

INTERNAL CAPITAL MARKETS AND BANK RELATIONSHIP
-EVIDENCE FROM JAPANESE CORPORATE SPIN-OFFS

INTERNAL CAPITAL MARETS, INVESTMENT, AND BANK RELATIONSHIP
-EVIDENCE FROM JAPANESE CORPORATE SPIN-OFFS

by

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ABSTRACT

This dissertation consists of two studies related to internal capital markets and bank relationship using Japanese corporate spin-offs. The first study analyzes the relation between internal capital markets and banks by examining 137 Japanese corporate spin-offs created between the years 2001 and 2003 (since the establishment of new spin-offs law in 2001). In a univariate analysis, we find significant positive average cumulative abnormal returns around the announcements, market-adjusted excess returns after the spin-offs, an increase of the Herfindahl index, and a reduction in the diversification discount after the spin-offs. In a cross-sectional analysis, we find that bank-related governance variables such as the *keiretsu*-affiliation indicator, bank loan to total asset ratio, main bank ownership, and indicator variable of the existence of a bank-appointed director on the board indicator variables are significantly positively related to cumulative average abnormal returns around the announcements, market-adjusted excess returns after the spin-offs, an increase in focus of firms in terms of the Herfindahl index, and a reduction in the diversification discount. Therefore, we conclude that there is a significant relationship between internal capital markets and banks in Japan; after the internal capital market reorganization through spin-offs the closer relationship with banks creates shareholder wealth and increases the focus of firms. This paper is now co-authored with Professor Yoon K. Choi.

The second study analyzes the investment policy changes in internal capital markets and the effect of banks' monitoring on the investment changes using Japanese corporate spin-offs, including merger-facilitated spin-offs within conglomerates. We find that investment sensitivity increases significantly after internal restructuring through

spin-offs, consistent with Gertner et al. (2002). Furthermore, our results show that bank-related spin-offs' investments are more sensitive to investment opportunities, Tobin's Q, after being spun off. This suggests that the efficiency of Japanese internal capital markets has increased through spin-offs after the financial deregulation in 2001. We conclude that banks seem to play significant monitoring roles in internal capital markets to increase the investment efficiency after spin-offs. This paper is now co-authored with Professor Yoon K. Choi.

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GENERAL INTRODUCTION

This study examines whether the Japanese spin-offs create values for shareholders and increase the efficiency of internal capital markets. Furthermore, this study investigates the efficiency changes in internal capital markets and the impact of banks' monitoring in internal capital markets using Japanese corporate spin-offs. Unlike other divestitures such as equity carve-outs or asset sales, spin-offs do not generate cash for the parent and the spun-off. Because of the non-cash-generating features, spin-offs provide well-furnished natural experimental setting for internal capital market analysis. In addition, the Japanese spin-offs are purely internal transactions. Therefore, the Japanese spin-offs are well-furnished experimental setting for testing the relationship between internal capital markets and banks. We find that the efficiency of internal capital markets are significantly related to bank relationships. Thus, we conclude that banks seem to play a significant monitoring role in internal capital markets.

Study One **Internal Capital Markets and Bank Relationship** **-Evidence from Japanese Corporate Spin-offs**

Study one focuses on the Japanese corporate spin-offs and investigates the relationship between the efficiency of the internal capital markets and the roles of banks. The Japanese spin-offs dataset provides a unique setting because the banks play a critical role in the Japanese corporate structure and also the Japanese spin-offs are quite different from the U.S. spin-offs. In the Japanese spin-offs, a division becomes a new subsidiary, but still remains under the control of the parent company, and thus its overall governance

structure does not change. These restructurings are a purely internal transaction. This has an important implication for the study of internal capital markets. We can examine the effect of corporate restructuring on the efficiency of internal capital market without changing the ownership and control structure. We elaborate on this issue when we discuss the details of the Japanese spin-offs

Furthermore, this paper hypothesizes that banks can increase the efficiency of the internal capital market as the most informed external capital suppliers and monitors of firms. A vast array of literature in banking discusses the uniqueness of banks and their long-run relationships with their client firms, which characterize the difference between banks and other financial entities. The crucial roles of banks are to resolve the information asymmetries and agency problems between investors and firms. Consequently, the role of banks is instrumental in overcoming the inefficiency of internal capital markets. It is well-known that the Japanese corporate structure is governed by bank-centered relationship.

Study Two
Internal Capital Markets, Investment, and Bank Relationship
- Evidence from Japanese Corporate Spin-offs

Investment policy of internal capital markets affects the efficiency of internal capital markets. Internal capital markets are inefficient if cross-subsidization across divisions is not systematic: Capital of a firm may be misallocated from divisions with good investment opportunities to divisions with bad investment opportunities. Spin-offs literature analyzes how firms increase efficiency of investment policy in internal capital

markets through spin-offs.¹ Spin-offs allow us to examine the investment policy changes in internal capital markets because firms' capital is reallocated through spin-offs.

This study focuses on the Japanese corporate spin-offs to investigate the relationship between internal capital markets' efficiency of investment changes and banks. The Japanese spin-offs dataset provides a unique setting since the banks play a critical role in the Japanese corporate structure and also the Japanese spin-offs are purely internal transaction.² Diamond (1984, 1991), among others, argues that banks monitor their client firms: We suggest that bank play such a role in internal capital market to ensure the efficient investment decisions.

Our empirical analysis is similar to Gertner et al.'s (2002) Tobin's Q investment sensitivity analysis using panel data set of Japanese spin-offs. Based on the parent firms' bank related governance structure, we divide our sample into dichotomous settings, either bank-related or non-bank-related; *keiretsu*-affiliation, existence of bank-appointed directors, and bank or main bank ownership dummy variables (below- or above- sample median). We find consistent results with Gertner et al. (2002) that investment sensitivity increases after internal restructuring through spin-offs. Further more, our results show that bank-related spin-offs' investments are more sensitive to investment opportunities, Tobin's Q. This suggests that banks increase the investment efficiency of internal capital market after spin-offs as the most informed monitors. This result is consistent with the findings of Shin and Park (1999) that there is positive relationship between investment

¹ Gertner et al. (2002) show increase in investment sensitivity after spin-offs using spun-off divisions data, Dittmar and Shivdasani (2003) examine effect of divestitures in investment of parent firms, and Ahn and Denis (2004) study the changes of investment policy for the combined firm of parent and spun-offs.

² See Choi and Han (2005) for detail.

and investment opportunities where independent firms do not. Also, Khanna and Palepu (2000) show that internal capital market of Indian business group affiliated firms is more efficient compared to non-affiliated firms.

Overall Contribution

Taken together, studies one and two of this dissertation provide several significant contributions. First, and for most, this dissertation contributes to the internal capital markets literature from the angle of the uniqueness of banks and complements the monitoring role of the Japanese main bank literature. Kang, Shivdasani, and Yamada (2000) study Japanese domestic mergers in Japan, and show that the close bank relationship creates shareholder wealth and improves the investment efficiency.³ We provide evidence on the monitoring role of Japanese banks in internal capital markets, and show consistent results with Kang, Shivdasani, and Yamada (2000).

Second, this dissertation provides empirical evidence on the functions of Japanese corporate spin-offs not only create value for shareholders but also bring efficiency in internal capital markets. All these empirical findings are related to recent deregulation of Japanese financial markets. Deregulations through amendments of commercial codes are generally expected to bring efficiency in the market as an outcome of corporate efficiency. This dissertation tests whether a financial deregulation improves the efficiency of financial markets. The results of this dissertation provide empirical evidence to the mixed arguments on efficiency of internal capital markets.

³In the similar vein, Kaplan (1994), Kaplan and Minton (1994), and Kang and Shivdasani (1995, 1997) document the significant monitoring roles of Japanese banks.

Finally, this dissertation also suggests that bank related firms improve their investment efficiency of internal capital markets through spin-offs. Remaining of this dissertation will discuss the details of empirical findings.

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STUDY ONE
INTERNAL CAPITAL MARKETS AND BANK RELATIONSHIP
- EVIDENCE FROM JAPANESE CORPORATE SPIN-OFFS

Spin-offs are defined in the literature as a form of corporate divestiture in which a parent company separates one of its subsidiaries into an independent, publicly traded company and the new stocks from this independent company are distributed on a *pro rata* basis to the parent company's shareholders. Unlike other divestitures such as equity carve-outs or asset sales, spin-offs do not generate cash for the parent or the spun-off company. Because of this non-cash-generating feature, spin-offs provide a well-furnished natural experimental setting for internal capital market analysis. Some argue that inefficiently diversified firms are valued at a relative discount when compared with a portfolio of stand alone firms because of inefficient internal capital markets. Others argue that internal capital markets are efficient if headquarters oversees a small and focused set of projects (Stein(1997)).

This study focuses on the Japanese corporate spin-offs and investigates the relationship between the efficiency of the internal capital markets and the roles of banks. The Japanese spin-offs are interesting to examine given that banks play a critical role in Japanese corporate structure and also that Japanese spin-offs are quite different from U.S. spin-offs. In the case of Japanese spin-offs, a division becomes a new subsidiary but still remains under the control of the parent company, and thus its overall governance structure does not change. Any restructuring that takes place is purely an internal transaction. This has an important implication for the study of internal capital markets. That is, the situation of Japanese spin-offs allows us to examine the effect of corporate

restructuring on the efficiency of the internal capital market without changing the ownership and control structure. We later elaborate on this issue when we discuss the details of the Japanese spin-offs.

Furthermore, this paper hypothesizes that banks can increase the efficiency of internal capital markets, which serve as the most informed external capital suppliers and monitors of firms. A vast array of literature in banking discusses the uniqueness of banks and their long-term relationships with their client firms and characterizes the difference between banks and other financial entities.⁴ A crucial role of banks is to resolve information asymmetries and agency problems that develop between investors and firms. Consequently, banks are instrumental in overcoming the inefficiency of internal capital markets. It is well-known that the Japanese corporate structure is governed by bank-centered relationships.

We investigate the 137 Japanese corporate spin-offs created between 2001 and 2003 (since the establishment of the new Japanese corporate spin-offs law in April 2001). On April 1, 2001, the new Spin-offs Law became effective in Japan, and many firms started using the spin-offs in their reorganizations. We find that there are significant positive abnormal returns around the announcement, significant positive market-adjusted returns after the spin-offs, a significant increase in focus of firms in terms of the Herfindahl index, and a significant reduction in the diversification discount. In cross-sectional analyses, announcement abnormal returns, post-spin-offs performance,

⁴ Diamond (1984) and Fama (1985) argue that banks are unique because they have information that is not available to other external capital markets. Diamond (1991) argues that banks' information on client companies allows banks to monitor these firms, while Lummer and McConnell (1989) argue that banks are important and credible transmitters of firm-specific information to the capital market.

Herfindahl index increases, and reduction in the diversification discount are significantly positively related to bank relationship variables such as main bank, *keiretsu*-affiliation, bank ownership, and existence of bank-appointed directors.

Internal capital markets literature reports that after spin-offs are completed, the efficiency of the firm increases significantly. Desai and Jain (1999) find that both announcement period and long-term abnormal returns for the focus-increasing spin-offs are significantly larger than those of non-focus-increasing spin-offs. Gertner, Power, and Scharfstein (2002) show that spin-offs improve the allocation of capital by using the spun-off companies' data. Dittmar and Shivdasani (2003) show that divestiture reduces the diversification discount and increases the efficiency of segment investment. Ahn and Denis (2004) show that there is a significant increase in investment efficiency, while the diversification discount is eliminated after spin-offs.

This study also contributes to the internal capital market literature from the angle of the uniqueness of banks and complements the literature that focuses on the monitoring role of the Japanese main bank. Kang, Shivdasani, and Yamada (2000) study Japanese domestic mergers in Japan and show that the close relationship between banks and firms creates shareholder wealth and improves the investment efficiency.⁵ We provide evidence on the monitoring role of Japanese banks in internal capital markets, and show consistent results with Kang, Shivdasani, and Yamada (2000).

The rest of the paper is structured as follows. In Section 2, we provide the background on the Japanese spin-offs examined. In Section 3, we describe the data and

⁵In the similar vein, Kaplan (1994), Kaplan and Minton (1994), and Kang and Shivdasani (1995, 1997) document the significant monitoring roles of Japanese banks.

descriptive statistics of Japanese corporate spin-offs. In Sections 4 and 5, we analyze and interpret the empirical results. Section 6 summarizes the major tenets of our arguments.

Japanese Corporate Spin-offs

The Japanese economy and its financial markets have been stumbling for the past decade after the collapse of the bubble economy in the late 1980s. Since then, to reinvigorate the economy, the Japanese government has tried a wide range of deregulations through numerous revisions of the commercial codes. In 1997, merger procedures were simplified, and the Revision of the Antimonopoly Law allowed establishment of pure holding companies, which had been banned since 1947. In 1999, in conjunction with the simplified merger procedures and Antimonopoly Law, a stock swap system and stock transfer system were created to facilitate transactions between wholly-owned subsidiaries and their parent companies. The 2000 Amendment of the Commercial Code introduced the procedures for a company split-up so as to make the restructuring through spin-offs or divestitures easier. On April 1, 2001, a new spin-off law came into effect, and, owing to the benefits of this new law, many Japanese firms chose to restructure and became involved in the spin-offs for their corporate restructurings. Spin-offs are end-result of commercial codes revisions of the Japanese capital market in the late 1990s and the early 2000s. Thus, the various revisions of relating to stock repurchases, holding companies, and simplified mergers and spin-offs have not only made the legal framework for spin-offs more in tune with the demands of

Japan's internationalized capital markets, but they have also made executives of Japanese corporations more conscious of corporate value.⁶

Around the time of the Asian financial crisis at the end of the 1990s, Japanese corporations and the Japanese government had started to realize the need for corporate reorganizations, such as spin-offs or other divestitures, to improve the flexibility and efficiency of their corporate structures in the competitive international capital market. The institutional legal framework for Japanese corporate spin-offs began to change in 1997, and many Japanese multi-divisional firms reorganized their internal capital markets by transforming divisions into independent units such as wholly-owned subsidiaries or spun-offs to obtain optimal internal capital market structure. Before the enactment of the new corporate spin-offs law in April 2001, Japanese firms were required to be inspected by the federal court before doing the spin-offs. They also needed to obtain an individual approval from creditors for the transfer of liabilities and assets, which impeded the flexible corporate restructuring. The new commercial code revision in 2001 simplified that procedure. In addition, before the new law was enacted, cash transactions were required; however, the new law allowed easier transactions accompanied by the stock swap and stock transfer systems changes in 1999. Consequently, it became easier for firms to choose their optimal corporate structure by using the new corporate spin-offs laws.

A widely-accepted definition in the literature of a spin-off is a case in which a parent company transfers a part of its assets to a newly created, independent company

⁶ Japan Investor Relations and Investor Support, Inc. Research Newsletter, Issue No.1, December 2001

(usually a former subsidiary of the parent company), which then goes public. The new company's stocks are then distributed to the parent company's shareholders at a pro rata base. There are four different types of the Japanese spin-offs in terms of spun-off's stock distributions. First, the most commonly used method is to transfer the spun-off's stocks to the parent company after the spin-off has taken place, which is technically similar to wholly-owned subsidiary. The second method is identical to the traditional process of spin-offs mentioned above. These two categories of Japanese spin-offs are subdivided into two different types in terms of the purpose of the spin-offs. One type separates divisions in order to facilitate mergers either within the group or between the groups of companies. In this case, the spin-off company announces the spin-offs and mergers at the same time; on the execution date these two transactions are completed simultaneously. The other type of spin-off is creating new companies by separating divisions from the parent company.

Literature Review

Internal Capital Markets

Literature on efficiency of internal capital markets has mixed arguments. Lamont (1997) and Shin, and Stulz (1998) argue for inefficiency of internal capital markets because of inefficient cross-subsidization across the divisions. Thus inefficient internal capital markets literature argues that diversified firms misallocate the capital to poorly performing divisions. Rajan, Scharfstein, and Stein (2000) argue that rent-seeking behavior within the conglomerate worsens the diversified discount. Lins and

Servaes' (1999) documents the international evidence on diversification discount for Germany, Japan, and United Kingdom. They find that the Japanese and UK corporations have significant diversification discount while German corporations do not.

In contrast, Matsusaka and Nanda (2002) and Stein (1997) argue for the efficiency of internal capital markets. Stein (1997) diversified firms reduce the cost of financing and asymmetric information compared to stand alone firms because headquarters has information while other external entities do not.

Internal Capital Markets and Spin-offs

Desai and Jain (1999) find that both the announcement period and long-run abnormal returns for the focus-increasing spin-offs are significantly larger than those for non-focus-increasing spin-offs. Gertner, Power, and Scharfstein (2002) show that spin-offs improve the efficiency of capital allocation through spin-offs; these results are found primarily in the industries where the parent and spin-off firms are unrelated and in spin-offs where announcement returns are higher. Dittmar and Shivdasani (2003) show that divestiture reduces the diversification discount and increases the efficiency of segment investment, suggesting that inefficient investment is partly responsible for the diversification discount and supporting the corporate focus and financing hypothesis. Ahn and Denis (2004) study the changes of investment policy for the combined firm of parent and spun-off companies.

Japanese Banks

There are four major bank-oriented Japanese corporate governance systems in existence: the main bank, bank-centered groups called *keiretsu*, bank ownership of firms and bank-sent managers. The main banks are typically the major lenders to firms and play the role of information controller and monitor of the firm, intervening in financial decisions. Among others, Hoshi et al. (1990) find that firms with a close relation with main banks are less liquidity constrained. Also, main banks organize rescue programs when their client firms become financially distressed, and this insurance role leads them to monitor the firm more closely. Kang and Shivdasani (1995) find that poorly performing firms are more likely associated with higher CEO turnovers when firms have a close relationship with main banks. Kang et al. (2000) show that there is a significant positive relationship between the announcement returns of Japanese mergers and the loan amount from main bank. They suggest that Japanese banks, as debt holders, perform an important monitoring function.

*Keiretsu*⁷ refers to a bank-centered long-term transactional relationship linked by “stable inter-corporate shareholding”⁸ between firms (Morck and Nakamura(1999)). Hoshi et al. (1990) find that the insurance and monitoring roles are more evident with *keiretsu*-affiliated firms. Thus, bank-related Japanese corporate governance enhances the unique equity ownership structure, which involves *cross shareholdings* between

⁷ There are eight horizontal industrial groups in Japan, which are Mitsui, Mitsubishi, Sumitomo, Sanwa, Dai-Ichi Kangyo Bank, Fuyo, Tokai, and Industrial Bank of Japan.

⁸ Morck and Nakamura (1999) define ‘stable shareholders’ as those who almost never sell out and consistently support management.

industrial firms and banks.⁹ Morck et al. (2000) find that there is a non-linear relationship between main bank ownership and firm value, showing that at low levels of ownership by main banks, firm value decreases as ownership increases, and the opposite is shown sometimes at higher levels. Lastly, sometimes, Japanese banks appoint bankers to the board of firms for the purpose of managerial interventions and monitoring. Kaplan and Minton (1995) find that if there is a bank-appointed director in the board, there is more frequent executive turnover when firms perform poorly.

Methodology

Event Study

An event study measures the impact of a specific event on the value of a firm using financial market data. This is typically used with events relating to common stock returns, however, other securities can be used such as bond price returns. The measure of an abnormal stock return is the key ingredient of an event study. It is a very popular and useful technique due to the fact that, given the efficiency of the market, the effect of an event is reflected in security prices almost immediately. Hence, a measure of the event's economic impact can be set using security prices observed over a relatively short time period. The procedure for such a study involves the specification of the event that could include such examples as quarterly earnings reports or corporate mergers. Also the event time frame must be specified which usually includes time prior to and after an event. The

⁹ Morck, Nakamura, and Shivdasani (2000) explain the origins of Japanese bank ownership in detail.

first event study was conducted by Fama, Fisher, Jensen, and Roll (1969); it was an analysis of the effect of stock splits on firm value.

If an event has an impact on security prices, we should observe significant abnormal return on the securities of interest on or around the event date. The measure of the events abnormal stock return is basically equal to the actual return minus normal return over a given time period. There are many ways to measure abnormal returns. The normal return can use market returns or the constant mean return model, which uses a linear relationship between the market return and the security return. Brown and Warner (1985) discuss three ways to measure abnormal stock returns that are used very often.

The first one is to calculate mean-adjusted returns. The abnormal return in this case is measured as the difference between the return on the event date and the average daily return on the asset over some estimation period (usually 250 trading days, or a year). The second method uses the market-adjusted return which is calculated as the difference between the asset and market index returns on day t (event date). The third way is to use the OLS market model: $A_{i,t} = R_{i,t} - \alpha_i - \beta_i R_{m,t}$, where $A_{i,t}$ is the abnormal return on day t , $R_{i,t}$ – the total security return on day t , α_i and β_i are OLS values from the estimation period. These market returns involve market risk associated with its security compared to the market (Beta). Market returns are typically a better measure for normal returns vs. the constant mean return model. Recent studies have shown abnormal returns during earnings releases, corporate spin offs, how a company raises capital, stock splits, and mergers and acquisitions. This study uses market model. The market model parameters

are estimated using continuously compounded returns for the 258-day period, starting 258 days before the spin-offs announcement date and (-1,0) event window is used

Long Term Market-Adjusted Abnormal Returns

We evaluate the post-spin-offs market-adjusted long-term abnormal returns using a method similar to that of Spiess and Graves (1995). The market-adjusted returns for company i in t months after the ex-date are defined as

$$ar_{i,t} = r_{i,t} - r_{mkt,t}$$

where $r_{i,t}$ is return of the company i in month t , and $r_{mkt,t}$ is *Nikkei 225 Stock Average Index* in month t . The average market-adjusted return from the ex-date month to time t is calculated as

$$AR_{i,t} = \frac{1}{n} \sum_{t=1}^n ar_{i,t}$$

Herfindahl Index

The Herfindahl index measures the degree of corporate focus. Desai and Jain (1999) classify a spin-off to be a focus-increasing spin-off if the Herfindahl index increases after the spin-off compared to the year before the spin-off. A sales-based Herfindahl index, H_{jt} , calculates the degree which sales are concentrated in a few of a firm's segment. It is calculated across N_{jt} segments for the j th firms in fiscal year t as the sum squares of each segment's sales as a proportion of total sales:

$$H_{jt} = \sum_{i=1}^{N_{jt}} \left[\left(X_{ij} / \sum_{i=1}^{N_{jt}} X_{ijt} \right) \right]^2$$

Where X_{jt} is the sales attribute to a segment. Changes in focus is calculated difference between $H_{j,1}$ and $H_{j,-1}$.

Diversification Discount

This paper finds the significant diversification discount on the value of spin-offs samples of Japanese firms. This result is consistent with Lins and Servaes' (1999) findings when they examine the international evidence on diversification discount for Germany, Japan, and United Kingdom. They find that the Japanese and UK corporations have a significant diversification discount while German corporations do not. However, the diversification discount can be reduced or eliminated through internal capital market restructuring such as spin-offs (Ahn and Denis, 2004; Gertner et al., 2002; Desai and Jain, 1999). We find that the diversification discounts in the Japanese firms are significantly reduced after the spin-offs. Furthermore, the degree of reduction in diversification discount is positively related to the firms' relationship with the bank. This paper follows Lins and Servaes' (1999) diversification discount measurement, which is similar to that of Berger and Ofek (1995). Berger and Ofek (1995) define diversification discount (Discount) and multiplier estimation of imputed value, $I(V)$, as follows:

$$DISCOUNT = \ln(V/I(V)), \quad (1)$$

$$I(V) = \sum_{i=1}^n SALES_i * (Ind_i(V/SALES)_{mj}) \quad (2)$$

where

$DISCOUNT$ = firm's diversification discount

$I(V)$ = imputed value of the sum of a firm's segment as stand-alone firms,

$SALES_i$ = segment i 's sales,

$Ind_i(V/SALES)_{mf}$ = multiple of total capital to sales for the median single-segment firm in segment i 's industry

V = firm's total capital (market value of common equity plus book value of debt)

n = total number of segments in segment i 's firm.

Equation (1) shows that the firm's diversification discount is the natural logarithm of the ratio of the firm's actual value to its imputed value. Equation (2) indicates that the firm's imputed value is the sum of segment-imputed values, which are obtained by multiplying an industry median multiplier of total capital to sales by the segment's level.

Data and Sample Selection

We collect the sample of Japanese corporate spin-offs announced from January 1, 2001 through December 31, 2003 and completed since the effective date of the new corporate spin-offs law in April 2001. The data source is Merger and Acquisition Research Report (MARR, Tokyo) published by RECOFF CO., which is the largest M&A data service provider in Japan. MARR lists the announcement dates of spin-offs, names of parent and spun-off companies, and major industries of parent and spun-off companies.

In addition, we search for spin-off news in four major Japanese financial papers: *Nihon Keizai Shimbun* (Nikkei Economic Journal), *Nihon Keizai Sangyo Shimbun* (Nikkei Industrial Journal), *Nihon Keizai Ryutuu Shimbun* (Nikkei Distribution Journal), and *Nihon Keizai Kinyuu Shimbun* (Nikkei Finance Journal). Bank-centered industrial groups, *keiretsu*, are identified from *Industrial Groupings in Japan 2001*, published by Dodwell Marketing Consultants.¹⁰ We restrict the sample to the firms listed in the First or the Second section of Tokyo Stock Exchange prior to the spin-off event year.¹¹ We retrieve main bank information, bank ownership data, and consolidated bank loan amount data between 2000 and 2003 from the autumn issue of the *Japan Company Handbook*. Specific bank loan data and end-of-fiscal-year financial information are collected from the *Nikkei Economic Electronic Databank System (NEEDS)*, *Japan Company Handbook*, and *Worldscope*. These financial data are based on consolidated financial statements, which evaluate the performance of the business group as a whole, including spun-offs and related units. Daily stock prices, as reflected in the daily Nikkei Average Index is retrieved from *NEEDS*.

Initial spin-off data consisted of observations made between 2001 and 2003; we exclude merger-facilitated spin-offs.¹² The sample also excludes 10 companies, including 6 real estate, 2 financial, and 2 utility companies. Additionally, 11 of the remaining samples are eliminated because they are related to firms spinning off more

¹⁰ Hoshi et al. (1990 & 1991) use this publication for identifying the *Keiretsu*-affiliated firms.

¹¹ Japan Company Handbook contains the First and Second section of the Tokyo Stock Exchange's listed firms' firm specific information and financial data including name of the main bank, bank ownership, and bank loan amount data.

¹² For M&A facilitated spin-offs, we obtain the spin-offs completion dates, M&A completion dates, and new company's name.

than one division. Thus, the final sample includes 137 spin-off events. Table 1 describes the annual frequency of Japanese corporate spin-offs by *keiretsu*-affiliation of the parent firms. The non-*keiretsu*-affiliated firms are more frequently involved in corporate spin-offs during the sample period. Also, the annual frequency of spin-offs increased significantly from 36 in the first year (2001) to 73 in 2002 and 52 in 2003. Using the 40 MARR industry classifications, Table 2 shows the frequency of focus-increasing and non-focus-increasing spin-offs of parent companies by *keiretsu*-affiliation. If the parent company and its subsidiaries are in different industries, then the spin-off is considered to be focus-increasing. It seems spin-offs are wide spread across different types of spin-offs without any noticeable patterns. Table 3 shows the summary statistics of firm characteristics and bank governance variables. Banks as a whole own about 20% of equity, while main banks own approximately 6% on average. Almost 40% of the sample firms are affiliated with *keiretsu*. Finally, about 62% of the sample firms have bank-appointed directors.

Empirical Results

Announcement Abnormal Returns

Table 4 shows the two-day average cumulative abnormal returns for parent firms around the spin-offs announcement. The cumulative abnormal returns of spin-offs announcements are calculated based on the market model. The market model parameters are estimated from 258 days to 11 days before the spin-offs announcement date, using the *Nikkei 225* Stock Average Index as a market proxy. The cumulative abnormal returns are

calculated around the announcement date window of (-1, 0). On average, the whole sample shows 1.71% of positive abnormal returns at the 5% significance level. *Keiretsu*-affiliated spin-offs show 4.68% positive abnormal returns at the 1% significance level. However, non-*keiretsu*-affiliated spin-offs do not show significant abnormal returns. Both focus-increasing and non-focus-increasing spin-offs show 2.61% and 0.94% abnormal returns at the 1% and 10% significance level. This is consistent with the focus-increasing hypothesis that focus-increasing spin-offs have significant abnormal returns, higher than those of non-focus-increasing spin-offs. Even the non-focus-increasing spin-offs show significant positive returns, picked by the *keiretsu*-affiliated firms. Therefore, the bank-centered industrial groups seem to play significant monitoring role in the pre-spin-off stages in the Japanese corporate spin-off market. The focus-increasing spin-offs by *keiretsu*-affiliated firms show the highest abnormal returns, 8.01%, which is consistent with the role of banks as efficient monitors.

Table 5 shows the multivariate regression results, which are generated using two-day cumulative abnormal returns around the spin-offs announcement as the dependent variable and firm-specific control variables and bank-relation variables as independent variables. The regressions control for firm size, corporate focus, and profitability of the firms prior to the spin-offs announcements. We measure firm size as the logarithm of the total asset, and we measure profitability as return on assets. The focus-increasing dummy variable is one if the industry of the parent company is different from that of the spun-off firms. In model (1) of Table 5, we regress CARs against a *keiretsu*-affiliation dummy variable and the above mentioned control variables. There is a significant 6.4% of

difference in abnormal returns around announcement between *keiretsu*-affiliated and non-*keiretsu*-affiliated firms at the 5% level. In model (2) of Table 5, bank loan ration calculated as the bank loan normalized by the book value of total assets does not show any significant relationship to the abnormal returns, but the interaction variable with the bank-appointed director indicator variable is positively significant at the 10%. This model indicates that the amount of bank debt may have monitoring impact through the bank-appointed director. In model (3) of Table 5, we find that existence of a bank-appointed director on the board results in the significantly higher CARs. This indicates that bank-appointed directors seem to play significant monitoring roles in internal capital markets. Model (4) of Table 5 indicates that the greatest impact on shareholder's wealth is when firms have a *keiretsu*-affiliation and a bank-appointed director on the board. This is not surprising given the previous results in model (2) and (3). Unreported analysis shows that bank ownership is not significantly related to the announcement abnormal returns, but as it is shown in model (5) of Table 5, main bank ownership has a significant positive relationship with the abnormal return at the 10% significance level. Therefore, the results suggest that simultaneous bank ownerships of both debt and equity claims seem to have significant effect on spin-offs abnormal returns. In contrast with findings of Desai and Jain (1999), the focus-increasing dummy variable does not show any significant relationship with shareholder wealth change. However, when the focus-increasing spin-offs which are associated with the existence of a bank-appointed director or a *keiretsu*-affiliation, there is a significant positive relationship with announcement abnormal returns, shown in models (7) and (8) of Table 5. In sum, the Japanese market

positively responds to spin-offs and reacts even more strongly when firms are linked with strong bank governance.

Post-Spin-Offs Market-Adjusted Long-Term Abnormal Returns

Table 6 shows the univariate analysis of average post-spin-offs market-adjusted abnormal returns and its significance of t-test. After the spin-offs for 12 months, 24 months, and 36 months, there are significant positive abnormal returns of 1.35%, 1.12%, and 0.94% respectively at the significance level of 1%. The results indicate that the internal reorganization after spin-offs create value for shareholders in the long run. We investigate whether the established relation between the shareholder wealth change during the announcements and bank-related variables still exist after spin-offs.

Table 7 shows the multivariate regression results, which are based on 12-months post-spin-offs market-adjusted abnormal returns as the dependent variable and firm-specific control variables and bank-relation variables as independent variables. In model (1) of Table 7, *keiretsu*-affiliation does not show any significant difference in post-spin-offs market-adjusted abnormal returns, but the interaction variable with Tobin's Q below sample median indicator variable (Q-dummy) shows positive significant difference at the 10% level. In model (2) of Table 3, the result indicates that both bank loan amount and the interaction variable between bank loan amount and Q-dummy variable are significantly positively related to post-spin-offs market-adjusted abnormal returns at 10% and 1% each. Models (3) and (4) report similar result as model (1), that is interaction variables between main bank loan amount and Q-dummy variable and the interaction

variable between bank-appointed director and Q-dummy variable are significantly positively related to post-spin-offs market-adjusted abnormal returns at 10% and 1%. Overall, there are significant positive relationships between the bank-related governance variables and the abnormal returns after spin-offs for the Q-dummy variable. This is consistent with Kang, Shivdasani, and Yamada (2000), who suggest that firms with poor investment opportunities (measured by Q) have greater benefit from closer ties with banks, who serve as informed creditors.

Herfindahl Index as a Measure of Corporate Focus

As shown in Panel A of Table 8, the difference between the Herfindahl index one year after and one year before spin-offs is shown to be significantly positive at the 5% significance level. Panel B of Table 8 shows that the change in the Herfindahl index is significantly positively related to bank relationship variables. Model (1) in Panel B of Table 8 indicates that *keiretsu*-affiliation dummy variable has a significant positive relationship with the increase in the Herfindahl index at the 5% significance level. Model (2) of the table shows that the interaction term between *keiretsu*-affiliation and bank loan has a significant positive relationship with the Herfindahl index change at the 1% significance level. It can be interpreted that the firms with the stronger relationship with banks have the greater increase in the Herfindahl index. It is noteworthy that the Herfindahl index change is not associated with the focus-increasing dummy variable based on industries of parents and spin-offs, suggesting that these two alternative proxies for corporate focus actually do not pick up the same aspect of corporate focus.

Diversification Discount and Japanese Corporate Spin-offs

We find that the diversification discounts in the Japanese firms are significantly reduced after the spin-offs. Furthermore, the degree of reduction in diversification discount is positively related to the firms' relationship with the bank. Panel A of Table 9 shows that the difference in the diversification discount between one year after and one year before spin-offs is significantly positive ($t=2.3$). In Panel B of Table 9, the cross-sectional regression results suggest that the degree of reductions in the diversification discount has a significant positive relationship with bank relationship variables. Model (1) of Panel B shows that the loan amount from banks that have the ownership of the firm has a significant positive effect on the discount at the 1% significance level. Also, model (2) of the table shows that the bank loan from the firm's main bank with ownership has a significant positive relationship at the 1% level. It can be interpreted that the firms with the closer relationship with banks result in higher reductions in the diversification discount. In models (3) and (4), the analysis includes the interaction variable between the bank relationship and the Q-dummy variable. The results of models (3) and (4) indicate that the monitoring role of banks in poorly performing firms is stronger in terms of reducing the diversification discount through spin-offs. The results are also consistent with the results of models (1) and (2), which indicate that a stronger bank relationship creates a greater reduction of the diversification discount.

Conclusion

We study the relationship between internal capital market and banks relationship by examining the Japanese corporate spin-offs from 2001 through 2003 since the establishment of new spin-offs law in Japan. The Japanese spin-off data provide a unique environment in which we can focus on the effect of corporate restructurings on the efficiency of internal capital markets, not confronted by the control issues. This study shows that there are significant positive abnormal returns around the announcement; significant positive market-adjusted returns after the spin-offs for 12, 24, and 36 months; a significant increase in focus of firms in terms of the Herfindahl index; and a significant reduction in the diversification discount.

Announcement abnormal returns are positively related to the *keiretsu*-affiliation of firms, main bank ownership, and existence of a bank-appointed director. Neither bank loan amount nor main bank loan amount are significantly related to the abnormal returns, but bank loan amount with the existence of bank-appointed directors have a significant positive relationship with the announcement abnormal returns. Moreover, if the firm is *keiretsu*-affiliated and has directors appointed by banks, then the firm has significantly higher announcement returns than those affiliated only with *keiretsu* or with bank-appointed directors.

In contrast to previous studies, our study does not show significantly positive abnormal returns for focus-increasing spin-offs when corporate focus is measured based on industry differences. However, if the focus-increasing spin-offs are related to *keiretsu*-affiliations or the existence of a bank-appointed director, then there are significantly

positive announcement abnormal returns. The market-adjusted 12-months excess returns are significantly positively related to bank governance variables. In addition, we show evidence that under-performing firms benefit more from closer ties with banks than those who are not closely tied with banks. Also, the degree of increase in the Herfindahl index is significantly positively related to bank relationship. Finally, the corporate spin-offs in Japan seem to significantly reduce the diversification discount, and the degree of its reduction is positively related to the bank relationship with firms.

Our empirical evidence suggests that there is a significant relationship between internal capital market and banks in Japan; the closer relationship with banks creates shareholder wealth, increases the focus of firms, and reduces diversification discounts after the internal capital market reorganization through spin-offs.

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TABLES

Table 1 Annual Frequency of Japanese Spin-off and *Keiretsu*-Affiliations

This table lists the annual frequency of the Japanese spin-offs of listed firms in our sample, categorized by the *keiretsu*-affiliation of the firms. The sample includes the finance, real estate, and utility companies, which we excluded for our analysis. *Keiretsu*-affiliation information is retrieved from *Industrial Groupings in Japan 2001*.

Year	Keiretsu Affiliated Firms	Non-Keiretsu Affiliated	Total
2001	12	24	36
2002	29	44	73
2003	18	34	52
Total	59	102	161

Table 2 Number of Japanese Spin-offs by *Keiretsu*-affiliation Indication, and Focus-increasing Indication Variables from 2001 through 2003

This table summarizes the number of the Japanese spin-offs announced from January 1, 2001 through December 31, 2003 excluding the finance, utility, and real estate companies, categorized by *keiretsu*-affiliation and focus-increasing indicator variables. *Keiretsu*-affiliation information is retrieved from *Industrial Groupings in Japan 2001*. Focus-increasing dummy variable is indicated as focus-increasing if the industry of spun-off firms is different from that of the parent company's major industry. There are 40 industries which are categorized by MARR (Merger & Acquisition Resource Report)

		<u>Focus</u>		
		<u>Increasing</u>	<u>Non-Increasing</u>	<u>Total</u>
<u>Keiretsu-Affiliation</u>	<u>Affiliated</u>	25	31	56
	<u>Non-Affiliated</u>	44	51	95
	<u>Total</u>	69	82	151

Table 3 Summary Statistics of Pre-spin-offs for Japanese Spin-offs

This table provides the summary statistics of Japanese spin-offs samples listed in the First and Second section of Tokyo Stock Exchange, which are announced from January 1, 2001 through December 31st, 2003 and completed since effective date of the new corporate spin-offs law, April 1, 2001. The sample of Japanese corporate spin-offs are obtained from MARR (Merger and Acquisition Research Report, Tokyo) published by REOCFF CO., which is the largest M&A data service in Japan. Cumulative abnormal returns are calculated from market model estimated from days -258 to -11 relative to the press announcement.

Variables	Mean	Median	Standard Deviation
Total Assets (billions of yen)	669421	80175	1517245
Sales (billions of yen)	610139	88443	1369816
Bank Loan to Total Asset Ratio	.30133	.314865	.19968
Bank Ownership	19.7589	19.9	11.0011
Main Bank Ownership	6.17	5.60	4.182
Proportion of Firms in <i>keiretsu</i> -affiliation	38.8	-	-
Proportion of Firms has Bank-Appointed Director	62.2	-	-

Table 4 Two-Day (-1,0) Average Cumulative Abnormal Returns of Japanese Keiretsu-Affiliated Spin-offs, and Focus-Increasing Spin-offs

This table summarizes the market-adjusted two day cumulative abnormal returns of Japanese spin-offs samples listed in the First and Second section of Tokyo Stock Exchange, which are announced the spin-offs from January 1st, 2001 through December 31st, 2003 and completed the spin-offs since effective date of new corporate spin-offs law in April of 2001. Cumulative abnormal returns are calculated from market model estimated from days -258 to -11 relative to the press announcement. Mean cumulative abnormal returns and the p-values are reported in the parentheses under the mean.

	<u>Focus-Increase</u>	<u>Non-Focus-Increase</u>	<u>Total</u>
<u>Keiretsu-Affiliated</u>	.0801 *** (.000)	.019 ** (.0128)	.0468 *** (.000)
<u>Non-Keiretsu-Affiliated</u>	-.0075 (.3174)	.0033 (.6744)	-.0015 (.7794)
<u>Total</u>	.0261 *** (.000)	.0094 * (.0782)	.0171 ** (.016)

*, **, and *** indicate significance at the 10, 5, and 1 percent levels respectively.

Table 5 Cross-Sectional Analysis of Two-Day Cumulative Abnormal Returns for Japanese Spin-offs

This table summarizes the regression analysis with market-adjusted two day cumulative abnormal returns as dependent variables and bank-related governance variable as independent variable of Japanese spin-offs samples we collected. Bank-centered industrial groups, *keiretsu*, are identified from *Industrial Groupings in Japan 2001* published by Dodwell Marketing Consultants. We retrieve main bank information, bank ownership, and consolidated bank loan data from autumn versions of *Japan Company Handbook* between 2000 and 2003. Specific bank loan data and end of fiscal year financial data is collected from *Nikkei Economic Electronic Databank System (NEEDS)*, *Japan Company Handbook*, and *Worldscope*. These financial data are based on consolidated financial statements, which evaluate the performance of the business group as a whole, including spun-offs and related units. Bank-sent director variable is collected from year 2000 version through 2003 version of *Yakuinshikiho (Toyo Keizain Shimposha)*. Daily stock price of firms, and daily Nikkei Average Index are retrieved from *Nikkei Economic Electronic Databank System (NEEDS)*. The numbers in parentheses are p-values for two-tailed test.

Independent Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log of Total Asset	-.010 (.125)	.327 (.327)	-.006 (.324)	-.011* (.078)	.000 (.981)	.001 (.877)	-.003 (.572)	-.007 (.272)
Focus Increasing Dummy	.014 (.565)	.014 (.606)	.016 (.533)	.025 (.291)	-.004 (.821)	.000 (.990)	-.024 (.476)	-.023 (.402)
Return on Asset	-.147 (-.149)	-.134 (.227)	-.179* (.087)	-.111 (.266)	-.106* (.079)	-.096* (.097)	-.166 (.105)	-.156 (.121)
Keiretsu Dummy	.064** (.025)							
Bank Loan to Total Asset		-.024 (.794)						
Bank-Appointed Director			.051* (.060)					
Keiretsu Dummy × Bank Sent Director Dummy				.101*** (.001)				
Main Bank Ownership					.003* (.068)			
Bank Loan to Total Asset × Bank-Appointed Director Dummy		.135* (.091)						
Main Bank Ownership × Bank Sent Director Dummy						.004*** (.006)		
Focus Increasing Dummy × Bank-Appointed Director Dummy							.070* (.077)	
Focus Increasing Dummy × Keiretsu Dummy								.096** (.013)
Adjusted R2	.043	.033	.036	.090	.026	.066	.033	.052
Number of observations	N=134	N=122	N=122	N=134	N=113	N=120	N=129	N=134

*, **, and *** indicate significance at the 10, 5, and 1 percent levels respectively.

Table 6 Post-spin-offs Market-Adjusted Excess Returns of Japanese Spin-offs

This table summarizes the post-spin-off performance of Japanese spin-offs. Post-spin-offs market-adjusted excess returns for 3-, 6-, 12-, 24-, 36-months are calculated for Japanese spin-offs completed from 2001 through 2004. Market-adjusted excess returns are defined as average difference between firm's monthly compounded returns and monthly compounded monthly Nikkei index. Mean market-adjusted excess returns and the p-value of t-tests are reported in the parentheses under the mean. The sample excludes some recent events because our data set is limited up to September of 2004. P-values from t-tests are reported in parentheses below the mean and p-values from sign-rank tests are reported in parentheses below the median.

Post Spin-offs	3 months	6 months	12 months	24 months	36 months
Total	.5586%	.7341%	1.3505%***	1.1124%***	0.9385%***
	(0.495)	(0.118)	(0.000)	(0.000)	(.002)
	-0.4880%	0.1120%	0.7960%***	0.9568%***	0.8603%***
	(.2176)	(0.4662)	(0.000)	(0.000)	(0.0018)
	N = 129	N=129	N=125	N=70	N=22
Keiretsu-affiliated	0.0024	0.0067	0.0144**	0.0095***	0.0071
	(0.1095)	(0.3648)	(0.0155)	(0.0037)	(0.1794)
	-0.0143**	-0.00132	0.0098***	0.0064***	0.0032
	(0.0120)	(0.8255)	(0.0006)	(0.0009)	(0.2969)
	N=49	N=49	N=49	N=26	N=7
Non-keiretsu-affiliated	0.00859	0.0088	0.0133***	0.0124***	0.0092**
	(0.3436)	(0.1508)	(0.0049)	(0.0001)	(0.0125)
	-0.00203	0.0026	0.0071***	0.0101	0.0104**
	(0.9130)	(0.5764)	(0.0073)	(0.0001)***	(0.0151)
	N=80	N=80	N=76	N=44	N=15
Focus-Increasing	-0.0015	0.0115*	0.0167***	0.0141***	0.0126**
	(0.8846)	(0.0760)	(0.0004)	(0.0001)	(0.0123)
	-0.0100	0.0016	0.0109	0.0130***	0.0138**
	(0.2783)	(0.2436)	(0.0001)***	(0.0001)	(0.0371)
	N=56	N=56	N=54	N=31	N=10
Non-Focus-Increasing	0.0122	0.0054	0.0114**	0.0091***	0.0051
	(0.3130)	(0.4235)	(0.0358)	(0.0021)	(0.1349)
	-0.0023	0.0018	0.0057**	0.0064***	0.0048

	(0.8554)	(0.7543)	(0.0240)	(0.0009)	(0.1294)
	N=73	N=73	N=71	N=39	N=12
Existence of Bank-Appointed Director	0.01383	0.0103	0.0151***	0.0083***	0.0016
	(0.2884)	(0.1392)	(0.0059)	(0.0037)	(0.6418)
	-0.0024	0.0018	0.0085***	0.0054***	-0.0009
	(0.9978)	(0.4601)	(0.0024)	(0.0026)	(0.9219)
	N=73	N=73	N=71	N=38	N=10
Non-Existence of Bank-Appointed Director	-0.0081	0.0036	0.0136**	0.0153***	0.0154***
	(0.3821)	(0.6233)	(0.0348)	(0.0001)	(0.0003)
	-0.0049	-0.0017	0.0095***	0.0130***	0.0145***
	(0.2203)	(0.8460)	(0.0012)	(0.0001)	(0.0005)
	N=45	N=45	N=43	N=28	N=13

*, **, and *** indicate significance at the 10, 5, and 1 percent levels respectively.

Table 7 Cross-Sectional Analysis of 12-months Market-Adjusted Post-spin-offs Returns for Japanese Spin-offs

Post-spin-offs market-adjusted excess returns for 12-months are calculated for Japanese spin-offs completed from 2001 through 2004. Market-adjusted excess returns are defined as average difference between firm's monthly compounded returns and monthly compounded monthly Nikkei index. Mean market-adjusted excess returns and the p-values are reported in the parentheses under the mean. The sample excludes some recent events, because our data set is limited up to September of 2004. Tobin's Q dummy variable indicates whether the firm's Tobin's Q is below sample median.

Independent Variables	(1)	(2)	(3)	(4)
Log of Total Asset	-.004* (.074)	-.004** (.029)	-.001 (.461)	-.001 (.764)
Focus-Increasing Dummy	.004 (.555)	.002 (.726)	-.007 (.456)	.004 (.613)
Return on Asset	.009 (.769)	.023 (.441)	-.013 (.679)	.009 (.752)
Keiretsu Dummy	.001 (.949)			
Keiretsu Dummy × Tobin Q Dummy	.022* (.060)			
Bank Loan Ratio		.034* (.098)		
Bank Loan to Total Asset × Tobin Q Dummy		.057*** (.004)		
Main Bank Loan Ratio			.000 (.947)	
Main Bank Loan to Total Asset × Tobin Q Dummy			.139* (.059)	
Bank-Sent Director Dummy				-.010 (.235)
Bank-Sent Director Dummy × Tobin Q Dummy				.039*** (.000)
Adjusted R2	.027	.118	.011	.127
Number of observations	N=125	N =125	N =81	N =114

*, **, and *** indicate significance at the 10, 5, and 1 percent levels respectively.

Table 8 Univariate and Cross-Sectional Analysis of Herfindahl Index Changes from Pre- to Post-spin-offs in Japan

Herfindahl index measures degree of firm's focus. Herfindahl index is calculated as the sum of squares of each segment's sales as a proportion of total sales. P-values from sign-rank tests are reported in parentheses below the median and p-values from t-tests are reported in parentheses below the mean.

Panel A. T-test

N	Min.	Max.	Median	Mean
98	-.2663	.6469	.0046** (0.0356)	.02029** (0.044)

*, **, and *** indicate significance at the 10, 5, and 1 percent levels respectively.

Panel B. Cross-Sectional Analysis

Independent Variables	(1)	(2)
Log of Total Asset	-.011* (.067)	-.011** (.049)
Focus-Increasing Dummy	.020 (.338)	.021 (.302)
Return on Asset	.057 (.513)	.087 (.329)
Keiretsu Dummy	.049* (.053)	
Bank Loan to Total Asset		-.045 (.473)
Keiretsu Dummy × Bank Loan to Total Asset		.168*** (.006)
Adjusted R2	.014	.075
Number of observations	N=93	N =93

*, **, and *** indicate significance at the 10, 5, and 1 percent levels respectively.

Table 9 Univariate and Cross-Sectional Analysis of Diversification Discount Changes from Pre- to Post-spin-offs in Japan

Diversification discount calculation follows Lins and Servaes (1999), which is similar to that of Berger and Ofek (1995). Bank loan with ownership is the amount of bank debt obtained from banks which have the ownership of the firm. Similarly, main bank loan with ownership is the amount of bank debt obtained from main banks which have the ownership of the firm. P-values from sign-rank tests are reported in parentheses below the median and p-values from t-tests are reported in parentheses below the mean.

Panel A. T-test

N	Min.	Max.	Median	Mean
54	-1.10	8.85	.2114*** (0.0026)	.6509** (0.025)

Panel B. Cross-Sectional Analysis

Independent Variables	(1)	(2)	(3)	(4)
Log of Total Asset	.121 (.214)	.151 (.137)	.131 (.425)	.116 (.503)
Focus-Increasing Dummy	-.163 (.653)	-.455 (.202)	-.584 (.361)	-.828 (.220)
Return on Asset	-.570 (.575)	-.539 (.570)	2.454 (.233)	2.653 (.197)
Bank Loan with Ownership to Total Asset	9.624*** (.000)			
Main Bank Loan with Ownership to Total Asset		12.827*** (.000)		
Tobin Q			3.557*** (.009)	3.826*** (.006)
Bank Loan with Ownership to Total Asset × Tobin Q Below Sample Median Dummy			10.043*** (.006)	
Main Bank Loan with Ownership to Total Asset × Tobin Q Below Sample Median Dummy				13.6*** (.001)
Adjusted R2	.315	.527		.217
Number of observations	N=43	N =39	N = 51	N =47

STUDY TWO
INTERNAL CAPITAL MARKETS, INVESTMENT, AND BANK
RELATIONSHIP
- EVIDENCE FROM JAPANESE CORPORATE SPIN-OFFS

In conjunction with the internal capital market literature, studies on spin-offs analyze how firms increase the efficiency of internal capital markets after spin-off transactions. Spin-offs allow us to examine changes in the efficiency of internal capital markets because firms' capital is reallocated through spin-offs. Unlike other divestitures such as equity carve-outs or asset sales, spin-offs do not generate cash for the parent and the spun-off company. Because of the non-cash-generating features, spin-offs provide a well-furnished natural experimental setting for internal capital market analysis.

Literature on internal capital markets (e.g., Gertner et al., 2002; Dittmar and Shivdasani, 2003; Ahn and Denis, 2004) shows that spin-offs improve the investment efficiency.¹³ Most recently, Choi and Han (2005) show that internal capital markets in Japan become more efficient after spin-offs.¹⁴

In this study, we examine the investment efficiency changes in Japanese companies after corporate spin-offs. In addition, we investigate whether banks monitor the spin-offs' transactions during the restructuring to increase the efficiency of internal capital markets. Our main contributions are three-fold. The first is due to the uniqueness

¹³ Gertner et al. (2002) show an increase in investment sensitivity after spin-offs using spun-off division data. Dittmar and Shivdasani (2003) examine the effect of divestitures in investment of parent firms, and Ahn and Denis (2004) study the changes of investment policy for the combined firm of parent and spun-off companies.

¹⁴ Specifically, they show significant positive abnormal returns around the announcements, excess returns after the spin-offs, increases of Herfindahl index, and reduction in the diversification discount after the spin-offs. Also, these variables are significantly positively related to bank-related governance variables such as *keiretsu*-affiliation, bank loan amount, main bank ownership, and existence of bank-appointed director variables.

of the Japanese spin-off structure in which a division becomes a new subsidiary but still remains under the control of the parent company. Thus, its overall governance structure does not change. This has an important implication for the study of internal capital markets because these restructurings are purely internally executed transactions, which are different from what is commonly thought of as a spin-off. Thus, we can examine the effect of corporate restructurings on the efficiency of internal capital markets without changing the ownership and control structure. Our empirical setting complements that of Ahn and Denis (2004),¹⁵ which combines the investment efficiency of the parent and the spin-off companies. This study confirms the findings of previous internal capital markets literature, which find that internal restructuring through spin-offs increases the efficiency of internal capital markets.

Second, this investigation extends the studies on Japanese deregulation that has been implemented in the last two decades. The new corporate spin-off law is the end-result of recent Japanese capital market deregulation and Commercial Code revisions in the late 1990s and the early 2000s. These laws initiated the simplified spin-off procedures, using simplified merger procedures and stock transfer systems.¹⁶

The data of this study covers the deregulation time period of the year 2001 through the year 2003, which has not been examined yet in the literature. Anderson and Makhija (1999), Wu and Xu (2005), and Kato et al. (2006) have also investigated the effect of financial deregulation in Japan using data from the 1980s, 1974-1997, and 1997-

¹⁵ Ahn and Denis' (2004) empirical setting complements that of Gertner et al. (2002) and Dittmar and Shivdasani (2003), because they use the combined data of parent and spin-offs.

¹⁶ These procedures will be elaborated on in Section 3.

2001 respectively. Our study investigates one of the deregulatory issues in the “Big Bang,” which started in 1998 and finished in the spring of 2001.

Third, this study complements the Japanese banking literature.¹⁷ It is well known that the Japanese corporate structure is governed by a bank-centered relationship. Thus, the Japanese spin-offs dataset provides a unique setting that can test the impact of the bank relationship on internal capital markets. Diamond (1984, 1991), among others, argues that banks monitor their client firms and the delegated monitoring reduces the information asymmetry between the firms and the capital markets. Our study provides evidence of the monitoring role of Japanese banks in the investment behavior of internal capital markets, and shows results consistent with Kang, Shivdasani, and Yamada (2000), among others.

We find that investment sensitivity in Japanese companies increases significantly after internal restructurings through spin-offs, consistent with Gertner et al. (2002). Unlike other studies (Gertner et al., 2002; Dittmar and Shivdasani, 2003), we show that the related spin-offs show a significant increase of investment sensitivity after being spun-off. Furthermore, we find that banks’ monitoring function seems to increase investment efficiency. Examining the bank-related governance structure in Japan, including *keiretsu*-affiliation, main bank ownership, and amount of bank loan, we show that bank-related spin-offs’ investments are more sensitive to investment opportunities, Tobin’s Q. We find that *keiretsu*-affiliated firms’ spin-offs increase investment sensitivity after being spun-off. Also, spin-offs with low Qs and high bank loans

¹⁷ See Choi and Han (2005) for details on Japanese banking literature.

experience a significant increase in investment sensitivity, probably because of greater incentives for banks to monitor them, as argued by Kang et al. (2000). This result is also consistent with Khanna and Palepu's findings (2000) that the internal capital market for Indian business-group-affiliated firms is more efficient compared to that of non-affiliated firms. Hoshi et al. (1990, 1991) suggest that *keiretsu*-affiliated firms are not as liquidity constrained as non-affiliated firms and hence can be more efficient in investment policy. Thus, we suggest that banks play such a role in internal capital markets to ensure efficient investment decisions of the firms.

The rest of the paper is structured as follows. In Section 2, we provide the background on the Japanese financial deregulations and spin-offs. In Section 3, we discuss the hypotheses and methodology. In Section 4, we describe the data and descriptive statistics of Japanese corporate spin-offs and discuss the empirical results. Section 5 summarizes and concludes the paper.

Japanese Financial Deregulation and Internal Capital Markets Restructuring

The Japanese economy and financial markets have been stumbling for the last decade after the collapse of the bubble economy in the late 1980s. Since then, to reinvigorate the economy, the Japanese government has tried a wide range of deregulations through numerous revisions of the Commercial Codes. This section summarizes the process of recent financial deregulation in Japan, focusing on the Commercial Codes revisions. Then we anchor our study on Japanese corporate spin-offs as the extension of Japanese deregulation literature.

In Japan, the most important factor directly influencing the financial system and corporate governance is the existing Commercial Codes revised by governmental, academic, and corporate entities. In 1950, the Commercial Codes were revised dramatically to separate ownership and management. After the revisions in the 1950, the Commercial Codes were revised every several years.

Among the recent Japanese financial deregulations through Commercial Codes revisions, in the mid-1980s, the standards for bond issuance were liberalized through deregulation acceleration. As a result of this deregulation, many Japanese firms could decrease their heavy dependence on bank financing and select debt capital. Anderson and Makhija's (1999) study of Japanese firms in the late 1980s, which investigated the choice of monitored bank financing and arm's-length public bond, suggests that monitored bank financing provides benefits to firms compared to the public debt with high agency costs. Along with this study, Wu and Xu (2005) studied a sample of Japanese firms during 1974-1997, finding adverse *keiretsu*-effects in the 1980s, while the adverse value effect diminished in the 1990s, when heavy burdens of capital market regulation on the public debt market were removed: "This evidence presages the waning of traditional *keiretsu* practices, along with the main-bank-centered governance and finance structure" (Wu and Xu 2005).

The deregulation did not stop even when the Japanese economy was in the most serious recession after the Asian financial crisis in 1998-99. The "Big Bang" deregulation of the Japanese financial market started in 1998 through Commercial Codes

amendments. The amendments enhanced flexibility in the financial markets:¹⁸ stock options provisions, mergers, and internal capital market reorganizations. The stock options provisions amendments allowed the issuance of stock options for employees, including executives. Kato et al. (2006) study the shareholder wealth effect of 350 firms that adopted option-based compensation plans between 1997 and 2001, and they find that good incentive-based compensation plans create shareholder value. In 1997, merger procedures were simplified, and the Revision of the Anti-monopoly Law allowed establishment of pure holding companies, banned since 1947. In 1999, in conjunction with the simplified merger procedures and Anti-monopoly Law, the stock swap system and stock transfer system were created to facilitate the transactions between wholly-owned subsidiaries and their parent companies. The 2000 Amendment of the Commercial Codes introduced the procedures for company split-up to make restructuring through spin-offs or divestitures easier.

We extend the studies on the relationship between Japanese corporate governance and Japanese deregulations using the Japanese spin-offs data between 2001 and 2003. On April 1, 2001, the new spin-off laws went into effect, and many Japanese firms became involved in spin-offs for their corporate restructurings. The new spin-off laws are the end-result of the Commercial Code revisions of the Japanese capital market in the late 1990s and the early 2000s. Thus, the various revisions relating to stock repurchases,

¹⁸ Milaupt (2003) divides the amendments into two groups. One group might be called *flexibility enhancing amendments*. These Code changes expand corporate finance options and increase organizational flexibility for Japanese firms in the areas of stock options, mergers, and corporate reorganizations. A second group might be called *monitoring enhancing amendments*. These Code amendments include changes to the shareholder derivative suit mechanism and statutory auditor system as well as reforms to the corporate board structure.

holding companies, and simplified mergers and spin-offs have not only brought the legal framework more in tune with the demands of Japan's internationalized capital markets, but have also made the management of Japanese corporations more conscious of corporate value.¹⁹ Thus, this study investigates the effect of Japanese financial deregulation after the year 2001 using corporate spin-offs data that has not been examined yet.

Around the time of the Asian financial crisis at the end of the 1990s, the Japanese government and corporations started to realize the need for corporate reorganizations, such as spin-offs or other divestitures, to improve the flexibility and efficiency of their corporate structures in the competitive international capital market. The institutional legal frame of Japanese corporate spin-offs began to change in 1997, and many of the Japanese multi-divisional firms reorganized their internal capital markets by transforming divisions into independent units such as wholly-owned subsidiaries or spin-offs to obtain optimal internal capital market structures. Before the enactment of the new corporate spin-off laws in April 2001, Japanese firms were required to be inspected by the federal court before conducting spin-offs. They also needed to obtain individual approval from creditors for the transfer of liabilities and assets, which impeded flexible corporate restructuring. However, the procedure has been simplified since the new Commercial Codes revision in 2001. In the past, cash transactions were required, but the new law allowed easier transactions without cash, accompanied by the stock swap and stock transfer systems changes in 1999. Consequently, it became easier for firms to choose

¹⁹ Japan Investor Relations and Investor Support, Inc. Research Newsletter, Issue No.1, December 2001

their optimal corporate structure, setting the stage for implementing the new corporate spin-off laws in Japan.

Hypotheses and Methodology

Hypotheses: Investment and Bank Relationship

Gertner, Power, and Scharfstein (2002) show that spin-offs improve the efficiency of capital allocation through spin-offs; these results are found primarily in the industries where the parent and spin-off firms are unrelated and in spin-offs where announcement returns are higher. Desai and Jain (1999) find that both the announcement period and long-run abnormal returns for the focus-increasing spin-offs are significantly larger than those for non-focus-increasing spin-offs. Dittmar and Shivdasani (2003) show that divestiture reduces the diversification discount and increases the efficiency of segment investment, suggesting that inefficient investment is partly responsible for the diversification discount and supporting the corporate focus and financing hypothesis.

Furthermore, we estimate equation (1) by dividing the sample into sub-samples based on the characteristics of the spin-offs: related and unrelated, and regular and merger-facilitated spin-offs. The related spin-offs create an independent, related business unit within the conglomerate. Berger and Ofek (1995) argue that diversified firms with unrelated businesses are less efficient. Therefore, we expect that related spin-offs significantly increase investment sensitivity after being spun off. On the other hand, unrelated spin-offs diversify the conglomerate by creating independent, unrelated businesses. However, even if unrelated spin-offs diversify the conglomerate, division

managers become more independent from the parent company and have greater incentives to increase investment efficiency. Therefore, unrelated spin-offs' net effect of diversification is not clear in the efficiency of the overall conglomerate.

There are three major bank-oriented Japanese corporate governance systems: 1) a bank-centered group called *keiretsu*, 2) bank ownership of firms, and 3) main bank. *Keiretsu*²⁰ is a bank-centered, long-term transactional relationship that closely monitors client firms; *keiretsu*, the bank-centered group, is linked by “stable inter-corporate shareholding”²¹ between firms (Morck and Nakamura, 1999). Thus, bank-related Japanese corporate governance enhances the unique equity ownership structure, which is *cross shareholdings* between industrial firms and banks.²² Hoshi et al. (1990) find that the insurance and monitoring roles are more evident with *keiretsu*-affiliated firms. Therefore, we expect that investment sensitivity under *keiretsu*-affiliation would be greater than under non-*keiretsu* affiliation.

Equity ownership of industrial firms by Japanese banks is unique to the Japanese governance system, while equity ownership by banks is limited in the United States. Morck et al. (2000) study the relationship between main bank ownership and firm value in Japan, arguing that bank ownership increases firm value only when the banks and shareholders are closely aligned in incentives. In particular, they examine main banks' dual ownership of debt and equity claims; this dual ownership measures the degree of

²⁰ There are eight horizontal industrial groups in Japan: Mitsui, Mitsubishi, Sumitomo, Sanwa, Dai-Ichi Kangyo Bank, Fuyo, Tokai, and Industrial Bank of Japan.

²¹ Morck and Nakamura (1999) define ‘stable shareholders’ as those who almost never sell out and consistently support management.

²² Morck, Nakamura, and Shivdasani (2000) explain the origins of Japanese bank ownership in detail.

alignment of interests between debt and equity holders. The main banks are typically the major lenders to firms, and play the role of information controller and monitor of the firm, intervening in financing and investment decisions. Hoshi et al. (1990) find that firms with a close relation with main banks are less liquidity constrained. Also, main banks organize rescue programs when their client firms become financially distressed, and this insurance role leads them to monitor the firm more closely. Kang and Shivdasani (1995) find that poorly performing firms are more likely associated with higher CEO turnovers when firms have a close relationship with main banks.

Morck et al. (2000) find that there is a non-linear relationship between main bank ownership and firm value, showing that at low levels of ownership by main banks, firm value decreases as ownership increases, and the opposite is shown sometimes at higher levels. Banks as creditors may act against maximizing shareholder wealth; low-to-moderate ownership may empower banks to expropriate shareholder wealth. However, with high levels of bank ownership, the adverse incentive is mitigated and the positive effect of monitoring kicks in. Thus, we expect that investment efficiency increases at a high level of main bank ownership.

Finally, Kang et al. (2000) show that there is a significant positive relationship between the announcement returns of Japanese mergers and the loan amount from bank and main bank. They suggest that Japanese banks, as debt holders, perform an important monitoring function. We examine whether the bank loan amount affects our investment model. We do not have main bank loan amounts due to the lack of the bank-specific loan amount of each sample. Thus, we use the overall bank loan amount as a proxy for banks'

monitoring incentives. Thus, we hypothesize that banks' monitoring function affects the increase in investment efficiency of internal capital markets.

Methodology

Our empirical model is similar to that of Gertner et al.'s (2002). Scaled capital expenditures are regressed on Q in our investment model. Our estimation is based on the panel framework of years -2, -1, +1, and +2 before and after spin-offs transactions. We exclude the spin-offs' year, because it overlaps the periods of pre- and post-spin-offs.

The basic empirical model is as follows:

$$IK_{it} = \alpha_i + \beta_1 * Q_{it} + \beta_2 * Q_{it} * AFTER + \beta_3 * AFTER + \sum_t \gamma_t * YEAR_t + \varepsilon_{it}. \quad (1)$$

In equation (1), IK_{it} is the ratio of capital expenditures to the book value of total assets for firm i at time t . $AFTER$ is a dummy variable indicating the post-spin-off time period of +1 and +2 as one and zero otherwise. Q_{it} is a proxy of investment opportunities for firm i at time t . $YEAR_t$ is a calendar dummy variable of fiscal year t , which controls for the specific year effect. $Q_{it} * AFTER$ is the interaction term to check if there is any significant increase in investment sensitivity after spin-offs transactions. Our main focus is on the coefficient estimate of the interaction term. In general, we expect a significant positive β_2 —the coefficient of the interaction term between Tobin's Q and the $AFTER$ dummy variable in equation (1)—if the investment efficiency of internal capital markets increases through spin-offs. As discussed in Section 1, it is worthwhile to note that unlike other

studies,²³ our data make it convenient to compare pre- and post-spin-off events to examine the overall effect of the spin-offs because the consolidated financial data is available before and after spin-offs. In the following, we examine the estimation results of the above investment model under various specifications based on bank governance and spin-off-specific variables.

In estimation, we choose to employ the random effect model instead of the fixed effect one. Zhou (2001) argues that the fixed effect model cannot detect an effect of ownership on performance, considering a firm as a time variant entity allowing within-variation rather than an invariant one. Therefore, we also use the random effect model because firm-specific effects such as governance or board structures are not fixed but are dynamic over time, especially during our estimation period.²⁴ In Japan, during the sample period of this study, many deregulations were in active progress. For example, the Commercial Code amendment of 2002 exercised board reforms which allowed a U.S.-style committee system for corporate governance. Therefore, based on Zhou's (2001) argument and actual Japanese regulation-specific effects on Japanese firm dynamics, it is reasonable to use the random effect model for our analysis.

²³ Gertner et al. (2002), Dittmar and Shivdasani (2003), and Ahn and Denis (2004).

²⁴ We checked the Hausman test and results are mixed by different model estimation. Thus, we chose the random effect model based on Zhou's (2001) argument.

Data and Empirical Analysis

Data and Sample Selection

We collected the sample of Japanese corporate spin-offs announced from January 1, 2001 through December 31, 2003 and completed since the effective date of the new corporate spin-offs law in April 2001. The data source is Merger and Acquisition Research Report (MARR, Tokyo) published by RECOFF CO., which is the largest M&A data service provider in Japan. MARR lists the announcement dates of spin-offs, names of parent and spun-off companies, and major industries of parent and spun-off companies. In addition, we searched for spin-off news in four major Japanese financial papers: *Nihon Keizai Shimbun* (Nikkei Economic Journal), *Nihon Keizai Sangyo Shimbun* (Nikkei Industrial Journal), *Nihon Keizai Ryutuu Shimbun* (Nikkei Distribution Journal), and *Nihon Keizai Kinyuu Shimbun* (Nikkei Finance Journal). Bank-centered industrial groups, *keiretsu*, are identified from *Industrial Groupings in Japan 2001*, published by Dodwell Marketing Consultants.²⁵ We restricted the sample to the firms listed in the First or the Second Section of Tokyo Stock Exchange prior to the spin-off event year.²⁶ We retrieved main bank information, bank ownership data, and consolidated bank loan amount data from the autumn issue of *Japan Company Handbook* between 2000 and 2003. Specific bank-loan data and end-of-fiscal-year financial information were collected from *Nikkei Economic Electronic Databank System* (NEEDS), *Japan Company Handbook*, and

²⁵ Hoshi et al. (1990, 1991) use this for identifying the *keiretsu*-affiliated firms.

²⁶ *Japan Company Handbook* contains the First and Second Section of Tokyo Stock Exchange listed firms' firm specific information and financial data including the name of main bank, bank ownership, and bank loan amount data.

Worldscope. These financial data are based on consolidated financial statements, which evaluate the performance of the business group as a whole, including spun-off companies and related units. Daily stock prices and daily Nikkei Average Index were retrieved from *NEEDS*.

Initial spin-off data consist of observations announced between 2001 and 2003, totaling 293 spin-offs, including regular spin-offs (161) and merger-facilitated (132) spin-offs. Regular spin-offs are the transactions in which one of the divisions of the firm is separated from the parent firm and becomes a wholly-owned subsidiary of the parent firm. Merger-facilitated spin-offs are the transactions in which the separated division is merged into one of the existing subsidiaries within the firm. Therefore, these two transactions are pure internal transactions without any change of governance or ownership structure of the firm. The sample excludes 19 companies: 8 real estate, 7 finance, and 4 utility companies. In addition, 30 of the remaining samples are eliminated because the firms spun off more than one division. Thus, the final sample includes 244 spin-off events. Table 10 describes the annual frequency of Japanese corporate spin-offs by different types. The annual frequency of spin-offs increased significantly from 72 in the first year (2001) to 120 in 2002 and 101 in 2003. Panel A of Table 11 shows the summary statistics of firm characteristics and bank governance variables. Main banks own approximately 6% of the equity of the sample firms on average. Almost 40% of the sample firms are affiliated with *keiretsu*. Finally, about 57% of the sample firms have bank-appointed directors. Panel B of Table 11 summarizes the capital expenditures to total asset ratio and Tobin's Q of the firms before and after the spin-offs. The summaries of the capital expenditures

and Q variables are categorized by *keiretsu*-affiliation of the firms. There is no significant difference in capital expenditures between the *keiretsu*-affiliated and non-*keiretsu*-affiliated firms across the panel time frame of the analysis. There is a significant difference in Tobin's Q between the *keiretsu*-affiliated and non-*keiretsu*-affiliated firms before and after the spin-offs. The significant difference of Q decreases after spin-offs, and the difference is not significant at year +2.

Empirical Results

Our study finds two main empirical results. First, in Japan, the efficiency of internal capital markets increases through corporate spin-offs: investment becomes more sensitive to investment opportunities. Second, banks' monitoring roles seem to have a significant positive impact on the investment sensitivity of internal capital markets through spin-offs. Model (1) of Table 12 reports the estimation results of equation (1) for the full sample. The estimate for the interaction term between the Q and *AFTER* dummy variable is positive at the 10% level; the firms' sensitivity of investment to Tobin's Q increases significantly after spin-offs. This result is consistent with Gertner et al.'s (2002) contention that spin-offs may improve the allocation of capital.

Model (2) of Table 12 reports the estimation results of equation (1), dividing the sample into two sub-samples based on whether the spin-off transaction is related or not. A spin-off is defined as related when the spun-off firm's industry is related to the parent's. Related spin-offs show a statistically significant increase in investment sensitivity (significant at the 5% level) after the internal reorganization, while unrelated transactions

do not. However, it is not clear if the efficiency increase results from a conglomerate's focus on its core business, because of the unique nature of Japanese spin-offs. For example, in unrelated Japanese spin-offs, the spun-off unit still remains within the conglomerate. This may confound the true meaning of corporate focus defined by relatedness. Therefore, we use alternative measures of corporate focus, for example, the Herfindahl index. The Herfindahl index measures the focus of a conglomerate based on the size of each segment within the conglomerate. The mere number of segments does not change after the spin-offs because spun-off firms remain in the conglomerate in Japanese spin-offs. However, the size (e.g., sales) of a particular segment can increase due to improved efficiency after becoming independent from parent firms, which may affect the Herfindahl index. Thus, we divide the sample whether the Herfindahl index is increased or not to measure focus changes. Model (3) of Table 12 reports that focus-increasing spin-offs show increase in investment sensitivity after spin-offs at the 10% significance level. This result is consistent with Gertner et al.'s (2002) finding that focus-increasing spin-offs increase the investment efficiency of internal capital markets while non-focus-increasing spin-offs do not.

To examine how bank monitoring influences the investment sensitivity result above, we estimate the investment models using several sub-samples constructed based on various bank-related variables: *keiretsu*-affiliation, bank loan amount normalized by total assets, and main bank ownership. Hoshi et al. (1990) argue that *keiretsu*-affiliated firms are less liquidity constrained even when they are financially distressed, and this propping-up role may lead to monitoring the affiliated firms more closely. Model (1) of

Table 13 reports that *keiretsu*-affiliated firms' spin-offs show a significant increase in investment sensitivity, at the 5% significance level, after the transaction. This supports the finding that the bank-centered group, *keiretsu*, may play a significant monitoring role in internal capital markets.

Model (2) of Table 13 does not show any significant increase in investment sensitivity after spin-offs for either a high or low bank loan amount. We will elaborate on this result later relating to poorly performing firms (low Q) in Panel B of Table 14. However, when we investigate the sample with low and high *main* bank ownership, we find, as shown in Model (3) of Table 13, that there is an increase in investment sensitivity for the high *main* bank ownership sub-sample at the 10% significance level. This is consistent with Morck et al. (2000), showing that the lesser conflict between debt and equity holders with higher ownership affects investment policies by undertaking more good projects. This result implies that the main bank ownership may facilitate monitoring incentives in increasing investment sensitivity through spin-offs.

Finally, Panel A of Table 14 further separates the spin-off-specific sub-samples of Models (2) and (3) of Table 3, based on bank-related and spin-off-specific variables, *keiretsu*-affiliation, and relatedness. Among the four combinations of relatedness and *keiretsu*-affiliation, only *keiretsu*-affiliated and related spin-offs show a significant increase in investment sensitivity as shown in Model (1) in Panel A of Table 14. This result is consistent with our bank-monitoring hypothesis that banks' monitoring facilitates the investment efficiency of internal capital markets after spin-offs. As mentioned, relatedness in Japanese spin-offs is not appropriate for a proxy for corporate focus,

requiring some alternative measure such as the Herfindahl index. From the results of Model (2) in Panel A of Table 14, unrelated spin-offs, even if *keiretsu*-affiliated, do not show any significant increase in investment sensitivity. As shown in Model (3) of Panel A in Table 14, a significant increase of investment sensitivity of merger-facilitated spin-offs is shown by *keiretsu*-affiliated spin-offs. Thus, the bank-centered industrial groups, *keiretsu*, seem to play a significant monitoring role in investment policy in Japanese corporate spin-offs.

Kang et al. (2000) show that banks have greater monitoring incentives for firms with poor investment opportunities (low Q), and that the announcement abnormal returns of Japanese mergers are positively related to the interaction term between main bank loan amount and the low Q dummy variable. They argue that poorly performing firms are more likely to be bank-monitored. Panel B of Table 14 shows the estimated model with the sub-samples with high- and low-Q spin-offs under high and low bank loan amounts. Among the four combinations, only the high bank loan and low-Q sub-sample shows the positively significant coefficient of interaction term, β_2 , of equation (1), consistent with Kang et al.'s (2000) finding. Therefore, we conclude that these results are consistent with our bank-monitoring hypothesis in Japanese internal capital markets.

Conclusion and Future Studies

Our study is based on the basic Q-theory which predicts that firms should invest more if there are better investment opportunities. The Q variable is used as a proxy for investment opportunities and capital expenditures as investments. Based on the basic

empirical framework of Q-theory, we study the investment policy changes in internal capital markets and the impact of banks' monitoring in internal capital markets using Japanese corporate spin-offs.

We analyze the Japanese corporate spin-offs announced from 2001 through 2003 since the establishment of the new spin-offs law. The Japanese spin-off data provides a unique empirical environment where we can focus on the effect of corporate restructurings on the efficiency of internal capital market, not confronted by the control issues. We extend the studies on the relationship between Japanese corporate governance and Japanese deregulations using Japanese spin-offs. Spin-offs are the end-result of Commercial Codes revisions of the Japanese capital market in the late 1990s and the early 2000s, which include revisions of stock repurchases, holding companies, and simplified mergers procedures.

We find that the efficiency of internal capital markets in Japan increases through corporate spin-offs; efficiency of investment policy within the firm has increased. Also, we find that related spin-offs increase investment efficiency after being spun-off. However, we explore this issue more with a more appropriate measure of corporate focus, such as the Herfindahl index and find that focus-increasing spin-off companies increase investment sensitivity consistent with Gertner et al. (2002). Furthermore, we find that bank-centered spin-offs in Japan experience a significant increase in investment sensitivity after being spun off. In addition, there is a significant increase in investment sensitivity for the spin-offs with low Q and high bank loans. This is consistent with the argument that Japanese banks have a greater incentive to monitor the firms with low

investment opportunities (low Q), thus resulting in the improvement in investment efficiency after being spun-off.

However, several future studies on empirical specifications emerged from the results of this study. First, investment sensitivity analysis between capital expenditures and Tobin's Q could be controlled by size variables such as natural logarithm of sales or total assets. In addition to bank related variables, the size effect could contribute to the investment sensitivity. Second, in addition to the bank and size variables, we could control the profitability or leverage of the firms. The profitability or leverage variable such as operating income or debt to equity ratio could affect the investment sensitivity. Finally, cash flows could be used as the proxy for the investment opportunities instead of the capital expenditures. Therefore, the robustness checks by controlling the size, profitability, or leverage and using cash flows for investment opportunities of the firms in empirical analysis may strengthen our arguments.

In sum, our empirical evidence suggests that the efficiency of internal capital markets in Japan increases through spin-offs. Also, banks' monitoring roles seem to have significant positive impacts on investment sensitivity through spin-offs.

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TABLES

Table 10 Annual Frequency of Spin-offs and MA Spin-offs per Year

This table lists the annual frequency of the Japanese spin-offs of listed firms in our sample, categorized by the merger-facilitated spin-offs. The sample includes the finance, real estate, and utility companies, which we excluded for our analysis. The sample of Japanese corporate spin-offs are obtained from MARR (Merger and Acquisition Research Report, Tokyo) published by REOCFF CO., which is the largest M&A data service in Japan and four major Japanese financial papers: *Nihon Keizai Shimbun* (Nikkei Economic Journal), *Nihon Keizai Sangyo Shimbun* (Nikkei Industrial Journal), *Nihon Keizai Ryutuu Shimbun* (Nikkei Distribution Journal), and *Nihon Keizai Kinyuu Shimbun* (Nikkei Finance Journal).

Year	Spin-Offs	MA Spin-Offs	Total
2001	36	36	72
2002	73	47	120
2003	52	49	101
Total	161	132	293

Table 11 Summary Statistics before Spin-offs and Capital Expenditures and Tobin's Q before and after Spin-offs

This table provides the summary statistics of Japanese spin-offs samples listed in the First and Second section of Tokyo Stock Exchange, which are announced from January 1, 2001 through December 31st, 2003 and completed since effective date of the new corporate spin-offs law, April 1, 2001. Financial data is retrieved from NEEDS (*Nikkei Economic Electronic Databank System*). *Keiretsu*-affiliation information is retrieved from *Industrial Groupings in Japan 2001* published by Dodwell Marketing Consultants. Main bank information, bank ownership, and consolidated bank loan data is collected from autumn versions of *Japan Company Handbook* between 2000 and 2003. The estimation of Tobin's Q is calculated as the sum of market value of equity and book value of debt divided by book value of total assets.

Panel A. Summary Statistics before Spin-offs

Variables	Mean	Median	Standard Deviation
Total Assets (billions of yen)	918327	150916	1822521
Sales (billions of yen)	923831	134946	1937767
Capital Expenditures to Total Asset Ratio	0.0426	0.0333	0.0356
Tobin's Q	1.077	0.9498	0.5184
Bank Loan to Total Asset Ratio	0.3063	0.3113	0.2035
Bank Ownership	0.2061	0.2155	0.1049
Main Bank Ownership	0.0590	0.0510	0.0420
Proportion of Firms in <i>keiretsu</i> -affiliation	0.4029	-	-
Proportion of Firms has Bank-Sent Director	0.5708	-	-

Panel B. Capital Expenditures and Tobin's Q before and after Spin-offs

		<u>Capital Expenditures to Total Asset</u>				<u>Tobin's - Q</u>			
		<u>-2</u>	<u>-1</u>	<u>1</u>	<u>2</u>	<u>-2</u>	<u>-1</u>	<u>1</u>	<u>2</u>
Total (N=800)	Mean	0.0430	0.0426	0.0382	0.0463	1.3049	1.0862	0.9638	1.1072
	Median	0.0383	0.0333	0.0349	0.0421	1.0760	0.9499	0.9273	1.0339
<i>Keiretsu</i> – affiliated (N=352)	Mean	0.0394	0.0389	0.0374	0.0463	1.3974	1.1681	1.0151	1.1072
	Median	0.0393	0.0399	0.0369	0.0421	1.1259	1.0093	0.9351	1.0339
Non- <i>keiretsu</i> - affiliated (N=458)	Mean	0.0449	0.0454	0.0391	0.0413	1.2171	1.0179	0.9293	1.0392
	Median	0.0336	0.0318	0.0316	0.0382	0.9924	0.9257	0.9230	0.9229
<i>Keiretsu</i> - Non- <i>keiretsu</i>)	Difference	-0.0055	-0.0064	-0.0017	0.0053	0.1802*	0.1415**	0.0859*	0.0670
	(P-value)	(0.2156)	(0.1675)	(0.7111)	(0.3941)	(0.0774)	(0.0402)	(0.0586)	(0.0392)

Table 12 Investment Sensitivity of Pre- and Post-Spin-offs

This table reports the investment sensitivity analysis results of following panel equation,

$IK_{it} = \alpha_i + \beta_1 * Q_{it} + \beta_2 * Q_{it} * AFTER + \beta_3 * AFTER + \sum \gamma_t * YEAR_t + \varepsilon_{it}$. *IK* is calculated as the ratio of capital expenditure to the book value of total asset. *Q* is Tobin's Q computed as the ratio of the sum of book value of debt and market value of equity to the book value of assets. *AFTER* is the dummy variable, which is indicated as 1 for years -2, and -1, and 0 for years +1, and +2. $\sum \gamma_t * YEAR_t$ is year dummy variables. The numbers in parentheses below the coefficient estimates are *p*-values. The sample is sub-categorized by relatedness and merger-facilitation. If the parent and subsidiaries are in the same industries, then the spin-off is considered to be related. Merger-facilitated transactions spin-off one division and it is merged to one of existing subsidiary within the conglomerate.

Model	(1) Total	(2) Relatedness		(3) Herfindahl Index Focus		(4) Merger-Facilitation	
		Related	Unrelated	Increasing	Non-Increasing	Regular	Merger
Tobin's Q	0.0017 (0.378)	0.0035 (0.2518)	0.0025 (0.300)	-0.0038 (0.190)	0.0118*** (0.000)	0.0112** (0.014)	-0.0023 (0.347)
Tobin's Q × After	0.0092* (0.076)	0.0229** (0.0206)	0.0078 (0.226)	0.0130* (0.064)	0.0093 (0.258)	0.0020 (0.773)	0.0100 (0.215)
After	-0.0102 (0.101)	-0.0277** (0.0218)	-0.0071 (0.370)	-0.0188 (0.431)	-0.0038 (0.796)	-0.0026 (0.774)	-0.01215 (0.181)
No. of Firms	244	130	114	93	65	128	116
No. of Obs.	800	425	375	331	228	385	415
R-square	0.0239	0.0316	0.0216	0.0589	0.0508	0.1074	0.0222

*, **, and *** indicate significance at the 10, 5, and 1 percent levels respectively.

Table 13 Investment Sensitivity of Pre- and Post-Spin-offs

This table reports the investment sensitivity analysis results of following panel equation,

$IK_{it} = \alpha_i + \beta_1 * Q_{it} + \beta_2 * Q_{it} * AFTER + \beta_3 * AFTER + \sum \gamma_t * YEAR_t + \varepsilon_{it}$. IK is calculated as the ratio of capital expenditure to the book value of total asset. Q is Tobin's Q computed as the ratio of the sum of book value of debt and market value of equity to the book value of assets. $AFTER$ is the dummy variable, which is indicated as 1 for years -2, and -1, and 0 for years +1, and +2. $\sum \gamma_t * YEAR_t$ is year dummy variables. The numbers in parentheses below the coefficient estimates are p -values. The sample is sub-categorized by bank-related firm specific variables: *keiretsu*-affiliation, below and above sample medians of, bank loan amount normalized by book value of total assets, and main bank ownership.

Model	<u>(1) Keiretsu</u>		<u>(2) Bank Loan Amount</u>		<u>(3) Main Bank Ownership</u>	
	<u>Affiliated</u>	<u>None</u>	<u>High</u>	<u>Low</u>	<u>High</u>	<u>Low</u>
Tobin's Q	0.0052** (0.015)	-0.0002 (0.961)	-0.0049 (0.129)	0.0067*** (0.008)	0.0018 (0.453)	0.0021 (0.545)
Tobin's Q × After	0.0147** (0.015)	0.0066 (0.391)	0.0127 (0.137)	0.0069 (0.302)	0.0107* (0.098)	0.0075 (0.401)
After	-0.0089 (0.211)	-0.0116 (0.222)	-0.0087 (0.352)	-0.0135 (0.115)	-0.0120 (0.133)	-0.0079 (0.437)
No. of Firms	105	139	120	124	137	107
No. of Obs.	352	448	394	406	451	349
R-square	0.0687	0.0141	0.0243	0.0602	0.0434	0.0311

*, **, and *** indicate significance at the 10, 5, and 1 percent levels respectively.

Table 14 Investment Sensitivity of Pre- and Post-spin-offs

This table reports the investment sensitivity analysis results of following panel equation, $IK_{it} = \alpha_i + \beta_1 * Q_{it} + \beta_2 * Q_{it} * AFTER + \beta_3 * AFTER + \sum \gamma_t * YEAR_t + \varepsilon_{it}$. IK is calculated as the ratio of capital expenditure to the book value of total asset. Q is Tobin's Q computed as the ratio of the sum of book value of debt and market value of equity to the book value of assets. $AFTER$ is the dummy variable, which is indicated as 1 for years -2, and -1, and 0 for years +1, and +2. $YEAR_t$ is year dummy variables. The numbers in parentheses below the coefficient estimates are p -values. The sample is sub-categorized by combinations of spin-offs and bank-related firm specific variables.

Panel A. Keiretsu-Affiliation vs. Focus and Merger-Facilitated Spin-offs

Model	(1) Related		(2) Unrelated		(3) Merger-Facilitation		(4) Regular Spin-offs	
	<i>Keiretsu</i>	<i>Non-Keiretsu</i>	<i>Keiretsu</i>	<i>Non-Keiretsu</i>	<i>Keiretsu</i>	<i>Non-Keiretsu</i>	<i>Keiretsu</i>	<i>Non-Keiretsu</i>
Tobin's Q	-0.0013 (0.657)	0.0106** (0.027)	0.0041 (0.122)	-0.0053 (0.148)	-0.0022 (0.369)	-0.0017 (0.654)	0.0066 (0.296)	0.0087 (0.160)
Tobin's Q × After	0.0281*** (0.001)	0.0027 (0.838)	0.0089 (0.230)	0.0072 (0.413)	0.0202** (0.016)	-0.0010 (0.937)	0.0049 (0.506)	-0.0009 (0.936)
After	-0.0131 (0.194)	-0.0183 (0.228)	-0.0055 (0.533)	-0.0038 (0.729)	-0.0121* (0.193)	-0.0103 (0.470)	-0.0017 (0.855)	-0.0038 (0.781)
No. of Firms	51	80	52	61	51	65	54	76
No. of Obs.	172	257	172	199	186	229	164	227
R-square	0.1171	0.0469	0.0521	0.0227	0.0582	0.0320	0.0584	0.0960

Panel B. Q-dummy vs. Bank Loan Amount

Model	(1) Low Q		(2) High Q	
	<u>High Bank Loan</u>	<u>Low Bank Loan</u>	<u>High Bank Loan</u>	<u>Low Bank Loan</u>
Tobin's Q	-0.0074 (0.613)	-0.0433*** (0.000)	0.0053 (0.121)	-0.0013 (0.774)
Tobin's Q × After	0.0526** (0.034)	0.0372 (0.104)	0.006 (0.577)	-0.0194 (0.218)
After	-0.0529*** (0.009)	-0.0138 (0.433)	0.0054 (0.729)	0.0151 (0.437)
No. of Firms	51	65	54	76
No. of Obs.	186	229	164	227
R-square	0.0582	0.0320	0.0584	0.0960

*, **, and *** indicate significance at the 10, 5, and 1 percent levels respectively.

GENERAL CONCLUSION

We study the relationship between internal capital market and banks relationship by examining the Japanese corporate spin-offs from 2001 through 2003 since the establishment of new spin-offs law in Japan. The Japanese spin-off data provide a unique environment in which we can focus on the effect of corporate restructurings on the efficiency of internal capital markets, not confronted by the control issues.

Empirical evidence of this study shows that there are significant increase in efficiency of internal capital markets after spin-offs; positive abnormal returns around the announcement; significant positive market-adjusted returns after the spin-offs for 12, 24, and 36 months; a significant increase in focus of firms in terms of the Herfindahl index; a significant reduction in the diversification discount; and a significant increase in investment sensitivity after the spin-off transactions. Furthermore, these increases of internal capital market efficiency are closely related to bank relationship variables such as *keiretsu*-affiliation, main bank ownership, bank loan amount, or existence of a bank-appointed director. Thus, our empirical evidence suggests that there is a significant relationship between internal capital markets and banks in Japan; the closer relationship with banks creates shareholder wealth, increases the focus of firms, reduces the diversification discounts, and increases the investment efficiency after the internal capital market reorganizations through spin-offs.

In sum, our empirical evidence suggests that the efficiency of internal capital markets in Japan increases through spin-offs. Also, banks' monitoring roles seem to have significant positive impacts on efficiency of internal capital markets.