Do Buyouts by Private Equity Funds Enhance Firm Value in Japan?

Tsung-ming Yeh

Akita International University

Japan

yosomei@aiu.ac.jp

Tel: 81(0)18-834-3222

Fax: 81(0)18-834-3222

Do Buyouts by Private Equity Funds Enhance Firm Value in Japan?

Abstract

This study aims to investigate the role and the effect of private equity funds in the setting of Japanese corporate buyouts. The empirical tests show that the announcement of takeovers of Japanese publicly listed firms by buyout funds is associated with significantly positive stock market reaction; that the abnormal returns are positively related with, but not simply driven by, the expected takeover premiums. A follow-up examination reveals that for those buyouts that were actually completed, 30 cases have seen the acquiring funds exiting out of their investments, with an average investment length of 33 months. The positive abnormal returns are associated with some improvement in the operating performance, as far as the exit-group firms are concerned. The results suggest that the sources of value-enhancement can be attributed to more efficient use of asset and reduction of operating costs. Meanwhile, there was no evidence indicating that the acquired firms cut back on their research and development, capital investments, and employee wage and growth. Further examination of the exit-group firms after the exit shows no deterioration in the operating performance. While follow-up studies are necessary on those buyouts still in the midst of commitment by the private equity funds, in all, the results in this study suggest that private equity funds can enhance firm value by means of strengthened monitoring, better-aligned incentives, and more efficient operational management. In a more broad sense, the results support the possibility that institutional investors may play an effective role in the corporate governance of Japanese firms.

1. Introduction

Conventionally, Japanese institutional investors such as insurance firms or pension funds, in spite of their relatively large shareholding, had been taking a hands-off stance on their investing firms. The job of corporate governance was entrusted to the firm's main bank. The arrangement of reciprocal monitoring by the main banks had the benefit of avoiding duplicative monitoring costs (Aoki et al., 1990). The potential cost of conflict of interests on the side of main banks was comparatively small during the period of high growth

economy. However, the change in the business environment since late 1980s has weakened the main bank's capacity and incentive as the monitors of Corporate Japan (Yeh, 2007; Hirota and Miyajima, 2001). This creates a void in the corporate governance, which private equity firms, beginning to receive attention in the late 1990s in Japan, take upon themselves to fill the void.

Initially, foreign private equity firms, such as *Ripplewood Holdings*, were taking the lead in the market of corporate control and shareholder activism in Japan[1]. Before long, indigenous private equity firms were set up and began to join the new game[2]. These indigenous private equity firms may be affiliated with a Japanese securities firm, general trading firm, a bank, or independently run. The top brass in the indigenous cohort were usually associated with some foreign financial investment bank in their previous career.

Jensen (1989) argues that private equity firms apply financial, governance, and operational engineering to their portfolio firms, improving firm operations and creating value. In this sense, private equity firms can be expected to play a similar role as the Japanese main banks in their heyday. On the other hand, buyouts by the private equity fund are a relatively new phenomenon in Japan, with very limited deals before the 2000s. Empirical studies on Japanese takeovers by buyouts, therefore, are nearly non-existing[3]. Meanwhile, there were previous studies on takeovers among Japanese industrial firms, finding that the post-buyout acquired firms' operating performance deteriorated (e.g. Yeh and Hoshino, 2002). In fact, the management model differs between private equity acquirers and industrial acquirers (the characteristics of the former in Japan's case will be elaborated in the next section). This study aims to investigate the role and the effect of private equity funds in the setting of Japanese corporate buyouts. Corporate buyout is

---

[1] *Ripplewood Holdings* was an American private equity firm, set up in 1995. Its division in charge of the investment in Japan was changed to a holding company in 2005, named *RHJ International*, with the representative office in Japan called *RHJ International Japan*.

[2] *Recof*, a Japanese M&A consulting firm, documented only two cases of takeovers of Japanese firms by private equity firm in 1999, while rising to 402 deals in 2007 (comprised of 229 cases by Japanese acquirers, and 173 by foreign ones).

[3] As far as the author can find, the only relevant published study authored by Nose and Ito (2009) reported significantly positive three-day abnormal returns for Japanese corporate takeovers by buyout funds. However, their sample may include cases where the investment by the acquirer is not accompanied by a change of control, making it unclear to what degree the value enhancement is derived by the intervention from the acquirer. Also, although their study focuses on the change in the stock returns and the post-buyout operating costs, there was no follow-up investigation on the post-buyout consequences.

associated with a substantial change of control in the acquired firms, serving as a perfect setting for investigating the effects of private equity funds.

This study is structured as follows. Section 2 provides an overview of the characteristics of buyout funds' activity in Japan. Section 3 develops the hypotheses to be investigated in this study, with a review of previous literature. Section 4 reports the empirical study's methods and results. The final section summarizes the findings and discusses the implication for further research.

2. Buyouts by Private Equity Funds in Japan

The process of buyouts by private equity funds in Japan usually starts with looking for perspective target firms that are undervalued, either because of inefficient management or because of information asymmetry. The takeover will be implemented by the acquirers obtaining a majority of the target firm's shares through private placements or tender offers, or a mix of both. In some cases the target firm would reject the unsolicited bidder, which then resorts to a hostile takeover bidding, although such case is rather rare in Japan.

After the buyout, the acquiring funds will have to press the target firm to take on "selection and concentration" of its business; for instance, reorganizing the business portfolios and selling off those noncore or unprofitable businesses. Drastic layoffs are avoided in Japan's case, sometimes taking the form of more moderate approaches such as introducing "early retirement system" or stopping recruiting new hires. Instead, incentive pay such as stock options or performance pay is usually adopted after the buyout in order to raise the incentive of management or employees.

The acquiring funds provide various support, including financial and human resources, to the target firms. In Japan a corporate buyout is not necessarily accompanied with a change of the top managers, and even if so, the scale of turnover is rather small and limited. But in either case, the fund will send a team of experts into the board of the target firm to take charge in the post-buyout management. These experts are seasoned managers with proven track records in their previous career. The target firm can also expect to tap into the fund's business network in finding potential supplier/clients and tie-up partners.

Most private equity funds' investments are expected to find an "exit" after a certain period of time, ranging from 3 to 10 years or so. The ideal scenario is that, after enhancing the target firm's value, the acquiring funds look to take it public again or sell the stake to a third-party at a profit. However, it is not rare for the acquirers to blunder on the investment, ending up with selling at a loss or even liquidating the acquired firms.

2.1. Looking for a buyout target

In looking for a buyout candidate firm, private equity firms tap into their network of various business resources. Then the interested acquirer makes overture to the top management of the target firm, hopefully to gain their agreement and cooperation regarding the buyout conditions and the post-buyout strategies. For example, private equity funds affiliated with a bank group can work with other group firms, such as consulting firms or banks, in identifying potential candidates. *Mizuho Corporate Adviser*, a financial consulting firm, makes buyout proposals to their clients and refers them to *Mizuho Capita*l, a private equity fund affiliated with *Mizuho Bank*.

Another important network is that of human resources. Private equity firms attempt to build connections with former heavyweight politicians, government officials or bureaucrats. Such connections contribute to higher credibility for the acquirer, making it easier to engage with a potential candidate. It also proves useful in facilitating a deal, particular in Japan where the newly emerging private equity firms are perceived with a suspicious eye by most Japanese firms. Also political connections may lubricate deals that require cooperation from government agencies or may meet political backfire. For example, *Nikkei* newspaper (2002.8.15) reported that *Carlyle*, an American private equity firm, enlisted in its advisors the former U.S President George Bush, former U.S ambassadors in Japan, and the top executives of big-name Japanese companies such as *Toshiba* and *Fujitsu*. It was speculated that these heavyweight names are helpful for *Carlyle* in lining up potential investors.

Private equity firms also develop their network of professional experts by headhunting former executives of big companies with proven records. The candidate firm may be more willing to accept a buyout proposal with a suitable or trustable top manager to be sent in the target firm. For example, in early 2006, *Yusin*, a Japanese car parts maker, was comfortable with the buyout proposal made by the private equity firm *RHJ International Japan*, which proposed the CEO of *Niles*, another car parts maker, as the new CEO for *Yusin* (Nikkei, 2006.05.19).

2.2. Financing of corporate buyout by funds in Japan

A buyout fund is usually highly leveraged in financing a takeover. In U.S the proportion of leverage can amount to upwards of 90% or so in early leveraged buyouts, even though it is declining gradually afterwards (Kaplan and Stromberg, 2009). The limited use of equity financing is intended to maximize the investment efficiency. In Japanese cases, banks are involved and lending around a half of the funds. For banks, leveraged buyouts provide new business opportunities and a source of revenues.

As regards equity financing, private equity firms acquire the target firm by means of an existing or a newly established fund, sometimes jointly participated by other corporations or private equity firms. A projected period of investment time (for example 3 to 10 years) is usually set in the beginning. After the pre-set deadline, the fund would be liquidated, returning the proceeds to its investors. In other cases, the private equity firm finances the buyout with its own money, a practice called "principal investment". This form of buyout may have a benefit of a lower cost of capital, and can be more flexible in setting the investment period. However, principal investment may cause conflict of interest, especially in the case of funds set up by a security firm. For example, conflict of interest occurs when the acquired firm is competing head-on with the security firm's other corporate clients.

Some buyouts take the form of management buyout (MBO), where management of the acquired firm, usually working with private equity firms, invests their own money in the buyout[4]. The most ostensible reason of a MBO is a more efficient decision-making and the emancipation from the short term market pressure. In some MBO cases, it is a split-off or selling off a non-core business division of the parent company. Another motivation of MBO in Japan is for succession strategy, particularly for family-owned businesses with difficulty finding a suitable successor.

2.3. The means of corporate takeover by funds in Japan

In Japan, the majority of takeovers by buyout funds are completed either through tender offer (or takeover bid, TOB) or private placement, or a mix of both, and the takeover bids are rarely hostile. A successful acquisition of the target firm in Japan invariably requires the agreement from its management or large shareholders (such as the founding family or parent company). There have been a few cases where foreign private equity funds waged a hostile TOB towards a Japanese firm, only to obtain not even a single share. One example is *Steel Partners*, an American private equity firm, which bid for shares of *Yushiro Chemical* in a hostile TOB in late 2003, only to meet strong resistance from the incumbent management, and obtain no share at all eventually (Nikkei, 2004.01.27).

Compared to a TOB, an acquisition by the means of private placement has been questioned as to the fairness of the buyout price. There have been a few cases where the

[4] However, it must be pointed out that in most Japanese MBO, the managerial shareholding percentage is trivial relative to the collaborating private equity funds. There did exist MBO where the majority of the funds was financed by the incumbent managers, although very few in numbers.

buyout price was alleged to be unfairly low in favor of the acquiring parties (which may include the incumbent management)[5]. An unfairly low buyout price benefits acquirers at the expense of existing shareholders, who receive lower payment. Such a problem is more likely in the case of a private placement (versus a public tender offer)[6]. Also, earnings dilution arising from issuance of new shares concerns the existing shareholders.

In a relatively small number of cases in Japan, a private equity firm emerges as the majority shareholder (in a potential sense) by acquiring the target firm's warrants, or securities (preferred stocks or corporate bonds) with warrants attached. It must be noted that in such cases, not all private equity firms are interested in taking over the target firm. Some will just take profit quickly (usually in a few months) after exercising the warrants or converting to equity. Caution is required as to distinguishing such profit-taking cases from change-of-control takeovers.

2.4. The role of banks in the corporate takeover by funds in Japan

Even though the model of monitoring by main banks is said to be collapsing in Japan, banks are still an important stakeholder, mainly as a financing source, for Japanese companies, not least the unlisted ones with limited sources of financing. In Japanese takeovers by private equity funds, firm-bank relation can be a complicating factor. The existence of banks may work for or against the fate of the buyout proposal and even the post-buyout consequences.

One example demonstrating the bank influence in the stage of buyout proposal is *Hashimoto Forming* (a car parts maker) which declined a buyout proposal from some interested buyout funds, out of concern that its banks may oppose it. Eventually *Hashimoto* accepted the one proposed by a buyout fund affiliated with its main bank, with which it feels more comfortable.

---

[5] An example is the MBO of *Rex Holding* in 2006. Before the MBO, the firm announced a downward revision of it earning forecast, with a subsequent price fall. The lower stock price benefited the managers in their ensuing buyout of the firm. Another similar case is *World* announcing an upward revision of earning forecast, after it completed an MBO in 2005. Had the upward revision announced before the MBO, it would have cost the buyer parties far more when the stock price rose (Nikkei, 2006.11.01).

[6] Solutions are proposed for such a conflict of interest arising from the buyout price. For example, the independent directors or an independent committee can play a role in determining a fair price. Soliciting buyout proposals from multiple bidders can drive up the bidding price closer to the target firm's value.

On the other hand, banks can play a facilitating role in the buyout process. For example, the main bank of *Kito* (a machinery manufacturer) was the matchmaker of the firm's buyout deal with *Carlyle* in 2003, whose investment policy impressed the bank. The understanding shown by the main bank was instrumental in facilitating the deal.

Another example illustrating the conflict between the bank and the acquiring fund is *Steel Partners*, an American private equity firm, deciding to get rid of its stakes in *Sapporo Holdings* (a beverage company) in 2010, after failing to push reforms through, "deterred by Japanese main banking system" (Asahi Shimbun, 2010.12.21).

In fact, a buyout potentially will be more synergetic with the blessing of the acquired firm's main banks. *Meisei Denki*, a struggling Japanese electronics maker, was bailed out in 2003 by *SMBC Principal Investment*s, which is affiliated with *Mitsui-Sumitomo* financial group. In this deal, *SMBC Principal Investment* provides capital funds and dispatched top executives, *Mitsui-Sumitomo bank* ensures a stable financing by the means of term loan and loan commitment, and the group's think tank, *Nippon Research Institute*, contributes its know-how of valuation and technology.

2.5. The managers and employees in the buyouts

So far, buyout funds in Japan rarely resort to large-scale cutback on the workforce of the acquired firms. This contrasts with cases in U.S., where draconian restructuring is inevitable in order to pay back the debts that financed the buyout. In fact, it has been rare for Japanese firms to implement drastic personnel layoffs, even in the case of financial distress. Even though the lifelong employment system, an implicitly honored practice in corporate Japan during the past decades, is no long the norm since the 1990s, it still leaves a strong social legacy.

Another reason of limited personnel restructurings may be the friendly nature and cooperation-emphasis that can be seen in a majority of the buyouts in Japan, regardless of the acquiring funds being Japanese or foreign. For example, *Carlye Japan* makes it known that it is not sparing with time in engaging with the target firm's employees. Interviews given by the fund's managers indicate their emphasis on earning the understanding and the cooperation of the target firm's employees as a crucial key in the post-buyout operations (Nikkei, 2007.10.11). Most of the buyout funds are keen to prevent outflows of talented workers, an important intangible asset in maintaining firm value.

As with the top managers, the buyout funds adopt a similar approach. Changes of CEO or top executives are usually announced as the control changes hand. But it is not

unusual to see a case where the incumbents are left intact, especially in an MBO[7]. Even in the former case, the former executives are allowed to stay in the company, typically relegated to an honorary position. In either case, across-the-board turnover of the incumbent top grass in the acquired firms is a rarity in Japan.

It is quite certain that, in most cases, the buyout fund will send its experts into the acquired firm's board. These experts are usually professional managers with proven records, some of them with their former career in a different industry from the acquired firm they are charged with the task of turning it around. These sent-in professionals may or may not be appointed as the CEO; in some cases, they are arranged to look more like advisors or consultants. They are usually given an incentive compensation scheme, which together with their reputation at stake, aligns their interest closely with the acquired firm's[8].

2.6. The post-buyout business strategies of the acquired firm's

In addition to the financial support, the acquiring funds also provide the network of their resources to the acquired firm, including the acquirer's professional managers to be sent in to the acquired firm, the fund's in-house or contracted consultants. The case of *Meisei Denki* mentioned earlier demonstrates the synergetic benefits received from the whole group of the acquirer.

The network of the acquirer's supplier/clients and tie-up partners is also a valuable resource for the acquired firm. One quintessential example is the "roll-up" or "build-up" approach, where the private equity fund acquires firms from a fragmented industry with numerous small-medium firms. In this sense, the private equity firm functions as a holding company, under which there are multiple subsidiaries engaging in the same industry. Sometimes these subsidiaries will be consolidated later on. Such a roll-up strategy creates synergy by achieving the economy of scale or scope. For example, in

---

[7] However, even in the case of MBO, it is not unusual to see confrontations between the managers and the acquirer over the management strategies after the buyout, with the managers removed from the management positions by the acquirer. For instance, after the MBO of *Skylark* (a restaurant chain) in 2006, the firm performance deteriorated, and the then-CEO was discharged in 2008 by the acquirer *Nomura Principal* due to the disagreement in the management policy (Nikkei, 2011.10.22).

[8] Even though there are no consistent statistics publicly available, these sent-in professional managers have a compensation contract with performance pay equivalent to a certain percentage of the firm's profits.

2006, *RHR International Japan* acquired *Yusin*, a Japanese car parts maker, which then set out to take over another car parts maker *Niles* in 2007.

After the buyout, the acquired firm would be pressed by the acquiring fund to carry out "selection and concentration" of its businesses; reorganizing the business portfolios and selling off those noncore or unprofitable businesses. However, unlike the case in the U.S., large scale layoffs or across-the-board management turnover are usually avoided in Japan, although mild approaches such as an "early retirement system" may be put in place to reduce labor costs.

Furthermore, incentive pay such as stock options or performance pay is usually adopted after the buyout. Such incentive schemes usually apply to a selected set of managers and employees. The top managers sent in by the fund are also offered such incentive schemes. Such incentive pay is put in place in order to align the employees' interest with the firm's more closely.

After a certain preset period of time, typically 3 to 10 years, the acquirer looks for an "exit". In Japan, exit strategies include initial public offer (IPO), sell-off to a third-party (another funds, secondary funds, or industrial firms), sell-off back to the acquired firm (in the form of stock repurchase), sell-off to the acquired firm's manager or related parties, or liquidation of the acquired firm[9]. A survey by *Venture Enterprise Center*, a Japanese trade association for ventures in Japan, compiled the buyout funds' exit outcomes during April 2007 to March 2008. Out of a total of 33 exit cases, there are 17 cases of sell-off to a third-party (52%), 6 cases of sell-off to the acquired firm' managers (18%), 8 cases of IPO (24%), and one unclassified case. IPO exit proves to be most profitable, earning an average of 366 million yen per case for the acquiring fund, while sell-offs to the acquired firm' managers come next earning 52 million yen per case.

3. Hypotheses to be tested in this study

3.1. Do the buyouts enhance shareholder wealth of the acquired firms?

The first question is whether the buyouts by private equity funds enhance Japanese acquired firms' value. Private equity firms can be interpreted as conglomerate firms or

[9] Conflict may also occur over the choice of "exit" decision. In general, private equity firm has a greater say on deciding the sell-off method or the buyer, which may not necessarily conform to the best interest of the acquired firm. However, considering its reputation and track record, which may be crucial for its future buyout activities in Japan, the private equity firm may have an incentive to show consideration for the acquired firm in the exit decision.

collections of separate production agencies into one owning organization (Alchian and Demsetz, 1972). Jensen (1989) argues that private equity firms apply financial, governance, and operational engineering to their portfolio firms, improving firm operations and creating value. Empirical evidence, mostly based on western cases, reports that buyouts by the private equity firms create value. Lehn and Poulsen (1989) tabulated 20% abnormal return associated with the announcements of leveraged buyouts (LBO). Positive announcement-associated abnormal returns are also reported by Kaplan (1989a; 1989b), Muscarella and Vetsuypens (1990), and Travlos and Cornett (1993). What are the sources of gains reported in these studies? In general, takeovers by the private equity firms can enhance the acquired firm's value in several ways.

First of all, greater concentrated ownership strengthens monitoring capacity and incentives for the controlling shareholder. The separation of ownership and control, particularly in a publicly-listed firm, engenders agency problems by the managers. With their invested funds and reputation at stake, private equity firms have strong incentives to monitor the post-buyout management, reducing the information asymmetry between shareholders and management. With more concentrated ownership and centralized board structure, the decision making process inside the acquired firm also becomes more efficient, particularly in the case of going-private buyouts. Gertner and Kaplan (1996) reported smaller boards of directors, more frequent board meetings, and higher turnover of poor-performing managers in the post-buyout firms. Smith (1990) found that the improvement in the performance of the acquired firms is positively related to the change in managerial shareholding (strengthened incentives) and ownership concentration (improved monitoring). Travlos and Cornett (1993) found an adverse relationship between the announcement-associated abnormal returns accruing to the acquired firm and its price-earnings ratio (PER), suggesting that pre-buyout firms with greater agency costs (and lower PER) are expected to enhance greater value under the acquiring funds' control.

Secondly, incentive pay, including stock option and performance pay, is usually adopted for top managers of the acquired firms after the buyout (Muscarella and Vetsuypens, 1990). Incentive pay motivates managers to work harder in the interest of the firm. In the case of MBO, managerial shareholding in the firm would rise after the buyout, aligning more closely the interest of managers and the firm (Kaplan, 1989a; Smith, 1990). Western studies have consistently reported a reinforced incentive structure in the acquired firms after the buyout (Kaplan, 1989a; Simith, 1990; Muscarella and Vetsuypens, 1990).

Furthermore, the source of value-creation can also be attributed to the improved operating efficiency initiated by the acquiring funds, including one sort or another form

of restructurings such as asset redeployment, cost reduction, market strategies, or working capital management (Muscarella and Vetsuypens, 1990; Kaplan, 1989; Smith, 1990).

It is expected, therefore, that the acquiring funds can enhance value of Japanese acquired firms by applying changes in the monitoring, incentive and operating dimensions (Hypothesis 1). The fact that the acquirer and the target firm consented to the buyout connotes perceived benefits overweighing possible costs and conflicts of interest. Stock prices of the acquired firms are examined to test whether this is the case for the Japanese buyouts. The abnormal stock returns can be interpreted as reflecting the expected change in the acquired firms' future earnings after the buyout. Positive abnormal returns are expected under the value-enhancing hypothesis.

While the abnormal stock returns can be interpreted as reflecting the expected change in the acquired firms' future earnings after the buyout, they also reflect expected takeover premiums accruing to the target firm's shareholders. Previous studies suggest that the announcement of corporate takeovers is associated with positive abnormal stock returns for the target firms. Some previous studies tabulate higher-than-40% premiums (with the target firm's stock price as of 1 to 2 months before the announcement date as the benchmark). Lowenstein (1985) reported premiums of 50% or so for management buyouts.

It is therefore expected that the rise in the stock price in response to the takeover report should be proportional with the reported buyout price premium. In theory, the price differential between the price the acquirer is willing to pay and the target firm's current price, reflects the present value of the projected enhancement of earnings of the acquired firms after the buyout. In reality, however, the acquirers may overpay or underpay. The market may also react in a different way that deviates from the acquirer's projection.

The second question of this study is whether the announcement-associated abnormal return can be explained by the expected takeover premiums (Hypothesis 2). If so, can the abnormal return be fully explained by the reported premiums? To test the above hypotheses, the relationship between the abnormal return and the reported buyout price will be examined.

3.2. How are the bank relations relevant in the buyout consequences?

The role of banks is another question of interest in this study. Even though Japanese main banks are gradually losing their dominant monitoring role in their client firms' corporate governance, they are still an important capital provider. Examples demonstrated in Section 2.4 suggest the importance of banks, as a creditor, for the target firms in the

buyout decision making. The existence of banks may work for or against the fate of the buyout; while the blessing from the bank may be beneficial for the post-buyout firm, the conflict of interest between creditors and the acquiring funds is detrimental to the firm. In general, anecdote evidence illustrates that banks may be involved in corporate takeovers in the following ways.

First, the concern of souring relationship with banks may discourage target firms from accepting buyout proposals. Banks may oppose a takeover proposal made by private equity funds, out of concern that the acquirer's policies in the post-buyout firm may hurt banks' interest. As a large creditor, banks may have conflicted interests with the acquirer. Possible conflicts may occur over the post-buyout investment or divesture decisions. Banks may have apprehensions about the borrowing firm making risky investments or selling valuable businesses, reducing the borrower's ability of paying back its debt. Therefore, a Japanese target firm will see to it that the buyout deal obtains the consent of its main banks, which may still serve as a major source of financing for the target firms, particularly those in a dire situation.

Secondly, on the other hand, banks may play an active role in facilitating a buyout deal, when they feel it in their interest. Japanese banks, beleaguered by their own bad-loan problems, are becoming less capable of bailing out their troubled borrowing clients nowadays. It would be in the interest of banks to have an acquiring fund to take over the financing and monitoring role in their stead, if the acquirer's management policy resonates with the banks, or if the acquirer is closely tied to the banks.

Thirdly, buyout proposals are more likely to materialize with the consent of the bank, other things being equal. For a starter, the target firm can continue to rely on the bank loans in the wake of the buyout. In the case of financial distressed firms, the support from banks in the form of debt forgiveness is crucial in the buyout fund's planning and implementation. The outcome of the buyout deal and the post-buyout performance may hinge on how much the banks are willingness to forgive the debt.

Previous studies mainly focus on the question whether takeovers hurt the interest of the acquired firm's bondholders. For example, there may be no bond covenants protecting the existing bondholders in the event of change of control, or newly issued bonds might not be subordinated to the outstanding bonds, or may have shorter maturity. In fact, the evidence regarding transfer of wealth from bondholders to shareholders is somewhat mixed. While Lehn and Poulsen (1989) found no value lost for the bondholders, Travlos and Cornett (1993) found a statistically significant (but small) decline in bondholder wealth relative to the gains to equity-holders. However, as Kaplan and Stromberg (2009)

argued, even if bondholder value suffered, the losses only account for a small portion of shareholder gains.

The possibility of bondholder value suffering suggests the potential conflict between the banks and acquiring funds. In this study, I focus on the question how bank influence affects the acquired firm's shareholder value, since the anecdote evidence illustrates that Japanese banks may work in favor or against the fate and consequence of the takeovers. In fact, one previous study by Yeh (2007) investigated Japanese M&A among industrial companies, finding that bank control is detrimental to the announcement-associated abnormal returns.

It is expected that the higher the bank influence, the greater the potential conflict between the acquirer and the bank, which reduces value creation potential for the acquired firm (Hypothesis 3). To test for the effect of the bank influence on the buyout, the relationship between the bank influence and the abnormal returns is investigated.

3.3. Are the announcement-associated stock returns consistent with the post-buyout performance?

The abnormal stock returns can be interpreted as reflecting the expected change in the acquired firm's future earnings after the buyout. Positive abnormal returns are expected under the value-enhancing hypothesis. A further test of this argument requires a direct examination of the post-buyout performance of the acquired firms. This also serves as a supplementary test of the hypothesis whether the abnormal return is mainly driven by the expected takeover premiums, or by the market's expectation of substantial amelioration in the operating performance.

Since most buyouts by the private equity funds are limited to an investment period of a few years, it is also of empirical importance to examine how these acquirers measure up to the goals they set up for the investment. Direct investigation of post-buyout operating performance can ascertain which aspects of the performance changed, if any, as a consequence of the change of control. Are the acquired firms becoming more profitable as a result of efforts to cut costs (more efficient), or generate more sales (more effective)? Are the acquired firms engaging more or less in long-term investments such as research and development or capital investment?

For example, one problem for publicly-listed firms is the existence of information asymmetry, in that large capital investment is avoided by the management since it is undervalued by the stock market. Equity financing for a large corporate capital investment, usually requiring a huge amount of funds, is associated with a price fall after

the announcement. LBO or MBO can solve the under-investment problem by a private equity firm taking over the firm and providing the funds. Existing shareholders are compensated by a takeover premium. With a large controlling shareholder after the buyout, the information asymmetry that prevailed before the buyout can be mitigated. The acquired firms are then better placed to make a value-enhancing capital investment[10].

Previous empirical studies show that the operating performance of the acquired firms also shows signs of improvement after the buyout. Opler (1992) and Kaplan and Stein (1993) found that the acquired firms experience an increase in the operating profit in the post-LBOs. Andrade and Kaplan (1998) also found positive effects on the operating profitability for firms even under financial distress.

On the other hand, critics argue that private equity firms take advantage of tax breaks and information superiority, thus creating no value. That is, private equity firms' buyouts are only influenced by market timing and mispricing in the stock market. The better informed parties in a buyout deal, e.g. the insider managers or the private equity fund, capture most of the gains by acquiring the underpriced target firm. However, Kaplan (1989a) found that informed managers don't necessarily participate in the buyout even though they hold large shares in the pre-buyout firm; those managers who don't participate hold a median of 10% shares, larger than 4.67% held by the participating management. Smith (1990) also indirectly rejected the under-pricing argument, finding that MBOs that failed to materialize are not followed by increases in the operating profit.

Another critique is that conflicts of interests may exist between the private equity firms versus the acquired firm's other stakeholders. Private equity funds may pursue the efficiency of the acquired firms during the investment period, but at the expense of the future prospects. For example, the acquiring fund may resort to short-term orientated business strategies, such as across-the-board restructuring or cost-reducing reforms, at the expense of long-term growth prospects.

In general, most of the western evidence suggests no transfer of wealth in the buyouts by private equity funds. For example, Muscarella and Vetsuypen (1990) reported

---

[10] For example, *Barnes & Noble*, a brick and mortar bookstore retailer in the U.S. has been hesitant in investing in electronic book business, which requires a huge amount of funds. In August, 2010, the board of *Barnes & Noble* decided to "evaluate strategic alternatives", in other words, it is putting itself up for sale. The article in Economist commented that "one of the attractions of taking *Barnes & Noble* private is that it will be easier to make a big bet on electronic books; such heavy investment does not sit well with the short-term obsession of the stock market" (The Economist, 2010).

that manager turnover is lower than that in an average firm. Kaplan (1989a) did find that the number of acquired firm's employees was lower in the post-buyout period, but attributed it as a result of post-buyout divesture and more efficient use of labor. Cao and Lerner (2007) followed up the post-IPO stock returns for the target firms (reversed LBO) and found no deteriorating performance in the post-IPO period. Smith (1990) reported no cutback on research and development as well as advertising expenditures by the acquired firms in the post-buyout period.

It is expected that the operating performance of Japanese acquired firms improves after the buyout, without sacrificing the firm's long-term growth prospect (Hypothesis 4). A follow-up examination of the acquired firms in the post-buyout period is conducted to compare the change in the performance between the pre-buyout and post-buyout years.

4. Empirical tests and results

4.1. Data, sample, and definition of variables

I collected sample data of Japanese corporate buyouts by private equity funds that were reported during the period from 2000 to 2007 in *Japan Economic Newspaper* (*Nihon Keizai Shimbun*) and its affiliated papers. A case is selected if the post-buyout shareholding of the target firm by the acquiring funds exceeds 50%. This ensure a change of control in the acquired firm, which the acquirer invariably will take charge of the management, providing a setting to observe the effect of the acquiring funds). Also, sample target firms are confined to publicly-listed non-financial companies at the point of the announcement, based on stock data availability and the substantial impact on their stakeholders.

From the descriptions in the press reports, I identified information on the acquiring funds, the target firms, the reported means of acquisition and the reported purchase price, and the first report date in the press. Furthermore, I also checked subsequent developments regarding the buyouts, whether and when the reported buyout was actually completed, whether the acquirers had exited out of the investment (if so, when and how) or are still committed to the acquired firms. Corporate and financial information of the target firms is gathered from *Nikkei*'s financial database *NEEDS*, and stock price data from *Toyo Keizai*'s stock price CD-ROM.

In total, 74 buyouts remained as effective sample. For target firms, I compute a set of variables, as enlisted in Table 1, to be examined in the following tests. Examination of these ratios is intended to test if the change in the firm value is consistent with the change in the post-buyout effectiveness and efficiency. Various profit margin measures, sales

growth and fixed asset turnover are examined. Greater effectiveness and efficiency lead to higher return on asset (ROA) and return on equity (ROE). Since ROE can also be enhanced by a higher leverage, the long-term debt ratio is also examined. To test for the possibility that the acquiring funds may pursue short-term profits at the expense of the acquired firm's long-term growth prospects, I also examine the acquired firm's capital investment ratio, research and development ratio, wages ratio, and the employee growth ratios, which are relevant in a firm's long-term growth potential. Furthermore, quick ratio and current ratio are also examined to measure the acquired firm's short-term liquidity.

Table 1

If buyouts by the acquiring funds are expected to improve the acquired firm's effectiveness and efficiency, we can expect a higher level of ROA and ROE of the firm, and thus higher growth opportunity. Stock pricing models in corporate finance suggests incremental value can be created by higher growth opportunity[11]. The ratios listed in Table 1 will be examined to test whether the stock price change around the buyout announcement is associated with changes in the firm's effectiveness and efficiency in the post-buyout period.

In measuring stock price change, I calculate the abnormal return associated with the announcement of the buyouts. Abnormal return is a standard indicator in event studies to measure the change in stock price associated with a certain event (in this study, the announcement of takeovers). Under the market efficiency assumption, when information of takeovers is revealed, the market quickly gauges potential effects on the future earnings of the target firms, resulting in changes in the stock prices. Since the stock price can be considered the present value of future cash flows discounted by the risk-adjusted rate of return, stock price change indicates market perceptions of the potential effects of the takeovers on the firm's future operating performance. Inspection of announcement-associated stock price changes therefore is an appropriate means of testing hypotheses regarding the effects of takeovers.

Abnormal returns are calculated as the difference between the actual returns and "normal" returns (the returns which firms would have gained if there were no announcement of takeovers). For each sample firm *i*, the market model regression $R_i = \alpha + \beta \cdot RM + e_i$ is estimated, where R_i is firm *i*'s daily stock return and *RM* the daily

[11] For instance, Gordon growth model formulates that a stock is valued as $DIV/r-g$, where *DIV* is the coming dividend, *r* the expected rate of return, and *g* the constant growth rate of dividends.

TOPIX-based market return, for the period from 230 to 31 days prior to the first press report date of the anti-takeover measures. The *first* press report date, *t=0*, hereafter will be referred to as the "announcement date". Using $\hat{\alpha}$ and $\hat{\beta}$, the "normal" return for each firm is calculated as $\hat{\alpha} + \hat{\beta} \cdot RM$ for the window period from 2 days before through to 2 days after the announcement date (*t=−2~2*). Each firm *i*'s abnormal return (AR) is then calculated as $AR_{i,t} = R_{i,t} - (\hat{\alpha} + \hat{\beta} \cdot RM_t)$ for the interval *t=−2~2*. The cumulative abnormal return (CAR) for firm *i* from *t=l~k* is calculated as $CAR_i = \sum_{t=l}^{k} AR_{i,t}$.

To test whether the sample firms' mean CAR(*t=l~k*) is equal to zero, the test statistic is calculated as follows, following Campbell et al. (1997).

$$\frac{Mean\ CAR(t = l{\sim}k)}{\sqrt{\frac{T}{N^2}\sum_{i=1}^{N} V(AR_i)}}$$

where $V(AR_i)$ is the estimated variance of the residuals, $R_{i,t} - (\hat{\alpha} + \hat{\beta} \cdot RM_t)$, for firm *i* over the estimation period *t=−230~−31*, *T* is the length of the window period (*T=l−k+1*), and *N* is the number of sample firms. This test statistic for mean CAR follows a standardized normal distribution.

In addition, the sign test is conducted for the null hypothesis that the expected proportion of positive abnormal returns is $\frac{1}{2}$. The test statistic is calculated as

$$\left(\frac{N^+}{N} - 0.5\right)\frac{\sqrt{N}}{0.5}$$

where N^+ is the number of cases where the abnormal return is positive. This test statistic asymptotically follows a standardized normal distribution.

4.2. Descriptive statistics of the sample buyouts

Table 2 reports the descriptive statistics of the sample corporate buyouts. Panel A shows the industry distribution of the target firms. Panel B reports the firms' financial information at the year-end prior to the buyout report. The debt ratio is averaged at 61.49%, with the median at 58.35%, suggesting the majority of the target firms were not in the state of bankruptcy with debt in excess of asset before the buyout (even though a few were so). The current ratio, on average, is above one, also suggesting that the target firms were not having severe liquidity problems before being bought out. However, the mean operating profit margin and net profit margin are negative, while median values are

positive. This connotes a portion of the target firms having incurred substantial loss before the buyouts.

Table 2

Panel C of Table 2 documents the characteristics of the sample buyouts. Out of the 74 reported buyouts, there are 12 cases that did not follow through afterwards. For example, the acquiring fund failed to solicit enough shares in TOB from the acquired firm's shareholders, or the promised capital was not paid in by the acquirers before the deadline. For those 62 cases that were completed, the estimated purchase price on average is 1.49% *lower* than the target firm's stock price as of 30 days prior to the first press report date, even though the median takeover premium is a positive 7%. However, in those cases involving TOB, the mean premium is 12.57%, while those not using TOB report a mean premium of −15.07%. In the latter case, the means of acquisition is mainly through a private placement or rights issuance.

Panel C of Table 2 also shows the subsequent developments for the completed buyouts. Out of the 62 completed buyouts, 32 cases still have the acquiring funds committed to the acquired firms. As of May 2011, the length of investment is averaged at 57 months. In the remaining 30 cases, the acquiring funds had exited in one way or another, with the mean investment length at 33 months. The breakdown of the exit strategies shows that the most frequently employed is selling the stakes to other business corporations (17 cases). There are 6 cases where the acquiring funds sold their shareholding in the stock market[12].

4.3. Abnormal returns and the reported takeover premiums

Table 3 reports the abnormal returns for the window period around the first press report date. The market responds favorably to the report of takeovers by the private equity funds. The mean abnormal return one day before the press report and on the report day is 2.35% and 8.89%, respectively, and statistically significant. Afterwards, the abnormal return is not significantly different from zero, with the exception day 2 which observes a significant decline. The negative abnormal return is likely to result from profit-taking selloffs. The three-day cumulated abnormal returns, indicated by CAR (−1~1), is 11.39%, and statistically significant.

[12] In fact, there are 2 cases in which the acquired firms, once being delisted after the buyout, went public again. Such seasoned public offering is usually quoted as the objective at the point of buyout, while in reality it was often not achieved. Reasons include time-consuming IPO procedure and unfavorable market price movement.

Table 3

Is the significantly positive announcement-associated abnormal return mainly driven by the expected takeover premiums? One factor that may be related to the premium level is the means of buyout. Most buyouts in this study were implemented by TOB or private placement. The former is more likely to pay a higher price than the latter, which is susceptible to earnings dilution or a potential problem of unfairly under-pricing.

The sample buyouts are divided into two groups, one involving TOB and the other not. Table 4 reports the abnormal returns and takeover premiums for the two groups. The TOB group documents a positive average premium (=12.57%) while the non-TOB group a negative one (=−15.07%), with the difference between the two groups significantly differently from zero. As for the abnormal return, the TOB group shows a higher positive 3-day CAR, and the non-TOB group a lower but still positive one.

Table 4

These results are consistent with the conjecture that TOB is associated with more premium, and therefore higher CAR. Moreover, it can be seen that the non-TOB group is associated with negative average premium, but still positive CAR. If the abnormal return *were* mainly driven by the expected premium, it is hard to explain why positive CAR is associated with negative reported premium. Therefore, it is possible that the positive abnormal returns also signal the market's expectation of an improvement in the acquired firms' performance after the buyout.

The following equation estimates the abnormal returns after controlling for the reported premium.

$$CAR_i = a_0 + a_1 \cdot PREMIUM_i + e_i \qquad (1)$$

where *CAR* is the CAR(−1~1), and *PREMIUM* the reported price premium. The constant estimates the level of CAR for a zero premium. The estimate results are reported in the first column in the Table 5. The variable *PREMIUM* shows a significantly positive coefficient estimate, consistent with the conjecture that higher takeover premium is associated with high abnormal return. The constant also has a significant coefficient estimate, implying that the acquired firms receiving a zero premium can obtain a CAR of 10.8%. The result suggests that the market in general expects favorable consequences for the buyouts by the acquiring funds. As described earlier, the potential sources of the expected enhancement of firm value may be attributed to the expected synergy arising from combined resources, more efficient decision-making, and more concentrated

ownership with intensified monitoring and better aligned incentives. This will be examined in the subsequent Section 4.5, where the positive CAR is associated with actual improvement in the post-buyout performance.

Table 5

4.4. The effect of bank relation

The next question to be investigated regards the role of banks. Banks presumably have more influence towards borrowing firms that are more indebted. I follow previous studies by using the firm's debt ratio as a proxy of the bank influence towards the firm (Kang et al. 2000; Yeh 2007). To test the effect of the bank influence on the buyout, the relationship between the bank influence and the abnormal returns is estimated by an extended equation of (1) as follows.

$$CAR_i = a_0 + a_1 \cdot PREMIUM_i + a_2 \cdot DEBT_i + e_i \qquad (2)$$

where *DEBT* is the acquired firm's debt ratio as of the year-end prior to the buyout announcement. The estimated results are reported in the second column in Table 5. The result shows an insignificant negative coefficient estimate for the *DEBT* variable.

It is likely that banks have relatively stronger power in those borrowing firms with less favorable performance, other things being equal. As argued by Aoki et al. (1990), financially troubled firms have greater financing needs and may have difficulty raising sufficient funds in the public market, a situation where banks play an important role and maintain a powerful position. On the other hand, banks may have little say in a relatively profitable and financially stable borrowing firm. To account for the varying levels of bank influence in firms with different financial strength, an interaction term is added to the equation (2) as follows.

$$CAR_i = a_0 + a_1 \cdot PREMIUM_i + a_2 \cdot DEBT_i + a_3 \cdot LOSS_i \cdot DEBT_i + e_i \qquad (3)$$

where *LOSS* is a dummy variable for the acquired firms with a net loss as of the year-end before the buyout announcement. The estimated results are reported in the third column in Table 5. The coefficient estimate for *DEBT* is still insignificant, while the estimate for the interaction term being negative and statistically significant. Furthermore, a joint null hypothesis, $a_2 = 0$ and $a_3 = 0$, is tested to see whether *DEBT* has an effect on abnormal returns. The results (not shown in Table 5) report an *F*-value of 2.72 and chi-square of 5.43, with p-value of 0.076 and 0.066, respectively. Thus, bank influence has a significant effect on abnormal returns. The interaction term's negative sign indicates that for

financially troubled firms, the bank influence has a greater magnitude of negative effect on the abnormal returns. On the other hand, the insignificant coefficient estimate for *DEBT* suggests that bank influence is not relevant for those firms that are relatively financially stable.

The results suggest that the market's concern of the potential conflicts of interest is more pronounced in the buyouts where the target firms are financially distressed. In a financially distressed firm, the conflict of interest between the creditors and shareholders are naturally acute, where banks are more apprehensive that the changes entailed by the acquiring fund may hamper their claims to the acquired firms. With more bank power in the case of a financially distressed firm, the conflict of interest is more likely to surface and may adversely affect the post-buyout management in the acquired firm. This result is consistent with anecdote evidence and the finding by Yeh (2007). On the other hand, such conflict is trivial or not substantially problematic in the target firms with more favorable performance.

4.5. The long-term firm performance in the post-buyout period

The preceding tests of the abnormal stock returns suggest that the market expects an amelioration of firm performance after the buyout. This section reports the results for a direct examination of the post-buyout performance for the acquired firms. The purpose is to explore whether, and which aspects of, firm performance improved after the buyout. For the acquired firms which the acquirers had exited, the performance as of the end of the exit-year is compared with that as of the pre-buyout year-end. The selection of the exit-year is to circumvent the confounding effects of the varying investment lengths, and of the change in corporate control after the exit. On the other hand, for those non-exit acquired firms, the performance as of March 2010 (when the latest financial information is available) is compared with the pre-buyout performance. Examined here are the ratios defined in Table 1.

Table 6 reports the original values as of the pre-buyout year as well as the exit/latest year. Also reported is the performance for the group of firms which announced buyouts but failed to follow through. These firms show a statistically significant decrease in the profitability measures, capital investments, sales growth rate, fixed asset turnover, and a statistically significant increase in the labor costs, as of the latest year. On the other hand, the acquired firms show no statistically significant change for any of the measures examined except sales growth, which decreases significantly after the buyout. It can be seen that the long-term debt ratio and the liquidity ratio s for both groups also show little change after the buyout.

Table 6

Table 7 reports the industry-adjusted values as of the pre-buyout year as well as the exit/latest year. The industry-adjusted value is calculated as the firm's original performance measure minus the corresponding industry's average value, using the industrial classification of Tokyo Stock Exchange. A similar picture can be seen from Table 7. Those firms not following though the buyout show a statistically significant decrease in the profitability measures, capital investments, sales growth rate, fixed asset turnover, and a statistically significant increase in the labor costs, as of the latest year. On the other hand, the acquired firms show no statistically significant change for all the measures examined.

Table 7

Two potential problems may exist in the above comparisons. First of all, those firms that failed to follow through after the buyout announcement may harbor peculiar situations specific to these firms. Even though the reasons why the deal was not completed were not disclosed for all cases in the follow-up press reports, the very fact of failing to complete the buyout may suggest some potentially adverse problems in these firms, which may be associated with deteriorating performance afterwards. Therefore, caution is required in inferring the post-buyout results for this group of firms.

Secondly, among the buyout cases that did follow through, the projected and the actual length of investment by the acquiring funds vary among different cases. This makes it harder to judge whether the lackluster post-buyout performance of the acquired firms is a consequence of poor investment, or bad management by the acquirer, or just because the effect has not yet kicked in.

However, the second problem may in part be remedied by dividing the buyout cases into two groups, those where the acquirers had exited and those otherwise. In the former group, it can be considered that the actual investment length has reached the projected one so the acquirers opted to exit. In the latter group, it can be deemed that the acquirers are still in the midst of their projected investment length, or in a protracted commitment due to some unexpected change or development. Table 8 shows the industry-adjusted performance ratios for these two groups.

Table 8

The 30 firms in the exit-group report an increase in operating profit margin, fixed asset turnover, and ROA, all at a statistically significant level. No significant change is observed for the measures of leverage, liquidity, capital investment, R&D outlays, and

employment costs. The test results suggest that the exit-group firms had improved their post-buyout effectiveness and efficiency, without sacrificing their financial stability and long-term growth prospect.

In contrast, the 32 firms in the non-exit group show a significant decrease in the employee growth rate and ROA, while other profitability ratios and growth rate also show a downward direction of change in an insignificant level. It can also be observed that capital investment, R&D outlay and long-term debt ratio in both groups indicate little change after the buyout.

Presuming the exit-group as the investment reaching the projected investment length, and the non-exit group as still in the midst of the projected investment length or in a protracted commitment, it can be interpreted that firms reaching the acquirer's projected investment length made some improvement in the profitability and the effectiveness, while those firms to which the acquirers are still committed are in the state of work-in-progress.

Two regression equations are separately estimated with respect to the improvement in the acquired firms' post-buyout profitability.

$$Q_i^{post} - Q_i^{pre} = b_0 + b_1 EXIT_i + e_i \quad (4)$$

$$Q_i^{post} - Q_i^{pre} = b_0 + b_1 CAR_i + e_i \quad (5)$$

EXIT is a dummy variable for firms in the exit group, *CAR* is the abnormal returns *CAR(t=−2~0),* and Q_i^{post} and Q_i^{pre} are the firm *i*'s industry-adjusted profitability ratios for the post-buyout and pre-buyout period, respectively. The operating profit margin and ROA are used as the profitability ratio.

Equation (4) tests whether the exit-group firms are more profitable than the non-exit-group in the post-buyout period, in a sense equivalent to the test in Table 9. The estimate for b_0 is equivalent to the average of the change in the profitability ratio for the non-exit group firms, and the estimate for b_0 plus b_1 is equivalent to the average of the change in the profitability ratio for the exit-group firms. The estimated results for equation (4) are reported in the first two columns in Table 9. It can be seen that the exit-group firms are becoming more profitable than the non-exit group firms after the buyout at a statistically significant level.

Table 9

Equation (5) tests whether the post-buyout performance is consistent with the announcement-associated abnormal returns. In estimating equation (5), *only the exit-group firms* are examined since the non-exit group firms are presumed to be still work-in-progress, where the effect of control by the acquirer has not yet kicked in. The estimated results for equation (5) are reported in the third and forth column in Table 9. The coefficient estimate for the *CAR* variable is positive, as predicted, and statistically significant for the equation with operating profit margin as the dependent variable. The test results suggest that value creation is associated with an improvement in the effectiveness and efficiency of the acquired firms after the buyout.

4.6. The post-exit operating performance of the exit-group firms

The preceding test results indicate that the exit-group firms improved their effectiveness and efficiency at the end of the year when the acquiring funds exited, and that the improvement is not achieved at the expense of the firm's long-term growth prospects. One concern is the possibility that the effect of sacrificing long-term growth prospects may not be manifest before the exiting of the acquiring funds, but would begin to kick in after the exit. To examine this possibility, I conduct a further follow-up investigation to see how the exit-group firms are faring after the exit, as of March 2010, where the latest financial information is available. Table 10 reports the exit-group firms' industry-adjusted performance before the buyout and that as of March 2010.

Table 10

The exit-group firms report an increase in the operating profit margin, EBIT ratio, fixed asset turnover, and ROA, at a statistically significant level in the Wilcoxon test, while not significant in the t-test, even though the direction of change in these ratios is consistent in both test results. The discrepancy in the two tests' significant level is mainly due to some outliers in the financial ratios, whose effect in the case of relatively small sample size may cause an insignificant result due to greater variance. On the other hand, other ratios, similar to the result in Table 8, reveal no significant change after the exit. In all, there is no evidence showing the exit-group firms deteriorating in the operating performance after the exit.

5. Summary and the implication for future research

The empirical tests show that the announcement of takeovers of Japanese publicly listed firms by buyout funds is associated with significantly positive stock market reaction; the three-day CAR around the first press report day is averaged at 11.39%. The abnormal returns are positively related with, but not simply driven by, the expected takeover

premiums; the three-day CAR is estimated to be 10.8% in the case of zero premium. It can be interpreted that the positive abnormal return arises from the market's expected improvement in the acquired firms' post-buyout performance.

It is also found that the expected conflict of interest between the acquiring funds and the banks has an adverse effect on the abnormal returns only for those firms with poor pre-buyout performance, in which banks have stronger influence. On the other hand, no significant relationship was observed between bank influence and the abnormal returns in those firms that were relatively profitable before the buyout, suggesting that banks are taking a hands-off stance in such cases. At any rate, even after accounting for the potentially adverse effect of conflict with banks, the three-day abnormal returns are still positive.

This study also conducted a follow-up examination of the reported buyouts. Out of the 74 reported buyouts, there are 12 cases that did not follow through afterwards. For those 62 cases that were actually completed, 32 cases still have the acquiring funds committed to the acquired firms as of May 2011, with an average 57 months of investment length. In the remaining 30 cases, the acquiring funds had exited out of their investments, with the average investment length at 33 months. The most frequently employed exit strategy is by selling the stakes to other business corporations (17 cases), followed by sell-off in the stock market (6 cases).

The examination of post-buyout operating performance provides results that are in general consistent with the announcement-associated abnormal returns. The positive market reaction to the buyout announcement is associated with some improvement in the operating performance, *as far as the exit-group firms are concerned*. The test results suggest that the sources of value-enhancement can be attributed to more efficient use of asset and reduction of operating costs. Meanwhile, there was no evidence indicating that the acquired firms cut back on their research and development, capital investments, and employee wage and growth, which are considered as important for the long-term growth of the companies. This result suggests that the improvement in the profitability is not achieved at the expense of the firms' long-term growth opportunities. Further examination of the exit-group firms after the exit shows no deterioration in the operating performance.

In all, the test results, consistent with previous western studies, suggest that private equity funds can enhance firm value by means of strengthened monitoring, better-aligned incentives, and more efficient operational management. There is little evidence in this study suggesting sacrifices of future prospects and transfer of wealth from the acquired

firm's employees to shareholders. In fact, the deteriorating performance in those firms failing to complete the announced buyouts indirectly rejects the informational superiority argument. That is, if the better-informed acquirers capture most of the gains simply by taking advantage of their informational superiority over the undervalued firms, then we should also have observed improved performance in those firms planning for buyouts but not materializing. However, the deteriorating performance reported in Section 4.5 indirectly rejects this informational superiority argument.

In a more broad sense, the results provided in this study support the possibility that institutional investors can play an effective role in the corporate governance of Japanese firms. Institutional investors such as private equity funds can be expected to play a similar role in corporate Japan that main banks played in the past. The strengthened monitoring and aligned incentive brought about by the acquiring funds result in the improvement in the firm's post-buyout operating performance. Even though the investment period is limited to a certain period of time in private equity buyouts, the effect seems not to be phased out even after the selloff of the firms.

Some limitations of this study are worth noting, with implications for further research in the future.

First, since buyouts by private equity funds are a relatively new phenomenon in Japan, only a half or so of the sample buyouts in this study achieve one sort or another exit strategy by the acquiring funds. Potential bias of selection may exist in the results as regards the post-buyout operating performance, since the exit-group firms are more likely to be better performing ones. To enhance results regarding the effect of private equity fund, follow-up studies are necessary on those cases still in the midst of commitment by the private equity funds[13].

Another potential source of selection bias might exist due to private-taking of the acquired firms after the buyout. Privately held firms are subject to looser disclosure requirements. Poorly performing firms may choose not to disclose financial information. In this study, financial data for a few companies (most of them non-exit group firms) are

[13] Sample firms in the non-exit group in this study may see the acquirer exiting after this study's investigation period. For example, one of the sample firms, *Skylark* (a restaurant chain) was sold by the acquirer *Nomura Principal* to an American investment fund lately in Oct 2011. In this case, *Skylark* was reported to have recovered in the profitability, in spite of shrinking sales revenue, at the point of the sell-off (Nikkei, 2011.10.22).

not available for the post-buyout period. Even though the number is relatively small, caution is required in interpreting the results.

Finally, even though this study shows no evidence of sacrificing future prospects and transfer of wealth from the acquired firm's employees to shareholders, it is less clear regarding the impact on the bondholders. This study did not investigate the impact on the wealth of the acquired firm's bondholders. Also, while the informational superiority argument is indirectly rejected in this study, it is based on a relatively small number of cases (12 cases in which buyouts are announced but not completed). Further research is expected to shed more light on the above unanswered issues.

References

Alchian, A., Demsetz, H., 1972. Production, information costs, and economic organization. Am. Econ. Rev. 62(5), 777-795.

Andrade, G., Kaplan, S., 1998. How costly is financial (not economic) distress? Evidence from highly leveraged transactions that became distressed. J. Financ. 53(5), 1443-1494.

Aoki, M., Patrick, H., Sheard, P., 1990. The Japanese main bank system: an introductory overview. In: Aoki, M., Patrick, H. (Eds.), The Japanese Main Bank System: Its Relevancy for Developing and Transforming Socialist Economies. Oxford University Press, Cary, NC, pp. 3-50.

Campbell, J., Lo, A., MacKinlay, C., 1997. The Econometrics of Financial Markets. Princeton University Press, New Jersey.

Cao, J., Lerner, J., 2007. The performance of reverse leveraged buyouts. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=937801

Economist, 2010. Barnes & Noble: The final chapter? Economist August 5.

Gertner, R., Kaplan, S., 1996. The value maximizing board. http://www.bi.no/OsloFiles/ccgr/Demiroglu_James.pdf.

Hirota, S., Miyajima, H., 2001. Main bank kainyu gata governance wa henka shita noka? 1990-nendai to sekiyu shock go to no hikaku. Gendai Financ. 10, 35-61.

Jensen, M., 1989. Eclipse of the public corporation. Harv. Bus. Rev. 67(5), 61-74.

Kang, J., Shivdasani, A., Yamada, T., 2000. The effect of bank relations on investment decisions: an investigation of Japanese takeover bids. J. Financ. 55(5), 2197-2218.

Kaplan, S., 1989a. Management buyouts: Evidence on taxes as a source of value. J. Financ. 44(3), 611-632.

Kaplan, S., 1989b. The effects of management buyouts on operating performance and value. J. Financ. Econ. 24(2), 217-254.

Kaplan, S., Stein, J., 1993. The evolution of buyout pricing and financial structure in the 1980s. Q. J. Econ. 108(2), 313-357.

Kaplan, S., Stromberg, P., 2009. Leveraged buyouts and private equity. J. Econ. Perspectives 23(1), 121-146.

Lehn, K., Poulsen, A., 1989. Free cash flow and stockholder gains in going private transactions. J. Financ. 44(3), 771-788.

Lowenstein, L., 1985. Management buyouts. Columbia Law Rev. 85, 730-784.

Muscarella, C., Vetsuypens, M., 1990. Efficiency and organizational structure: a study of reverse LBOs. J. Financ. 45, 1389-1413.

Nose, Y., Ito, A., 2009. Buyout fund ni yoru baisyu no impact ni kansuru bunseki. Gendai Financ. 26, 49-66.

Opler, T., 1992. Operating performance in leveraged buyouts: Evidence from 1985-1989. Financ. Manag. 21(Spring), 27-34.

Smith, A., 1990. Capital ownership structure and performance: the case of management buyouts. J. Financ. Econ. 27(1), 143-164.

Travlos, N., Cornett, M., 1993. Going private buyouts and determinants of shareholders' returns. J. Account. Audit. Financ. 8, 1-25.

Venture Enterprise Center, 2009. Venture Business Review in Japan (2008-nen venture business no kaiko to tenbou). http://www.vec.or.jp/2009/01/28/001-24/

Yeh, T., 2007. Bank directorship and bidder's returns in Japanese takeovers. Jpn. J. Adm. Sci. 20(2), 169-184.

Yeh, T., Hoshino, Y., 2002. Productivity and operating performance of Japanese merging firms: Keiretsu-related and independent mergers. Jpn. World Econ. 14(3), 347-366.

Table 1: The list of definitions for the variables in this study.

$$Takeover\ Premium^{a} = \frac{Purchase\ Price}{Stock\ Price}$$

$$Debt\ Ratio = \frac{Debt}{Asset}$$

$$ROE = \frac{Operating\ Income}{Equity}$$

$$ROA = \frac{Operating\ Income}{Asset}$$

$$Operating\ Profit\ Margin = \frac{Operating\ Income}{Sales}$$

$$EBIT\ Margin = \frac{Earnings\ before\ Interests\ and\ Taxes}{Sales}$$

$$Net\ Profit\ \ Margin = \frac{Net\ Profit}{Sales}$$

$$Long\text{-}term\ Debt\ Ratio = \frac{Long\text{-}term\ Debt}{Asset}$$

$$Quick\ Ratio = \frac{Cash + Marketable\ Securities + Receivables}{Current\ Liability}$$

$$Current\ Ratio = \frac{Current\ Asset}{Current\ Liability}$$

$$Sales\ Growth\ Ratio = \frac{Current\ Year's\ Sales}{Previous\ Year's\ Sales} - 1$$

$$Fixed\ Asset\ Turnover = \frac{Sales}{Fixed\ Asset}$$

$$Capital\ Investment\ Ratio = \frac{Capital\ Investment\ Expenditure}{Sales}$$

$$R\&D\ Ratio = \frac{Research\ \&\ Development\ Expenditure}{Sales}$$

$$Wages\ Ratio = \frac{Employee Wages}{Sales}$$

$$Employee\ Growth\ Ratio = \frac{Current\ Year's\ Employee\ Number}{Previous\ Year's\ Employee\ Number} - 1$$

[a] Purchase price is the one indicated in the initial press report, adjusted for the number of target firm's shares to be acquired. Stock price is the target firm's stock price as of 30 days before the initial press report day.

Table 2: Descriptive statistics of all the sample buyouts announced in the press report. Sample includes all buyouts reported during 2000 to 2007 in Japan Economic Newspaper (Nihon Keizai Shimbun) and its affiliated papers. A case is selected if the post-buyout shareholding of the target firm by the acquiring funds exceeds 50%. Also, sample target firms are confined to publicly-listed non-financial companies at the point of the announcement. Corporate and financial information of the target firms is gathered from Nikkei's financial database NEEDS, and stock price data from Toyo Keizai's stock price CD-ROM. The industry distribution in Panel A follows the classification adopted by Tokyo Stock Exchange. Financial information reported in Panel B is calculated as of the year-end prior to the buyout report.

Panel A: Industry Distribution	N
Retailing	17
Electronics	9
Communications	8
Real Estate	6
Machinery	5
Food	5
Service	4
Construction	4
Transportation Vehicle	3
Textile	3
Metal	3
Others	7
Total	74

Panel B: Pre-announcement characteristics of target firms	N	Mean	Median
Asset (million yen)	68	53,785	19,459
Debt Ratio (%)	68	61.49	58.35
Current Ratio	68	2.05	1.27
Operating Profit Margin (%)	68	−3.73	2.25
Net Profit Margin (%)	68	−13.33	0.01
Managerial Shareholding (%)	65	8.53	1.25

Panel C: Characteristics of buyouts	N	Mean	Median
Buyouts not following through after announcement	12	N.A	N.A.
Buyouts following through after announcement	62	N.A	N.A.
Premiums for all buyouts following through (%)	57	−1.49	7.00
Premiums for buyouts involving TOB (%)	28	12.57	25.00
Premiums for buyouts not involving TOB (%)	29	−15.07	−18.00
Amount of Payments (million yen)	60	19,324	4,304
Non-Exited Buyouts	32	N.A	N.A.
Length of investment as of May 2011 (months)	29	56.9	50.0
Buyouts that the fund had exited	30	N.A	N.A.
Length of investment (months)	30	32.8	27.5
Exit by selling the stakes to other companies	17	N.A	N.A.
Exit by selling the stakes in the stock market	6	N.A	N.A.
Exit by selling the stakes to other funds	3	N.A	N.A.
Exit by selling the stakes back to the acquired firms	3	N.A	N.A.
Exit by selling the stakes to the acquired firm’s founders	1	N.A	N.A.

Table 3: The abnormal returns around the first press report date of buyouts by the funds.
Abnormal returns are calculated as the difference between the actual returns and "normal" returns (the returns which firms would have gained if there were no announcement of takeovers). For each sample firm *i*, the market model regression $R_i = \alpha + \beta \cdot RM + e_i$ is estimated, where R_i is firm *i*'s daily stock return and *RM* the daily TOPIX-based market return, for the period from 230 to 31 days prior to the first press report date of the anti-takeover measures. The *first* press report date, *t=0*, hereafter will be referred to as the "announcement date". Using $\hat{\alpha}$ and $\hat{\beta}$, the "normal" return for each firm is calculated as $\hat{\alpha} + \hat{\beta} \cdot RM$ for the window period from 2 days before through to 2 days after the announcement date (*t=−2~2*). Each firm *i*'s abnormal return (AR) is then calculated as $AR_{i,t} = R_{i,t} - (\hat{\alpha} + \hat{\beta} \cdot RM_t)$ for the interval *t=−2~2*. The cumulative abnormal return (CAR) for firm *i* from *t=l~k* is calculated as $CAR_i = \sum_{t=l}^{k} AR_{i,t}$.

	CAR for 62 buyouts following through					**CAR for all 74 announced buyouts**				
Date	N	Mean	P value[a]	Median	P value[b]	N	Mean	P value[a]	Median	P value[b]
−7	61	0.66%	0.202	−0.24%	0.249	72	0.58%	0.297	−0.24%	0.192
−6	61	−0.76%	0.142	−0.88%	0.522	72	−0.85%	0.124	−0.89%	0.192
−5	61	0.34%	0.517	−0.62%	0.159	72	0.45%	0.412	−0.44%	0.406
−4	61	1.53%	0.003	0.38%	0.159	72	1.40%	0.011	0.24%	0.157
−3	61	0.46%	0.378	0.32%	0.522	72	0.49%	0.375	0.31%	0.480
−2	61	0.79%	0.129	0.21%	0.522	72	1.10%	0.046	0.51%	0.239
−1	61	2.35%	0.000	0.98%	0.015	72	2.39%	0.000	0.85%	0.034
0	61	8.89%	0.000	7.90%	0.001	72	9.04%	0.000	8.57%	0.000
+1	61	0.14%	0.780	−0.13%	0.522	72	0.36%	0.514	−0.07%	0.814
+2	61	−1.11%	0.033	−0.77%	0.015	72	−1.12%	0.043	−0.71%	0.018
+3	61	0.36%	0.484	0.34%	0.701	72	0.17%	0.754	−0.32%	0.637
(−1 ~ +1)	61	11.39%	0.000	10.08%	0.000	72	11.80%	0.000	11.14%	0.000
(−2 ~ 0)	61	12.03%	0.000	8.74%	0.000	72	12.54%	0.000	9.04%	0.000

[a] To test whether the sample firms' mean CAR(t=l~k) is equal to zero, the test statistic, following Campbell et al. (1997), is calculated as $\frac{Mean\ CAR(t = l\sim k)}{\sqrt{\frac{T}{N^2}\sum_{i=1}^{N} V(AR_i)}}$, where $V(AR_i)$ is the estimated variance of the residuals, $R_{i,t} - (\hat{\alpha} + \hat{\beta} \cdot RM_t)$, for firm *i* over the estimation period t=−230~−31, T is the length of the window period (T=l−k+1), and N is the number of sample firms. This test statistic for mean CAR follows a standardized normal distribution.

[b] Sign test is conducted for the null hypothesis that the expected proportion of positive abnormal returns is 1/2. The test statistic, also following Campbell et al. (1997), is calculated as $\left(\frac{N^+}{N} - 0.5\right)\frac{\sqrt{N}}{0.5}$, where N^+ is the number of cases where the abnormal return is positive. This test statistic asymptotically follows a standardized normal distribution.

Table 4: Stratification of all 62 completed buyouts by the acquiring means. The sample buyouts are divided into two groups, one involving TOB and the other not. Abnormal returns and takeover premiums for the two groups are presented separately. T-test and Mann-Whitney test are employed to test the null hypothesis that there is no difference between the two groups.

	CAR (−2~0)			**CAR (−1~1)**			**Premiums**		
	N	Mean (%)	Median (%)	N	Mean (%)	Median (%)	N	Mean (%)	Median (%)
All	61	12.03	8.74	61	11.39	10.08	57	−1.49	7.93
(1)Buyouts involving TOB	28	15.80	13.09	28	16.10	14.97	28	12.57	25.00
(2)Buyouts not involving TOB	33	8.83	5.34	33	7.39	5.12	29	−15.07	−18.00
Difference of (2) versus (1)		t-test	Mann-Whitney test		t-test	Mann-Whitney test		t-test	Mann-Whitney Test
P value		0.116	0.016		0.113	0.052		0.020	0.008

Table 5: Ordinary least squares regressions of abnormal returns on the acquired firm's debt ratio variables. In all regressions, the dependent variable is the three-day abnormal returns, denoted by CAR(−1~1). The variable PREMIUM is the reported price premium. Debt ratio is calculated for the acquired firms as of the year-end before the buyout report. The dummy variable (for loss making firm) assign a value of one to those acquired firms with a net loss as of the year-end before the buyout report.

	Dependent Variable		**Dependent Variable**		**Dependent Variable**	
	CAR(−1~1)		***CAR(−1~1)***		***CAR(−1~1)***	
N	57		54		54	
Adjusted R^2	0.15		0.14		0.20	
F-statistic	11.11		5.19		5.42	
P value of F-statistic	0.002		0.009		0.003	
Explanatory Variables	Coefficient Estimate	P value	Coefficient Estimate	P value	Coefficient Estimate	P value
Constant	10.80	0.000	13.93	0.020	8.72	0.154
Premium	0.19	0.002	0.19	0.003	0.17	0.005
Debt ratio (pre-buyout)			−0.05	0.559	0.16	0.206
Debt ratio×Dummy for loss making firm (pre-buyout)					−0.21	0.029

Table 6: The change in the original performance ratios for the target firms as of the pre-buyout year as well as the exit/latest year. For the 12 buyouts not following through, the target firm's performance measures are computed as of March 2010 (when the latest financial information is available). For the acquired firms which the acquirers had exited, the performance measures are computed as of the end of the exit-year, while for those non-exit acquired firms, the performance measures are computed as of March 2010 (when the latest financial information is available). T-test and Wilcoxon test are employed to test the null hypothesis that the difference in the firm performance between pre-buyout and the exit/latest year is zero.

	12 Buyouts not following through									**62 Buyouts following through**								
	(1)1-year before			(2)Latest year			Difference (2)–(1)			(1)1-year before			(2)Exit/Latest year			Difference (2)–(1)		
	N	Mean	Median	N	Mean	Median	N	t-test P value	Wilcoxon P value	N	Mean	Median	N	Mean	Median	N	t-test P value	Wilcoxon P value
ROE (%)	10	−45.4	7.2	7	−96.3	−16.9	7	0.224	**0.043**	49	4.1	8.3	45	−5.4	9.5	40	0.155	0.572
ROA (%)	10	−5.7	2.5	9	−19.6	−5.9	9	**0.075**	**0.011**	56	0.7	2.7	48	−2.6	3.2	47	0.287	0.791
Opt. profit/Sales (%)	10	−17.5	2.1	9	−56.3	−6.8	9	0.239	**0.021**	58	−1.4	2.4	50	−9.7	2.1	49	0.206	0.939
EBIT/Sales (%)	10	−18.8	2.2	9	−59.6	−6.7	9	0.258	**0.028**	58	−1.1	2.5	50	−11.4	2.1	49	0.157	0.792
Net profit/Sales (%)	10	−27.2	−1.7	9	−98.0	−24.9	9	0.131	0.015	58	−10.9	0.0	50	−16.8	0.8	49	0.401	0.948
Long-term debt/Equity	10	2.0	0.3	6	0.4	0.3	6	0.465	0.588	52	0.7	0.1	47	1.0	0.1	43	0.565	0.952
Current ratio (%)	10	159.2	147.8	9	143.7	130.5	9	0.559	0.515	58	212.9	119.3	50	182.8	136.8	49	0.329	0.680
Quick Ratio (%)	10	129.9	106.0	9	208.1	66.2	9	0.468	0.594	58	160.2	73.7	50	142.2	95.9	49	0.448	0.905
Sales growth (%)	10	27.2	−1.1	9	−31.0	−28.0	9	0.132	**0.011**	56	0.6	−3.0	48	−12.5	−7.4	47	**0.053**	**0.054**
Fixed asset turnover	10	3.7	3.4	9	2.7	1.5	9	**0.072**	**0.075**	56	4.8	1.7	48	4.2	2.1	47	0.727	0.315
Capital investment/Sales (%)	9	5.0	3.3	6	1.8	1.4	5	**0.012**	**0.043**	52	5.0	2.4	44	5.5	2.1	39	0.138	0.234
R&D/Sales (%)	8	4.8	4.8	5	5.2	6.1	5	0.385	0.465	32	3.4	2.2	24	2.7	1.9	21	0.359	0.396
Wages/Sales (%)	7	9.6	6.6	2	25.0	25.0	2	**0.073**	0.180	42	14.5	12.2	27	14.3	8.4	22	0.165	0.277
Employee Growth (%)	10	97.4	1.6	8	−8.0	−0.3	8	0.346	0.499	57	5.0	−0.3	47	14.5	0.0	46	0.488	0.702

Table 7: The change in the industry-adjusted performance ratios for the target firms as of the pre-buyout year as well as the exit/latest year. The industry-adjusted value is calculated as the firm's original performance measure minus the corresponding industry's average value, using the industrial classification of Tokyo Stock Exchange. For the 12 buyouts not following through, the target firm's performance measures are computed as of March 2010 (when the latest financial information is available). For the acquired firms which the acquirers had exited, the performance measures are computed as of the end of the exit-year, while for those non-exit acquired firms, the performance measures are computed as of March 2010 (when the latest financial information is available). T-test and Wilcoxon test are employed to test the null hypothesis that the difference in the firm performance between pre-buyout and the exit/latest year is zero.

	12 Buyouts not following through									**62 Buyouts following through**								
	(1)1-year before			(2) Latest year			Difference (2)–(1)			(1)1-year before			(2) Exit/Latest year			Difference (2)–(1)		
	N	Mean	Median	N	Mean	Median	N	t-test P value	Wilcoxon P value	N	Mean	Median	N	Mean	Median	N	t-test P value	Wilcoxon P value
ROE (%)	10	−60.2	−5.0	7	−106.3	−26.3	7	0.249	**0.091**	49	−9.2	−5.1	45	−18.8	−0.4	40	0.155	0.717
ROA (%)	10	−11.2	−3.5	9	−23.8	−10.6	9	0.106	**0.038**	56	−3.8	−2.2	48	−8.1	−0.3	47	0.182	0.817
Opt. profit/Sales (%)	10	−23.5	−3.8	9	−61.7	−9.5	9	0.249	**0.086**	58	−6.9	−3.0	50	−17.4	−0.9	49	0.137	0.928
EBIT/Sales (%)	10	−25.2	−4.5	9	−65.2	−9.0	9	0.270	**0.066**	58	−6.9	−2.7	50	−19.2	−0.9	49	0.108	0.975
Net profit/Sales (%)	10	−30.1	−4.2	9	−100.2	−25.2	9	0.135	**0.028**	58	−12.9	−1.2	50	−21.1	0.0	49	0.266	0.832
Long-term debt/Equity	10	1.5	−0.1	6	0.0	−0.2	6	0.684	0.752	52	0.2	−0.2	47	0.5	−0.2	43	0.501	0.717
Current ratio (%)	10	28.9	−2.0	9	14.2	−20.3	9	0.535	0.594	58	93.4	5.8	50	51.7	10.4	49	0.206	0.672
Quick Ratio (%)	10	39.6	6.0	9	118.5	−34.2	9	0.470	0.678	58	84.1	5.3	50	61.4	12.7	49	0.363	0.446
Sales growth (%)	10	23.1	−1.3	9	−24.4	−16.7	9	0.231	0.260	56	−2.8	−5.8	48	−8.4	−8.1	47	0.380	0.370
Fixed asset turnover	10	1.5	1.0	9	0.6	0.1	9	**0.093**	0.110	56	3.2	0.2	48	2.6	0.5	47	0.714	0.261
Capital investment/Sales (%)	9	−1.6	−0.2	6	−5.6	−1.9	5	**0.006**	**0.043**	52	−0.7	−1.0	44	0.2	−2.1	39	0.220	0.608
R&D/Sales (%)	8	1.9	1.4	5	2.4	2.6	5	0.328	0.345	32	1.1	−0.1	24	0.3	0.0	21	0.795	0.546
Wages/Sales (%)	7	6.9	2.7	2	23.9	23.9	2	**0.074**	0.180	42	8.4	6.5	26	9.8	6.0	22	0.276	0.876
Employee Growth (%)	10	95.4	3.3	8	−10.9	−4.3	8	0.341	0.401	57	−1.0	−2.6	47	14.8	−2.6	46	0.511	0.666

Table 8: The change in the industry-adjusted performance ratios for the acquired firms where buyouts followed through. Sample firms are divided into two groups: those where the acquirers had exited and those otherwise. The industry-adjusted value is calculated as the firm's original performance measure minus the corresponding industry's average value, using the industrial classification of Tokyo Stock Exchange. For the acquired firms which the acquirers had exited, the performance measures are computed as of the end of the exit-year, while for those non-exit acquired firms, the performance measures are computed as of March 2010 (when the latest financial information is available). T-test and Wilcoxon test are employed to test the null hypothesis that the difference in the firm performance between pre-buyout and the exit/latest year is zero.

	30 Exited Buyouts									**32 Non−Exited Buyouts**								
	(1)1-year before			(2)Exit year			Difference (2)–(1)			(1)1-year before			(2) Latest year			Difference (2)–(1)		
	N	Mean	Median	N	Mean	Median	N	t-test P value	Wilcoxon P value	N	Mean	Median	N	Mean	Median	N	t-test P value	Wilcoxon P value
ROE (%)	23	-9.6	-3.3	22	5.0	5.1	18	0.152	0.102	23	−5.3	−6.5	19	−25.7	−3.3	18	0.116	0.163
ROA (%)	27	-3.6	-0.7	23	0.9	3.8	22	**0.012**	**0.011**	24	−1.1	−2.2	19	−10.1	−2.1	19	**0.040**	**0.035**
Opt. profit/Sales (%)	29	-5.3	-2.1	25	-1.2	1.0	25	**0.090**	**0.076**	24	−1.8	−3.9	20	−14.9	−4.2	19	0.106	0.122
EBIT/Sales (%)	29	-5.0	-1.9	25	-1.1	1.0	25	0.143	0.189	24	−1.4	−4.5	20	−15.6	−4.5	19	0.103	0.157
Net profit/Sales (%)	29	-7.0	-0.7	25	-6.7	1.0	25	0.802	0.732	24	−9.8	−2.4	20	−15.2	−4.1	19	0.203	0.145
Long-term debt/Equity	26	0.4	-0.2	24	0.0	-0.1	22	0.227	0.821	23	0.1	−0.3	20	1.4	−0.3	18	0.360	0.554
Current ratio (%)	29	131.8	-6.4	25	33.0	8.3	25	0.138	0.230	24	28.8	−0.1	20	45.1	−8.0	19	0.318	0.446
Quick Ratio (%)	29	114.1	3.8	25	36.0	4.9	25	0.137	0.304	24	32.7	0.8	20	29.9	7.5	19	0.704	0.948
Sales growth (%)	27	-10.0	-9.5	23	-7.0	-4.3	22	0.446	0.715	24	7.5	0.5	19	−4.4	−7.8	19	0.212	0.306
Fixed asset turnover	27	0.8	0.0	23	1.1	0.4	22	0.237	**0.068**	24	5.7	0.4	19	3.7	0.4	19	0.549	0.433
Capital investment/Sales (%)	28	0.8	-1.5	24	-2.0	-2.2	23	0.432	0.649	20	−3.4	−2.2	17	−0.8	−2.6	14	0.646	0.861
R&D/Sales (%)	16	1.3	-0.2	14	0.2	-0.1	12	0.345	0.790	14	0.7	−0.2	9	0.3	−0.1	8	0.933	0.866
Wages/Sales (%)	24	6.6	3.3	15	5.2	3.6	15	0.415	0.975	17	10.7	8.7	10	9.7	4.8	8	0.520	0.779
Employee Growth (%)	28	-5.1	-6.1	25	-6.6	-2.4	24	0.801	0.951	24	8.7	1.2	17	−9.9	−8.1	17	**0.075**	0.109

Table 9: Ordinary least squares regressions of the acquired firm's industry-adjusted performance ratios on the announcement-associated abnormal returns. For regressions containing all sample firms where the buyouts followed through, the dependent variable is the change in the industry-adjusted profitability measure (ROA and operating profit margin) between the exit/latest year and the pre-buyout year. The industry-adjusted value is calculated as the firm's original performance measure minus the corresponding industry's average value, using the industrial classification of Tokyo Stock Exchange. For the acquired firms which the acquirers had exited, the performance measures are computed as of the end of the exit-year, while for those non-exit acquired firms, the performance measures are computed as of March 2010 (when the latest financial information is available). Dummy variable (for exited buyouts) assigns a value of one to those acquired firms which the acquirers had exited. For regressions containing sample firms where the buyouts followed through and the acquirer had exited, the dependent variable is the change in the industry-adjusted profitability measure (ROA and operating profit margin) between the exit year and the pre-buyout year. The explanatory variable CAR(−2~0) is the cumulated abnormal returns from two days before (date= −2) to the initial press report day (date=0).

	All sample firms where the buyouts followed through				*Sample firms where the buyouts followed through and the acquirer had exited*			
	Dependent Variable		Dependent Variable		Dependent Variable		Dependent Variable	
	Change in ROA		***Change in Opt. Profit Ratio***		***Change in ROA***		***Change in Opt. Profit Ratio***	
N	46		49		22		25	
Adjusted R^2	0.17		0.08		0.07		0.18	
F-statistic	10.43		5.46		2.46		6.30	
P value of F-statistic	0.002		0.024		0.132		0.02	
	Coefficient Estimate	P value	Coefficient Estimate	P value	Coefficient Estimate	P value	Coefficient Estimate	P value
Constant	−11.32	0.003	−25.00	0.008	3.89	0.106	0.84	0.766
Dummy(for exited buyouts)	17.01	0.002	29.56	0.024				
CAR(−2~0)					0.17	0.132	0.33	0.020

Table 10: The change in the industry-adjusted performance ratios for the exit-group firms after the exit. The industry-adjusted value is calculated as the firm's original performance measure minus the corresponding industry's average value, using the industrial classification of Tokyo Stock Exchange. The performance measure for the latest year is calculated as of March 2010 (when the latest financial information is available). T-test and Wilcoxon test are employed to test the null hypothesis that the difference in the firm performance between pre-buyout and the latest year is zero.

	30 Exited Buyouts								
	(1) 1-year before			(2) the latest year			Difference (2)–(1)		
	N	Mean	Median	N	Mean	Median	N	t-test P value	Wilcoxon P value
ROE (%)	23	-9.6	-3.3	23	-9.0	6.0	19	0.683	0.231
ROA (%)	27	-3.6	-0.7	24	-0.6	3.4	23	0.349	**0.010**
Opt. profit/Sales (%)	29	-5.3	-2.1	25	-1.6	1.6	25	0.242	0.037
EBIT/Sales (%)	29	-5.0	-1.9	25	-2.5	1.2	25	0.489	**0.086**
Net profit/Sales (%)	29	-7.0	-0.7	25	-6.7	1.1	25	0.860	0.440
Long-term debt/Equity	26	0.4	-0.2	24	-0.1	-0.2	22	0.243	0.986
Current ratio (%)	29	131.8	-6.4	25	44.7	14.2	25	0.194	0.549
Quick Ratio (%)	29	114.1	3.8	25	40.9	18.7	25	0.175	0.607
Sales growth (%)	27	-10.0	-9.5	24	-6.7	-7.0	23	0.388	0.638
Fixed asset turnover	27	0.8	0.0	24	1.3	0.6	23	0.130	**0.019**
Capital investment/Sales (%)	28	0.8	-1.5	24	0.4	-1.4	23	0.364	0.858
R&D/Sales (%)	16	1.3	-0.2	14	0.2	-0.2	12	0.820	0.594
Wages/Sales (%)	24	6.6	3.3	14	6.9	4.9	13	0.379	0.875
Employee Growth (%)	28	-5.1	-6.1	25	37.8	0.7	24	0.337	0.584