothesis 1 is supported.

5.2. Operating performance of acquiring firms

We also analyzed operating performance to examine if the observed stock price performance does not contradict the overall operating performance trends of acquiring firms. The operating profits of target firms needed to be fully consolidated with the figures of acquirers after acquisitions. With this in mind, the sample in this test was limited to transactions in which an acquiring firm held 50% or more of the shares of the target firm (we refer to these deals as Majority Acquisitions). In this case, target firms are subject to the consolidated accounting of acquiring firms. Since more than 60% of the target firms in our sample are unlisted, we could not analyze the combined accounting figures of acquirers and targets. [11] The OCFR and CF-Margin shown in the Table 4 is abnormal in comparison to the median of the industry in the same years. Cases in which the figure is positive (negative) imply higher (lower) OCFR than the median of the industry to which an acquirer belongs.[12]

*****Table 4 about here*****

In Table 4, we show that industry-adjusted OCFR declines from the year before a deal completion to the year after the completion, and do not recover in the three years after the completion. Since the total assets of the

[11] As mentioned in 3.1 (3), Healy et al. (2001) adapt cash flow divided by market value of assets as operating cash flow returns. Also, Andrade et al. (2001) show operating cash flow to be connected to sales of combined firms. We use the book value of assets to avoid bias in our results resulting from changes in the market stock prices of acquirers during this period. We also simply examine acquirers' and not combined firms' OCFR, since more than 60% of our sample targeted non-listed firms for which we could not obtain sufficient accounting data.

[12] We also analyzed the subsample for which we could obtain OCFR data for the entire 7-year period. Since the results from sub-sample show similar trends in changes of OCFR with the results shown in the Table 4, we argue that the results shown in the Table 4 are not significantly distorted by either survival bias. As is made clear in Section 3.2, we do not have full three-year OCFR data for deals announced in 2009 and 2010.

post-acquisition period are inflated by recognizing goodwill, a difference between the proceeds paid for the acquisition and the net asset value of the target, it is understandable that OCFR deteriorates shortly after an acquisition. However, Japanese acquirers seem to fail to improve OCFR even in the subsequent few years. In addition, the results of CF-Margin, which are not influenced by goodwill, also show the similar trend.

The presented results are different from the findings on US acquirers reported by Andrade et al. (2001) in which operating performance improves immediately after acquisition. Japanese acquirers thus seem to be slower than US acquirers in realizing synergy effects. A potential cause of this delayed effect is that managers of Japanese firms, who value life-time employment and long-term relationships with stakeholders, need a longer period of time to restructure and reorganize their businesses to maximize firm performance after acquisitions. Our results are similar as Hosono, Takizawa, and Tsuru (2009), which analyzed merger of Japanese manufacturers in the period between from 1995 to1999 and reported that total factor productivity decreases immediately after mergers and does not recover within three years after merger.

While we show in Table 4 that OCFRs of acquirers deteriorate shortly after acquisitions, these results might be adversely affected by good performances in the pre-acquisition period. In particular, since the median industry-adjusted OCFR of the pre-acquisition period is significantly positive, which means the acquirers are better performer in the respective industry, we suspect that good operating performance in the pre-acquisition period adversely affects that in the post-acquisition period, with little relation to acquisitions. To control operating performance in the pre-acquisition period, following the method employed by Healy et al. (1992), Andrade et al. (2001), and Moeller et al. (2005), we regress the OCFR(CF-Margin) of two years before the completion of acquisitions (independent variable) for the OCFR(CF-Margin) of one year and three year after the completion of the

acquisitions (dependent variable). The reason that we use OCFR (CF-Margin) of two years prior to the deal completion is to avoid any effect from the acquisitions, which is often announced more than 12 months before the completion date.

We show the regression results in Table 4. The slope coefficients in the models, which are positive and statistically significant, capture the persistence of this measure. This indicates that there is consistency in pre- and post-acquisition performance. The intercepts indicate the abnormal OCFR (CF-Margin) after controlling for the OCFR (CF-Margin) in the pre-acquisition period. The intercepts are negative but are not significant both in OCFR and CF-Margin Models.

These results are consistent with the results of long-term stock performance, in that there is no significant abnormal return or performance, but are not consistent with positive announcement returns. This might be because operating performance in three–years after the deal completion does not reflect synergy effects and growth opportunities obtained in the acquisitions. In fact, when we tested OCFR of fifth years from the completion in subsample that financial data is available (N=252), we confirmed that industry-adjusted OCFR recovers to the pre-acquisition level (We do not show the results in the table). We further analyze relation between shareholder returns and post-acquisition operating performance in the next section.

5.3. Correlation among performance variables

Table 5 shows correlations among performance variables analyzed in this study and the control premiums of deals. In this analysis, we use BHAR for the long-term performance of stock prices, since we need returns for respective stocks, and not portfolio returns calculated by CTP. There is a positive correlation between abnormal return at the time of announcement and BHAR in the post-announcement period, although it is statistically

significant only for BHAR of 12 months. This indicates that stock market reactions at the announcement have tendency of under-reaction. These results further support our Hypothesis 1.

On the other hand, abnormal returns at the announcement do not have statistically significant correlation with firm performance of post-acquisition period. Since we do not observe negative and significant correlation at least, stock market reactions at the announcement do not contradict to operating performance.

BHAR of 12 months are correlated positively with OCFR of post-acquisition periods (one and two year after completion of the acquisitions) but they are not significant.

Thus, the reaction of the stock market at the time of announcement is consistent with the long-term stock returns in the post-announcement period, which do not contradict post-acquisition operating performance. In this sense, our results are consistent with those of Healy et al. (1992) and Andrade et al. (2001), in that operating performance does not contradict stock price reactions to acquisitions.

Also, in the sub-sample that we can calculate control premium offered to the target shareholders based on the market share price of the target firms, there are no significant correlations between control premiums and abnormal returns of acquiring firms, either at the time of announcement or in the post-announcement period. Higher control premiums by themselves do not directly imply overpayment for acquisitions.

*****Table 5 about here*****

5.4. Multivariate analysis for abnormal returns

5.4.1. Model

To test Hypotheses 2 and 3, we conducted a multivariate regression analysis. We attempt to find some key factors of M&A investment that

result in better performance for acquirers, based on Hypotheses 2 and 3. As dependent variables, we used the CAR (cumulative abnormal returns) of three days around the announcement, BHAR for 12 and 36 months.[13] In addition to those shareholder returns, we also analyzed factors of post-acquisition operating performance of one and three year after the completion respectively, although we do not include deals announced in 2009 and 2010 due to lack of data.

As independent variables, we employed variables closely related to the hypotheses. First, we explored whether business combination of an acquirer and target influences synergy effects from acquisitions (Hypothesis 2). To test this, we prepared horizontal dummy, which had a value of 1 when the first two digits of the primary industry codes of an acquirer and target were the same, and had a value of 0 otherwise. We expected a positive coefficient in this dummy variable, based on Hypothesis 2.

Second, we investigated whether cross-border acquisitions create greater shareholder value and result in better post-acquisition performance than domestic acquisitions. We prepared two dummy variables named "CB G10 Target Dummy" and "CB Non-G10 Target Dummy". "CB G10 Target Dummy" takes a value of 1 for cross-border acquisitions involving target firms in Group of 10 countries except Japan (Belgium, Canada, France, Germany, Italy, Netherlands, Sweden, Switzerland, United Kingdom, and United States), otherwise takes a value of 0. "CB Non-G10 Target Dummy" takes a value of 1 for cross-border acquisitions involving target firms in countries other than Group of 10. We expect that the first dummy variable captures additional wealth effects from acquiring firms in developed countries and the second captures that from acquiring firms in developing countries compared to the domestic acquisitions.

[13] We have a smaller sample for BHAR 36 month than for BHAR 12 month, since we did not obtain BHAR 36 month data for deals completed after the end of 2009.

Third, in order to examine whether the corporate governance of acquiring firms contributes to efficient acquisitions (Hypothesis 3), we prepared a few variables that possibly influence on the level of monitoring against management of acquiring firms. We included a dummy variable for outside director, which has a value of 1 if an acquirer has at least one outside director on its board. This reflects that outside director system was still not widely involved in Japanese firms during the analyzed period. We also included the foreign shareholdings and director shareholding in our analysis. In cases of higher shareholdings by foreign investors, managers of acquiring firms are expected to be more disciplined, since foreign investors can either become friendly or hostile block holders. In fact, Ferreira et al. (2010) show that higher shareholdings by foreign institutional investors result in higher probability that a firm will become a target of acquisition by foreign firms. On the other hand, higher director shareholdings are expected to mitigate agency problems (Jensen, 1986). We also include shareholdings by mutual shareholders. Mutual shareholdings are one of anti-takeover measures often taken by Japanese firms in which firms mutually hold block shares to prevent hostile takeover attempts by other third parties. Higher mutual shareholdings for an acquiring firm are expected to weaken monitoring against the management by stock market with lower probability of occurrence of hostile takeover attempt. In addition, we included the level of debt usage by of acquirers ("Leverage"). Kang et al. (2000) have reported that positive announcement returns are associated with acquirers' strong relationships with banks in M&A of Japanese firms between 1977 and 1993. In the 1990s, Japanese banks seriously suffered from non-performing loan problems and the main banking system itself was weakened. If the monitoring by banks still works effectively in Japan in the period after Japanese banking crisis, we expect positive coefficient for this variable.

In addition, to see whether payment method influences performance,

we included Stock Deal Dummy, which takes on a value of 1 if the payment of a deal is in stock. If stock deals have signaling effect that indicate that the market stock price of an acquirer is overpriced in the market relative to its fundamental value, the coefficient for stock deal dummy should show a negative sign. Since cross-border acquisitions are mostly paid in cash, the variable primarily captures the difference caused by method of payment among domestic acquisitions.

We also included a dummy variable named Over90%Acq which has a value of 1 if an acquisition controls of more than 90% of the outstanding shares of a target, and has a value of zero otherwise, in order to see whether the full control of firms adds value for acquirers. Controlling more than 90% of outstanding shares is an important threshold in the US and in other developed countries which legally enables acquirers to squeeze out remaining minority shareholders.[14]

As control variables, we included price to book ratio of acquiring firms as of previous month of deal announcement, shareholding by acquiring firms of target firms prior to the deal announcement ("Toehold"), size of acquirers (natural log of market-cap) relative deal size (deal value divided by market-cap of acquiring firms), foreign sales ratio by acquiring firms, dummy variables to identify whether a target firm was a public firm, industry dummy, and announcement year dummy.

5.4.2. Regression results

Panel A of Table 6 shows the results for the entire sample for our multivariate tests of the determinants of abnormal returns at the announcement and in the post-announcement period. For test of announcement returns, we prepare two models, Model 1 and Model 2.

[14] In re Siliconix, Inc. S'holders Litig., No 18700, 2001 Del. Ch. LEXIS 83 (DEL. Ch. June 19, 2001).

Model 1 is for the entire sample and Model 2 is for the subsample that excludes deals to establish new holding company, in which acquirers were delisted in the process and the new holding company were listed subsequently. Due to the delisting of acquiring firms in these deals, sample size of Model 2, 3 and 4 are decreased from that of Model 1.

Table 6 about here

Firstly, in Model 1, the coefficient for the dummy variable to identify deals which establish new holding company is negative and significant. This is consistent with the results reported in Table 2.

Results in Model 3 and 4 show that Hypothesis 2 is supported for long-term stock returns but not for announcement returns. The coefficient for horizontal dummy is positive and significant for BHAR of both 12 months and 36 months. These results confirm expectation that synergy effects are expected to be realized quickly after acquisitions in horizontal acquisitions. What is puzzling is that stock market underreact to the additional positive wealth effect in the horizontal acquisitions at the time of announcement.

An additional result which is likely to be related to Hypothesis 2 is that acquisitions that result in control of more than 90% of shares of target firms were found to have better long-term stock returns. This indicates that full control of target firms enables acquirers to realize synergy effects more easily and at an earlier stage. Our empirical results show that full control of target firms in the same industry contributes to enhanced wealth effects for acquiring firms in long run.

The results show that cross-border acquisitions targeting developing countries create greater shareholder value at the announcement. Coefficient for “CB Non-G10 target dummy” is positive and significant in

Model 1. Since we do not observe significant coefficients for long-term stock returns, the positive and larger wealth effects from cross-border acquisitions targeting developing countries are not canceled out in subsequent periods. On the other hand, cross-border acquisitions targeting developed countries tend to perform poorly in post-announcement period. Coefficient for "CB G-10 target dummy" is negative and significant at 10% level in the regression of BHAR 36 months. Thus, negative and significant BHAR of 36 months, as shown in Panel B of Table 3, are primarily due to cross-border acquisitions targeting developed countries.

As for Hypothesis 3, we find supporting evidence for positive wealth effects of monitoring by an outside director. The presence of outside directors among the board members (outside director dummy) has positive effects for announcement returns (significant at the 10% level) in Model 1. However, there is no evidence that outside director contribute to realize larger in post-acquisition period since we did not observe any significant effects of the presence of outside directors on long-term performance in Model 3 and 4. These results are consistent with interpretation that stock market expects positive effects from outside directors primarily in the process of decision making of acquisitions, not in the process of post-acquisition management.

In addition, mutual shareholdings have negative and significant (10% level) effects in Model 2. This is consistent with Hypothesis 3, since acquisitions by management better protected from hostile takeover attempts are valued lower by stock market at the announcement.

On the other hand, we do not find consistent result with Hypothesis 3 for other variables related to monitoring against management. Both shareholdings by foreign shareholders and directors have negative and significant effects on announcement returns. This contradicts our prediction in Hypothesis 3. However, for both the variables, we do not observe significant effects in Model 3 and 4. Thus, the negative reactions

for firms with higher foreign shareholding and director shareholding are not reliable prediction of the post-announcement returns. We also do not find positive effects for leverage of acquiring firms, although we find negative effects from leverage on BHAR of 12 months which again contradict Hypothesis 3.

To summarize, related Hypothesis 3, we find positive effects only from the presence of outside director on the board of acquiring firms. In Japan, large listed firms increasingly introduce outside directors which are not common for Japanese firms until recently (Saito (2008)). Our results add a new evidence that outside directors in Japanese firms are expected to play important role in the decision of acquisitions.

Relating to payment method in acquisitions, we do not find significant effects from payment method at the announcement, which is not consistent with prediction based on signaling effects under information asymmetry, as shown by Myers and Majluf (1984). However, we find negative and significant coefficient for stock deal dummy in Model 3. This result is consistent with that of Mitchell and Stafford (2000). Since acquisitions paid by acquirer's own stock have similar effects as seasoned stock offering, there might be the similar

Acquisitions of public targets do not result in significantly lower stock returns, either in the announcement or post-announcement period. This implies that the overpayment problem that was expected to be a relevant one for public targets is not serious for Japanese acquirers. These results contradict those of Conn et al. (2005). This result is consistent with the results that both shareholder returns at the announcement and in the post-announcement period are not negatively correlated with control premium paid to target shareholders.

In Panel B of Table 6, we show results of regression tests of determinants of both industry-adjusted OCFR and CF-Margin of one and

three year after the deal completion. In the regressions, sample sizes are smaller than in regressions of long-term shareholder returns (Model 3 and 4 of Panel A), since we limit the samples in Panel B as majority acquisitions and we cannot analyze post-three year OCFR and CF-Margin due to lack of financial data for acquisitions announced in 2009 and 2010. Still, we have quite consistent results in Model 2 (OCFR of post-three year from deal completion) with the results shown in Panel A. Cross-border acquisitions targeting developed countries (G10) shows significantly poorer performance than domestic deals. Horizontal deals, acquisitions accumulated more than 90% shares, acquisitions by firms with presence of at least one outside director on the board show significantly better OCFR. In addition, stock deals show poorer OCFR relative to cash deals. On the other hand, firms in which foreign shareholdings were high shows significantly better OCFR, which are inconsistent with results for announcement returns. This indicates that acquisitions by firms with high foreign shareholdings are not bad acquisitions. In Model 1, we obtain similar results from Model 2, but Horizontal dummy is not significant. This indicates that synergy realizes not in the next year but in a few years from deal completion. This is also consistent with results in shareholder returns that horizontal dummy is positive and significant in long-term returns but is not in announcement returns.

In Model 3 and 4 where CF-Margin is dependent variable, most of the variables are insignificant other than CB G10 target dummy which is negative and significant in Model 4. These results indicate that better operating performance in horizontal acquisitions from is not realized as a form of higher profitability but as a form of improved efficiency. This is consistent a view that wealth creation from M&A by Japanese firms are not from stronger market power but from efficiency improvements.

In summary, we find results consistent with Hypothesis 2 both for the long-term returns and operating performance in the post-announcement

period. Regarding Hypothesis 3, we only find supporting evidence for the positive effects of the presence of an outside director both for shareholder returns and operating performance of post-acquisition period. In addition, cross-border acquisitions targeting developing countries have higher returns at the announcement compared to domestic deals, but cross-border acquisitions targeting developed countries do not. We also find that both long-term returns and operating performance are better in acquisitions in which acquirers obtain full control of target firms. This is consistent with the findings of Ellis et al. (2011), which indicate that one of the causes of the wealth effects of acquisitions is the improvement in the governance of target firms.

6. Summary and conclusion

In this study, we examine whether M&A by Japanese firms are efficient investments, by examining both shareholder wealth effects and operating performance. Our results show that M&A by Japanese firms contribute to the enhanced shareholder value of acquiring firms. The effects are mostly reflected in the stock prices of acquirers at the time of announcement of acquisitions, which is consistent with the efficient market hypothesis. The profitability of acquiring firms tends to decline from one year after acquisitions, but the decline is not significant when performance of pre-acquisition period is controlled.

The positive wealth effects of acquiring firms for shareholders at the announcement do not contradict our results of post-announcement stock returns and of operating performance in post-completion period. The sources of these positive wealth effects from acquisitions are the synergy through strengthening the core businesses of acquirers, which is better realized in full acquisitions of targets than in partial acquisitions.

From above results, we conclude that M&A by Japanese firms, whether domestic or cross-border, are efficient investments. The results

show that the effects of M&A by Japanese firms on stock prices are similar to those reported by Andrade et al. (2001) and Ellis et al. (2001). We can thus say that the performances of M&A by Japanese firms are for the most part similar to those reported to US or UK firms. This indicates that M&A in Japan are working in the same manner as those in the US and UK markets. A series of amendments to corporate laws and M&A rules made in Japan in the late 1990s has worked effectively to develop a market for corporate control and address the changing business environments. On the other hand, developed competitive market for corporate control has made it difficult to make acquisitions that consistently earn large wealth effects, as has been described by Andrade et al. (2001).

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Appendix. Explanation Variables

Variable	Explanation
Horizontal dummy	Dummy variable that takes on a value of 1 if the first two digits of the SIC Code of an acquirer and target are the same, and takes on a value of 0 otherwise.
CB G10 target Dummy	Dummy variable that takes on a value of 1 if a target firm in a cross-border acquisition is located in a G10 nation other than Japan, and takes on a value of 0 otherwise.
CB Non-G10 target Dummy	Dummy variable that takes on a value of 1 if a target firm in a cross-border acquisition is located in a non-G10 nation, and takes on a value of 0 otherwise.
Outside Director Dummy	Dummy variable that takes on a value of 1 if at least one outside director is present on the board of directors of an acquirer firm, and takes on a value of 0 otherwise.
Foreign shareholding	Percentage of shares of an acquiring firm held by foreign shareholders.
Director shareholding	Percentage of shares of an acquiring firm held by directors of the firm.
Mutual Shareholding	Percentage of shares of an acquiring firm held by parties which have mutual shareholding relation with the acquiring firm
Leverage	Ratio of net debt to shareholders equity in an acquiring firm.
Over90%acq	Dummy variable that takes on a value of 1 if an acquiring firm controls at least 90% of the outstanding shares of the target firm as a result of an acquisition.
Public target	Dummy variable that takes on a value of 1 if a target firm is a public firm, and takes on a value of 0 otherwise.
Acquirer Size	Natural log of market cap of an acquiring firm.
Relative deal size	Ratio of proceeds paid for an acquisition to market-cap of an acquiring firm.

Manufacturer	Dummy variable that takes on a value of 1 if an acquiring firm is a manufacturer, based on industry classification by the Tokyo Stock Exchange, and takes on a value of 0 otherwise.
Information and Media	Dummy variable that takes on a value of 1 if an acquiring firm belongs to the information and media industry, based on industry classification by the Tokyo Stock Exchange, and takes on a value of 0 otherwise.

Table 1 Descriptive Statistics

Panel A. Sample Distribution

	Domestic Deals N=658		Cross-border Deals N=73	
	Valid Obs.	Ratio	Valid Obs.	Ratio
Cash Deal	297	45%	71	97%
Majority Acquisition	603	92%	65	89%
Acquisition Over 90% Shares	491	75%	56	77%
Public Target	247	38%	19	26%
Horizontal Deal (2digit)	298	45%	46	63%
Horizontal Deal (4digit)	159	24%	26	36%
Target G10 Nations	-	-	45	62%
Manufacturer	221	34%	53	73%
Information & Media	150	23%	14	19%

Panel B. Descriptive Statistics

	Domestic M&A				Cross-border M&A				Difference of Mean		
	N	Mean	Median	STD	N	Mean	Median	STD	Dif	t-stat	
Amount ($ mil)											
Value of Transaction	658	240	44	805	73	541	200	862	-302	-2.855	***
Acquirer Total Assets	658	1,936	423	6,085	73	5,693	2,130	9,709	-3,758	-3.237	***
Acquirer Net Sales	658	2,012	469	6,545	73	4,996	1,876	8,366	-2,985	-2.950	***
Target Net Sales	487	670	150	2,290	31	756	300	1,171	-86	-0.369	
Ratio (%)											
(Deal Information)											
Toehold	658	8.8	0.0	18.5	73	3.3	0.0	11.5	5.4	3.565	***
Shares Acquired	658	79.5	99.1	26.3	73	85.6	100.0	23.9	-6.1	-2.049	**
Owned After Transaction	658	88.3	100.0	21.5	73	89.0	100.0	22.6	-0.7	-0.238	
Deal Value to Acquirer Total Assets	658	33.4	10.4	178.3	73	87.1	9.0	266.4	-53.8	-1.683	*
Control Premium (4 Weeks Prior)	229	25.6	18.0	30.3	18	41.7	34.0	34.0	-16.1	-1.944	*
(Acquirer Information)											
Firm Age	623	39	36	25	73	50	58	31	-11.4	-3.064	***
Book to Price Ratio of acquirers	658	0.76	0.60	0.71	73	0.61	0.58	0.44	0.1	2.429	**
Acquirer ROA	658	7.2	4.0	16.3	73	7.8	5.0	11.7	-0.6	-0.425	
Acquirer Net Debt to Assets	655	23.4	20.0	16.9	73	25.6	21.0	21.7	-2.3	-0.857	
Foreign Sales Ratio	652	3.5	0.0	9.9	73	14.9	1.6	20.5	-11.4	-4.695	***
Foreign Investor Shareholding	650	12.0	8.0	13.3	73	18.8	18.0	12.1	-6.9	-4.568	***
Director's Shareholding	650	11.0	2.0	17.1	73	5.7	0.0	11.6	5.3	3.534	***
Mutual Shareholding	650	4.9	1.0	7.2	73	7.0	5.0	8.0	-2.2	-2.207	**
Firms Outside Director Exists	658	42.1	0.0	49.4	73	50.7	100.0	50.3	-8.6	-1.385	
Ratio of Outside Director	650	4.6	0.0	10.3	73	4.8	0.0	11.4	-0.2	-0.119	

***, **,* indicate statistically significant at 1%, 5%, and 10% level based on a two-tail t-test.

Table 2 Share Price Performance at Announcement

Entire Sample

	N	Mean	t-stat	
Market Model	731	1.75%	6.027	***
F-F Model	731	1.77%	6.187	***

	Non-Holding Co. Deals				Holding Co. Deals				Non H - H		
	N	Mean	t-stat		N	Mean	t-stat		Dif	t-stat	
Market Model	681	1.88%	6.297	***	50	-0.10%	-0.088		1.98%	1.666	
F-F Model	681	1.93%	6.563	***	50	-0.38%	-0.323		2.32%	1.888	*

	Domestic				Cross-border				D - CB	
	N	Mean	t-stat		N	Mean	t-stat		Dif	t-stat
Market Model	658	1.62%	2.510	***	73	2.86%	2.510	**	-1.23%	-1.049
F-F Model	658	1.65%	2.523	***	73	2.89%	2.523	**	-1.24%	-1.049

	Cash Deal				Stock Deal				C - S	
	N	Mean	t-stat		N	Mean	t-stat		Dif	t-stat
Market Model	368	1.43%	3.350	***	363	2.07%	5.284	***	-0.63%	-1.096
F-F Model	368	1.44%	3.425	***	363	2.11%	5.435	***	-0.66%	-1.157

Cash Deal Sub-sample

	Domestic				Cross-border				D - CB	
	N	Mean	t-stat		N	Mean	t-stat		Dif	t-stat
Market Model	297	1.25%	2.668	***	71	2.19%	2.122	**	-0.93%	-0.826
F-F Model	297	1.28%	2.766	***	71	2.14%	2.088	**	-0.86%	-0.768

***, **,* indicate statistically significant at 1%, 5%, and 10% level based on a two-tail t-test.

Table 3 Long-Term Returns

Panel A. CTP

		Value Weighted			Equal Weighted		
		12 months	24 months	36 months	12 months	24 months	36 months
Panel A: All Firms							
All Firms	α_p	-0.02%	0.17%	0.24%	0.06%	0.03%	0.14%
	t-statistics	(-0.08)	(0.71)	(1.16)	(0.21)	(0.13)	(0.56)
	N (calender months)	104	105	105	104	105	105
Panel B: Method of Payment							
Cash Deal	α_p	-0.15%	0.00%	0.05%	-0.09%	-0.09%	-0.08%
	t-statistics	(-0.49)	(0.01)	(0.19)	(-0.25)	(-0.29)	(-0.26)
	N (calender months)	98	99	99	98	99	99
Other	α_p	-0.20%	0.08%	0.20%	-0.18%	-0.15%	0.18%
	t-statistics	(-0.56)	(0.29)	(0.82)	(-0.50)	(-0.50)	(0.65)
	N (calender months)	97	105	105	97	105	105
Panel C: Domestic of Cross-border							
Domestic	α_p	0.02%	0.10%	0.20%	0.02%	0.02%	0.18%
	t-statistics	(0.07)	(0.39)	(0.93)	(0.07)	(0.06)	(0.73)
	N (calender months)	104	105	105	104	105	105
Cross-border	α_p	-0.08%	0.23%	0.15%	-0.47%	-0.40%	-0.61%
	t-statistics	(-0.23)	(0.77)	(0.63)	(-0.96)	(-0.95)	(-1.47)
	N (calender months)	84	93	93	84	93	93

α_p (mean monthly abnormal return) is calcualted in the follwoingregression.

$$R_{pt} - R_{ft} = a_p + b_p(R_{mt} - R_{ft}) + s_p SMB_t + h_p HML_t + \varepsilon_{pt}$$

Where R_{pt} is the average raw return for stocks in calendar month t (where a sample stock is included if month t is within the event period (12, 24, or 36 months) following the announcement of M&A).

Panel B: BHAR

Entire Sample

	N	Mean	t-stat	
BHAR12M	666	-2.22%	-1.098	
BHAR24M	608	-4.71%	-1.927	*
BHAR36M	522	-6.55%	-1.921	*

	Cash Deal				Stock Deal				C - S		
	N	Mean	t-stat		N	Mean	t-stat		Dif	t-stat	
BHAR12M	356	-1.79%	-0.755		310	-2.71%	-0.801		0.92%	0.223	
BHAR24M	319	-2.28%	-0.778		289	-7.40%	-1.849	*	5.12%	1.033	
BHAR36M	270	-8.37%	-2.700	***	252	-4.60%	-0.737		-3.77%	-0.541	

	Domestic				Cross-border				D - CB		
	N	Mean	t-stat		N	Mean	t-stat		Dif	t-stat	
BHAR12M	594	-2.13%	-0.988		72	-2.89%	-0.516		0.75%	0.125	
BHAR24M	545	-4.01%	-1.518		63	-10.79%	-1.832	*	6.78%	1.050	
BHAR36M	469	-4.84%	-1.300		53	-21.64%	-3.572	***	16.79%	2.361	**

Cash Deal Sub-sample

	Domestic				Cross-border				D - CB		
	N	Mean	t-stat		N	Mean	t-stat		Dif	t-stat	
BHAR12M	285	-1.59%	-0.610		71	-2.59%	-0.458		1.01%	0.162	
BHAR24M	257	-0.51%	-0.153		62	-9.60%	-1.638		9.09%	1.346	
BHAR36M	218	-5.40%	-1.530		52	-20.83%	-3.403	***	15.44%	2.185	**

***, **,* indicate statistically significant at 1%, 5%, and 10% level based on a two-tail t-test.

Table 4 Pre- and Post-Acquisition Operating Performance

Sample: Majority Acquisitions

Year	N	Industry-adjusted OCFR	t-stat	Year	N	Industry-adjusted CF-Margin	t-stat
-3	448	2.31%	3.523 ***	-3	466	-2.46%	-0.654
-2	454	4.30%	8.947 ***	-2	466	1.49%	0.613
-1	459	3.71%	9.505 ***	-1	466	2.63%	1.608
0	453	1.60%	3.238 ***	0	466	1.14%	0.603
1	459	1.34%	3.102 ***	1	466	0.54%	0.340
2	411	0.86%	2.226 **	2	422	-0.67%	-0.407
3	365	0.56%	1.227	3	370	-3.76%	-1.010

***, **,* indicate statistically significant at 1%, 5%, and 10% level based on a two-tail t-test.

Regression of post-acquisition OCFR (CF-Margin) to pre-acquisition OCFR (CF-Margin).

$$OCFR_{post1,\,i} = -0.013 + 0.343\ OCFR_{pre2,\,i}$$
$$(-0.897) \quad (9.977)$$

N=454 Adj. R^2 = 0.190

$$CF\text{-}Margin_{post1,i} = -0.001 + 0.244 CF\text{-}Marigin_{pre2,i}$$
$$(-0.023) \quad (8.623)$$

N=466 Adj. R^2 = 0.134

$$OCFR_{post3,i} = -0.015 + 0.217\ OCFR_{pre2,i}$$
$$(-0.974) \quad (5.198)$$

N=365 Adj. R^2 = 0.082

$$CF\text{-}Margin_{post3,i} = -0.074 + 0.449\ CF\text{-}Marigin_{pre2,i}$$
$$(-0.595) \quad (7.516)$$

N=370 Adj. R^2 = 0.130

t-value in parenthesis. OCFR(CF-Margin)post x,i and OCFR(CF-Margin)pre x,i are industry adjusted OCFR(CF-Margin) of firm i as of x-th year x of post- and pre-acquisition respectively.

Table 5 Pearson Correlation between Performance Variables

		Premium / 4 Weeks	3 Days CAR (FFModel)	BHAR 12M	BHAR 36M	OCFR Post-one Year Change	OCFR Post-three Year Change
Premium / 4 Weeks	Correlation	1.000	-0.072	-0.007	0.026	-0.076	-0.012
	N	247	247	209	171	148	120
3 Days CAR (FFModel)	Correlation		1.000	0.138***	0.007	-0.012	0.009
	N		731	666	522	459	365
BHAR 12M	Correlation			1.000	0.716***	0.015	0.015
	N			666	522	455	361
BHAR 36M	Correlation				1.000	-0.009	0.003
	N				522	388	361
OCFR Post-one Year Change	Correlation					1.000	0.869***
	N					459	365
OCFR Post-three Year Change	Correlation						1.000
	N						365

***, **,* indicate statistically significant at 1%, 5%, and 10% level in two-talied test.
Correlations with Pre- and Post-acquistiion OCFR are calculated for majority acquisition sub-sample.
OCFR Post-one (three) Year Change are change of OCFR of one (three) fiscal year after closing of acquisitions from those of two years prior to the closing date.

Table 6 Multivariate Test

Panel A. Determinants of shareholder returns

	Model 1			Model 2			Model 3			Model 4		
Sample	All			Non-Holding Co. Deals			All			All		
	CAR 3Days			CAR 3Days			BHAR 12M			BHAR 36M		
N	719			658			645			508		
Adj R2	0.073			0.086			0.081			0.082		
	Coefficient	t-stat		Coefficient	t-stat		Coefficient	t-stat		Coefficient	t-stat	
(Constant)	12.070	*4.216*	***	11.645	*3.912*	***	0.320	*1.844*	*	-0.442	*-1.744*	*
New Holding Co. Dummy	-3.161	*-2.689*	***									
CB G10 Target Dummy	1.010	*0.773*		0.139	*0.106*		-0.114	*-1.506*		-0.177	*-1.687*	*
CB Non-G10 Target Dummy	3.246	*2.131*	**	3.066	*2.036*	**	-0.018	*-0.211*		-0.126	*-1.042*	
Horizontal Dummy	-0.361	*-0.613*		-0.250	*-0.417*		0.083	*2.402*	**	0.170	*3.565*	***
Over90%Acq Dummy	0.381	*0.506*		0.701	*0.926*		0.098	*2.239*	**	0.106	*1.760*	*
Outside Director Dummy	1.090	*1.783*	*	0.777	*1.249*		-0.052	*-1.436*		-0.017	*-0.335*	
Foreign Shareholding	-0.054	*-2.089*	**	-0.057	*-2.160*	**	-0.002	*-1.202*		0.001	*0.412*	
Direcoter Shareholding	-0.036	*-1.905*	*	-0.037	*-1.910*	*	-0.001	*-0.856*		0.000	*0.072*	
Mutual Shareholding	-0.068	*-1.544*		-0.079	*-1.712*	*	0.001	*0.408*		-0.001	*-0.213*	
Leverage	-0.094	*-1.178*		-0.040	*-0.486*		-0.009	*-1.999*	**	0.001	*0.070*	
Book to Price Ratio	0.122	*0.227*		0.129	*0.234*		-0.007	*-0.230*		0.056	*1.256*	
Acquirer's Toehold	-0.037	*-2.178*	**	-0.038	*-2.162*	**	0.001	*0.824*		0.002	*1.601*	
Public Target Dummy	0.449	*0.672*		0.390	*0.565*		0.016	*0.403*		0.106	*1.946*	*
Stock Deal Dummy	0.983	*1.429*		0.771	*1.091*		-0.137	*-3.352*	***	-0.067	*-1.211*	
Relative Deal Size	0.157	*1.099*		0.429	*2.380*	**	-0.006	*-0.553*		0.022	*0.667*	
Acquirer Size	-0.818	*-3.521*	***	-0.767	*-3.187*	***	-0.016	*-1.172*		0.006	*0.288*	
Foreign Sales Ratio	2.764	*1.035*		3.505	*1.284*		0.399	*2.520*	**	-0.109	*-0.473*	
Industry Dummy	Yes			Yes			Yes			Yes		
Year Dummy	Yes			Yes			Yes			Yes		

***, **,* indicate statistically significant at 1%, 5%, and 10% level.

Panel B. Determinants of operating performance

	Model 1			Model 2			Model 3			Model 4		
Sample	Majority Acquisitions			Majority Acquisitions			Majority Acquisitions			Majority Acquisitions		
	OCFR Post One-year			OCFR Post-Three Year			CF-Margin Post One-year			CF-Margin Post Three-year		
N	444			356			454			360		
Adj R2	0.248			0.191			0.132			0.135		
	Coefficient	t-stat		Coefficient	t-stat		Coefficient	t-stat		Coefficient	t-stat	
(Constant)	-0.065	*-1.684*	*	-0.175	*-3.584*	***	0.086	*0.331*		-0.870	*-2.125*	**
OCFR Pre Two-year	0.307	*8.398*	***	0.187	*4.310*	***						
CF-Margin Prior Two-Year							0.566	*8.145*	***	0.440	*7.082*	***
CB G10 target Dummy	-0.007	*-0.496*		-0.056	*-3.091*	***	-0.037	*-0.375*		-0.466	*-3.035*	***
CB Non-G10 target Dummy	0.009	*0.442*		-0.027	*-0.895*		-0.054	*-0.404*		0.013	*0.051*	
Horizontal Dummy	0.006	*0.884*		0.017	*1.887*	*	-0.044	*-0.899*		-0.041	*-0.544*	
Over90%Acq Dummy	0.019	*1.879*	*	0.028	*2.368*	**	-0.015	*-0.229*		0.003	*0.025*	
Outside Director Dummy	0.013	*1.682*	*	0.017	*1.806*	*	-0.079	*-1.548*		-0.027	*-0.330*	
Foreign Shareholding	0.001	*1.794*	*	0.001	*1.678*	*	0.000	*-0.215*		-0.002	*-0.484*	
Direcoter Shareholding	0.000	*0.886*		0.001	*1.948*	*	0.001	*0.586*		0.001	*0.489*	
Mutual Shareholding	0.000	*-0.416*		0.000	*-0.231*		-0.003	*-0.921*		0.007	*1.271*	
Leverage	-0.002	*-1.132*		0.000	*-0.196*		0.008	*0.719*		-0.004	*-0.271*	
Book to Price Ratio	-0.013	*-2.109*	**	0.003	*0.341*		0.034	*0.808*		0.045	*0.589*	
Acquirer's Toehold	0.000	*0.853*		0.000	*-0.302*		-0.003	*-1.933*	*	0.000	*-0.097*	
Public Target Dummy	0.008	*0.997*		0.013	*1.272*		0.075	*1.321*		-0.005	*-0.053*	
Stock Deal Dummy	-0.017	*-2.023*	**	-0.018	*-1.715*	*	-0.053	*-0.946*		0.041	*0.474*	
Relative Deal Size	-0.001	*-0.649*		0.007	*1.144*		0.003	*0.242*		0.010	*0.199*	
Acquirer Size	0.005	*1.726*	*	0.013	*3.232*	***	0.007	*0.316*		0.069	*2.116*	**
Foreign Sales Ratio	-0.050	*-1.604*		-0.107	*-2.661*	***	0.152	*0.726*		0.257	*0.754*	
Industry Dummy	Yes			Yes			Yes			Yes		
Year Dummy	Yes			Yes			Yes			Yes		

***, **,* indicate statistically significant at 1%, 5%, and 10% level.

OCFR (CF-Margin) Post-One (Three) Year are OCFR (CF-Margin) of first (third) fiscal year after closing of acquisitions. OCFR (CF-Margin) Pre Two-Year are OCFR (CF-Margin) of two fiscal year prior to the closing of acquisitions.