An Empirical Study on the Sources of Acquisition Premiums: The Case of Management Buy-outs in Japan

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An Empirical Study on the Sources of Acquisition Premiums: The Case of Management Buy-outs in Japan*

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Abstract

This study examined the sources of acquisition premiums in the public-to-private type of MBOs implemented by Japanese companies by testing the following five hypotheses emphasized in the preceding studies including 1) the undervaluation hypothesis, 2) the tax benefit hypothesis, 3) the agency costs hypothesis, 4) the breach of trust hypothesis, and 5) the listing costs hypothesis. The empirical analysis supported the undervaluation hypothesis and weakly supported the agency costs hypothesis.

JEL classification: G34, G32, D22

Keywords: MBO, acquisition premium, undervaluation, breach of trust, tax shield of debts

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1. Introduction

"Public-to-private (PTP)" management buyouts (MBOs) for corporate managers to opt for withdrawal from the stock market and to facilitate drastic corporate restructuring have been undertaken increasingly since the late 1990s.[1] Although MBOs include various other types such as divestiture (divestment), business succession, and business rehabilitation (CMBOR 1991), the PTP type of MBOs predominates Japan's MBO market, comprising about 70% in terms of monetary value.[2] Although the global economic crisis triggered by the subprime loan issue which surfaced in the autumn of 2007 caused a slight decline in terms of their monetary value, the number of PTP MBOs has continued to increase. They appear to have established their position as an important tool for corporate reorganization.

– Figure 1 about here –

In such an increasingly active MBO market of Japan, the argument on the differences between the TOB prices offered to squeezed-out shareholders and the latest stock prices, i.e. "acquisition premiums," is drawing particular attention. Although views on acquisition premiums associated with MBOs have traditionally been divided into opposites—one that they reflect the increase in future shareholder value as a result of corporate reorganization and the other that such premiums derive simply from wealth transfer from stakeholders—the possibility of the latter has risen as an important issue in recent years.[3] Examples are the cases of Rex Holdings and Sunstar, which led to litigation over the level of the stock purchase price.

Acquisition premiums have been examined from various perspectives, primarily using cases in the U.K. and U.S., having advanced MBO markets. Major research achievements include Kaplan (1989b), for instance, which pointed out the existence of tax benefits obtained from the increase in debt associated with MBOs, Lehn and Poulsen (1989), which emphasized the disciplinary role of debt which forces management to pay out free cash flow after MBOs and Renneboog et al. (2007), which examined the source of acquisition premiums systematically based on the preceding studies.

How about the case of Japan? The number of research on this topic is increasing as MBO cases

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[1] An MBO is defined as the method by which internal human resources working for an existing company to become principal shareholders and corporate managers by purchasing the company (business) and establishing a new company (Usui 2001:8).

[2] Whereas the MBOs of "public-to-private type" dominate the share in terms of value, the "divestment type," in which the manager of business affiliated with a parent company selects MBO when the parent sells such business, predominates in terms of the number of cases (Kawamoto et al. 2012: Fig. 1). See Saito and Kawamoto (2010) and Kawamoto et al. (2012) for the characteristics of parent companies that implement divestment MBOs and assessment of such parent companies from the stock market.

[3] A number of pages are allocated to this issue is in the "Guidelines for Management Buyouts (MBO) that Increase Corporate Value and Ensure Fair Process," released by the Ministry of Economy, Trade, and Industry in 2007.

have been piling up. Inoue et al. (2010) found the size of acquisition premium is greater for the firm whose share price is undervalued before the announcement of an MBO. They also found the trend that management paid more for acquisition premiums after the case against Rex Holdings. Although not a direct study of MBOs, Nose and Ito (2009) analyzed acquisitions conducted using buyout funds in recent years and reported correction of undervaluation and reduction of agency costs as important sources of excess returns. Maesawa (2008) and Yoshimura (2010) studied the impact of MBOs on the wealth of minority shareholders by examining pre-acquisition share prices and the size of acquisition premiums.

These studies are pioneering attempts to investigate the relevance between MBOs (or buyouts in general) and acquisition premiums of Japanese companies, which, however, are unfortunately not systematic examinations of the determinants of acquisition premiums, as examinations have been in a number of studies conducted in other countries. This paper therefore specifically examines the following five hypotheses emphasized in the preceding studies to study the sources of acquisition premiums including 1) the undervaluation hypothesis, 2) the tax benefit hypothesis, 3) the agency costs hypothesis, 4) the breach of trust hypothesis, and 5) the listing costs hypothesis.

This article is structured as follows: The next section introduces preceding studies of MBOs and acquisition premiums and presents some working hypotheses. The third section presents a description of the dataset used for empirical analysis and provides an estimation model and the sign condition of each variable. The fourth section will report the results of empirical analysis; the fifth will be dedicated to the conclusion and issues to be addressed in the future.

2. Preceding Studies and Working Hypotheses[4]

This section introduces preceding studies of the sources of acquisition premiums paid in the implementation of MBOs. Moreover, it presents working hypotheses for the subsequent sections.

2.1. The undervaluation hypothesis

Normally, asymmetry of information purportedly exists between the potential value of the company concerned and its managers. The reason is that, although the managers are insiders having direct access to internal information, shareholders are outsiders which do not have access to such information. Such information asymmetry induces the managers having an information advantage, who know the true value of their company, to perceive the actual market valuation as less than satisfactory. On this assumption, the managers and buyout funds are likely to increase the premiums paid to squeezed out

[4] This section used reports by Renneboog et al. (2007), Weston et al. (2004), Kitagawa (2007), and others as references.

shareholders because (the managers expect that) the lower the market valuation, the greater the potential for new value created by the buyout. In fact, many preceding studies of public-to-private MBOs in the US and Europe have implicated undervaluation as a major source of acquisition premiums (Travlos and Cornett 1993, Renneboog et al. 2007, Nose and Ito 2009, Inoue 2010).

Hypothesis 1: The more undervalued the stock price before acquisition, the higher the acquisition premium.

2.2. The tax benefit hypothesis

When an acquisition is funded by debt, additional interest paid is included in expenses, which are tax-deductible. This effect is called the "tax shield." The resulting reduced tax expenses have been regarded as an important source of acquisition premiums. Among the wide-ranging empirical studies of acquisition premiums and tax shields, the most symbolic is the result of an examination by Kaplan (1989b). This analysis of 76 MBO cases in the US between 1980 and 1986 concludes that 21%–72% of premiums paid to existing shareholders are explainable by the tax shield effect. Nose and Ito (2009) specifically examined the amount of interest payments before buyouts and concluded that, despite the absence of directly significant correlation between such payments and premiums, companies paying a smaller amount of interest (i.e., companies with larger room for tax deduction because of an increase in additional interest payments) were more likely to select public-to-private MBOs, suggesting that the tax shield effect constituted an important motive for PTP MBOs.

If the tax shield is a major motive to implement an MBO in Japan, as implied by the preceding studies described above, then it is likely that companies with larger tax burdens and smaller interest payments receive an increased tax shield effect, thereby raising the premiums.

Hypothesis 2: The greater the tax burdens are before acquisition and the smaller the interest payments are, the higher the acquisition premium is.

2.3. The agency costs hypothesis

Managements in publicly listed firms with dispersed ownership may not pursue shareholder interests since shareholding ratios of managements are usually low enough to cause the conflict of interest between shareholders and managers. One example of such cases is excessive investments which bring negative NPV motivated by managers' self-satisfaction or self-protection. MBOs may alleviate such agency problems between shareholders and managers.

2.3.1. The incentive realignment hypothesis

As a result of an MBO the shareholding ratio of the management increases and ownership and control might be reintegrated (i.e. incentive realignment). Thus, an increase in the management shareholding ratio is likely to reduce the conflict of interest and raise manager's effort level, which delivers improvement in the future corporate value (Jensen and Meckling 1976). Part of expected increment in corporate value might be used for premium payment. The study of Renneboog et al. (2007) on UK companies in the period after the late 1990s verified that the lower the shareholding ratio of the management before an MBO, the more likely the premium was to be relatively high, which meant that firms with more rooms to raise the management shareholding ratios would pay higher premiums.

Hypothesis 3-1: The lower a management's shareholding ratio before acquisition, the higher its acquisition premium is.

2.3.2. The free cash flow hypothesis

MBOs might alleviate agency problems through the reduction in free cash flow. MBOs are one form of LBOs (Leveraged Buy-outs) which deter managements to invest on projects with negative NPV through the reduction in free cash flows by the increase in interest payments (Jensen 1993). Thus, firms with more free cash flows before MBO are expected to pay higher acquisition premiums since they are susceptible to the disciplinary role of debt and likely to improve corporate values after MBO (Lehn and Poulsen 1989).

Hypothesis 3-2: The more a company holds free cash flow before acquisition, the higher its acquisition premium is.

2.3.3. The buyout fund hypothesis

Buyout funds might alleviate agency problems by providing close monitoring as block shareholders (Shleifer and Vishney 1986). At the same time, they might contribute to raise corporate values through the provisions of knowledge and experiences in finance (Sugiura 2006). Xu (2011) picks up the case of Kito which delisted from JASDAQ in 2003 by MBO and relisted on Tokyo Stock Exchange in 2007 and documents how Carlyle contributed to the business restructuring and overseas operations after MBO by providing their operating engineering skills. Thus, in MBOs with buyout funds, future incremental corporate values created by funds might be distributed to minority shareholders.

Hypothesis 3-3: In an MBO case where a buyout fund involved, an acquisition premium paid in the case is higher than a case without.

However, buyout funds are financial buyers as well. In that sense, they might try hard to lower purchasing costs by cutting acquisition premiums.

2.4. The breach of trust hypothesis

The fourth source of acquisition premiums might derive from a loss of wealth of existing employees. As noted in Shleifer and Summers (1988), the buyer of the company can earn a short-term profit by voiding long-term agreements and through the use of "implicit contracts" such as seniority-based wages established between the former management and existing workers. This argument speaks to a so-called "breach of trust." The premium provided to shareholders agreeing to a TOB reflects the prospect of increased shareholder value after acquisition based on this "breach of trust." It is noteworthy that the premium is simply a wealth transfer from employees to shareholders and that it is not based on any creation of net value.

Although the possibility of such a breach of trust is often examined in the context of a hostile takeover (Gokhale et al. 1995, Canyon et al. 2001), it might occur also in the case of MBOs. This might be attributable to the following three reasons (Amess and Wright 2008). First is an increase in the debt-to-equity ratio. If an MBO takes the form of LBO, then the reliance on debts increases, as does the risk of bankruptcy, which also has the effect of weakening the employees' bargaining power (Fox and Marcus 1992). Secondly, this causes the funding company to increase its monitoring. The operation periods of funds are reportedly three to five years (Mitsusada and Shiraki, 2006: 22), which is likely to exert pressure on management improvement also in such a short term. The third reason is an increase in the shareholding ratio of the managers. This functions as a management incentive and simultaneously reduces the possibility of conflict of interest with shareholders (alignment effect), while encouraging corporate management to maximize shareholder value as demanded by the fund.

For these reasons, a breach of trust might occur in the case of MBOs,[5] and the acquisition premiums are presumably higher for companies having an excessive number of employees with high wages and allowing for management streamlining after acquisition by solving such problems.

Hypothesis 4: The greater the excess of employees and wages at a company before acquisition, the higher the acquisition premium.

2.5. The listing costs hypothesis

Finally, the saved cost from going private transaction can be a source of acquisition premiums. The costs of being listed consist of both direct and indirect costs including listing fees, audit fees, costs

[5] Empirical studies outside Japan, however, found no significant decline in the number of employees after acquisitions. Moreover, no case of breach of trust attributable to MBOs has been reported (Kaplan 1989a, Smith 1990).

related to shareholder meetings, costs of both mandatory and voluntary disclosure documentation such as securities reports and IR documents. Also, in recent years, such listing costs have been increasing due to introductions of quarterly report and internal control system obligatory by Financial Instruments and Exchange Act. Delisted firms especially small firms and firms which rarely issued equity chose cost saving as a reason for having gone private.

Although there are not many studies dealing with listing costs and acquisition premiums explicitly, Renneboog et al. (2007) is an exceptional study. They show that firms listed on AIMs (Alternative Investment Market), which require smaller listing fees and have lower disclosure standards, pay lower acquisition premiums since cost savings from going private are limited for these firms.

Hypothesis 5: The greater the saved cost from going private, the higher its acquisition premium is.

3. Method of Analysis and Data

3.1. Dataset

The sample used for the analysis consists of 101 cases in which a PTP MBO was announced between fiscal 2000 and 2011. The data originate in the cases categorized as private-to-public MBOs from "MARR M&A Data CD-ROM" of RECOF Corp. The stock price, financial, and shareholder composition data were extracted from Nikkei NEEDS-Financial QUEST. Many explanatory variables are based on data from the prior year, and consolidated data were used whenever available; otherwise, the analysis used non-consolidated data related to companies and ownership structures.

3.2. Method of analysis and variables

To analyze the determinants of acquisition premiums in PTP MBOs, we will estimate a linear regression model by OLS with acquisition premiums as the explained variables and the following factors based on the hypothesis in the second section as explanatory variables.

(1) Explained variable

PREM20; PREM40: The explained variables are acquisition premiums. Methods of two types were used for the measurement. Comparisons were made between the TOB price and the values at 20 days and 40 days before the announcement. In addition to control premiums generated by increased shareholding ratio as in ordinary acquisitions, acquisition premiums in PTP MBOs are thought to involve those associated with an increase in corporate value based on factors specific to MBOs such as the factors described in the second section.

(2) Explanatory variables

Variable for undervaluation: In reference to Renneboog et al. (2007), SHPF, price earnings ratios standardized with the market index, were used as a variable for Hypothesis 1, "the more undervalued the stock price of the company concerned, the higher the potential for value created through MBO, and thus, the larger acquisition premium." As the indices, two types, are used: SHPF, which is determined by subtracting the earnings ratio of the market index (TOPIX) for the same period from the price earnings ratio calculated from the stock price (closing) at 300 days before the announcement of MBO and the stock price (closing) at 41 days before the announcement; and price-to-book ratio, PBR. These variables denote the level of undervaluation of the company in the stock market. The expected conditions of the sign are negative.

Variables for tax shield: The variables for Hypothesis 2—the larger the tax burdens before acquisition and the smaller the interest payments are, the higher the acquisition premium is—are the interest-paid-to-sales ratio ("INTEREST") and the debt-to-total-assets ratio ("DEBT"). Companies paying less interest might generate higher acquisition premiums based on a higher potential for an increase in additional interest payments. Also, firms with low leverage before acquisition have room to increase debt and might pay higher premiums. The expected signs are therefore negative.

Variables for agency costs: Hypothesis 3, which states that the reduction of agency cost through MBOs is a source of acquisition premiums, consists of three hypotheses. First hypothesis is on incentive realignment which is based on the notion that an increase in the shareholding ratio of the management as a result of an MBO is likely to reduce the conflict of interest between shareholders and corporate managers. In this case, a lower shareholding ratio of the managers increases the room for improvement in the agency cost, which is expected to increase the premium. This study uses directors' shareholding ratio as a proxy variable for the management's shareholding ratio.

Second hypothesis is on free cash flow which is based on the notion that MBOs alleviate agency problems through the reduction in free cash flow. We test the hypothesis by focusing on pre-MBO free cash flow ratio. The free cash flow ratio FCF is defined as "LQ × liquidity on hand / total assets," where LQ is the dummy variable that takes value 1 when Tobin's q (simple q: stock price market cap. + total interest-bearing debts / total assets) is 1 or fewer and liquidity on hand is defined as cash and deposits + securities + investment securities. Liquidity on hand of companies with less growth potential more easily becomes free cash flow. Thus, firms with more free cash flows before MBO have greater room for improvement in corporate values, which is expected to increase the premium. The sign expected from the hypothesis positive.

Third hypothesis is on the role of buyout funds. The dummy variable FUND that takes value 1 when

a buyout fund involves in an MBO is used to verify the hypothesis. A buyout fund might have two opposite roles; one possibility is that it acts as a block shareholder, who provides intensive monitoring, and also provides financial knowhow to improve corporate values. Another possibility is that it acts as a financial buyer who tries hard to lower purchasing costs by cutting acquisition premiums.

Variables for employees: Sales per employee ("SALES") and labor expenses per employee ("LABOR") are used to verify Hypothesis 4 on the wealth transfer from employees that the more excessive the employees and wages the company is facing before acquisition, the higher the acquisition premium. For both variables, adjustment among industries is made by reducing the median in the same industry.[6] SALES presumably expresses excessive employees and LABOR excessive wages. The expected sign is negative because of the low productivity per employee of companies having excessive employees, in which productivity should be increased by reducing their employees. Companies paying excessive wages are expected to be capable of creating an acquisition premium on the assumption of cutting wages after an MBO. The expected sign is positive.

Variables for listing costs: The number of traded days ratio ("TRADED") and the emerging stock market dummy variable ("EMERGMKT") are used as the variables to verify Hypothesis 5 which is based on the notion that the saved cost from going private transaction can be a source of acquisition premiums. TRADED is the ratio of the number of days share of an MBO firm was actually traded between 250 and 41 days before the announcement of MBO. The smaller the ratio is, the higher the cost of being listed is. The expected sign is therefore negative. EMERGMKT is dummy variable that takes value 1 when an MBO firm was listed on either Hercules, JASDAQ or Mothers before MBO. Since costs of being listed on these stock markets for emerging firms should be smaller, cost savings from going private are limited for the firms listed on the markets before MBOs. The expected sign is therefore negative.

Control variables: Furthermore, the logarithm of the acquisition price ("DEAL"), the manufacturer dummy ("MANUFAC") that gives value 1 to companies in the manufacturing industry, and fiscal year dummy ("YEAR") are added as control variables.

We will review the basic characteristics of acquisition premiums before moving on to a specific empirical analysis. The value of average premium paid by PTP companies is 57.6% based on a comparison between the value 20 days before the announcement and TOB price and 56.0% based on the value 40 days before the announcement (Table 1). This not only exceeds the range acknowledged as normal market value in Japan (20% of six-month-average stock price before MBO), but is

[6] The Nikkei Industrial Classification was used to designate industrial categories.

comparable to the premium (56.0%) of the MBO sample of US companies studied by Lowenstein (1985), which is considered relatively high, even among the values obtained in preceding studies of the US and UK (Table 2).[7]

– Table 1 about here –

– Table 2 about here –

What are the factors, then, that influence the acquisition premium? The next section will identify them based on regression analysis of the assumption of the hypotheses presented in the second section.

4. Results of Estimation

Results of the estimation are presented in Table 3. Estimation results in columns (1) - (3) used PREM 20 as the explained variable and those in columns (4) - (6) used PREM 40 as the explained variable.

– Table 3 about here –

We first consider Hypothesis 1 that the more undervalued the stock price of the company concerned, the higher the potential for value created through MBO, which explains the larger acquisition premium. The price-earnings ratio SHPF and the price-to-book ratio PBR are employed to capture the level of undervaluation of the company in the stock market. SHPF takes negative coefficients on all the models with significance levels 5% or lower. PBR also has a negative effect on the premium index of two types, but compared to SHPF the effect is weaker. In other words, Hypothesis 1 is supported.

Regarding the tax shield based on an increase in debt-to-equity ratio associated with MBO, theoretically, the larger the tax burdens and the smaller the interest payments, the higher the acquisition premium, as stated in Hypothesis 2. The interest-paid-to-sales ratio INTEREST and the debt-to-total-assets ratio DEBT are employed to test the hypothesis. Although INTEREST takes a negative coefficient at 10% significance level as the hypothesis suggests (column 1), all other models suggest, however, that these variables have significant effect on the premium indices. Thus, this analysis did not demonstrate any relevance that the tax shield through increased debts was used as a source of acquisition premiums.

The first agency costs hypothesis is on incentive realignment which is that an increase in the

[7] Reasons that the values of premiums in this study exceed the results of measurements performed in overseas preceding studies might include 1, excessive premiums paid in Japan attributable to optimistic risk assessment of management based on inadequate practical experience in M&As (Hattori 2008; 75) and 2, excessive response of companies aiming for going-private transactions to the successive litigation cases over stock purchase prices, encouraging them to pay high premiums to facilitate smooth acquisitions. These, however, are beyond the scope of examination in this study, and are therefore not explained any further.

shareholding ratio of the management as a result of an MBO is likely to reduce the conflict of interest between shareholders and corporate managers. The coefficient of directors' shareholding ratio DIREC takes significantly negative coefficients in columns 1 and 4. This fact implies that companies with larger room for reduction of agency cost between shareholders and the management associated with increased directors' shareholdings after MBO pay higher premiums. The second agency costs hypothesis is on free cash flow which states that firms with more free cash flows before MBO have greater room for improvement in corporate values, which is expected to increase the premium. The free cash flow ratio FCF was not statistically significant, and the accumulated level of free cash flow before acquisition could not be confirmed as a source of premiums based on the analysis results obtained in this study. The third agency costs hypothesis is on the role of buyout funds. The dummy variable FUND takes significantly negative coefficients when PREM 20, for which the reference stock price for premium calculation is set at 20 days before the announcement, is used as the explained variable. This fact implies that in MBOs with a buyout fund acquisition premiums are set lower due to the financial buyer side of buyout funds.

Hypothesis 4 related to the wealth transfer from employees—the more excessive employees and wages the company is facing before acquisition, the higher the acquisition premium—was verified using sales per employee, SALESPW, and labor expenses per employee, LABORPW. Companies paying their employees high salaries might create acquisition premiums by voiding their implicit contracts after MBOs. The estimation did not show any significant relation between both LABORPW and SALESPW and the premium indices.

The number of traded days ratio ("TRADED") and the emerging stock market dummy variable ("EMERGMKT") are used as the variables to verify Hypothesis 5 which is based on the notion that the saved cost from going private transaction can be a source of acquisition premiums.

Regarding Hypothesis 5 which is based on the notion that the saved cost from going private transaction can be a source of acquisition premiums, either the number of traded days ratio TRADED or the emerging stock market dummy variable EMERGMKT does not show significant effect on acquisition premiums. Thus, this analysis did not demonstrate any relevance that the cost savings through MBOs was used as a source of acquisition premiums.

5. Conclusion

This study examined the sources of acquisition premiums in the public-to-private type of MBOs implemented by Japanese companies by testing the following five hypotheses emphasized in the preceding studies including 1) the undervaluation hypothesis, 2) the tax benefit hypothesis, 3) the agency costs hypothesis, 4) the breach of trust hypothesis, and 5) the listing costs hypothesis. The

analysis produced the following findings.

First, measurement of the level of acquisition premiums revealed addition of more than 50% to the stock prices at 20 days or 40 days before the TOB announcement, which is a level that is comparable to those in of US and UK companies. Secondly, regression analysis using acquisition premiums as the explained variable indicated a significantly negative coefficient of the price-earnings ratio before MBOs and PBR, suggesting that companies of which stocks are undervalued before going private tend to pay higher premiums. Thirdly, companies with larger room for reduction of agency cost between shareholders and the management associated with increased directors' shareholdings after MBO pay higher premiums. This result implies that the reduction of agency cost through incentive realignment is a source of acquisition premiums. Fourthly, regarding the role of buyout funds on MBOs, we observed the financial buyer side of buyout funds who try to lower purchasing costs rather than alleviating agency problems by providing close monitoring as block shareholders or providing financial knowhow to improve corporate values.

Finally, there are issues remaining in this study. This study used data only of those companies that implemented public-to-private MBOs as the sample, which might be susceptible to sample selection bias. Therefore, companies not in MBOs must also be included in the sample using such techniques as a paired sample. Regarding the effects of the involvement of buyout funds, we just took into account the existence of involvement without considering characteristics of the funds. Including information such as past experiences on MBO cases and type of funds, e.g. foreign-affiliated vs. domestic, financial institution-affiliated vs. independent, etc. in the analysis is expected to be meaningful.

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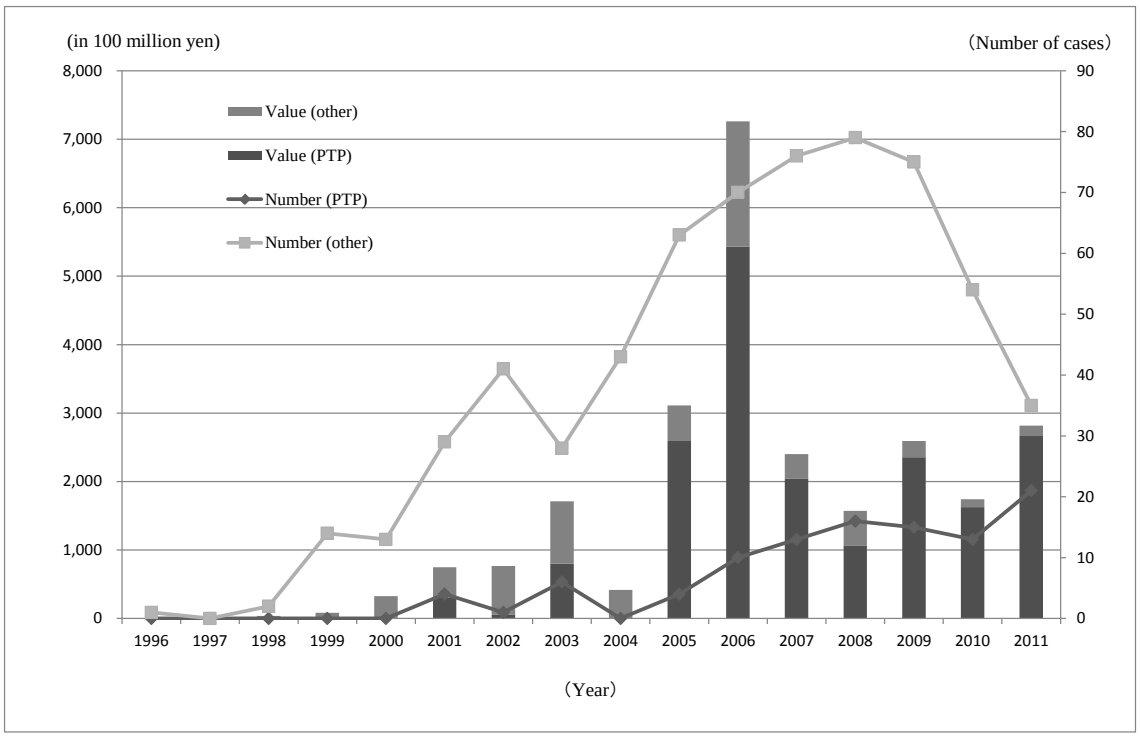
Figure 1: Japanese MBO Market



Note: "PTP" in the graph denotes the value and number of public-to-private MBOs; "other" denotes the value and number of MBOs of types other than public-to-private.

Source: Prepared by the author based on "MARR M&A Data CD-ROM" of RECOF Corp.

Table 1: Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
PREM20	0.576	0.403	0.008	2.229
PREM40	0.560	0.378	0.053	2.217
SHPF	-0.098	0.237	-0.609	0.613
PBR	0.936	0.713	0.177	3.487
INTEREST	0.016	0.044	0.000	0.407
DEBT	1.509	2.766	0.067	25.059
DIREC	0.140	0.133	0.000	0.694
FCF	0.195	0.187	0.000	0.596
FUND	0.495	0.502	0.000	1.000
SALESPW	5.758	39.746	-53.015	268.312
LABORCOST	0.332	3.508	-6.492	18.091
TRADED	0.819	0.237	0.166	1.000
EMERGMKT	0.604	0.492	0.000	1.000
DEALSIZE	8.858	1.374	5.451	12.513
MANUFAC	0.366	0.484	0.000	1.000
DACC	-0.001	0.056	-0.174	0.221
DOWNADJ	0.347	0.478	0.000	1.000

Note: The sample size is 101 companies.

Table 2: Results of preceding studies of acquisition premiums in public-to-private MBOs

Source	Period	Country	Type	Reference Stock Price	*N*	Avg. Premium (%)
DeAngelo et al. (1984)	1973-1980	US	ALL	40 days earlier	72	56.3
Lowenstein (1985)	1979-1984	US	MBO	30 days earlier	28	56.0
Lehn and Poulsen (1989)	1980-1987	US	ALL	20 days earlier	257	36.1
Amihud (1989)	1983-1986	US	MBO	20 days earlier	15	42.9
Kaplan (1989a, b)	1980-1985	US	MBO	2 months earlier	76	42.3
Asquith and Wizman (1990)	1980-1988	US	ALL	1 day earlier	47	37.9
Harlow and Howe (1993)	1980-1989	US	ALL	20 days earlier	121	44.9
Travlos and Cornett (1933)	1975-1983	US	ALL	1 month earlier	56	41.9
Easterwood et al. (1994)	1978-1988	US	MBO	20 days earlier	184	32.9
Weir et al. (2005)	1998-2000	UK	ALL	1 month earlier	95	44.9
Renneboog et al. (2007)	1997-2003	UK	MBO	40/20 days earlier	137	40.6 39.1

Note 1: “Reference stock price” denotes the stock price before the announcement of going private, which will be compared to the TOB price.

Note 2: “ALL” means the overall public-to-private cases, and “MBO” means that the sample is limited to MBOs.

Source: Table 6 in Renneboog et al. (2007). The result of Renneboog et al. (2007) itself is also added.

Table 3: Determinants of Acquisition Premiums

	PREM20			*PREM40*		
	(1)	(2)	(3)	(4)	(5)	(6)
SHPF	-0.388***		-0.388***	-0.429**		-0.429**
	(0.134)		(0.135)	(0.167)		(0.169)
PBR		-0.144*	-0.144*		-0.114	-0.114*
		(0.079)	(0.073)		(0.073)	(0.066)
INTEREST	-6.884*	-5.905	-6.328	-6.058	-5.149	-5.617
	(3.893)	(3.735)	(3.808)	(3.750)	(3.660)	(3.700)
DEBT	0.103	0.093	0.097	0.086	0.077	0.081
	(0.068)	(0.065)	(0.066)	(0.064)	(0.062)	(0.062)
DIREC	-0.649**	-0.544	-0.510	-0.524*	-0.452	-0.414
	(0.312)	(0.347)	(0.339)	(0.314)	(0.336)	(0.332)
FCF	0.253	0.067	0.075	0.029	-0.121	-0.112
	(0.165)	(0.188)	(0.183)	(0.163)	(0.189)	(0.182)
FUND	-0.205**	-0.168*	-0.177*	-0.127	-0.094	-0.105
	(0.094)	(0.096)	(0.093)	(0.084)	(0.090)	(0.086)
SALESPW	0.000	0.000	0.000	-0.001	0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
LABORCOST	-0.005	-0.001	-0.005	-0.006	-0.001	-0.006
	(0.011)	(0.011)	(0.011)	(0.008)	(0.008)	(0.008)
TRADED	0.255	0.233	0.236	0.294	0.276	0.279
	(0.174)	(0.171)	(0.164)	(0.190)	(0.186)	(0.184)
EMERGMKT	-0.015	0.040	-0.006	-0.032	0.025	-0.025
	(0.081)	(0.080)	(0.082)	(0.081)	(0.084)	(0.080)
DEALSIZE	-0.042	-0.019	-0.009	-0.065	-0.050	-0.039
	(0.044)	(0.054)	(0.051)	(0.041)	(0.048)	(0.046)
MANUFAC	0.110	0.004	0.063	0.079	-0.024	0.041
	(0.080)	(0.081)	(0.076)	(0.092)	(0.094)	(0.090)
CONSTANT	0.675	0.710	0.633	0.780*	0.831*	0.746*
	(0.439)	(0.459)	(0.440)	(0.421)	(0.438)	(0.421)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	101	101	101	101	101	101
R-squared	0.509	0.495	0.531	0.428	0.395	0.444

Note 1: Values in the parentheses are heteroskedasticity-robust standard error.

Note 2: *, **, and *** denote that they are significant at significance levels 10%, 5%, and 1%, respectively.