

Internal Capital Markets and Bank Relationships: Evidence from Japanese Corporate “Spin-offs”

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Abstract

We analyze the relationship between the efficiency of internal capital markets and the monitoring role of banks by examining 132 Japanese corporate spin-offs created between the years of 2001 and 2003 (since the establishment of a new Japanese spin-off law in 2001). Our main contributions are three-fold. The first stems from the uniqueness 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, the overall governance structure of the subsidiary 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.

Second, our study provides evidence on the monitoring role of banks by investigating diversification discounts, investment behavior, and corporate focus around Japanese spin-offs. It is well-known that the Japanese corporate structure is governed by a bank-centered relationship. Thus, the Japanese spin-off 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 this delegated monitoring reduces the information asymmetry between the firms and the capital markets.

Third, this investigation extends the studies on Japanese deregulation, which has been implemented for the past two decades. The new corporate spin-off law in 2001 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 methods and stock transfer systems. The data of this study covers the deregulation time period from 2001 to 2003, which has not yet been examined in the literature.

We find significant positive average cumulative abnormal returns around the announcements and market-adjusted excess returns after the spin-offs. Corporate focus has increased, while the diversification discount has substantially decreased. We further find evidence consistent with the bank monitoring hypothesis that banks can improve the efficiency of the internal capital market by resolving the information asymmetries and agency problems that develop between investors and firms.

JEL Classifications: G21, G31, G34

Keywords: Internal capital markets; Bank relationships; and Japanese “Spin-offs”

Internal Capital Markets and Bank Relationships: Evidence from Japanese Corporate “Spin-offs”

This study focuses on Japanese corporate spin-offs and investigates the relationship between the efficiency of internal capital markets and the monitoring role of banks. Our main contributions are three-fold. The first stems from the uniqueness of the Japanese spin-off structure, in which a division becomes a new subsidiary but still remains under the control of the parent company.¹ Thus, the overall governance structure of the subsidiary 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. 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.²

Second, our study provides evidence on the monitoring role of Japanese banks by investigating diversification discounts, investment behavior, and corporate focus around Japanese spin-offs. It is well-known that the Japanese corporate structure is governed by a bank-centered relationship. Thus, the Japanese spin-off 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

¹ Dittmar and Shivdasani (2003) study the effect of divestitures on diversification discounts, focusing only on the remaining parent company. Gertner et al. (2002) analyze the investment policy changes only for spun-off firms. Ahn and Denis (2004) examine the combined effect of spin-offs on the diversification discount.

² Rajan, Servaes, and Zingales (2000), Scharfstein, and Stein (2000), Lamont (1997), and Shin, and Stulz (1998) argue for the inefficiency of internal capital markets. In contrast, Matsusaka and Nanda (2002) and Stein (1997) argue for their efficiency.

this delegated monitoring reduces the information asymmetry between the firms and the capital markets.³

Third, this investigation extends the studies on Japanese deregulation, which has been implemented for the past two decades. The new corporate spin-off law in 2001 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 methods and stock transfer systems. The data of this study covers the deregulation time period from 2001 to 2003, which has not yet been examined in the literature. Anderson and Makhija (1999), Wu and Xu (2005), and Kato et al. (2005) investigated the effect of financial deregulation in Japan using the data from the 1980s, 1974-1997, and 1997-2001, respectively.

There are four major bank-centered Japanese corporate governance systems: (main) banks, bank-centered industrial groups called *keiretsus*, bank ownership of firms, and bank-appointed directors. The main banks are typically the major lenders to firms and play the role of information controllers and monitors of the firm, intervening in financial decisions. *Keiretsu*⁴ refers to a bank-centered, long-term transactional relationship linked by “stable inter-corporate shareholding” between firms (Morck and Nakamura 1999).⁵ Another unique aspect of Japanese corporate governance is the equity ownership structure, which involves *cross shareholdings* between industrial firms and

³ 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 firms allows banks to monitor these firms, while Lummer and McConnell (1989) assert that banks are important and credible transmitters of firm-specific information to the capital market.

⁴ 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.

⁵ Morck and Nakamura (1999) define ‘stable shareholders’ as those who almost never sell out and consistently support management.

banks.⁶ Lastly, Japanese banks occasionally appoint bankers to the board of firms for the purpose of monitoring managers.

We investigate the 132 Japanese corporate spin-offs created between 2001 and 2003 (since the establishment of the new corporate spin-offs law in April 2001). On April 1, 2001, the new spin-off law became effective in Japan, and many firms started creating spin-offs through reorganization. We find that there are significant positive abnormal returns around the announcement and significant positive market-adjusted returns after the spin-offs. Corporate focus in terms of the Herfindahl index has increased, while the diversification discount has been substantially reduced. In cross sectional analyses, announcement abnormal returns, post-spin-offs performance, Herfindahl index increases, and reduction in the diversification discount are significantly and positively related to bank relationship variables such as (main) bank loans, bank ownership, and existence of bank-appointed directors.

Literature on internal capital markets 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 efficiency of capital allocation. Dittmar and Shivdasani (2003) show that divestiture reduces the diversification discount and increases the efficiency of segment investment. Ahn and Denis (2004) show that after spin-offs, there is a significant increase in investment efficiency, while the diversification discount is substantially reduced. Consistent with these existing results, investment seems

⁶ Morck, Nakamura, and Shivdasani (2000) explain the origins of Japanese bank ownership in detail.

to become more sensitive to the change in investment opportunity after spin-offs. Further, this improved efficiency appears to result from increased corporate focus.

The present study also contributes to the internal capital market literature from the angle of the uniqueness of banks and complements the studies that focus on the monitoring role of the Japanese bank. Kang, Shivdasani, and Yamada (2000) showed that in Japanese domestic mergers, the close relationships between banks and firms enhance shareholder wealth and improve investment efficiency.⁷ We provide further evidence on the monitoring role of Japanese banks in internal capital markets, consistent with Kang, Shivdasani, and Yamada (2000). Finally, we confirm recent evidence in Walker (2005) and Wu and Xu (2005) that the *keiretsu* structure in Japan hinders the efficiency of internal capital markets.

The rest of the paper is structured as follows. In Section I, we provide the background on the Japanese spin-offs examined. In Section II, we describe the data and descriptive statistics of Japanese corporate spin-offs. In Section III, we analyze and interpret the empirical results. Section IV elaborates on the diversification discount and investment efficiency. Finally, Section V summarizes and concludes the major tenets of our arguments.

I. Japanese Financial Deregulation and Internal Capital Market Restructuring

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 implemented a wide range of

⁷In a similar argument, Kaplan (1994), Kaplan and Minton (1994), and Kang and Shivdasani (1995, 1997) document the significant monitoring roles of Japanese banks.

deregulation measures through numerous revisions of the Commercial Code. Among these, the standards for bond issuance were liberalized through deregulation acceleration in the mid-1980s. As a result of this deregulation, many Japanese firms could reduce the 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 bonds, suggests that monitored bank financing (compared to public debt) provides benefits to firms with high agency costs. Along with this study, Wu and Xu (2005) studied a sample of Japanese firms from 1974-1997, finding adverse *keiretsu*-effects in the 1980s. This 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 a serious recession after the Asian financial crisis in 1998-99. In fact, the deregulation of the Japanese financial market started in 1998 through Commercial Code amendments. The amendments enhanced flexibility in the financial markets⁸: stock options provisions, mergers, and internal capital market reorganization. The stock options provisions amendments allowed the issuance of stock options for employees, including executives. Kato et al. (2005) studied the shareholder wealth effect of 350 firms that adopted option-based compensation plans between 1997 and 2001, and they found that good incentive-based compensation plans create shareholder value. In 1997, merger procedures were

⁸ Milhaupt (2003) divides the amendments into two groups: *flexibility enhancing amendments* and *monitoring enhancing amendments*. The former expands stock options and enhances organizational flexibility for Japanese firms in mergers, divestitures, and corporate reorganization. The latter addresses changes to the shareholder-derived suit mechanism, statutory auditor system, and the corporate board structure.

simplified, and the Revision of the Anti-monopoly Law allowed the establishment of pure holding companies, which had been 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 Code introduced the procedures for company split-ups to facilitate the restructuring through spin-offs or divestitures.

We extend earlier studies on the relationship between Japanese corporate governance and Japanese deregulations using the Japanese spin-off data from 2001 to 2003. On April 1, 2001, the new spin-off laws went into effect, and many Japanese firms became involved in the spin-offs for their corporate restructurings. The new spin-off law is 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, 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.⁹ Thus, this study investigates the effect of financial deregulation in Japan after 2001, using corporate spin-off data that have not been examined yet.

Around the time of the Asian financial crisis at the end of the 1990s, Japanese corporations and the government started to realize the need for corporate reorganization, 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

⁹ Japan Investor Relations and Investor Support, Inc. Research Newsletter, Issue No.1, December 2001

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 law 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 the flexibility of corporate restructuring. However, the procedure has been simplified since the new Commercial Code revision in 2001. In the past, cash transactions were required, but the new law allowed easier, cash-less transactions, accompanied by the stock swap and stock transfer system changes in 1999. Consequently, it became easier for firms to choose their optimal corporate structure, setting the stage for implementing the new corporate spin-off laws in Japan.

II. Data and Sample Selection

We obtain our sample of Japanese corporate spin-offs from those announced between January 1, 2001 and December 31, 2003 and completed since the effective date of the new corporate spin-off 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 the Tokyo Stock Exchange prior to the spin-off event year.¹¹ We retrieve information on main banks, bank ownership, and consolidated bank loan 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), the *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-off companies and related units. Daily stock prices and the daily Nikkei Average Index are retrieved from *NEEDS*.

Initial spin-off data consist of 293 observations made between 2001 and 2003; we exclude 132 merger-facilitated spin-offs. Financial data for 10 companies are not available from the *NEEDS*. The sample also excludes 11 companies-- 7 real estates, 2 finance firms, and 2 utility companies. Additionally, 8 of the remaining spin-offs are eliminated because they are related to firms spinning off more than one division. Thus, the final sample includes 132 spin-offs. Table I describes the annual frequency of Japanese corporate spin-offs by *keiretsu*-affiliation of the parent firms. Non-*keiretsu*-affiliated firms (80 cases) are more frequently involved in corporate spin-offs than their affiliated counterparts (52 cases) during the sample period. Also, the annual frequency of

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

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

spin-offs increased significantly from 30 in the first year (2001) to 61 in 2002 and 41 in 2003. Using the 40 MARR industry classifications, Table II shows the frequency of related and unrelated spin-offs. If the parent company and its subsidiaries are in different industries, then the spin-off is considered to be unrelated. In the literature, un-relatedness is considered equivalent to focus-increasing. However, this distinction becomes obscure in the case of the Japanese spin-offs in our sample because the spun-off firms are still under the parents' control. Therefore, we employ the Herfindahl index as an alternative measure of corporate focus.¹² It seems that unrelated spin-offs are slightly more frequent than related ones, while focus-increasing spin-offs are more dominant than non-increasing ones. Table III shows the summary statistics of sample firm characteristics and bank governance variables. The firms are large with average assets of ¥656 billion and average sales of ¥608 billion. The average Q is about 0.95 with a median of 0.87. Capital expenditures normalized by total assets are about 4.15% on average. Forty percent of the sample firms is associated with focus-increasing (measured by Herfindahl index) spin-offs. Thirty-three percent of the sample firms are related spin-offs in terms of industries. The mean bank loan ratio is about 0.3. Banks as a whole own about 20% of equity, while main banks own approximately 6% on average. About 40% of the sample firms are affiliated with *keiretsus*. Finally, about 64% of the sample firms have bank-appointed directors. Overall, exposure of the sample firms to bank relationships seems substantial.

III. Empirical Results: Announcement Effects and Bank Governance

A. Univariate Results

¹² Desai and Jain (1999) classify a spin-off to be focus-increasing if the Herfindahl index increases after the spin-off compared to the year before the spin-off. The Herfindahl index is calculated as the sum of squares of each segment's sales as a proportion of total sales.

Table IV shows the two-day average cumulative abnormal returns (i.e., CARs) for parent firms around the spin-off announcement. These returns are calculated based on the market model, with parameters estimated from 258 days to 11 days before the spin-off announcement date. The cumulative abnormal returns are calculated around the announcement window of (-1, 0), where 0 denotes the initial announcement date. On average, the whole sample shows 1.95% abnormal returns at the 10% significance level. Measured with relatedness or focus in terms of the Herfindahl Index, we do not observe any significant differential effect on the CARs. This is in contrast to the results with U.S. spin-offs, in which the CARs for the focus-increasing spin-offs are significantly higher than those of the non-focus-increasing ones (see Daley, Mehrotra and Sivakumar 1997; Desai and Jain 1999). *Keiretsu*-affiliated spin-offs show 4.86% abnormal returns at the 10% significance level. However, non-*keiretsu*-affiliated spin-offs do not show significant abnormal returns. Albeit statistically weak, the difference of 5% for the two-day abnormal return may be economically substantial. Thus, our results suggest that the Japanese market expects shareholder wealth to improve more significantly for *keiretsu*-affiliated firms than for independent firms, as a result of spin-off reorganization. Interestingly, the abnormal returns in spin-offs with bank-appointed directors are shown to be much greater than those without bank-appointed directors. Both mean and median tests show a very significant difference at the 5% and 1% level, respectively. We examine other bank-related governance variables and their effect on CARs. The bank loan ratio (bank loans normalized by the book value of total assets) and bank ownership appear to affect the abnormal returns. Overall, banks seem to play an effective monitoring role based on the market's positive response to bank governance variables. In the next section,

we closely examine these bank relationship variables in the multivariate frame to assess the bank's monitoring role in the internal reorganization.

B. Multivariate Results

Table V shows the multivariate regression results with two-day cumulative abnormal returns around the spin-off announcement as the dependent variable and firm-specific control variables and bank relationship variables as independent variables. The regression analysis controls for firm size, corporate focus, and corporate performance (or investment opportunity) of the firms prior to the spin-off announcements. We measure firm size as the logarithm of the total assets, and we measure corporate performance as Tobin's Q. We use two alternative measures of corporate focus – relatedness of spin-offs and change in the Herfindahl index. Since the regression results are the same qualitatively, we only report the results with a relatedness dummy: the focus-increasing dummy variable is 1 if the industry of the parent company is different from that of the spin-off. In model (1) of Table V, we regress the CARs against a *keiretsu*-affiliation dummy variable and the above-mentioned control variables. There is a significant difference (6.65%) in abnormal returns around the announcement between *Keiretsu*-affiliated and non-*keiretsu*-affiliated firms, after controlling for other variables. As in the univariate analysis, *keiretsu* affiliation is an important determinant of the CARs. This market's response can be interpreted as indicating that the spin-off reorganization is expected to improve shareholder wealth more in *keiretsu*-affiliated firms than in independent firms.

In models (2) and (3) of Table V, we find that the existence of bank-appointed directors and/or *keiretsu* affiliation contributes to significantly high CARs. This indicates

that the market expects the greatest improvement in shareholder wealth for the firms with bank-appointed directors and *keiretsu* affiliation. In model (4) of Table V, the bank loan ratio shows a significant relationship with the abnormal announcement returns at the 10% level. It is interesting to observe that the significance of the effect of the bank loan ratio disappears in model (5) when we add an interaction term between the bank loan and *keiretsu* affiliation dummy. The coefficient estimate (i.e., 0.1356) of the interaction term is found to be significant at the 5% level. Specifically, as the bank loan ratio increases by its standard deviation, the CARs would increase by as much as 3.27% [$.19837 \times (.029 + .1356)$] when the spin-offs are affiliated with *keiretsu*. This suggests that the effect of the bank relationship is stronger in *keiretsu*-affiliated spin-offs.

One of the unique features of the Japanese industrial structure is the equity ownership of industrial firms by Japanese banks. Morck et al (2000) find that there is a non-linear relationship between bank ownership and firm value. Banks as creditors may act against maximizing shareholder wealth; low to moderate ownership may empower banks to expropriate their shareholders. However, with high levels of bank ownership, the adverse incentive is expected to be mitigated, and the positive effect of monitoring kicks in. In order to discuss this potentially important topic, model (6) estimates the relationship between the CARs and the bank loan ratio and its interaction with a bank ownership dummy that is equal to 1 if the bank ownership is above the median. The coefficients on both the bank loan and the interaction with bank ownership are all insignificant – indicating a lack of evidence to support the argument that bank ownership affects firm value in a nonlinear manner.¹³

¹³ Morck et al. (2000) employ main bank ownership instead of bank ownership as a whole. Due to insufficient data on main bank ownership, we use bank ownership data instead. When we estimate the

We estimate model (7) in order to address the argument that the bank's monitoring role may be more effective in relatively poor investment opportunities, which are measured by low Q values (Kang et al. 2000). In our sample, the coefficient of the interaction is negative but insignificant. The difference is that Kang et al. (2000) examine takeovers, which affect the internal capital market drastically in comparison with our case where the internal capital market remains in tact. Finally, when the interaction term between bank loan ratios and the bank-appointed director dummy is added in the regression, we find the all coefficients are insignificant, including that for the bank loan ratio. We suspect that the amount of bank loans and the decision of appointing directors in the firm's board may not be independent, and this dependency (or correlation) may lead to the insignificant results in model (8).

C. Post-Spin-Off Market-Adjusted Long-Term Returns

We have documented the market's response (CARs) to Japanese spin-off announcements and the effect of bank governance on the CARs. In this section, we examine how the firms perform in the market after restructuring. We continue to analyze the bank's monitoring role in determining post-spin-off performance. We evaluate the post-spin-off, market-adjusted, long-term abnormal returns, closely following the method of Spiess and Graves (1995). The market-adjusted returns for company i in month t after the ex-date are defined as:

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

relationship with main bank ownership with 88 observations, the interaction term coefficient is significant at the 1% level. That is, with higher ownership, the main bank's monitoring becomes more effective in enhancing shareholder wealth.

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

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

Table VI shows the univariate analysis of average post-spin-off, market-adjusted abnormal returns and its significance. Twelve months, 24 months, and 36 months after the spin-offs, we observe significant positive abnormal returns of 1.37%, 1.11%, and 0.94%, respectively, at the 1% significance level. The results indicate that the internal reorganization via spin-offs creates value for shareholders in the long run. We investigate whether the established relationship between improved shareholder wealth and bank-related variables persists after spin-offs. In contrast to the case of the announcement effect, *keiretsu* affiliation, corporate focus, and bank-appointed directorship do not influence post-spin-off performance. However, the bank loan ratio turns out to be a very important determinant of post-spin-off performance. For the periods of six, twelve, twenty four, and thirty six months after the spin-off, the spin-offs with high bank loan ratios (above the median) show very significant post-spin-off performance. In contrast, this performance is significant only for the 12-month period in the low bank loan sample.

Table VII shows the multivariate regression results, which are based on 12 months of post-spin-off, market-adjusted abnormal returns as the dependent variables and firm-specific control variables and bank-relationship variables as independent variables. In all models of Table VII, the coefficient estimates of bank loan ratios are very significant at either the 1% or 5% level. This confirms the market's expectation of the positive monitoring role of banks. It is interesting to observe significantly negative

coefficients for asset size. Further, the interaction term with Tobin's Q is insignificant while the interaction term with the bank ownership dummy is negative and significant at the 5% level. The result with Tobin's Q is consistent with the earlier result in the announcement effect shown in Table V. However, model (3) shows a strong interaction effect of bank ownership, which implies a substitution effect of bank monitoring. That is, the effectiveness of bank monitoring may diminish with bank ownership, which is supported by the significant and negative interaction term (i.e., -0.0421).

IV. Diversification Discount and Investment Sensitivity around Spin-Offs

A. Diversification Discount

This paper finds a significant diversification discount on the value of spin-off samples of Japanese firms. This result is consistent with Lins and Servaes (1999), who examine international evidence on a diversification discount for Germany, Japan, and the United Kingdom. They find that the Japanese and UK corporations have significant diversification discounts while German corporations do not. 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 the diversification discount (Discount) and the multiplier estimation of imputed value, $I(V)$, as follows:

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

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

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 with sales by the segment's level. We find that the diversification discounts in the Japanese firms are significantly reduced after the spin-offs. Furthermore, the degree of reduction in diversification discounts is positively related to the firms' relationship with banks.

In Panel A of Table VIII, the cross-sectional regression results suggest that the degree of reductions in the diversification discount is strongly determined by the increase of corporate focus, which is consistent with previous work (Ahn and Denis 2002 and Gertner and et al. 2002). The focus coefficients are all positive and very significant at the 1% level. An important point is warranted here. Since we are interested in the effect of corporate focus on the diversification discount in the context of Japanese spin-offs (an internal reorganization), we need to resort to an alternative measure of focus. We use a sales-based Herfindahl index to measure focus.¹⁴ This measure may change even if the spun-off division stays within the organization when sales are concentrated on a few business segments.

¹⁴ In our sample, the difference of the Herfindahl index between one year after and one year before spin-offs is shown to be significantly positive at the 5% significance level (not reported).

We do not observe any significant relationship between diversification discount changes and bank governance variables. All models, except model (3), show negative but insignificant coefficients for bank loan ratios. This is an unexpected result, given the previous strong relationship between CARs and bank loan ratios. The presumption is that bank loan ratios reflect banks' relationships with their client firms. As discussed in Morck et al., there are two counteracting effects of bank debt toward shareholder maximization. One is to maximize shareholder wealth as a monitor, and the other is to maximize the interest of bondholders as a creditor. In order to address this potential interaction effect of bank loans and ownership, we add the ownership interaction factor in model (4). The estimation results are all insignificant.

Moreover, Walker (2005) provides recent evidence that investment is inefficient for *keiretsu*-affiliated firms while the investment of non-affiliated firms is sensitive to growth opportunity. He argues that the inefficiency of investment of *keiretsu*-affiliated firms may destroy value. Lins and Servaes (1999) also showed that diversified firms in Japan were discounted at 20 percent when those firms belong to a *keiretsu*. Model (2) of Panel A also provides a result consistent with Walker (2005). That is, the coefficient for the *keiretsu* dummy is significantly negative, which means that the diversification discount change is smaller for the *keiretsu*-affiliated spin-offs than for the independent ones. Furthermore, the coefficient on the interaction term between the bank loan ratio and the *keiretsu* dummy is also significant and negative, as shown in model (3), implying that banks behave as creditors that decrease the value of *keiretsu*-affiliated firms. Specifically, the bank loan coefficient for the independent firm is positive (1.57) but insignificant. However, in the case of *keiretsu*-affiliated firms, the coefficient estimate is -2.144 (i.e., -

3.716 + 1.572), implying that the diversification discount becomes larger as the bank loan ratio increases. The difference between the two coefficients is the same as the coefficient estimate of the interaction term (i.e., -3.716), which is statistically significant at the 5% level.

In order to mitigate the confounding effect of the bank loan ratio and bank ownership, we examine a subset of the data in which banks have an equity ownership. A client firm borrows funds from multiple banks, each of which may or may not own equities of the client firm. In our sample, even some main banks do not hold any equities in their client firms. Naturally, banks with no equity at all are likely to behave more as creditors than those with some equity ownership. Therefore, in the analysis in Panel B, we use only the loan amount of the banks that have some equity ownership. As shown in model (1) of Panel B of Table VIII, even with the small sample, the bank loan ratio has a significant positive relationship with the diversification discount change. This is consistent with the argument that banks with some equity ownership play a strong monitoring role, which leads to reduced diversification discounts and value creation.

However, the detrimental effect of the *keiretsu* is also evident with this sample. According to model (2) of Panel B, the interaction term with the *keiretsu* is negative and significant at the 1% level, indicating that a closer connection with banks (reflected in higher bank loan ratios) results in more excess value after spin-offs in independent firms than in *keiretsu*-affiliated firms. The estimation in model (3) suggests that bank ownership amplifies the monitoring effect of bank loan ratios on the diversification discount. The coefficients for the bank loans and ownership interaction is almost five times (i.e., 5.56 with p -value of 0.08) the previous coefficient (1.39 with p -value of 0.38

in Panel A). Finally, the very significant coefficient for the interaction term between bank loans and low-Q firms in model (5) supports the fact that the monitoring effect is pronounced for poorly performing firms.

B. Investment Sensitivity and the Internal Capital Market

In order to further assess the source of the reduction in diversification discounts after spin-offs, we examine investment behavior around spin-offs. We assume that improved internal capital markets minimize any misallocation of internal resources: firms in efficient internal markets should invest more if there are better investment opportunities. Tobin's Q is taken as a proxy for investment opportunities, and capital expenditures scaled by total assets are considered investment measures. Our regression model is similar to that of Gertner et al. (2002), in which the estimation is based on the panel framework of years -2, -1, +1, and +2 around spin-off transactions. We exclude the spin-off year in order to avoid any potential confounding effects during the transitional period. The basic empirical model is as follows:

$$IK_{it} = \alpha_i + \beta_1 * Q_{it} + \beta_2 * Q_{it} * AFTER + \beta_3 * AFTER + \sum_t \gamma_t * YEAR_t + \varepsilon_{it}. \quad (3)$$

In equation (3), 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 post-spin-off time periods 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 that checks for any significant increases in investment sensitivity after spin-off transactions. As discussed earlier, unlike other studies, our data make it convenient to compare between pre- and post-spin-off

events in the examination of the overall effect of the spin-offs, because the consolidated financial data is available before and after spin-offs.

Gertner, Power, and Scharfstein (2002) show that the spin-offs improve the efficiency of capital allocation through spin-offs: these results are found primarily in the industries of unrelated parent and spin-off firms and in spin-offs with higher announcement returns. Desai and Jain (1999) find that both the announcement period and long-run abnormal returns for 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. They argue that inefficient investment is partly responsible for the diversification discount and support the corporate focus and financing hypothesis. Therefore, we expect a significant positive β_2 - the coefficient of the interaction term between Tobin's Q and the *AFTER* dummy variable in equation (3) - if the investment efficiency of internal capital markets increases through spin-offs. Furthermore, we estimate equation (3), dividing the sample into sub-samples based on the firm characteristics of the spin-offs: focus-increasing vs. non-focus-increasing. We also hypothesize that the banks' monitoring function should increase the investment efficiency of internal capital markets. This means that we expect a greater β_2 (the interaction term coefficient) for greater bank loans.

Overall, in Table IX, we observe that the investment sensitivity does not change around the spin-off reorganization. However, investment becomes more sensitive after spin-offs for the sample of focus-increasing spin-offs. The estimated coefficient of Tobin's Q for focus-increasing spin-offs is negative and significant (p -value = 0.055).

This suggests that internal capital markets before focus-increasing spin-offs were not efficient. However, the interaction term coefficient is positive and significant around the 5% level. This means that after spin-offs, the internal capital market has become more efficient: investment becomes more sensitive to investment opportunity. Given the previous result on the relationship between the diversification discount and focus in Table VIII, we conclude that the source of the improved value seems to be the increased investment efficiency resulting from focus-increasing spin-offs.

V. Summary and Conclusion

We study the relationship between internal capital markets and banks by examining Japanese corporate spin-offs for the period from 2001 through 2003. 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, without considering 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 corporate focus in terms of the Herfindahl Index, and a significant reduction in the diversification discounts.

Furthermore, the announcement abnormal returns are positively related to the *keiretsu*-affiliation of firms, bank loan ratios, and bank-appointed directorship. This can be interpreted as an indication that spin-off reorganization is expected to improve shareholder wealth more significantly in close bank relationship settings and in *keiretsu*-affiliated firms.

The abnormal returns are shown to persist after spin-offs. The long-term performance measured by market-adjusted, 12-month excess returns are significantly and positively related to the bank relationship measured by the bank loan ratio. The corporate spin-offs in Japan seem to significantly reduce the diversification discount. Further, we find a very strong relationship between the diversification discount and corporate focus. However, the relationship between the diversification discount and bank relationships is complex because of Japan's unique industrial structure, which includes the *keiretsu* and bank equity ownership.

We find some evidence that the closer relationship with banks reduces diversification discounts, especially for independent firms without *keiretsu* affiliation. This confirms recent evidence in Walker (2005) that *keiretsu*-affiliated firms are associated with inefficient investment policies. Finally, we provide evidence that for focus-increasing spin-offs, investment becomes efficient after spin-offs. We conclude that the source of the improved value seems to be the increased investment efficiency resulting from focus-increasing spin-offs.

REFERENCES

- Ahn, S, and Denis, D, 2004, Internal capital markets and investment policy: evidence from corporate spinoffs, *Journal of Financial Economics* 71, 489-516.
- Anderson, C.W., and Makhija, A., M., 1999, Deregulation, disintermediation, and agency costs of debt: Evidence from Japan. *Journal of Financial Economics* 51, 309-339.
- Berger, P., and Ofek, E., 1995, Diversification's effect of firm value, *Journal of Financial Economics* 37, 39-65.
- Daley, L., Mehrotra, V., and Sivakumar, R., 1997, Corporate focus and value creation: Evidence from spinoffs, *Journal of Financial Economics* 45, 257-281.
- Desai, H., and Jain, P., 1999, Firm performance and focus: long-run stock market performance following spinoffs, *Journal Financial economics* 54, 75-101.
- Diamond, D., 1984, Financial intermediation and delegated monitoring, *Review of Economics Studies* 51, 393-414.
- Diamond, D., 1991, Monitoring and reputation: The choice between bank loan and publicly placed debt, *Journal of Political Economy* 99, 689-721.
- Dittmar, A., and Shivdasani, 2003, Divestitures and divisional investment policies, *Journal of Finance* 58, 6, 2711-2743.
- Fama, E., 1985, What's different about banks, *Journal of Monetary Economics* 15, 29-39.
- Gertner, R., Powers, E., and Scharfstein, D., 2002, Learning about internal capital markets from Corporate Spin-offs, *Journal of Finance* 57, 6, 2479 – 2506.
- Hoshi, T., Kashyap, A., and Scharfstein, D., 1990, The role of banks in reducing the costs of financial distress in Japan, *Journal of Financial Economics* 27, 67-88.
- Hoshi, T., Kashyap, A., and Scharfstein, D., 1991, Corporate structure, liquidity, and investment: Evidence from Japanese industrial groups, *Quarterly Journal of Economics* 106, 33-60.
- Kang, J., and Shivdasani, A., 1995, Firm performance, corporate governance, and top executive turnover in Japan, *Journal of Financial Economics* 38, 29-58.
- Kang, J., and Shivdasani, A., 1997, Corporate restructuring during performance decline in Japan, *Journal of Financial Economics* 46, 29-65.

- Kang, J., Shivdasani, A., and Yamada, T., 2000, The effect of bank relations on investment decisions: An investigation of Japanese takeover bids, *Journal of Finance* 55, 2197-2218.
- Kaplan, S., 1994, Top Executive rewards and firm performance: A comparison of Japan and the U.S., *Journal of Political Economy* 102, 510-546.
- Kaplan, S., and Minton, B., 1994, Appointments of Outsiders to Japanese Boards: Determinants and Implications for Managers, *Journal of Financial Economics* 36, 225-258.
- Kato, H., Lemmon, M., Luo, M., and Schallheim, 2005, An empirical examination of the costs and benefits of executive stock options: Evidence from Japan. *Journal of Financial Economics* 78, 435-461.
- Lang, L., and Stulz, R., 1994, Tobin's q, corporate diversification, and firm performance. *Journal of Political Economy* 102, 1248-1280.
- Lamont, O., 1997, Cash flow and investment: evidence from internal capital market, *Journal of Finance* 52, 83-109.
- Lins, K., and Servaes, H., 1999, International evidence on the value of corporate diversification, *Journal of Finance* 54, 2215-2239.
- Lummer, S., and McConnell, J., 1989, Further evidence on the bank lending process and the capital-market response to bank loan agreements, *Journal of Financial Economics* 25, 99-122
- Matsusaka, N., and Nanda, V., 2002, Internal capital markets and corporate refocusing. *Journal of Financial Intermediation* 11, 176-211.
- Milhaupt, C., 2003, A lost decade for Japanese corporate governance reform?: What's changed, what hasn't, and why, Columbia University Law School working paper series.
- Morck, R., and Nakamura, M., 1999, Banks and corporate control in Japan, *Journal of Finance* 54, 319-339.
- Morck, R., Nakamura, M., and Shivdasani, A., 2000, Banks, ownership structure, and firm value in Japan, *Journal of Business* 73, 4, 539 – 567.
- Rajan, R., Servaes, H., Zingales, L., 2000. The cost of diversity: The diversification discount and inefficient investment. *Journal of Finance* 55, 1, 35-80.

- Scharfstein, D.S., and Stein, J.C., 2000. The dark side of internal capital markets: divisional rent-seeking and inefficient investment. *Journal of Finance* 55, 2537-2564.
- Shin, H., and Stulz, R., 1998. Are internal capital markets efficient? *Quarterly Journal of Economics* 113, 531-552.
- Spiess, and Graves, 1995. Underperformance in long-run stock returns following seasoned equity offerings. *Journal of Financial Economics* 38, 3, 243-267.
- Stein, J., 1997, Internal capital markets and the competition for corporate resources. *Journal of Finance* 52, 1, 111-133.
- Walker, M., 2005, Industrial group and investment efficiency, *Journal of Business* 78, 1973 – 2002.
- Wu, X., and Xu, L., 2005. The value information of financing decisions and corporate governance during and after the Japanese deregulation. *Journal of Business* 78, 243-280.

Table I

Annual Frequency of Japanese Spin-offs and Keiretsu Affiliations

This table lists the annual frequency of the Japanese spin-offs listed in the First and Second section of the Tokyo Stock Exchange, announced from January 1, 2001 through December 31, 2003. The sample is categorized by the *keiretsu*-affiliation of the firms. *Keiretsu*-affiliation information is retrieved from *Industrial Groupings in Japan 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. In addition, we search spin-off news from four major financial papers in Japan, which are 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	Keiretsu Affiliated Firms	Non-Keiretsu Affiliated	Total
2001	10	20	30
2002	26	35	61
2003	16	25	41
Total	52	80	132

Table II**Number of Japanese Spin-offs by *keiretsu*-affiliation and Focus Variables
from 2001 to 2003**

This table summarizes the number of the Japanese spin-offs announced from January 1, 2001 through December 31, 2003, categorized by *keiretsu*-affiliation, relatedness, and focus-increasing. The *Keiretsu*-affiliation information is retrieved from *Industrial Groupings in Japan 2001*. A spin-off is classified as unrelated if the industry of the spun-off firms is different from that of the parent firms. There are 40 industries which are categorized by MARR (Merger & Acquisition Resource Report). A spin-off is classified as focus-increasing if the firm's Herfindahl index increases after the spin-off.

Panel A. Related- and Unrelated- Spin-offs

	<u>Relatedness</u>			
		<u>Related</u>	<u>Unrelated</u>	<u>Total</u>
<u><i>Keiretsu</i>-Affiliation</u>	<u>Affiliated</u>	23	29	52
	<u>Non-Affiliated</u>	37	43	70
	<u>Total</u>	60	72	132

Panel B. Focus-Increasing- and Non-Focus-Increasing

	<u>Focus</u>			
		<u>Increasing</u>	<u>Non-Increasing</u>	<u>Total</u>
<u><i>Keiretsu</i>-Affiliation</u>	<u>Affiliated</u>	37	15	42
	<u>Non-Affiliated</u>	43	35	78
	<u>Total</u>	81	49	130

Table III
Summary Statistics of Japanese Spin-offs

This table provides the summary statistics of the Japanese spin-off samples that were listed in the First and Second Sections of the Tokyo Stock Exchange. Annual financial and bank loan data are retrieved from the Nikkei Economic Electronic Databank System (NEEDS). Bank ownership and main bank information are collected from autumn versions of the *Japan Company Handbook* between 2000 and 2003. *Keiretsu*-affiliation information is retrieved from *Industrial Groupings in Japan 2001*. Bank-appointed director information is collected from annual versions of *Yakuinshikiho* (*Toyo Keizai Shimpusha, Tokyo*) between 2000 and 2003.

Panel A. Firm Characteristics

Variable	Mean	Median	Stdv.	N
Total Asset (billions of Yen)	656	81	1445	132
Sales (billions of Yen)	608	93	1349	132
Tobin's Q	.954	.876	.364	132
Capital Expenditures to Total Asset Ratio	.041	.030	.039	129
Portion of Focus-Increasing Spin-offs	.45	-	-	130
Portion of Related Spin-offs	.33	-	-	132

Panel B. Governance Characteristics

Variable	Mean	Median	Stdv.	N
Bank Loan to Total Asset (%)	30.7	31.56	19.837	132
Bank Ownership (%)	19.67	19.6	11.085	132
Main Bank Ownership (%)	6.12	5.1	4.32	113
Portion of <i>keiretsu</i> -affiliated firms	.39	-	-	132
Portion of Bank-Appointed Director	.64	-	-	116

Table IV
Two-Day (-1,0) Average Cumulative Abnormal Returns of Japanese Spin-offs,
Categorized by Bank and Keiretsu Association and Corporate Focus

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

	Number of Sample	Mean	Median	t-Test	Wilcoxon Test
Total	N = 132	0.0195 (0.0904)	-		
Focus-increasing	N=79	0.01595 (0.0618)	0.0028 (0.1629)	0.40 (0.6881)	0.6628 (0.5075)
Non-focus-increasing	N=51	0.02727 (0.3129)	-0.00020 (0.7863)		
<i>Keiretsu</i> -affiliated	N=52	0.04868* (0.0884)	0.00695** (0.0471)	1.70* (0.0959)	1.6393 (0.1011)
Non- <i>keiretsu</i> -affiliated	N=80	0.00062 (0.8848)	-0.00301 (0.8769)		
Bank-appointed Director	N=74	0.03974* (0.0495)	0.00846*** (0.0064)	2.24** (0.0278)	2.5477** (0.0108)
Non- Bank-appointed Director	N=42	-0.00657 (0.2540)	-0.00688 (0.2764)		
Bank Loan Above Median	N=66	0.04011* (0.0777)	0.00459* (0.0739)	1.81* (0.0748)	1.5542 (0.1201)
Bank Loan below Median	N=66	-0.00100 (0.8018)	-0.00385 (0.7737)		
Bank Ownership Above Median	N=66	0.02138** (0.0217)	0.01022** (0.0059)	0.16 (0.8747)	2.7785*** (0.0055)
Bank Ownership Below Median	N=66	0.01774 (0.404)	-0.00440 (0.2363)		

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

This table summarizes the regression analysis with the market-adjusted two-day cumulative abnormal returns as dependent variables and bank-related governance variables as independent variables in Japanese spin-off samples. A bank-centered industrial group, *keiretsu*, is identified from the *Industrial Groupings in Japan 2001*, published by Dodwell Marketing Consultants. We retrieve main bank information, bank ownership, and consolidated bank loan data between 2000 and 2003 from the autumn versions of the *Japan Company Handbook*. Specific bank loan data and end-of-fiscal-year financial data are collected from the *Nikkei Economic Electronic Databank System* (NEEDS), the *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 spin-offs and related units. The bank-appointed director variable is collected from 2000 to 2003 version of *Yakuinshikiho (Toyo Keizain Shimposha)*. Daily stock prices of individual firms and the daily Nikkei Average Index are retrieved from the *Nikkei Economic Electronic Databank System* (NEEDS). The numbers in parentheses are p-values for two-tailed tests.

<i>Independent Variables</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log of Total Asset	-.0102 (0.113)	-.0050 (.324)	-.0109 (0.107)	-.0055 (0.354)	-.0098 (0.117)	-.0091 (0.182)	-.0053 (0.368)	-.0071 (0.299)
Unrelated Spin-offs Indicator	.0347 (0.126)	.0380 (0.144)	.0484* (0.058)	.0319 (0.164)	.0342 (.131)	.0358 (0.124)	.0276 (0.232)	..0330 (.0293)
Tobin's Q	.0306 (0.332)	.02208 (0.548)	.0242 (0.492)	.0310 (0.332)	.0335 (0.289)	.03601 (0.265)	.0107 (0.761)	.0268 (.0330)
<i>Keiretsu</i> -Affiliation Indicator	.0665** (0.012)							
Bank-Appointed Director		0.045* (0.101)						
Keiretsu Dummy × Bank Sent Director Dummy			0.093*** (0.001)					
Bank Loan to Total Asset				.1066* (0.079)	.0290 (0.681)	.0847 (0.185)	.1328** (0.037)	.0325 (0.724)
Bank Loan to Total Asset × <i>Keiretsu</i> -Affiliation					.1356** (0.043)			
Bank Loan to Total Asset × Bank Ownership Above Median						.0783 (0.284)		
Bank Loan to Total Asset × Tobin Q Below Median Dummy							-.0980 (0.182)	
Bank Loan to Total Asset × Bank-Appointed Director								.0999 (0.196)
Adjusted R^2	0.0448	0.0238	0.0833	0.0205	0.0430	0.0213	0.0262	0.0371
Number of observations	N =132	N = 116	N = 116	N = 132	N = 132	N = 132	N = 132	N=114

Table VI

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

This table summarizes the post-spin-off performances of Japanese spin-offs. Post-spin-off market-adjusted excess returns for 3, 6, 12, 24, 36 months are calculated for Japanese spin-offs from 2001 to 2004. Market-adjusted excess returns are defined as the average difference between a firm's monthly compounded returns and monthly compounded Nikkei index returns. 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	Mean & Median	3 months	6 months	12 months	24 months	36 months
Total	Mean	0.00472 (0.5730)	0.00783 (0.1007)	0.0136934*** (0.0002)	0.01107*** (.0001)	0.00944*** (0.0015)
	Median	-0.00488 (0.4392) N = 127	0.00339 (0.3780) N=127	0.00771*** (.000) N=123	0.00957*** (.0001) N=70	0.00860*** (0.0018) N=23
	Focus-Increasing (Herfindahl Index)	Mean Median	-0.02043 * (0.0733) N=42	0.00877 (0.2681) N=42	0.01438*** (0.0070) N=41	0.01438*** (0.0070) N=24
Non-Focus-Increasing	Mean	0.01635 (0.1443) N=84	0.00606 (0.3057) N=84	0.01271** 0.0098) N=81	0.00968*** (0.0002) N=45	0.006073* (0.0610) N=13
	Median	-0.00153 (0.5742) N=84	0.00428 (0.4437) N=84	0.00847** (0.0037) N=81	0.00858*** (.0001) N=45	0.00649* (0.0574) N=13
Keiretsu-affiliated	Mean	-0.00100 (0.9487) N=50	0.00594 (0.4131) N=50	0.01347** (0.0201) N=50	0.00959*** (0.0040) N=27	0.009734* (0.0836) N=8
	Median	-0.01447 (0.2951) N=50	-0.00149 (0.9583) N=50	0.00861*** (0.0008) N=50	0.00644*** (0.0022) N=27	0.005891 (0.1484) N=8
Non-keiretsu-affiliated	Mean	0.00844 (0.3711) N=77	0.00905 (0.1540) N=77	0.01385*** (0.0045) N=73	0.012001*** (.0001) N=43	0.00928** (0.0116) N=15
	Median	-0.00271 (0.9980) N=77	0.00409 (0.3191) N=77	0.00649*** (0.0061) N=73	0.010040 (.0001)*** N=43	0.01042** (0.0144) N=15
Bank Loan Above Median	Mean	0.0061 (0.6600) N=63	0.01854** (0.0209) N=63	0.02131*** (0.0003) N=61	0.01455*** (0.0001) N=35	0.00799* (0.0390) N=12
	Median	-0.01065 (0.5331) N=63	0.00989 (0.0783) N=63	0.01114*** (0.0001) N=61	0.01173*** (0.0001) N=35	0.00340* (0.0884) N=12
Bank Loan Below Median	Mean	0.00328 (0.7268) N=64	-0.00272 (0.5963) N=64	0.00620 (0.1644) N=62	0.007588*** (0.0072) N=35	0.011013 (0.0233) N=11
	Median	-0.00257 (0.7260) N=64	-0.00541 (0.5648) N=64	0.00421 (0.1680) N=62	0.005565 (0.0045) N=35	0.010921 (0.0322) N=11

Table VII

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

Post-spin-off, market-adjusted excess returns for twelve months are calculated for Japanese spin-offs from 2001 to 2004. Market-adjusted excess returns are defined as the average difference between a firm's monthly compounded returns and monthly compounded Nikkei index return. 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 the sample median.

<i>Independent Variables</i>	(1)	(2)	(3)	(4)
Log of Total Asset	-.0049*** (0.007)	-.0048*** (0.008)	-.0029 (0.148)	-.0049** (0.011)
Unrelated Spin-offs Indicator	.0012 (0.853)	-.0138 (0.980)	-.0024 (.456)	.0012 (0.857)
Tobin's Q	-.0071 (0.466)	-.0138 (0.205)	-.0012 (0.861)	-.0071 (0.468)
Bank Loan Ratio	.0562*** (0.003)	.0629*** (0.001)	.0698*** (0.001)	.0569** (0.013)
Bank Loan to Total Asset × Tobin Q Dummy		-.0318 (0.171)		
Bank Loan to Total Asset × Bank Ownership Above Median Dummy			-.0431* (0.052)	
Bank Loan to Total Asset × <i>Keiretsu</i> -Affiliation				-.00098 (0.962)
Adjusted R^2	0.0755	0.0825	0.0973	0.0676
Number of observations	N=123	N =123	N =123	N =123

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

Table VIII
Regression Models of Diversification Discount Change on Bank Relationship and Control Variables around Spin-offs in Japan

The diversification discount calculation follows Lins and Servaes (1999). Panel A summarizes the regression analysis with the diversification discount change as dependent variables and bank-related governance variables and other control variables as independent variables in Japanese spin-off samples. The sample in Panel B is restricted to the cases in which banks have some equity ownership. P-values from sign-rank tests are reported in parentheses below the median, while p-values from t-tests are reported in parentheses below the mean.

Panel A. Cross-Sectional Analysis: Bank Loan Amount

<i>Independent Variables</i>	<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>
Log of Total Asset	.2102 (0.230)	.3429** (0.011)	.2698** (0.045)	.15407 (0.306)	.2126 (0.124)
Herfindahl Index Focus-Increasing Indicator	1.6066*** (0.007)	1.4523*** (0.005)	1.444** (0.011)	1.595*** (0.007)	1.6535*** (0.007)
Tobin Q	1.0614 (0.169)	1.1049 (0.120)	.9801 (0.184)	1.1426 (0.143)	1.1666 (0.168)
Bank Loan to Total Asset	-1.9013 (0.240)		1.5722 (0.462)	-2.517 (0.157)	-2.149 (0.235)
<i>Keiretsu</i> -Affiliation Indicator		-1.7001*** (0.002)			
Bank Loan to Total Asset × <i>Keiretsu</i> -Affiliation Indicator			-3.7167** (0.022)		
Bank Loan to Total Asset × Bank Ownership Above Median Dummy				1.391 (0.385)	
Bank Loan to Total Asset × Tobin Q Below Median Dummy					.5256 (0.748)
Adjusted R^2	0.1785	0.3010	0.2477	0.1747	0.1635
Number of observations	N=55	N=55	N=55	N=55	N = 55

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

Panel B. Cross-Sectional Analysis: Bank Loan with Ownership

<i>Independent Variables</i>	(1)	(2)	(3)	(4)
Log of Total Asset	.0568 (0.502)	.1725** (0.016)	.0199 (0.814)	.0797 (0.334)
Herfindahl Index Focus-Increasing Indicator	-.1023 (0.797)	-.1123 (0.71)	.0583 (0.883)	-.0372 (0.923)
Tobin Q	.926 (0.151)	.6535 (0.192)	.6839 (0.285)	.8727 (0.161)
Bank Loan with Ownership to Total Asset	9.066*** (0.000)	14.116*** (0.000)	4.6257 (0.158)	.2208 (0.964)
Bank Loan with Ownership to Total Asset× <i>Keiretsu</i> -Affiliation Indicator		-11.7553*** (0.000)		
Bank Loan with Ownership to Total Asset× Bank Ownership Above Median Dummy			5.5606* (0.083)	
Bank Loan with Ownership to Total Asset × Tobin Q Below Sample Median Dummy				11.119* (0.051)
Adjusted R^2	0.3342	0.6025	0.3692	0.38271
Number of observations	N=44	N=44	N=44	N = 44

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

Table IX
Investment Sensitivity Pre- and Post-Spin-offs

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

$$IK_{it} = \alpha_i + \beta_1 * Q_{it} + \beta_2 * Q_{it} * AFTER + \beta_2 * AFTER + \sum \gamma_t * YEAR_t + \varepsilon_{it}$$

IK is calculated as the ratio of capital expenditure to the book value of total assets. *Q* is Tobin's Q_2 computed as the ratio of the sum of the book value of debt and the market value of equity to the book value of assets. *AFTER* is the dummy variable, which is indicated as 1 for the years +2 and +1, and 0 for the years -1 and 22. $\sum \gamma_t * YEAR_t$ represents dummy variables for the year. The numbers in parentheses below the coefficient estimates are *p*-values.

Model	(1) Total	(2) Focus		(3) Keiretsu		(4) Bank Loan		(5) Bank Ownership	
		Increase	Non-Increase	Affiliated	None	High	Low	High	Low
Log of Sales	-0.0205** (0.011)	-0.02629** (0.013)	-0.0185 (0.143)	.0137 (0.185)	-.03541*** (0.003)	-.0006 (0.937)	-.0637*** (0.000)	-.00064 (0.937)	-.0132 (0.250)
Tobin's Q	-0.0049 (0.360)	-0.0136* (0.055)	0.0040 (0.654)	.0145691 (0.108)	-.00676 (0.335)	.0006 (0.912)	-.0144 (0.136)	.0006 (0.912)	.0043 (0.588)
Tobin's Q × After	0.0036 (0.610)	0.0175* (0.059)	-0.0102 (0.421)	-.00060 (0.942)	.0067 (0.65)	-.0007 (0.928)	.0091 (0.462)	-.0007 (0.928)	.0035 (0.758)
After	-0.0078 (0.309)	-0.0260* (0.013)	0.0108 (0.396)	-.0009164 (0.919)	-.0098 (0.376)	-.0005 (0.947)	-.0148 (0.270)	-.00056 (0.947)	-.0081 (0.504)
No. of Firms	96	60	36	131	191	161	146	161	144
No. of Obs.	322	201	121	39	57	47	49	47	42
R-square	0.0003	0.0079	0.0012	0.1822	0.0056	0.0178	0.0000	0.0178	0.0038

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