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Management Ownership and Risk-Shifting Investment*

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ABSTRACT

This study analyzes the relationship between management ownership and its risk-shifting incentive. We first present a simple model showing that the risk-shifting incentive of management of financially distressed firms increases as the management ownership of the firm increases. Empirically, we test the hypothesis that under the former Japanese Corporate Reorganization Law, firms with higher management ownership are more likely to use legal rather than private reorganization. Since the reorganization process under the law virtually eliminates the possibility of risk-shifting investment, creditors are more likely to prefer the legal process to private process, when management ownership is higher. Empirical results are consistent with the hypothesis.

JEL Classification: G32; G33; G34
Key Words: Management Ownership; Risk Shifting; Debt Restructuring; Reorganization; Bankruptcy

1. Introduction

A firm's shareholders and creditors have conflicting interests. Shareholders, bearing limited liability for paying creditors' claims, have an incentive for the firm to pursue projects with higher risk even if they have lower value to the firm (Jensen and Meckling 1976). This may particularly be the case when the likelihood of a firm's defaulting on its debt is higher (Brealey et al. 2007: ch.18). When the management's ownership in a financially distressed firm is higher, their interests are more aligned with those of the shareholders. As a result, management ownership can be most harmful when a

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firm is near default.[1] This study first presents a simple model regarding the relationship between management ownership and its risk-shifting incentive. The model suggests that, in a financially distressed firm, the management with higher ownership is more likely to pursue risk-shifting investment that may lead to a high payoff for the shareholders and a low payoff for the creditors.

When creditors of a financially distressed firm perceive the level of the management's risk-shifting incentive, the creditors' perception will influence the negotiation for the debt restructuring. In this context, the former Japanese Corporate Reorganization Law (*Kaisha Kosei Ho*) provides a unique opportunity to test the implication. Filing for legal reorganization under the law virtually eliminates the possibility of risk-shifting investment that could impair the value of creditors' claims.[2] Following the filing, the entire management is dismissed and replaced by court-appointed receivers.[3] Charged with the responsibility of prudent management of the firm's assets, the receivers propose a reorganization plan in cooperation with creditors and implement it once it is approved by the court.[4] Also, as absolute priority is strictly observed under the law, the existing equity becomes worthless. Therefore, the former management can influence the investment decision neither as management nor as shareholders. These complete changes in management and ownership structure will remove the concern for risk-shifting investment from the creditors.

On the other hand, legal reorganization or bankruptcy generally costs the firm more than a private reorganization (Gilson 1991; Gilson et al. 1990; Franks and Torous 1994; Wruck 1990). Therefore, the creditors may as well demand the change in management and ownership structure, before entering legal reorganization process (Gilson and Vetsuypens 1994). We assume, however, it is very difficult for the creditors to implement these changes privately.[5] In fact, when a private reorganization plan is agreed upon with creditors, management team usually remains and ownership structure is wholly unchanged (see Section 3.1), suggesting that it is actually difficult for the creditors to privately implement these changes. Accordingly, we can assume that the creditors are more likely to resort to the legal reorganization process when they feel stronger need for these structural changes.

Put differently, under the former Japanese law, to incumbent management and existing shareholders private reorganization is more favorable, because the management has good chance to remain in office and the existing equity does not become worthless. Therefore, we presume that the management of a financially distressed firm first seeks to restructure its debt under private reorganization and it depends largely on the creditors' reaction whether the firm files for the law or not.[6] We hypothesize accordingly that management ownership which is related to the creditors' perception of its risk-shifting incentive affects the choice between private and legal reorganization.

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[1] We do not explicitly consider the incentive effect of management stock options. The sample period of our empirical study is from 1990 to 1998, while management stock options were not introduced in Japan until 1997.

[2] For details of the former Japanese Corporate Reorganization Law, see Schumm (1988). The law was enacted in 1952 by introducing Chapter 10 of the U.S. Bankruptcy Code then existing. Since the law was revised overall in 2002, we use the samples before the revision in our empirical test.

[3] As a result of the revision of the law, it has been made possible for an incumbent director to remain in the firm as a receiver if the director is not apparently responsible for the firm's financial difficulties. (In Japanese firms, directors generally perform the role that their counterparts in the U.S. perform as executive managers.)

[4] Usually the receivers are experienced practitioners such as lawyers. Compensation for the receivers is set by the court.

[5] For example, changing the management may not be enough for the creditors, since the resigning management who remains as shareholders can influence the new management who has been in most cases their subordinates (see Section 3.1). Also, insider trading regulations will make it difficult to let the management sell off their shares.

[6] In U.S. bankruptcy literature, it is reported that many firms entering Chapter 11 do so only after attempting to resolve their financial difficulties privately (Franks and Torous 1994).

In our empirical test, we use a sample of Japanese firms which have been reorganized either legal or private process while the former law is effective. The results support our hypothesis and suggest that the former Japanese Corporate Reorganization Law helps to curb management's value-decreasing investment or so-called moral hazard. If the incumbent management is prone to such investment, creditors will prevent them by resorting to the law.

The remainder of the paper is organized as follows. Section 2 develops a simple model that generates predictions about the relationship between management's ownership and its risk-shifting incentive. It also postulates a testable hypothesis concerning the choice of the reorganization process under the former Japanese law. Section 3 explains our sample selection process and defines variables used in our empirical test. Section 4 reports and discusses the empirical results. Section 5 concludes the paper.

2. Model and Testable Hypothesis

In this section, we first analyze the investment decision by the management of a financially distressed firm. We present a model that generates predictions of how management's ownership affects its risk-shifting incentive. The model is adapted from the credit rationing model (Stiglitz and Weiss 1981; Bester and Hellwig 1987). However, our analysis focuses on the conflicting interests of stakeholders rather than on credit rationing by lenders.

We consider a firm that must choose between two mutually exclusive investments: projects A and B. Project A's chance of success is p_A, and it will generate gross return R_A if successful. Project B's chance of success is p_B, and it will generate gross return R_B if successful. The gross return of both projects is assumed to be zero in the case of failure. Both projects have the same investment period, during which the risk-free interest rate is assumed to be zero. It is also assumed that both projects require identical initial investment, I, which is raised by issuing stock and debt. The following relationship between expected returns of the two projects is assumed to hold: $p_A R_A > I > p_B R_B$. In addition, project B is assumed to have a higher return if successful ($R_B > R_A$). Given these two assumptions, the relationship $p_A > p_B$ holds. In sum, project B is inefficient and riskier than project A.[7] It may be useful to suppose an existing firm, with project A being an extension of existing businesses and project B an unrelated speculative venture.

Let us assume that the firm's debt consists of a discount bond with face value F, which matures at the end of the investment period. We assume that the original level of F is exogenously determined on the basis of the costs and benefits of debt financing.[8] Let us further assume that management holds an exogenous fraction m ($0 \leq m \leq 1$) of the firm's total outstanding shares and is risk neutral.[9] Management will choose between the two projects so as to maximize its own expected payoff.

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[7] As pointed out by Brealey et al. (2007: ch.18), the risk-shifting problem is of practical importance when a financially distressed firm ventures to gamble for resurrection. We assume that such an investment is not efficient. Bradley and Rosenzweig (1992) also refer to risk-shifting as the decision to carry out negative net present value projects (p.1052).

[8] For example, if the firm is to issue debt with a face value of F^*, the creditors, assumed to be risk neutral, will pay the amount of $p_A F^*$ for the debt, as long as they perceive that project A is to be chosen. The capital contribution by the shareholders will then be $I - p_A F^*$.

[9] We assume the management's risk neutrality for simplicity, since our principal objective is to analyze how the creditors will respond to the reorganization plan prepared by the management. We also assume that management compensation does not vary with investment outcome. Jensen and Murphy (1990) report that management wealth is tied to shareholders' wealth mostly by management shareholdings.

Creditors cannot effectively specify by contract which project is chosen, since they cannot verify it.

Let us first examine the relationship between the face value of the firm's debt and the management's choice of project. If the project succeeds, the management will receive its share of the residual return; in contrast, if the project fails, the management's share will be worthless. Management's expected payoff from project A, π_A, and from project B, π_B, can be expressed as follows:

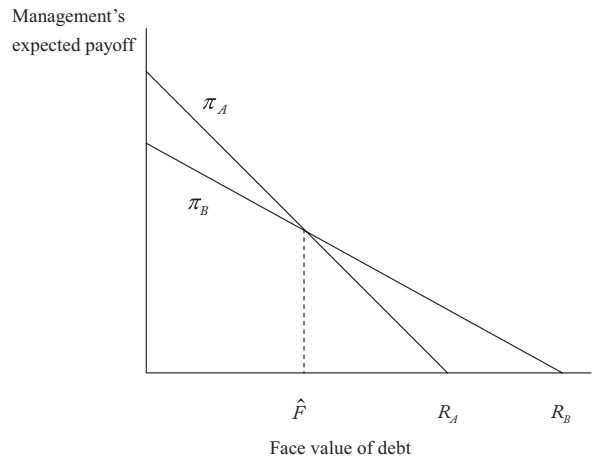
$$\pi_A = p_A m (R_A - F) \tag{1}$$

$$\pi_B = p_B m (R_B - F) \tag{2}$$

In Figure 1, the lines labeled π_A and π_B express management's expected payoff from projects A and B, respectively, as functions of F. Given the assumptions $p_A > p_B$ and $p_A R_A > p_B R_B$, if the face value of the debt is zero, management's expected payoff from project A is greater than that from project B. Further, the absolute value of the slope of line π_A (the rate at which management's expected payoff decreases with an increase in debt) is greater than that of line π_B. Also, given the assumption $R_B > R_A$, the two lines intersect at a point where management's expected payoff is positive (see Figure 1). We refer to the face value of the debt at the intersection as , $\hat{F}$, which is expressed as follows:

$$\hat{F} = \frac{p_A R_A - p_B R_B}{p_A - p_B} \tag{3}$$

Figure 1: Management's Expected Payoff as a Function of Face Value of Debt



When the face value of the debt is smaller (larger) than $\hat{F}$ the management chooses project A (project B). Therefore, $\hat{F}$ is the maximum amount of debt for which the management chooses the efficient project.

The firm will not issue debt with a face value exceeding $\hat{F}$. That would induce the firm (management) to choose project B, imposing negative net present value on shareholders.[10] We

[10] If the firm is to make the most of the tax benefit of debt financing, it will issue debt with a face value of $\hat{F}$, the contractual interest payment being $(1 - p_A)\hat{F}$. (Here we assume that the management will choose project A when the face value of the debt is exactly $\hat{F}$.)

assume, however, that an exogenous shock could occur after the firm's financing but before the management's final decision regarding the choice of the project. The firm's financial conditions will be deteriorated by the shock and the firm's total liabilities L will exceed $\hat{F}$.[11] We analyze how this will affect the management's investment decision. In this situation, management's incentive to choose project B over project A, $\pi_B - \pi_A$, is expressed as

$$\pi_B - \pi_A = p_B m(R_B - L) - p_A m(R_A - L) \tag{4}$$

Let us examine the impact of management ownership on this risk-shifting incentive by differentiating equation (4) with respect to m:

$$\frac{d(\pi_B - \pi_A)}{dm} = L(p_A - p_B) - (p_A R_A - p_B R_B) \tag{5}$$

When $L > \hat{F}$, equation (5) takes a positive value. This means that when management has risk-shifting incentive, it is greater as management ownership is higher.

More practically, let us suppose that a firm is financed by rolling over its debt securities. When the firm's financial condition unexpectedly deteriorates and its liabilities exceed $\hat{F}$, management will find it difficult to roll over its maturing debt because investors in credit markets perceive risk-shifting incentive of management. In this circumstance, management may as well ask creditors for debt restructuring such as by extension of maturity.[12] Creditors' reaction to this private reorganization plan will vary by the level of management ownership of the firm, especially when legal reorganization is such an alternative that will eliminate the concern for risk-shifting investment. As management ownership is higher, they perceive greater risk-shifting incentive and tend to resort to legal process.

The former Japanese Reorganization Law provided creditors with such legal alternative. Upon filing under the law, the entire management is dismissed and replaced by court-appointed receivers charged with prudent management of the firm's property. Also, as absolute priority is strictly observed under the law, the existing equity becomes worthless. Therefore, the former management can influence the investment decision neither as management nor as shareholders. These complete changes in management and ownership structure will remove the concern for risk-shifting investment from the creditors.

Consequently, we postulate a testable hypothesis that when the former Japanese Corporate Reorganization Law is effective, the greater management ownership in a financially distressed firm increases the likelihood that private negotiation with creditors fail and the firm is reorganized under the law.[13]

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[11] In practice, when a firm's financial conditions deteriorate, its total liabilities, including obligations to suppliers, employees, and speculative lenders, may accumulate and exceed $\hat{F}$ in the model.

[12] It is also difficult for a financially distressed firm to issue equities except for distributing equities to creditors as a medium of debt restructuring.

[13] Kim and Kwok (2009) hypothesize that management ownership affects the likelihood of bankruptcy. However, their hypothesis depends on the assumption that shareholders retain more value in bankruptcy (Chapter 11) than in private reorganization, which does not seem plausible at least in Japan.

Table 1: Debt Restructuring Implemented Under Private Reorganization

Debt Restructuring Scheme	*Number of Cases Applicable*	
Extension of maturity	18	(58.1%)
Reduction of principal	12	(38.7%)
Reduction of interest	13	(41.9%)
Distribution of equity securities	7	(22.6%)

Note: The percentage of firms in our private reorganization sample that restructured debt on specified terms is provided in parentheses. Extension of maturity includes cases such as where the loan amount was increased simultaneously when the maturity was extended.

3. Samples and Variables

To test the hypothesis, we perform a comparison of univariate and logistic regression analyses. In this section, we explain the construction of our sample and the definition of variables used in the test.

3.1 Sample

We use a sample of nonfinancial firms, listed on Japanese exchanges, that restructured debt under the former Corporate Reorganization Law or through private reorganization from 1990 to 1998.[14] Sixteen listed nonfinancial firms filed under the law in the period and they constitute our legal reorganization sample. No firm filed under the law more than once.

Following previous studies (Gilson 1989, 1990; Gilson et al. 1990; Brown et al. 1993; Franks and Torous 1994), we constructed our private reorganization sample by conducting a keyword search, specifically in the news articles of the *Nihon Keizai Shimbun*, Japan's equivalent of the *Wall Street Journal*, for the period between 1990 and 1998.[15] Using the keywords such as "debt (interest) waiver," "debt (interest) relief," "debt (interest) moratorium," "financial support," and "reorganization," we sought articles involving listed firms that had agreed with creditors to restructure debt out of court. To be consistent with our legal reorganization sample, we chose nonfinancial firms that reorganized privately for the first time in or after 1990. As a consequence, 31 firms emerged as our private reorganization sample.[16] The terms of debt restructuring implemented by these firms are shown in Table 1.

The distribution of sampling years is presented in Table 2. One firm sampled for private reorganization in 1993 is also sampled for legal reorganization in 1997.[17] Table 3 shows the industry distribution of our sample firms and it is roughly the same between the two samples. Data used in our empirical analysis were collected from financial reports for the accounting year ending immediately

[14] For a listed Japanese firm seeking debt restructuring while continuing its business, filing for the former Corporate Reorganization Law had been the only alternative to the private negotiation. A new bankruptcy law, the Civil Rehabilitation Law (*Minji Saisei Ho*), was enacted in 2000, and it has been used in conjunction with the Corporate Reorganization Law. Under the new law, incumbent management is supposed to remain in control to prepare and implement the reorganization plan. We constrain our analysis for the period before the enforcement of this third alternative.

[15] Since debt restructuring as well as bankruptcy are observed only for financially distressed firms in Japan, we did not restrict our keyword search to firms with stock price declines or downgraded bond ratings.

[16] All the creditors that agreed on debt restructuring out of court were banks and insurance companies, consistent with previous studies (Gilson 1989; Gilson and Vetsuypens 1994).

[17] Gilson et al. (1990) admit the same firm to both samples if the interval between a private and a legal reorganization exceeds one year. In our sample, a firm mentioned in the text underwent a private and a legal reorganization with an interval of nearly four years.

Table 2: Distribution of Sampling Years

Year	*Private Reorganization*	*Legal Reorganization*
1990	0	0
1991	3	0
1992	4	2
1993	5	2
1994	4	0
1995	2	1
1996	1	0
1997	8	6
1998	4	5
Total	31	16

Note: The sampling year is defined as the year in which an article on debt restructuring first appears for private reorganization and the year in which bankruptcy protection is filed for legal reorganization.

Table 3: Industry Distribution of the Sample

Industry	*Private Reorganization*		*Legal Reorganization*	
Manufacturing	14	(45.2%)	6	(37.5%)
Construction	8	(25.8%)	5	(31.3%)
Distribution and warehousing	5	(16.1%)	4	(25.0%)
Real estate	3	(9.7%)	0	(0.0%)
Others	1	(3.2%)	1	(6.3%)
Total	31	(100.0%)	16	(100.0%)

Note: Percentage shares are provided in parentheses.

prior to the bankruptcy filing for the legal reorganization sample, and those immediately prior to the newspaper article for the private reorganization sample.

In our sample of privately reorganized firms, an average 73.7% of all directors prior to the reorganization remained the directors at the end of the subsequent accounting year. The ratio of surviving directors is more than a half in 29 firms (93.5% of the private reorganization sample). Furthermore, the president remained in position in 23 firms (74.2% of the sample) at the subsequent accounting year end. Even among the firms where the presidents resigned, their successors usually were promoted from among the firms' senior directors.[18] Hence, privately reorganized firms show considerable continuity of management team.[19] Also, the entities and their order in top 10 largest shareholder list and their

[18] One firm accepted a new president from its main bank. This is the only exception.

[19] For comparison, it has been reported that turnover of all directors during a two-year period is on average 24.0% and the average likelihood of presidential turnover during a two-year period is 30.1% for Japanese firms listed in the *Fortune* Global 500, which are arguably financially healthy (Kaplan 1994).

holding shares were wholly unchanged in the privately reorganized firms. The fact that management and ownership structure is stable through private negotiation suggests that it is difficult for the creditors to change it in private negotiation and thus if legal process is an alternative to facilitate the change, they are likely to resort to it when they want such structural change.

3.2 Variables

In the logistic regression analysis, the dependent variable is an indicator variable that takes the value 1 for private renegotiation and 0 for legal reorganization. Among the explanatory variables, management ownership (*MOWN*) is defined as the ratio of the shares effectively held by the directors—that is, shares held by directors themselves, their family, and their private shareholding entities—to the total shares outstanding.[20]

The other explanatory variables are proxies for factors that earlier studies have found to affect the decision between private and legal reorganization. First, a firm will lose its premium as a going concern—the excess of market value over liquidation value—if its assets are sold. Since bankruptcy involves higher likelihood of assets being sold, stakeholders enjoying the going-concern premium are more inclined to accept reorganization out of court (Gilson 1991). Also, it has been empirically shown that a firm is more likely to restructure debt privately if its going-concern premium is high (Gilson et al. 1990). We use the price-to-book ratio, *PBR*, as the proxy for a firm's premium as a going concern.[21]

Second, research has shown that firms that successfully restructure their debt privately are more solvent than those filing for legal reorganization, which may be related to the difference in operating performance (Franks and Torous 1994). To control for this effect, we use the ratio of book value of total liabilities to total assets, *L/A*, as an explanatory variable.

Third, conflicting interests among creditors make a private debt restructuring agreement more difficult, despite being less costly for creditors (Brown 1989). Gilson et al. (1990) and Asquith et al. (1994) find that the likelihood of bankruptcy increases as the number of creditors or number of debt contracts increases, suggesting that debt recontracting becomes more difficult as the number of creditors increases. Following Gilson et al. (1990), we use the standardized number of creditors (number of creditors per ¥ 1,000 of debt), *CREDITORS*, as a proxy for the severity of conflict among creditors.[22]

Fourth, the management presumably possesses more information than the creditors about the firm's financial situation and its future prospects. When this informational asymmetry is severe, creditors more likely will not restructure debt privately because management's reorganization plan becomes more difficult to evaluate (Giammarino 1989). As a proxy for the extent of this informational asymmetry, we use the ratio of directors who are bankers or ex-bankers to the total number of directors (*BANKBOARD*).[23] We assume that the larger the variable, the lesser is the informational asymmetry. Also, it has been suggested that a Japanese firm is more likely to agree to private debt restructuring with its lenders when it has a closer relationship with its main bank (Suzuki and Wright 1985; Hoshi et al. 1990). The variable *BANKBOARD* can be a proxy for the

[20] Directors' family members and private shareholding entities are selected from the top 10 shareholders list in financial reports and identified using *Okabunushi soran* [*Large Shareholders Overview*] published by *Toyo keizai*. We also use a management ownership variable composed only of shares held by directors themselves. The results, however, are qualitatively similar to those presented hereunder.

[21] The value of *PBR* is set to 0 for firms with negative net worth (four firms in the private reorganization sample; two firms in the legal reorganization sample).

[22] When we use the actual number of creditors instead of the standardized number or *CREDITORS*, it is insignificant in both the univariate comparison and logistic regression. The other results are qualitatively similar to those presented in this paper.

[23] As mentioned earlier, all the private debt restructurings in our sample are implemented under agreement with banks and insurance companies. There is no case where a director has a concurrent position or past career at insurance company.

Table 4: Summary Statistics and Univariate Comparison

	Private Reorganization (31firms)				*Legal Reorganization (16 firms)*				
Variable	Mean	Median	Min.	Max.	Mean	Median	Min.	Max.	*p*-value of Wilcoxon-Mann-Whitney test for difference
MOWN	0.038	0.003	0.000	0.307	0.111	0.060	0.001	0.455	0.009 **
PBR	3.41	1.44	0.00	44.64	1.72	1.39	0.00	4.44	0.719
L/A	0.91	0.91	0.44	1.48	0.87	0.89	0.57	1.31	0.459
CREDITORS	0.48	0.22	0.02	2.82	0.85	0.63	0.18	2.46	0.008 **
BANKBOARD	0.10	0.07	0.00	0.50	0.07	0.08	0.00	0.22	0.537
MV	114,966	41,368	5,340	794,705	55,145	16,952	1,674	346,082	0.157

Note: *MOWN* is the ratio of the shares held by the directors, their family members, and their private shareholding entities. *PBR* is the price to book ratio. *L/A* is the ratio of the book value of total liabilities to total assets. *CREDITORS* is the number of creditors per ¥ 1,000 of debts. *BANKBOARD* is the ratio of directors installed from banks to total directors. *MV* is the market value of the firm (¥ 1 million). $^{**}p<0.01$ (two-tailed test).

intimacy between the firm and its main bank.[24]

Finally, the sales volume of Japanese firms has been found to correlate negatively with the probability of bankruptcy (Suzuki and Wright 1985). We use the natural logarithm of the firm's market value (*MV*) to control for the effect of firm size. Greater market value also could be associated with lower management ownership.

4. Empirical Results

Table 4 shows the summary statistics of the variables and the *p*-value of the Wilcoxon-Mann-Whitney test for the difference between the two samples. Management ownership is significantly larger in the legal reorganization sample, which is consistent with the hypothesis that greater management ownership increases the likelihood that the firm will restructure its debt under a legal procedure. The variable *CREDITORS* is significantly larger in the legal reorganization sample, possibly suggesting greater difficulty in recontracting debt when the number of creditors is larger (Gilson et al. 1990).

Results of the logistic regression are presented in Table 5. As mentioned, the dependent variable is an indicator variable that takes the value 1 for private reorganization and 0 for legal reorganization. A positive (negative) estimated coefficient of an explanatory variable suggests that the larger (smaller) the variable, the more likely the firm will restructure its debts under private (legal) reorganization. The coefficient of *MOWN* is negative and statistically significant, again consistent with the hypothesis. Coefficients of all other explanatory variables have the expected signs, although they are not statistically significant.[25]

[24] Alternatively, the fraction of the shares held by financial institutions is used to control for the effect of informational asymmetry and the relationship with banks. It is, however, insignificant in the univariate comparison and logistic regression. The other results are qualitatively similar to those presented in this paper.

[25] Although a univariate comparison shows a significant difference in *CREDITORS*, it is not statistically significant in the logistic regression. This is possibly due to the negative correlation between *CREDITORS* and *MV*. The negative correlation can be explained as follows: The larger the size of the firm, the greater the firm's borrowings from one creditor and thus the smaller the number of creditors per unit of debt. Franks and Torous (1994) also report that the number of debt securities is not significantly different between private and legal reorganizations. Our result is consistent with their conjecture that the potential recontracting problems in private reorganization may be exaggerated.

Table 5: Logistic Regression Results

Independent Variable	(1)	(2)
Constant	−6.824 *	−7.708
	(0.037)	(0.098)
MOWN	−11.826 **	−13.034 *
	(0.008)	(0.015)
PBR		0.048
		(0.679)
L/A		−0.204
		(0.918)
CREDITORS		−0.088
		(0.881)
BANKBOARD		5.840
		(0.141)
lnMV	0.798 *	0.851 *
	(0.016)	(0.032)
Pseudo R^2	0.271	0.344

Note: The dependent variable is an indicator variable that takes value 1 for private reorganization and 0 for legal reorganization. See Table 4 for the definitions of the independent variables. The *p*-values are shown in parentheses. $^{**}p<0.01$, $^{*}p<0.05$ (two-tailed test).

5. Conclusion

We present a simple model analyzing the relationship between management ownership and its risk-shifting incentive. The model suggests that when a firm falls into financial distress, management with higher ownership has a greater incentive to shift wealth from creditors to shareholders by implementing a risky project.

When creditors of a financially distressed firm perceive the level of the management's risk-shifting incentive, the creditors' perception will influence the negotiation for the debt restructuring. The former Japanese Corporate Reorganization Law provides a unique opportunity to test the implication. Filing for legal reorganization under the law virtually eliminates the possibility of inefficient and risky investment which could impair the value of the creditors' claims. Consequently, we postulate a testable hypothesis that when the law is effective, the greater management ownership in a financially distressed firm increases the likelihood that private negotiation with creditors fail and the firm is reorganized under the law. Our empirical results are consistent with our hypothesis.

Our results suggest that the former Japanese Corporate Reorganization Law helps to curb value-decreasing investment or so-called moral hazard by management. If incumbent management is prone to such investment, creditors may forestall them by resorting to legal reorganization or bankruptcy.

The law was revised overall in 2002 and it has been made possible for an incumbent director to

remain in the firm as a receiver if the director is not apparently responsible for the firm's financial difficulties. Moreover, Japan enacted another bankruptcy law, the Civil Rehabilitation Law (*Minji Saisei Ho*) in 2000, which has been used in conjunction with the former and current Corporate Reorganization Law. Under the Civil Rehabilitation Law, incumbent management is supposed to remain in control to prepare and implement the reorganization plan. Also, the existing equity may retain its value. The two bankruptcy laws are expected to be used appropriately on a case-to-case basis in Japan. However, if the Civil Rehabilitation Law is used too easily, risk-shifting investment or moral hazard by financially distressed firms may not be so forestalled as before. This fact finding is a subject for future research.

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