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Keisuke Chikamoto
Ministry of Land, Infrastructure, Transport and Tourism
City Bureau, Urban Renewal Promotion Division

Fumiko Takeda
Department of Technology Management for Innovation
University of Tokyo

Ai Yokoyama
Department of Systems Innovation
University of Tokyo

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Keisuke Chikamoto
Ministry of Land, Infrastructure, Transport and Tourism
City Bureau, Urban Renewal Promotion Division
Tel: +81-3-5253-8406 / Fax: +81-3-5253-1589
E-mail: chikamoto-k2rq@mlit.go.jp

Fumiko Takeda[*]
Department of Technology Management for Innovation
University of Tokyo
7-3-1 Hongo, Bunky-ku, Tokyo 113-8656 Japan
Tel: +81-3-5841-1191
E-mail: takeda@tmi.t.u-tokyo.ac.jp

Ai Yokoyama
Department of Systems Innovation
University of Tokyo
7-3-1 Hongo, Bunky-ku, Tokyo 113-8656 Japan
E-mail: yokoyama1201@gmail.com

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[*] Corresponding author.

CROSS-BORDER M&AS AND FIRM VALUE: A COMPARISON OF CHINA- AND US-JAPAN M&AS

ABSTRACT

We examine the effect of M&As conducted by US and Chinese bidders (US-Japan and China-Japan M&As) on the stock prices of Japanese targets. We find that both types of M&As tend to increase the stock prices of the Japanese targets and that market reactions are significantly greater for US-Japan M&As than for China-Japan M&As. Additionally, capital participation produces greater market reactions to China-Japan M&As than other structures, while acquisition produces this effect in US-Japan M&As. Our results are consistent with previous research indicating that market reactions increase for bidders operating in a developed country with high-quality institutions and corporate governance.

JEL classification: G32; G34
Keywords: Cross-border M&A; Emerging market; MNEs; Event study

1. INTRODUCTION

The purpose of this paper is to examine the value created by acquisitions of Japanese targets by US and Chinese bidders (US-Japan M&A and China-Japan M&A). These two countries have been the top two bidders of Japanese target firms in recent years (Figure 1). However, the value created by the acquisition of Japanese targets is expected to differ between US bidders and their Chinese counterparts because of several differences, including institutional environments; reflected in factors, such as investor protection and accounting standards; corporate governance; and intangible assets, such as managerial and technological capabilities. In this paper, we investigate whether stock price reactions are affected by such characteristics, motives for M&As, and the M&A structure related to ownership control of the targets.

Previous studies of cross-border M&As have primarily investigated the value created by such M&As conducted by bidders from developed countries with stronger investor protection or better corporate governance. For instance, Rossi and Volpin (2004) argue that target firms are likely to be from countries with weaker investor protection than the bidders' countries. Francis *et al*. (2008) provide evidence that US bidders experience positive market reactions when they acquire targets located in segmented financial markets, which enable them to achieve a high level of operating performance. Bris and Cabolis (2008), Chari *et al*. (2010) and Ellis *et al*. (2011) suggest that bidders operating in markets with stronger investor protection and corporate

governance tend to experience greater market reactions when they acquire targets in markets with weaker investor protection and corporate governance.[1]

In contrast, relatively few papers focus on cross-border M&As conducted by bidders in emerging countries. Kang (1993) investigates M&As of US target firms by Japanese bidders between 1975 and 1988 and reports that M&A announcements tended to increase stock prices for both the US targets and the Japanese bidders. He also documents that the US targets of Japanese bidders realized the greatest differential returns when they sold a majority interest to the Japanese bidders. More recently, Aybar and Ficici (2009) demonstrate that cross-border acquisitions by bidders from emerging countries do not create value. Gubbi *et al*. (2010) examine the cross-border M&As of Indian bidders and demonstrate that the value created is larger when target firms are located in advanced countries.[2]

Chikamoto *et al*. (2013) investigate market reactions to China-Japan M&As conducted between 1990 and 2009. They find that Japanese targets experience greater market reactions when they are inefficiently managed and when the M&As are structured as capital participation rather than other forms of M&A. This paper is consistent with Chikamoto *et al*. (2013) but

[1] Other researchers have examined cross-border M&As conducted by various bidders, including bidders in emerging countries. For instance, Chakrabarti, *et al*. (2009) demonstrate that the acquirer's long-term buy-and-hold abnormal return is larger when the acquirer and the target are from countries that are culturally different. Chari *et al*. (2012) focus on the foreign acquisition of US target firms and find evidence of significant restructuring of target firms.

[2] Chen (2011) also studies the effect of investor origin on the performance of US target firms.

differs in the following two major aspects. First, we compare market reactions to US-Japan M&As with market reactions to China-Japan M&As because this comparison clarifies the difference between the value created by M&As conducted by bidders in developed countries compared to bidders in emerging countries. Second, we employ a Fama-French three-factor model rather than the simple market model utilized in Chikamoto *et al*. (2013) to estimate market reactions.

We rely on the model developed by Guadalupe *et al.* (2012), which explicitly incorporates the efficiency differences between bidders and targets as well as synergy effects arising from complementarity between the target's initial condition and investment in innovation. We find that both types of M&As tend to increase the stock prices of the Japanese targets and that these market reactions are significantly greater for US-Japan M&As than for China-Japan M&As. Our multivariate analysis does not support the claim that the value created by cross-border M&As is affected by the management efficiency of targets or by bailing out troubled targets. Instead, we find that capital participation produces greater market reactions than other structures in China-Japan M&As, while acquisitions create greater market reactions to US-Japan M&As. These results are consistent with previous research demonstrating that market reactions are greater for bidders operating in developed countries with better institutions and corporate governance.

The rest of this paper is organized as follows. Section 2 explains the development of the hypotheses. The methodology and data are presented in Section 3. Section 4 discusses the empirical results, and concluding remarks are provided in Section 5.

2. DEVELOPMENT OF THE HYPOTHESES

Several empirical studies of cross-border M&As suggest that market reactions are greater when the bidders operate in countries with stronger investor protection, accounting standards, and corporate governance. These findings suggest that the shareholders of Japanese targets gain more when the targets are acquired by US bidders than when they are acquired by Chinese bidders. We first test whether this prediction holds by comparing market responses to M&As conducted by US and Chinese bidders. We next examine which factors affect value creation in cross-border M&As. To explain these hypotheses, we follow Guadalupe *et al.* (2012) and develop a simple partial equilibrium model, which describes the endogenous choice of cross-border M&A and innovation when domestic firms differ in initial productivity and complementarities exist in productivity, innovation, and acquisition.[3]

[3] Other models of cross-border M&A have been proposed. One such model is a general equilibrium international trade oligopoly model developed by Neary (2007), which describes the situation in which it is profitable for efficient bidders to acquire inefficient targets. However, Brakman *et al.* (2013) provide evidence that does not support this hypothesis. Nocke and Yeaple (2007) present a different general equilibrium model suggesting that cross-border M&As create more value in industries in which firm heterogeneity comes from internationally mobile factors than in industries with other sources of firm heterogeneity.

2.1 Basic Model

The basic model follows Guadalupe *et al.*'s (2012) model of monopolistic competition, which consists of heterogeneous domestic firms with increasing returns to scale facing a Constant Elasticity of Substitution (CES) demand. We express the initial productivity of firm *i* as φ_i. Foreign bidders select which domestic targets to acquire, and all firms choose a level of investment in innovation, γ_i, producing post-innovation productivity levels, $\gamma_i\varphi_i$, and a marginal cost of $\frac{1}{\gamma_i\varphi_i}$. We denote ρ as the parameter in the CES utility function that determines the constant elasticity of substitution between varieties $\sigma = \frac{1}{1-\rho} > 1$. A_i is the market size relevant to firm *i*, and each firm sells $A_i\rho^{\sigma}(\gamma_i\varphi_i)^{\sigma}$ units, generates revenues of $A_i\rho^{\sigma-1}(\gamma_i\varphi_i)^{\sigma-1}$ and profits: $\pi_i = A_i\chi\lambda_i\varphi_i^{\sigma-1}$ where $\chi = \left(\frac{1-\rho}{\rho}\right)\rho^{\sigma}$ and $\lambda_i = \gamma_i^{\sigma-1}$ represents the change in productivity of firm *i* following the investment in innovation.

The value of firm *i* operating in the domestic market, V_i, is equal to the profit, π_i, less the cost of innovations, which is the sum of a fixed and a variable cost of innovation, $a_i + b_i f(\lambda_i)$:

$$V_i(\lambda_i) = A_i\chi\lambda_i\varphi_i^{\sigma-1} - \left[a_i + b_i f(\lambda_i)\right]. \quad (1)$$

Maximizing the firm value by choosing a level of innovation, λ_i^*, we obtain the first order condition, which indicates that the marginal benefit of innovation equals its marginal cost:

$$A_i\chi\varphi_i^{\sigma-1} = b_i f'(\lambda_i^*). \quad (2)$$

In Equation (2), optimal innovation, $\lambda_i^* = \lambda^*(A_i, b_i, \varphi_i)$, is an increasing function of initial productivity level, φ_i, and market size, A_i, and a decreasing function of the cost of investment in innovation, b_i.

We then introduce the acquisition of domestic targets by foreign bidders into the model. Because this type of M&A allows domestic targets to access larger markets through foreign bidders' networks, the market size that domestic targets can access following the acquisition, A_F, can be expressed as the sum of the domestic market size, A_D, and the foreign market size, A^*: $A_F = A_D + A^*$.

We next define the assumptions regarding the effect of foreign ownership on the cost of innovation. When foreign bidders reduce innovation costs, we assume $b_F < b_D$ and $a_F < a_D$. Denoting the optimal level of innovation under domestic ownership as λ_i^{*D} and under foreign ownership as λ_i^{*F}, we obtain $\lambda_i^{*F} > \lambda_i^{*D}$ when $A_F > A_D$ and $b_F < b_D$. Then, the change in firm value after foreign acquisition of domestic targets can be expressed as follows:

$$V_i^{*F} - V_i^{*D} = (A_F \lambda_i^{*F} - A_D \lambda_i^{*D}) \chi \varphi_i^{\sigma-1} - (a_F - a_D) - \left[b_F f(\lambda_i^{*F}) - b_D f(\lambda_i^{*D}) \right] \quad (3)$$

Equation (3) is strictly positive under the assumptions $A_F > A_D$, $b_F < b_D$, and $a_F < a_D$.

2.2 The Management Efficiency/Inefficiency Hypotheses

We now turn to the relationship between the change in firm value and the initial productivity

of domestic targets. The envelope theorem yields $\frac{d\left(V_i^{*F} - V_i^{*D}\right)}{d\varphi_i^{\sigma-1}} = \chi(A_F\lambda_i^{*F} - A_D\lambda_i^{*D}) > 0$. This inequality implies that the change in firm value is increasing in the initial productivity of the domestic targets. This positive effect arises from the synergy effect, i.e., the complementarity between a foreign bidders' superiority (larger market size and lower innovation costs) and the domestic target's productivity. Given these developments, we can state the first hypothesis as follows:

H1a (management efficiency hypothesis): *A change in firm value after a foreign acquisition will be greater for a domestic target firm with efficient management than for a target firm with inefficient management.*

Alternatively, we can assume that foreign bidders demand a certain technology level, Φ.[4] This assumption implies that $\lambda_i = \left(\frac{\Phi}{\varphi_i}\right)^{\sigma-1}$, i.e., investment in innovation is decreasing in initial productivity. Under this assumption, the firm value during the post-acquisition period is $V_i^{*F} = A_F\chi\Phi^{\sigma-1} - a_F$, where no synergy effect arise from initial productivity, φ_i, and investment in innovation, λ_i. Because the firm value during the pre-acquisition period, V_i^{*D}, is increasing in φ_i, the change in firm value after the acquisition is decreasing in φ_i:

[4] Guadalupe *et al.* (2012) use the same setting and discuss the case in which foreign bidders transplant their own superior technology to domestic targets. However, we believe that this setting can be used for more general case in which foreign bidders may not be superior in technology level but demand a certain level of technology to domestic targets.

$\frac{d\left(V_i^{*F} - V_i^{*D}\right)}{d\varphi_i^{\sigma-1}} = A_D \chi \lambda_i^{*D} < 0$. This inequality indicates that the change in firm value is decreasing in the initial productivity of the domestic targets. Given these developments, we can state the following alternative hypothesis:

H1b (management inefficiency hypothesis): *A change in firm value after a foreign acquisition will be greater for a domestic target firm with inefficient management than for a target firm with efficient management.*

Whether *H1a* or *H1b* holds depends on the synergy arising from complementarity between the initial technology level of the domestic target and the implemented technology. We assume that the level of technology is more similar between Japanese and American firms level between Japanese and Chinese firms; therefore, a synergy effect is more likely to arise from US-Japan M&As than from China-Japan M&As. This assumption leads to the prediction that *H1a* will be observed in US-Japan M&As, while *H1b* will be observed in China-Japan M&As.

2.2 The Bailout Hypothesis

Unlike in other advanced countries, hostile takeovers have not been common in Japan. Instead, studies report many instances of bailout M&As for firms that would be otherwise unable to survive. M&As conducted for such bailout purposes not only improve management of target

firms but also provide capital to targets starving for funding with no change in management resulting from the M&A. In their study of 243 M&As completed between 1980 and 1987, Odarigi and Hase (1989) report that approximately two-thirds of the 171 target firms that provided a reason for their M&A cited the difficulty of continuing independent operations. More recently, Kang *et al*. (2000), Yeh and Hoshino (2002), and Inoue and Kato (2006) report that bailout M&As account for 10%, 22%, and 26 % of the total M&As, respectively.[5] Chikamoto *et al*. (2013) note that bailout M&As occur in China-Japan M&As as well, including capital participation in Laox by the Suning Appliance Chain Store (Group) in June, 2009.

In bailout M&As, target firms are likely to be under inefficient management during the pre-acquisition period and thus are not likely to invest in innovation, at least in the short run, to generate synergy effect. Given these assumptions, we can state the following second hypothesis derived from *H1b*:

H2 (bailout hypothesis): *A change in the value of the target firm after an M&A is greater in the case of a bailout than in the case of a non-bailout.*

2.4 The M&A Structure Hypothesis

Next, we consider the effect of the M&A structure on firm value. We examine two

[5] These findings indicate that bailout M&As are not trivial, with the exception of a period around the 1990s.

representative forms of M&As: capital participation and acquisition.[6] From the perspective of corporate control, acquisitions involve a situation in which the bidder gains management control of the target firm, while capital participation does not entail any change in management.

It is naturally assumed that acquisition creates more value than capital control when the coexistence of the old and new management teams is superior to the old management alone. This situation can be described by the model outlined in subsection 2.2 as follows: Equation (3) is positive for acquisition where $A_F > A_D$, $b_F < b_D$, and $a_F < a_D$.

In contrast, when the old management alone is superior to the coexistence of the old and new management teams, acquisition creates more value than capital participation. This situation can occur when a cross-border M&As does include access to a foreign market, A_F, and when new management does not generate cost reduction, i.e., when $b_F \geq b_D$ and $a_F \geq a_D$. Then, the change in firm value after cross-border M&As can be described as follows:

$$V_i^{*F} - V_i^{*D} = -(a_F - a_D) - \left[b_F f(\lambda_i^{*F}) - b_D f(\lambda_i^{*D})\right] \leq 0 \qquad (4)$$

If we assume that the former case applies to US-Japan M&As while the latter case applies to China-Japan M&As,[7] capital participation (acquisition) creates more value for China-Japan

[6] More detailed definitions of capital participation and acquisitions are provided in subsection 3.2.

[7] There is anecdotal evidence to support this assumption. As discussed in Chikamoto *et al*. (2013), a typical case is the capital participation in Laox by the Suning Appliance Chain Store (Group) on June 24, 2009. Suning Home Appliance did not change the existing Laox management team but sent two experienced directors to help manage and control the company.

M&As (US-Japan M&As). Thus, we formulate the following hypotheses 3a and 3b:[8]

H3a (M&A structure hypothesis A): *A change in the value of the target firm after an M&A is larger for capital participation than for other forms of M&As in China-Japan M&As.*

H3b (M&A structure hypothesis B): *A change in the value of the target firm after an M&A is larger for acquisition than for other forms of M&As in US-Japan M&As.*

3. METHODOLOGY AND DATA

Many existing empirical studies of the impacts of M&As employ either an event study or a performance study methodology. An event study estimates abnormal returns (ARs) of stock prices around the announcement of M&As and statistically examines whether the ARs are significantly different from zero. A performance study investigates whether key financial performance indicators of bidders or targets improve after M&A transactions. Unlike the daily stock price data utilized in the event study methodology, performance indicators are typically released quarterly. The less frequent data make it difficult to isolate the effects of M&As from the effects of other events. Additionally, when the impact of M&As appears in the performance

[8] Relatively few studies have investigated the relationship between M&A structure and corporate performance utilizing data on Japanese M&As (Odagiri and Hase 1989; Okabe and Seki 2006; Chikamoto *et al*. 2013). Odagiri and Hase (1989) report that loose M&As, namely acquisition and capital participation, account for 82.3% of their sample and are preferred to strict forms, such as mergers. They conjecture that the preference for loose combinations reflects the desire of the acquiring firms to reduce possible costs arising from labor friction as well as to maintain organizational flexibility to address unforeseen changes in the business environment. Based on data on Chinese acquisitions of Japanese firms, Chikamoto *et al*. (2013) find that capital participation tends to increase the stock prices of target firms more than other forms of M&As.

data is not known. We thus utilize the event study methodology to evaluate the impact of cross-border M&As on firm value; however, we acknowledge the key limitation of this methodology, that is, that the fact that ex ante expectation may not be realized ex post.

3.1 Event Study Methodology

The event considered here is the day of the M&A announcement reported in the RECOF M&A database. By denoting t_1 as the beginning of the window and t_2 as the end of the window, we define five event windows: (t_1, t_2)=(-1, +1), (0, +1), (0, +2), (0, +3), and (-1, +3). The estimation window begins 150 trading days prior to the event window. We estimate the following equation for firm i at period t based on the Fama-French three-factor model:[9]

$$R_{it} - R_{ft} = a_i + b_i(R_{mt} - R_{ft}) + c_i SMB_t + d_i HML_t + \varepsilon_{it} \quad (5)$$

where R_{it} represents the stock return of firm i at period t; R_{ft} is the risk-free rate; R_{mt} is the market return based on the Tokyo Stock Price Index (TOPIX); SMB_t and HML_t are the Fama-French Small-Minus-Big and High-Minus-Low factors, respectively; and ε is a disturbance term.

Using the estimated parameters $\hat{a}_i$, $\hat{b}_i$, $\hat{c}_i$, $\hat{d}_i$, we calculate the abnormal return (AR) as follows:

$$AR_{it} = R_{it} - \{R_{ft} + \hat{a}_i + \hat{b}_i(R_{mt} - R_{ft}) + \hat{c}_i SMB_t + \hat{d}_i HML_t\} \quad (6)$$

[9] Graham and Harvey (2001, 2002) report that Fama-French factor models are used in not only academic but also in practical research on accounting and finance in the US. Kubota and Takehara (2010) demonstrate that the Fama-French three-factor model is effective in the Japanese market.

The cumulative abnormal return (*CAR*) and standardized *CAR* (*SCAR*) are then obtained by summing the abnormal returns over the event window as follows:

$$CAR_i(t_1, t_2) = \sum_{t=t_1}^{t_2} AR_{it} \text{ and } SCAR_i(t_1, t_2) = \frac{CAR_i(t_1,t_2)}{\sigma_i(t_1,t_2)} \quad (7)$$

where ${\sigma_i}^2(t_1, t_2)$ is the variance of *CAR*.

Next, we calculate the mean *CAR* and *SCAR* (*CAAR* and *SCAAR*, respectively) for sub-sample groups to test the hypotheses developed in the previous section. The *CAAR* and *SCAAR* are calculated as follows:

$$\text{CAAR}(t_1, t_2) = \frac{1}{N}\sum_{i=1}^{N} CAR_i(t_1, t_2) \text{ and } \text{SCAAR}(t_1, t_2) = \frac{1}{N}\sum_{i=1}^{N} SCAR_i(t_1, t_2) \quad (8)$$

where *N* represents the number of firms included in each sub-sample.

To test the null hypothesis $H_0: CAAR\ (SCAAR) = 0$, that is, that M&A announcements do not affect the stock prices of Japanese targets, we employ the following two test statistics:

$$J_1 = \frac{CAAR(t_1,t_2)}{[\bar{\sigma}^2(t_1,t_2)]^{\frac{1}{2}}} \sim N(0,1) \text{ and } J_2 = \left(\frac{N(L-4)}{L-2}\right)^{\frac{1}{2}} SCAAR(t_1, t_2) \sim N(0,1) \quad (9)$$

$$\bar{\sigma}^2(t_1, t_2) = VAR[\overline{CAR}(t_1, t_2)] = \frac{1}{N^2}\sum_{i=1}^{N} \sigma_i^2(t_1, t_2) \quad (10)$$

3.2 Cross-Sectional Analysis

Next, we conduct multivariate regression analyses to examine which factors affect *CAR*. The choice of variables follows Chikamoto *et al*. (2013). The dependent variable is *CAR*. The independent variables include five target variables (*PBR*, *ROA*, *Bailout*, *Kparticipation*, and

Acquisition) and six control variables (*Subsidiary, Manufacturing, Market, District, Equityratio*, and *Asset*). A summary of each explanatory variable is presented in the Appendix.

To test the management efficiency/inefficiency hypotheses (*H1a/H1b*), we include *PBR*, the price-to-book ratio and *ROA*, the rate of return on total assets, for the fiscal year immediately preceding the M&A announcement. Several prior studies employ the *PBR* to examine the relationship between the management efficiency of target firms and the subsequent market reactions to M&A announcements (Lang *et al*. 1989; Dong *et al*. 2006; Hanamura *et al*. 2011; Chikamoto *et al*. 2013).[10] Additionally, we include the *ROA,* which indicates the profitability of the target firms, as an alternative measure of management efficiency.[11] The management efficiency/inefficiency hypotheses predict that *PBR* and *ROA* are positively (negatively) correlated with *CAR* for *H1a* (*H1b*).

Bailout is a dummy variable that takes the value 1 when an M&A is conducted for bailout purposes and 0 otherwise. We include *Bailout* to test the bailout effect hypothesis (*H2*). Our classification of whether M&A deals possess a bailout objective is consistent with the definition

[10] Dong *et al*. (2006) analyze M&A activities among firms listed in the US from 1978 to 2000. They demonstrate that stock prices of targets with low Q ratios tend to react more positively than those of targets with high Q ratios. Hanamura *et al*. (2011) and Chikamoto *et al*. (2013) confirm these results using the data of Japanese firms listed on the first and second sections of the Tokyo Stock Exchange (TSE) that were involved in an M&A between 2000 and 2007 and the data of Japanese firms acquired by Chinese firms between 1990 and 2009, respectively.

[11] Alternative variables are used in previous studies. Brakman *et al.* (2013) use the Balassa Index, which is a measurement of comparative advantage, to test hypotheses derived from Neary's (2007) model. They provide evidence that efficient firms are both active bidders and targets. Based on the logarithm of sales, Guadalupe *et al.* (2012) also claim that efficient bidders acquire efficient targets.

in Chikamoto *et al*. (2013). An M&A is conducted for a bailout purpose when the target firm has reported a negative net income or operating deficit in more than two of the three fiscal years preceding the M&A announcement or when no dividends have been paid during the accounting period immediately preceding the announcement.[12] Our bailout effect hypothesis predicts a positive correlation between *Bailout* and *CAR*.[13]

Kparticipation and *Acquisition* are dummy variables that take the value 1 when an M&A takes the form of capital participation and acquisition, respectively. Capital participation can be defined as an acquisition of less than 50% of the shares of a target firm whose management control is not obtained by the bidder. Acquisition refers to a situation in which the bidder obtains more than 50% of a company's shares or it obtains both management control and less than 50% of the shares of the target firm (Item 3, Article 2 of the Companies Act). These two M&A structures are classified by the RECOF M&A database.[14] We include *Kparticipation* and

[12] Chikamoto *et al.* (2013) follow the second criterion in Inoue and Kato (2006). The first criterion from Inoue and Kato (2006) and Kang *et al.* (2000) is based on newspaper reports. However, very few China-Japan M&As have a bailout purpose according to newspaper articles and the RECOF M&A database.

[13] The empirical evidence on the effect of bailout M&As is mixed, however. Inoue and Kato (2006) report that stock price responses are significant and positive for target firms involved in a non-bailout M&A but are not significantly different from zero for those involved in bailout M&As. Because large restructuring costs following an M&A are likely to exceed benefits, the value of the target firm may be discounted in a bailout M&A, resulting in negative effects on the target firm. In contrast, Chikamoto *et al*. (2013) provide weak evidence to support this positive effect utilizing data on M&As of Japanese target firms and Chinese bidders. Thus, whether the bailout hypothesis holds remains an empirical question.

[14] The RECOF Corporation's M&A database classifies M&A structures into the following five categories: mergers, acquisitions, business transfers, capital participation, and investment expansion. In a merger, multiple firms merge into a single company. Business transfers entail the moving of assets, employees, goodwill, or other properties among multiple firms. Investment expansion refers to the additional acquisition of less than 50% of shares by capital participation parties. From the viewpoint of corporate controls, mergers and acquisitions involve a situation in which the bidder gains management control of the target firm, while capital participation, business transfers, and investment expansion do not entail any change in management controls. Thus, the two forms examined here

Acquisition to test the M&A structure hypotheses (*H3a* and *H3b*). The M&A structure hypotheses predict a positive correlation between *Kparticipation* (*Acquisition*) and *CAR* for China-Japan M&As (US-Japan M&As).

Subsidiary is a dummy control variable that takes the value 1 when the target firm is a subsidiary of a parent company or a company legally incorporated overseas and 0 otherwise. The classification of subsidiary sales is based on articles of the RECOF M&A database[15] and newspaper reports searched using Nikkei Telecom. Previous studies state that the economic impact of subsidiary sales entails a tradeoff between efficiency gains and agency costs (Slovin *et al*. 1995; Bates 2005). Efficiency gains can be generated by the transfer of resources from selling firms to acquiring firms that can better utilize them. Agency costs may arise from the private nature of subsidiary sales, when they are used to raise funds without monitoring accompanied by public securities offerings. Empirical studies of US and European M&As suggest that efficiency gains are larger than agency costs because market reactions are larger for the targets of subsidiary sales than for the targets of other forms of M&As (Hite *et al*. 1987; Slovin *et al*. 1995; Fuller *et al*. 2002; Moeller *et al*. 2004; Bates 2005; Faccio *et al*. 2006).[16] Thus, we predict a

(acquisitions and capital participation) capture the characteristics of M&As with respect to ownership control.

[15] When target firms include overseas and domestic subsidiaries of parent firms located in Japan, the RECOF M&A database classifies the parent companies as the target firms. In other words, acquisitions of the overseas subsidiaries of Japanese firms or joint ventures are also categorized as out-in M&As. Thus, when the subsidiary is not listed, we use the share price of the parent firm instead.

[16] In contrast, Chikamoto *et al*. (2013) do not find such effects using data on Chinese acquisitions of Japanese firms. They conjecture that the lack of significant market responses to subsidiary sales may be because many subsidiary

positive correlation between *Subsidiary* and *CAR*.

Manufacturing is an industry dummy variable that takes the value 1 if the target firm is classified as a manufacturing company and 0 if it is classified as a non-manufacturing company. The industry classification is based on the RECOF M&A database (Table 1).[17] *Market* is a dummy variable that takes the value 1 if the target firm is listed on an emerging market stock exchange (TSE Mothers, Osaka Stock Exchange (OSE) Hercules, or the Japan Association of Securities Dealers Automated Quotation (JASDAQ)) and 0 if it is listed on the TSE or other regional stock exchanges (Table 2). The future income of firms listed on an emerging market stock exchange is reasonably assumed to be more uncertain than that of firms listed on other stock exchanges. Acquisitions of the former firms can potentially improve profitability to a greater extent than those of the latter firms. Thus, we predict a positive correlation between *Market* and *CAR*.

District is a dummy variable that takes the value 1 if the bidder is located in Hong Kong and 0 if it is located in mainland China. This variable is included only for China-Japan M&As. It is reasonable to assume that bidders located in mainland China have less experience with cross-border M&As compared with those located in Hong Kong; therefore, an acquisition by the

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sales to Chinese bidders are not reported in Japanese newspapers.

[17] As shown in Table 1, the number of firms in each sector is very small for China-Japan M&As. That is why we use two classifications, i.e., manufacturing and non-manufacturing, rather than each sector.

former is likely to be less beneficial for the target firm.[18] Consequently, we predict a negative correlation between *District* and *CAR*.

The remaining three variables – *Equityratio* and *Asset* – are related to the financial condition of the target firms. *Equityratio* is a measure of the capital adequacy of the target firm. We include *Equityratio* to estimate the possible impact of the financial security of the target firm on *CAR*.[19] *Asset* is the natural logarithm of the target's total assets for the fiscal year immediately preceding the M&A announcement. We include *Asset* to estimate the possible impact of the target's size on *CAR*. Dong *et al*. (2006) suggest that the target's *CAR* tends to be greater when the bidder is larger than the target. Accordingly, we predict a negative correlation between *Asset* (for the target firm) and *CAR*.

3.3 Data

We collect data on China-Japan and US-Japan M&As from the RECOF M&A database, which is provided by the REOCF DATA Corporation and includes M&A projects involving Japanese firms. Specifically, the RECOF M&A database provides data on bidders and target firms,

[18] For example, Nikkei newspaper reports a difference in the experience of overseas M&As between a Chinese national firm and a large Hong Kong company on July 28, 2012, pointing out that the acquisition premium of the China National Offshore Oil Corporation's acquisition of a Canadian energy company was estimated to be only 9%, while the premium of Cheung Kong Holdings Limited's acquisition of a British gas company was 61%.

[19] Using data on M&As among Japanese firms, Arikawa and Miyajima (2007) suggest that firms with a low equity ratio are more likely to be taken over.

including company name, industry sector, and nationality as well as data regarding the M&A structure, including the announcement date and disclosed amounts.[20] We utilize the same data as Chikamoto *et al.* (2013) for China-Japan M&As conducted between 1990 and 2009; the data for US-Japan M&As covers transactions occurring between 1996 and 2011.[21] We limit our sample to listed firms due to the difficulty of data collection for non-listed firms.

To examine the impact of M&As on firm value, we obtain the stock prices of target firms from the 'Kabuka CD-ROM' by Toyokeizai, Inc. (Tokyo, Japan) and from Google Finance (http://www.google.com/finance). We utilize the NPM Fama-French Benchmark provided by Financial Data Solutions, Inc. (http://fdsol.co.jp) for the small minus big (SMB) factor, high minus low (HML) factor, risk-free rate, and market return for the Japanese stock markets. We also utilize financial data for the targets from the Nikkei Economic Electronic Databank System (NEEDS) provided by Nikkei Digital Media, Inc. (http://www.nikkei.co.jp/digitalmedia) and the eol database (http://eoldb.jp/EolDb) provided by Pronexus for the accounting period immediately preceding the M&A announcements. To determine whether M&As are classified as subsidiary sales, we search for newspaper articles that announce M&As using Nikkei Telecom 21, which

[20] Our sample includes deals that are later withdrawn. This inclusion does not cause problem in our study because stock price reactions reflect expected future cash flow at the time of announcement and the number of these deals is quite small, i.e., 3 for China-Japan M&As and 18 for US-Japan M&As. When target firms are acquired multiple times during the sample period, they are counted each time.

[21] Our sample includes bidders that are overseas legal entities of Japanese firms but have taken on US or Chinese nationality.

includes all articles published in four Nikkei-related newspapers.

Table 3 presents our sample selection process. During our sample period, there were 1,082 US-Japan M&As and 197 China-Japan M&As. We exclude cases involving targets that are not listed for the entire sample period. The sample for the event study analysis consists of 404 targets acquired by US firms and 107 targets acquired by Chinese firms. Next, we delete cases for which targets lack the data needed for univariate analyses. This deletion provides a sample consisting of 401 US-Japan M&As and 103 China-Japan M&As to test the efficient management hypotheses; 398 US-Japan M&As and 105 China-Japan M&As to test the bailout hypothesis; and 404 US-Japan M&As and 107 China-Japan M&As to test the M&A structure hypotheses. Finally, we delete cases involving firms for which we are unable to obtain the financial data needed for multivariate analysis. Our final sample for the multivariate analysis consists of 385 US-Japan M&As and 103 China-Japan M&As.

M&As involving targets with efficient (inefficient) management account for approximately 60% (40%) of both US-Japan M&As and China-Japan M&As. However, the composition is quite different in other categories. First, the number of M&As with a bailout objective is smaller than the number with a non-bailout objective in US-Japan M&As, while the opposite is true in China-Japan M&As. Second, capital participation and investment expansion are the top two M&A structures in US-Japan M&As, while capital participation and acquisitions are the top two

structures in China-Japan M&As.

4 EMPIRICAL RESULTS

4.1 Univariate Analysis

Table 4 presents the effects of M&A announcements on the stock prices of Japanese targets. Panels A and B display the results for US-Japan and China-Japan M&As, respectively. Panel C compares the mean *CAAR*s and mean *SCAAR*s for US-Japan and China-Japan M&As.[22] In Panels A and B, both *CAAR*s and *SCAAR*s are positive and significant at the 1% level for all windows. In addition, Panel C indicates that both the *CAAR*s and *SCAAR*s of the targets acquired by US firms significantly exceed those of the targets acquired by Chinese firms. The *CAAR*s are positive and significant at the 5% level for US-Japan M&As for two windows and are positive and significant for the *SCAAR*s during all windows. These results are consistent with the notion that M&As have a positive impact on the firm value of Japanese targets acquired by US and Chinese firms and that this impact is greater for those targets acquired by US firms than for those acquired by Chinese firms. To explore the causes of this difference, we examine the factors that may affect market reactions.

[22] To check the robustness of our results, we use different methodologies to compare *CAAR*s and *SCAAR*s between two groups to test four hypotheses. In addition to Welch's t-test shown in this subsection, ANOVA and the Mann-Whitney U-test are carried out. The results are similar for all three tests in all panels.

First, we investigate whether management efficiency is associated with market reactions (Table 5). Panels A and B present the results for US-Japan and China-Japan M&As, respectively. Because a Q ratio of less than 1 indicates a firm that does not fully realize the potential value of its assets, we classify such firms as 'efficient management' when the *PBR* is more than 1 and as 'inefficient management' when the *PBR* is less than 1. In both panels, the *CAAR*s and *SCAAR*s for targets with inefficient management are positive and significant at the 1% level for all windows. In contrast, the results for targets with efficient management are different between Panels A and B. Both *CAAR*s and *SCAAR*s of targets with efficient management are positive and significant at the 1% level for all windows in Panel A but are not significantly different from zero for all windows in Panel B.

In addition, both *CAAR*s and *SCAAR*s of targets with inefficient management significantly exceed those of targets with efficient management for all windows in Panel B, while the differences are significant for only three windows in Panel A. These results are consistent with the notion that the differences in market reactions between inefficient and efficient targets are greater when targets are acquired by Chinese bidders than when acquired by US bidders. In other words, the results for China-Japan M&As are consistent with *H1b,* and the results for the US-Japan M&As are not consistent with *H1a* and weakly support *H1b*.

Second, we examine whether a bailout objective is positively related to market reactions

(Table 6). Panels A and B present the results for US-Japan and China-Japan M&As, respectively. In both panels, *CAAR*s and *SCAAR*s are significant and positive for all windows. However, neither *CAAR*s nor *SCAAR*s are significantly different between M&As for a bailout objective and M&As for a non-bailout objective in Panel A, while *CAAR*s of M&As for a bailout objective are significantly larger, at the 10% level, for three windows than those for a non-bailout objective in Panel B. Thus, both results provide quite weak support for *H2*.

Third, we investigate whether M&A structure is associated with market reactions (Table 7). Panels A and B present the results between capital participation and other M&A structures for US-Japan and China-Japan M&As, respectively. In both Panels A and B, the *CAAR*s and *SCAAR*s for targets in both categories are significant and positive for all windows, and the significance levels are lower for most windows in Panel B than in Panel A. In addition, the differences between the two categories are not significantly different from zero for all windows in Panel A. In Panel B, the *CAAR*s are significantly larger for capital participation than for other structures in all windows, while the *SCAAR*s are larger and significant at the 10% level for capital participation in one window. In other words, the results for China-Japan M&As are consistent with *H3a*.

Although we do not find significant differences between capital participation and other structures in US-Japan M&As, we next examine whether acquisitions are different from other

structures. These results are presented in Panel C, which indicates that both the *CAAR*s and *SCAAR*s are significantly larger for acquisitions than for other structures in all windows. These results are consistent with *H3b*.

4.2 Multivariate Analysis

Next, we conduct a multivariate regression analysis. Table 8 presents the regression results using *CAR*s for a four-day window *CAR* (0, +3) as the dependent variable.[23] The results of Models 1 and 2 correspond to US-Japan M&As, and the results of Models 3 and 4 correspond to China-Japan M&As. Model 2 excludes *Market* and *Equityratio* because these are highly correlated with *Asset*.[24] Similarly, Model 4 excludes *Acquisition* and *Subsidiary* because these variables are highly correlated with *Kparticipation*.[25] We confirm that these models are unlikely to exhibit multicollinearity because the centered variance inflation factors are below 3 for all variables. In addition, we utilize White heteroskedasticity-consistent standard errors & covariance for all models because the White test does not reject the existence of heteroskedasticity.

[23] To ensure robustness, we perform multivariate regressions using different dependent variables: *CAR* (0, +1) and *CAR* (-1, +1). The results are similar for both US-Japan and China-Japan M&As, although the number of significant coefficients is lower for China-Japan M&As.
[24] The correlation coefficient between *Market* (*Equityratio*) and *Asset* is -0.503 (-0.413) for US-Japan M&As.
[25] The correlation coefficient between *Acquisition* (*Subsidiary*) and *Kparticipation* is -0.716 (0.526) for China-Japan M&As.

For all models, both *PBR* and *ROA* are not significantly different from zero. However, *PBR* has positive coefficients for both Models 1 and 2, while it has negative coefficients for Models 3 and 4. Although these variables are not statistically significant, the signs of the coefficients of *PBR* are consistent with those of our *H1a* and *H1b*, that is, market reactions to M&As involving targets with inefficient management are larger than those to M&As involving targets with efficient management in China-Japan M&As, but not in US-Japan M&As.

Similarly, for all models, *Bailout* is not significantly different from zero but has a positive coefficient. Although these variables are not statistically significant, the signs of the coefficients of *Bailout* are also consistent with our *H2*, that is, market reactions to M&As for a bailout objective are larger than those to M&As for a non-bailout objective. To consider why *H2* is not supported, we calculate the correlation between inefficient management and a bailout objective. Table 9 presents the relationship between efficient management and bailout objectives. M&As with a bailout objective for targets with inefficient management account for only 9.4% in US-Japan M&As and for 25.2% in China-Japan M&As. In other words, the correlation between inefficient management and a bailout objective is small for both M&As. This calculation contradicts our assumption that inefficiently managed targets tend to be bailed out by cross-border M&As and does not provide support for *H2*.

The results related to ownership control are different for China-Japan and US-Japan M&As.

First, both *Kparticipation* and *Acquisition* exhibit positive and significant coefficients at the 1% level for Models 1 and 2. In addition, we note that the coefficients of *Acquisition* are larger than *Kparticipation*. These results are consistent with *H3b.* Second, *Kparticipation* is positive and significant at the 10% level for Model 4 but not for Model 3. The results of Model 4 provide weak support for *H3a*.

Subsidiary produces no significant coefficients in US-Japan M&As, while it has a negative and significant coefficient at the 5% level for China-Japan M&As. Thus, neither the results of US-Japan M&As nor those of China-Japan M&As are consistent with our prediction. Our results for China-Japan M&As can be explained based on the argument presented by Chikamoto *et al*. (2013), which states that market reactions are significantly positive for non-subsidiary sales but are not significantly different from zero for subsidiary sales. Chikamoto *et al*. (2013) claim that investors are not well informed about subsidiary sales because only 41% of such sales are reported in newspapers for China-Japan M&As. This gap may explain the negative coefficients on *Subsidiary* for China-Japan M&As. In contrast, we confirm that all subsidiary sales in US-Japan M&As, representing only 6% of total US-Japan M&As, are reported in newspapers (Table 10), which yields no difference in market responses between subsidiary sales and other forms of M&As.

Manufacturing and *Market* are insignificant across all models. In other words, whether targets

are classified as manufacturing firms or non-manufacturing firms and whether they are listed on established markets or emerging markets do not matter to market reactions in US-Japan or China-Japan M&As. *District* matters only for China-Japan M&As and has a significantly negative coefficient at the 10% level for Model 3. The results of Model 3 are weakly consistent with our prediction that bidders located in mainland China have less experience with cross-border M&As compared with those located in Hong Kong and thus acquisition by the former is likely to be less beneficial for the target firm.

Among other variables related to the financial conditions of targets, *Equityratio* shows no significant coefficients for any models, and *Asset* shows significantly negative coefficients for Models 2 to 4. This negative correlation is consistent with our prediction that smaller targets are expected to benefit more from M&As by relatively large acquirers.

Our multivariate regression analyses are weak to support *H1a*, *H1b*, and *H2*, but are consistent with *H3a* and *H3b*. Considering the fact that the bidders' commitment to the targets' management is deeper in acquisitions than in capital participation, our results for *H3a* and *H3b* imply that investors tend to evaluate US-Japan M&As as better when the US bidders' commitment to the targets' management is deeper. Because the opposite is likely for China-Japan M&As, these results indicate that investors appreciate the management capability of US bidders to a greater extent than that of their Chinese counterparts, perhaps because the former appears

more likely to enhance the future value of the Japanese targets. This situation may not persist if Chinese bidders improve their management ability.

5 CONCLUDING REMARKS

In this study, we examine the effect of US-Japan and China-Japan M&As on the stock prices of Japanese targets. The event study analysis of data on US-Japan M&As conducted between 1996 and 2011 and China-Japan M&As conducted between 1990 and 2009 suggests that both types of M&A tend to increase the stock prices of Japanese targets and that market reactions are greater for US-Japan M&As than for China-Japan M&As. Although our results do not provide strong evidence that market reactions are different according to the targets' management efficiency, they are consistent with our hypotheses that capital participation produces greater market reactions in China-Japan M&As than other structures. This same pattern is observed for acquisition in US-Japan M&As. Overall, our results indicate that investors appreciate the management capability of US bidders more than that of their Chinese counterparts, perhaps because the former appears more likely to enhance the future value of the Japanese targets.

We acknowledge several limitations of our study. In particular, the limited number of China-Japan M&As prevents analysis of both cross-sectional (industry) and time-series differences. However, industry-level data could enable us to investigate the effects of

management efficiency, M&A objectives, and ownership structure. In addition, previous studies note that M&As occur in waves.[26] Thus, future research should investigate the effects of cross-sectional (industry) and time-series differences in a multi-country setting.

REFERENCES

- Arikawa, Y., and H. Miyajima. "Understanding the M&A boom in Japan: What drives Japanese M&A?" in *Changing Corporate Governance Practices in China and Japan: Adaptations of Anglo-American Practices*, edited by M. Nakamura Palgrave Macmillan, 2008.
- Aybar, B., and A. Ficici. "Cross-border acquisitions and firm value: An analysis of emerging-market multinationals." *Journal of International Business Studies*, 40, 2009, 1317-1338.
- Bates, T. W. "Asset sales, investment opportunities, and the use of proceeds." *Journal of Finance*, 60, 2005, 105-135.
- Brainard, W. C., and J. Tobin. "Pitfalls in financial model building." *American Economic Review: Papers and Proceedings*, 58, 1968, 99-122.
- Brakman, S., H. Garretsen, C. van Marrewijk, and A. van Witteloostuijn. "Cross-Border Mergers & Acquisition Activity and Revealed Comparative Advantage in Manufacturing." *Journal of Economics & Management Strategy*, 22(1), 2013, 28-57.
- Bris, A., and C. Cabolis. "The Value of Investor Protection: Firm Evidence from Cross-border Mergers." *Review of Financial Studies*, 21(2), 2008, 605-648.
- Chakrabarti, R., S. Gupta-Mukherjee, and N. Jayaraman. "Mars-Venus marriages: Culture and cross-border M&A." *Journal of International Business Studies*, 40, 2009, 216-236.
- Chari, A., P. P. Ouimet, and L. L. Tesar. "The Value of Control in Emerging Markets." *Review of Financial Studies*, 23 (4), 2009, 1741-1770.
- Chari, A., W. Chen, and K. M. E. Dominguez. "Foreign Ownership and Firm Performance: Emerging Market Acquisitions in the United States." *IMF Economic Review*, 60, 2012, 1-42.
- Chen, W. "The effect of investor origin on firm performance: Domestic and foreign direct investment in the United States." *Journal of International Economics*, 73(2), 2011, 219-228.
- Chikamoto, K., C. Lu, F. Takeda, and M. Watanabe. "Cross-border M&A and Firm Value: Evidence from Chinese Acquisitions of Japanese Firms." *Corporate Ownership & Control*,

[26] Arikawa and Mimiyajima (2008) investigate the features of different M&A waves in Japan.

10(3), 2013, 8-29.

- Dong, M., D. Hirshleifer, S. Richardson, and S. H. Teoh. "Does Investor Misvaluation Drive the Takeover Market?" *Journal of Finance*, 61(2), 2006, 725-762.
- Ellis, J., S. B. Moeller, F. P. Schlingemann, and R. M. Stulz. "Globalization, governance, and the returns to cross-border acquisitions." NBER Working Paper No. 16676, 2011.
- Faccio, M., J. J. McConnell, and D. Stolin. "Returns to acquirers of listed and unlisted targets." *Journal of Financial and Quantitative Analysis*, 41, 2006, 197-220.
- Fama, E. F., and K. R. French. "Common Risk Factors in the Returns on Stock and Bonds." *Journal of Finance Economics*, 33, 1993, 3-56.
- Francis, B. B., I. Hasan, and X. Sun. "Financial market integration and the value of global diversification: Evidence for US acquirers in cross-border mergers and acquisitions." *Journal of Banking and Finance*, 32, 2008, 1522-1540.
- Fuller, K., J. Netter, and M. Stegemoller. "What do returns to acquiring firms tell us? Evidence from firms that make many acquisitions." *Journal of Finance*, 57, 2002, 1763-1794.
- Graham, J. R., and C. R. Harvey. "The Theory and Practice of Corporate Finance: Evidence from the Field." *Journal of Finance Economics*, 60(2-3), 2001, 187-243.
- Graham, J. R., and C. R. Harvey. "How do CFOs Make Capital Budgeting and Capital Structure Decisions?" *Journal of Applied Corporate Finance*, 15(1), 2002, 8-23.
- Gregory, A., and S. McCorriston. "Foreign acquisitions by UK limited companies: short- and long-run performance." *Journal of Empirical Finance*, 12, 2005, 99-125.
- Guadalupe, M., O. Kuzmina, and C. Thomas. "Innovation and Foreign Ownership." *American Economic Review*, 102(7), 2012, 3594-3627.
- Gubbi, S. R., P. S. Aulakh, S. Ray, M. B. Sarkar, and R. Chittoor. "Do international acquisitions by emerging-economy firms create shareholder value? The case of Indian firms." *Journal of International Business Studies*, 41, 2010, 397-418.
- Hanamura, S., K. Inoue, and K. Suzuki. "Bidder and Target Valuation and Method of Payment of M&As in Japan: Evidence Against the Misvaluation-Driven Takeovers." *Corporate Ownership and Control*, 8, 2011, 406-416.
- Hart, O. "Financial Contracting." *Journal of Economic Literature*, 34(4), 2001, 1079-1100.
- Hite, G. I., J. E. Owers, and R. C. Rogers. "The market for interfirm asset sales: Partial sell-offs and total liquidations." *Journal of Financial Economics*, 18, 1987, 229-252.
- Inoue, K., and H. Kato. *M&A to Kabuka (M&A and Stock Prices*. Toyo Keizai Shimpo-sha, 2006.
- Kang, J. "The international market for corporate control: Mergers and acquisitions of U.S.

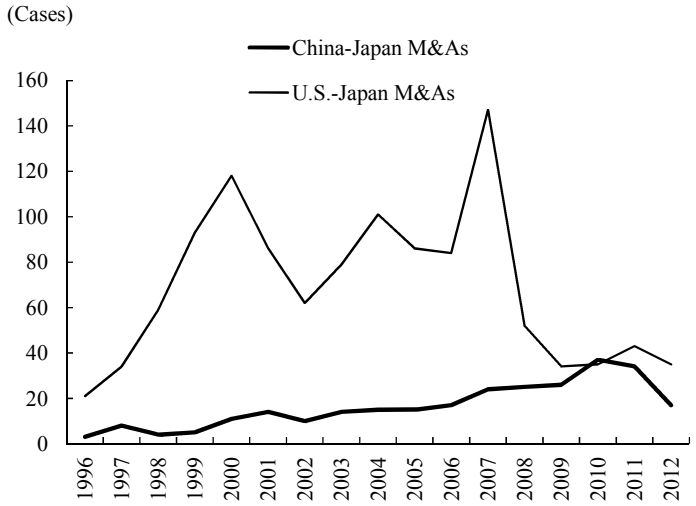
firms by Japanese firms." *Journal of Financial Economics*, 34, 1993, 345-371.

- Kang, J., Shivdasani, A., and T. Yamada. (2000) "The effect of bank relations on investment decisions: An investigation of Japanese takeover bids." *Journal of Finance*, 55(5): 2197-2218.
- Kubota, K., and H. Takehara. "Expected return, liquidity risk, and contrarian strategy: evidence from the TSE." *Managerial Finance*, 36(8), 2010, 655-679.
- Lang, L. H. P., R. M. Stulz, and R. A. Walkling. "Managerial performance, Tobin's Q, and the gains from successful tender offers." *Journal of Financial Economics*, 24, 1989, 137–54.
- Neary, J. P. "Cross-Border Mergers as Instruments of Comparative Advantage." *Review of Economic Studies*, 74, 2007, 1229-1257.
- Nocke, V., and S. Yeaple. "Cross-border mergers and acquisitions *vs*. greenfield foreign investment: The role of firm heterogeneity." *Journal of International Economics*, 72, 2007, 336-365.
- Odagiri, H., and T. Hase. "Are mergers and acquisitions going to be popular in Japan too?" *International Journal of Industrial Organizaion*, 7, 1989, 49-72.
- Okabe, M., and S. Seki. "Nihon ni okeru kigyo M&A (gappei oyobi baichu) no Koka (The effect of corporate M&As in Japan)." Keio University, Working paper, available at http://coe21-policy.sfc.keio.ac.jp/ja/wp/WP107.pdf, 2006.
- RECOF. *Mergers & Acquisitions Research Report*. February, 2013.
- Rossi, S., and P. F. Volpin. "Cross-country determinants of mergers and acquisitions." *Journal of Financial Economics*, 74, 2004, 277-304.
- Slovin, M., M. E. Sushka, and S. R. Ferraro. "A comparison of the information conveyed by equity carve-outs, spin-offs and asset sell-offs." *Journal of Financial Economics*, 37, 1995, 89–104.
- Tirole, J. "Corporate Governance." *Econometrica*, 69(1), 2001, 1-35.
- Wooster, R. B. "US companies in transition economies: wealth effects from expansion between 1987 and 1999." *Journal of International Business Studies*, 37, 2006, 179-195.
- Yeh, T.-M., and Y. Hosono. "Productivity and operating performance of Japanese merging firms: Keiretsu-related and independent mergers." *Japan and the World Economy*, 14, 2002, 347-366.

APPENDIX: List of independent variables

Independent variable	Definition
PBR	Price-to-book ratio of the target firm
Bailout	Dummy variable that is coded 1 if the M&A has bailout objective, 0 otherwise.
ROA	Target's rate of return on total assets
Kparticipation	Dummy variable that is coded 1 if the M&A is structured as capital participation, 0 otherwise.
Acquisition	Dummy variable that is coded 1 if the M&A is structured as acquisition, 0 otherwise.
Subsidiary	Dummy variable that is coded 1 if the M&A takes the form of subsidiary sales, 0 otherwise.
Manufacturing	Dummy variable that is coded 1 if the target firm is classified as a manufacturer, 0 if it is classified as a non-manufacturer.
Market	Dummy variable that is coded 1 if the target firm is listed on the emerging stock exchange, 0 if it is listed on the TSE or other major local stock exchanges.
District	Dummy variable that is coded 1 if the acquiring firm is located in Hong Kong, 0 if it is located in mainland China.
Equityratio	Target's rate of equity on total assets
Asset	Logarithm of total assets of the target firm

FIGURE 1: M&As of Japanese targets by US and Chinese bidders



Source: RECOF M&A database.

Note: China includes Hong Kong.

TABLE 1: Industry composition

RECOF Data Industry Sector Classifications	US-Japan M&A		China-Japan M&A	
	No.	Weight	No.	Weight
Agriculture, Forestry and Fisheries	0	0.0%	0	0.0%
Mining	1	0.2%	2	1.9%
Construction	9	2.2%	1	0.9%
Foodstuffs	24	5.9%	5	4.7%
Textiles	7	1.7%	2	1.9%
Paper/Pulp	2	0.5%	1	0.9%
Chemicals	21	5.2%	3	2.8%
Pharmaceuticals	8	2.0%	1	0.9%
Coal/Oil	3	0.7%	0	0.0%
Rubber	2	0.5%	1	0.9%
Publishing/Printing	2	0.5%	0	0.0%
Ceramics	0	0.0%	3	2.8%
Iron/Steel	8	2.0%	1	0.9%
Non-ferrous Metal Products	12	3.0%	6	5.6%
Machinery	31	7.7%	2	1.9%
Electrical Machinery	55	13.6%	13	12.1%
Transport Equipment	18	4.5%	6	5.6%
Precision	16	4.0%	0	0.0%
Other Manufacturing	8	2.0%	4	3.7%
Manufacturing	227	56.2%	51	47.7%
General Trading Company	0	0.0%	1	0.9%
Food Wholesaler	0	0.0%	0	0.0%
Pharmaceutical Wholesaler	2	0.5%	1	0.9%
Other Sales – Wholesaler	23	5.7%	6	5.6%
Department Store	0	0.0%	1	0.9%
Supermarket/Convenience Store	5	1.2%	6	5.6%
Consumer Electronics Store/HC	0	0.0%	1	0.9%
Other Retailer	10	2.5%	1	0.9%
Restaurant	8	2.0%	1	0.9%
Banking	9	2.2%	2	1.9%
Credit Union/Association	0	0.0%	0	0.0%
Life Assurance/Insurance	6	1.5%	0	0.0%
Securities	8	2.0%	2	1.9%
Other Financial	14	3.5%	1	0.9%
Transport/Warehousing	7	1.7%	3	2.8%
Electricity/Gas	3	0.7%	1	0.9%
Communications/Broadcasting	11	2.7%	3	2.8%
Real Estate/Hotel	31	7.7%	4	3.7%
Amusements	3	0.7%	3	2.8%
Software/Data	26	6.4%	10	9.3%
Service	11	2.7%	9	8.4%
Non-manufacturing	177	43.8%	56	52.3%
Total	404	100.0%	107	100.0%

TABLE 2: Stock exchange of listing

Stock exchange	US-Japan M&A		China-Japan M&A	
	No.	Weight	No.	Weight
TSE 1st section	229	56.7%	54	50.5%
TSE 2nd section	48	11.9%	15	14.0%
TSE REIT	4	1.0%	0	0.0%
OSE 1st section	0	0.0%	3	2.8%
OSE 2nd section	24	5.9%	3	2.8%
Hong Kong	0	0.0%	1	0.9%
Sub-total: TSE and local stock exchanges	305	75.5%	76	71.0%
Nagoya Centrex	3	0.7%	1	0.9%
JASDAQ	50	12.4%	21	19.6%
TSE Mothers	25	6.2%	6	5.6%
OSE Heracles	16	4.0%	3	2.8%
NASDAQ Japan	1	0.2%	0	0.0%
OTC	4	1.0%	0	0.0%
Sub-total: Emerging stock exchanges	99	24.5%	31	29.0%
	404	100.0%	107	100.0%

Note: TSE and OSE are abbreviations for the Tokyo Stock Exchange and Osaka Stock Exchange, respectively.

TABLE 3: Sample selection process

	US-Japan M&A		China-Japan M&A	
	No.	Weight	No.	Weight
(A) All cases	1,082		197	
(A -) Non-listed targets	416		108	
(A -) Targets lacking of stock price data for the sample period	12		1	
(B) Sample for the event study analysis	404		107	
(B -) Targets lacking of data on net worth	3		4	
(C) Sample for efficient management hypothesis	401	100.0%	103	100.0%
Efficient management	258	64.3%	60	58.3%
Inefifcient management	143	35.7%	43	41.7%
(B -) Targets lacking of data on profits	6		2	
(D) Sample for bailout hypothesis	398	100.0%	105	100.0%
Bailout objective	132	33.2%	66	62.9%
Non-bailout objective	266	66.8%	39	37.1%
(E) Sample for M&A structure hypothesis	404	100.0%	107	100.0%
Capital participation	183	45.3%	43	40.2%
Acquisition	37	9.2%	46	43.0%
Investment expansion	135	33.4%	9	8.4%
Business transfer	49	12.1%	9	8.4%
(B -) Targets lacking of financial data	19		4	
(F) Sample used for the multivariate analysis	385		103	

TABLE 4: Stock price responses to US-Japan M&As and China-Japan M&As

Panel A: US-Japan M&A

No.	Event window	CAAR(%)	J_1-stat		SCAAR	J_2-stat	
404	(-1,+1)	6.425	21.195	***	1.145	22.867	***
	(0,+1)	5.813	23.486	***	1.238	24.720	***
	(0,+2)	5.836	19.251	***	1.091	21.787	***
	(0,+3)	5.586	15.960	***	0.910	18.170	***
	(-1,+3)	6.198	15.839	***	0.918	18.330	***

Panel B: China-Japan M&A

No.	Event window	CAAR(%)	J_1-stat		SCAAR	J_2-stat	
107	(-1,+1)	3.178	4.183	***	0.486	4.992	***
	(0,+1)	2.873	4.630	***	0.614	6.308	***
	(0,+2)	3.491	4.594	***	0.517	5.308	***
	(0,+3)	4.055	4.622	***	0.484	4.975	***
	(-1,+3)	4.361	4.428	***	0.421	4.328	***

Panel C: Differences between US-Japan M&As and China-Japan M&As

	Event window	CAAR(%)	t-stat		SCAAR	t-stat	
A-B	(-1,+1)	3.247	1.709	**	0.660	2.263	**
	(0,+1)	2.940	1.697	**	0.624	1.939	**
	(0,+2)	2.344	1.258		0.575	2.230	**
	(0,+3)	1.531	0.728		0.426	1.771	**
	(-1,+3)	1.838	0.793		0.497	2.088	**

Note: *** and ** indicate statistical significance at the 1% and 5% levels, respectively.

TABLE 5: Stock price responses and management efficiency of targets

Panel A: US-Japan M&As

Event window	Inefficient management (A)							Efficient management (B)							t-stat (A-B)			
	No.	CAAR(%)	J_1-stat		SCAAR	J_2-stat		No.	CAAR(%)	J_1-stat		SCAAR	J_2-stat		for CAAR		for SCAAR	
(-1,+1)		6.220	13.338	***	1.391	16.527	***		6.057	15.494	***	0.987	15.748	***	0.084		1.286	*
(0,+1)		5.741	15.076	***	1.639	19.472	***		5.014	15.707	***	0.964	15.373	***	0.378		1.822	**
(0,+2)	143	5.654	12.123	***	1.386	16.458	***	258	5.007	12.808	***	0.880	14.032	***	0.332		1.439	*
(0,+3)		5.319	9.877	***	1.136	13.495	***		4.848	10.739	***	0.742	11.835	***	0.229		1.194	
(-1,+3)		5.798	9.631	***	1.057	12.557	***		5.892	11.673	***	0.819	13.061	***	-0.045		0.784	

Panel B: China-Japan M&As

Event window	Inefficient management (A)							Efficient management (B)							t-stat (A-B)			
	No.	CAAR(%)	J_1-stat		SCAAR	J_2-stat		No.	CAAR(%)	J_1-stat		SCAAR	J_2-stat		for CAAR		for SCAAR	
(-1,+1)		7.926	7.189	***	1.371	8.926	***		0.603	0.559		0.009	0.072		2.315	**	2.530	***
(0,+1)		6.466	7.183	***	1.510	9.834	***		0.680	0.772		0.070	0.542		2.227	**	2.376	**
(0,+2)	43	7.211	6.541	***	1.172	7.634	***	60	1.288	1.193		0.150	1.153		1.914	**	2.284	**
(0,+3)		9.038	7.099	***	1.179	7.681	***		1.204	0.966		0.122	0.940		2.028	**	2.554	***
(-1,+3)		10.498	7.351	***	1.161	7.565	***		1.127	0.806		0.072	0.553		2.050	**	2.704	***

Note: ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

TABLE 6: Stock price responses by target bailout objective

Panel A: US-Japan M&As

Event window	Bailout objective (A)							Non-bailout objective (B)							t-stat (A-B)	
	No.	CAAR(%)	J_1-stat		SCAAR	J_2-stat		No.	CAAR(%)	J_1-stat		SCAAR	J_2-stat		for CAAR	for SCAAR
(-1,+1)		6.615	9.143	***	1.076	12.284	***		5.829	21.408	***	1.161	18.812	***	0.384	0.283
(0,+1)		5.832	9.872	***	1.194	13.628	***		5.018	22.573	***	1.218	19.737	***	0.404	0.071
(0,+2)	132	5.971	8.252	***	1.001	11.428	***	266	4.915	18.052	***	1.100	17.816	***	0.515	0.313
(0,+3)		6.229	7.455	***	0.922	10.522	***		4.499	14.309	***	0.873	14.149	***	0.826	-0.173
(-1,+3)		7.012	7.507	***	0.903	10.307	***		5.309	15.104	***	0.910	14.744	***	0.806	-0.026

Panel B: China-Japan M&As

Event window	Bailout objective (A)							Non-bailout objective (B)							t-stat (A-B)	
	No.	CAAR(%)	J_1-stat		SCAAR	J_2-stat		No.	CAAR(%)	J_1-stat		SCAAR	J_2-stat		for CAAR	for SCAAR
(-1,+1)		4.329	3.762	***	0.595	4.804	***		1.605	2.259	**	0.854	5.561	***	0.964	0.352
(0,+1)		3.862	4.110	***	0.701	5.660	***		1.492	2.572	***	1.043	6.790	***	1.000	0.224
(0,+2)	66	4.842	4.207	***	0.626	5.054	***	39	1.361	1.916	**	0.893	5.815	***	1.374 *	0.474
(0,+3)		5.809	4.371	***	0.594	4.797	***		1.383	1.686	**	0.771	5.023	***	1.469 *	0.452
(-1,+3)		6.276	4.208	***	0.549	4.432	***		1.496	1.626	*	0.692	4.506	***	1.377 *	0.570

Note: ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

TABLE 7: Target stock price responses and M&A structure

Panel A: US-Japan M&As

Event window	Capital participation (A)							Other structures (B)							t-stat (A-B)			
	No.	CAAR(%)	J_1-stat		SCAAR	J_2-stat		No.	CAAR(%)	J_1-stat		SCAAR	J_2-stat		for CAAR		for SCAAR	
(-1,+1)		7.498	15.127	***	1.283	17.233	***		5.555	14.896	***	1.035	15.254	***	0.870		0.878	
(0,+1)		6.876	16.990	***	1.330	17.867	***		4.953	16.268	***	1.167	17.199	***	0.800		0.488	
(0,+2)	183	6.882	13.884	***	1.132	15.205	***	220	5.022	13.468	***	1.068	15.727	***	0.766		0.207	
(0,+3)		6.371	11.132	***	0.887	11.921	***		4.988	11.584	***	0.937	13.810	***	0.580		-0.179	
(-1,+3)		6.993	10.928	***	0.946	12.711	***		5.589	11.611	***	0.902	13.290	***	0.639		0.169	

Panel B: China-Japan M&As

Event window	Capital participation (A)							Other structures (B)							t-stat (A-B)			
	No.	CAAR(%)	J_1-stat		SCAAR	J_2-stat		No.	CAAR(%)	J_1-stat		SCAAR	J_2-stat		for CAAR		for SCAAR	
(-1,+1)		6.355	4.853	***	0.386	2.396	***		0.011	1.205	*	0.250	1.988	**	1.635	*	1.201	
(0,+1)		5.368	5.020	***	0.551	3.417	***		0.012	1.655	**	0.336	2.666	***	1.684	**	1.292	
(0,+2)	43	6.925	5.288	***	0.401	2.490	***	64	0.012	1.360	*	0.276	2.190	**	2.003	**	1.559	*
(0,+3)		7.943	5.253	***	0.396	2.456	***		0.015	1.439	*	0.305	2.420	**	1.720	**	1.244	
(-1,+3)		8.931	5.282	***	0.305	1.892	**		0.014	1.174	*	0.254	2.018	**	1.656	*	1.144	

Panel C: US-Japan M&As

Event window	Acquisitions (A)							Other structures (B)							t-stat (A-B)			
	No.	CAAR(%)	J_1-stat		SCAAR	J_2-stat		No.	CAAR(%)	J_1-stat		SCAAR	J_2-stat		for CAAR		for SCAAR	
(-1,+1)		15.744	14.874	***	3.878	23.111	***		5.524	17.445	***	0.880	16.741	***	3.159	***	3.671	***
(0,+1)		12.712	14.708	***	4.227	25.193	***		5.151	19.922	***	0.948	18.042	***	2.304	**	3.458	***
(0,+2)	36	13.976	13.204	***	4.160	24.792	***	367	5.071	16.015	***	0.796	15.149	***	2.262	**	3.326	***
(0,+3)		16.004	13.094	***	3.955	23.569	***		4.597	12.573	***	0.616	11.728	***	2.484	***	0.452	***
(-1,+3)		19.036	13.931	***	3.868	23.048	***		4.970	12.158	***	0.633	12.047	***	3.186	***	3.630	***

Note: ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

TABLE 8: Factors affecting market reactions to US-Japan M&As and China-Japan M&As

	US-Japan M&A				China-Japan M&A			
	Model 1		Model 2		Model 3		Model 4	
Variable	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
Constant	0.077	0.729	0.314	2.554 **	0.528	1.833 *	0.504	1.705 *
PBR	0.002	1.367	0.002	1.303	-0.001	-1.273	-0.001	-1.580
ROA	0.012	1.354	0.012	1.320	0.001	1.109	0.001	0.901
Bailout	0.020	1.010	0.015	0.859	0.069	1.608	0.071	1.593
Kparticipation	0.033	2.775 ***	0.031	2.727 ***	0.062	1.024	0.083	1.878 *
Acquisition	0.151	3.064 ***	0.143	2.892 ***	0.032	0.592		
Subsidiary	0.010	0.420	0.010	0.456	-0.110	-2.137 **		
Manufacturing	0.028	1.180	0.020	1.093	0.004	0.125	-0.012	-0.338
Market	0.052	1.301			-0.059	-1.268	-0.046	-0.998
District					-0.080	-1.838 *	-0.067	-1.580
Equityratio	0.045	1.283			-0.003	-0.027	0.004	0.038
Asset	-0.005	-1.216	-0.012	-2.629 ***	-0.017	-1.821 *	-0.018	-1.841 *
Obs.	385		385		103		103	
Adjusted R-squared	28.42%		27.88%		15.95%		12.52%	
S.E. of regression	0.182		0.182		0.170		0.174	
Durbin-Watson stat	2.033		2.063		2.242		2.153	
F-statistic	16.245 ***		19.558 ***		2.760 ***		2.622 ***	

Note: ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

TABLE 9: Relationship between inefficient management and bailout objective

	Bailout	Non-bailout	Total
US-Japan M&As			
Inefficient managament	9.4%	26.8%	36.2%
Efficient management	23.3%	40.5%	63.8%
Total	32.7%	67.3%	100.0%
China-Japan M&As			
Inefficient managament	25.2%	16.5%	41.7%
Efficient management	36.9%	21.4%	58.3%
Total	62.1%	37.9%	100.0%

TABLE 10: Subsidiary sales and newspaper reporting

	US-Japan M&A			China-Japan M&A		
	Total	No newspaper reporting		Total	No newspaper reporting	
		No.	Weight		No.	Weight
Subsidairy sales	24	0	0.00%	56	23	41.07%
Non-subsidiary sales	370	98	26.49%	51	12	23.53%
Total	394	98	24.87%	107	35	32.71%