

# Restructuring capital increases by Japanese companies: Focusing on differences in capital raising methods

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## Abstract

While issuing equity to repay outstanding debt is a typical strategy among financially distressed firms, Japanese firms exhibit distinct institutional features, most notably, diversity in the types of equity securities issued. For instance, some severely distressed Japanese firms issue preferred stocks rather than common stocks as a means of restructuring. To better understand these patterns, this study examines the financial characteristics and economic motivations of Japanese firms that engage in equity financing for debt-reducing restructuring, referred to as “Restructuring Issuance.” Specifically, we conduct a probit regression analysis and investigate the financial profiles of the issuing firms, using Japanese listed firms from 2010 to 2022 that operate in non-financial industries as a sample. The results show that the likelihood of restructuring increases with the probability of financial distress, indicating that distressed firms tend to seek equity-based solutions. Additionally, we find that firms are more likely to issue preferred stocks when the restructuring is large-scale, suggesting that control-related concerns, such as avoiding the dilution of voting rights, play a significant role in security design decisions. Preferred stocks in Japan typically offer dividend preferences, but limited or no voting rights, allowing issuing firms to raise capital while preserving managerial control. These findings contribute to international literature by highlighting how equity restructuring is implemented within Japan’s institutional framework. Moreover, they provide new empirical evidence of the strategic use of preferred stocks as restructuring instruments, particularly in situations involving large capital infusions. Overall, this study demonstrates that financial distress and control considerations jointly shape the structure of restructuring issues, offering insights into the interaction between firm-level conditions and capital structure policies in practice.

**Keywords:** Restructuring, capital structure, preferred stock, debt-equity swap, financial instruments with characteristics of equity

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## 1. INTRODUCTION

The determinants of equity issuance have long been a central question in corporate finance, and a substantial body of literature addresses this issue. Examining this phenomenon within the Japanese institutional setting could extend insights from prior studies due to various reasons. First, debt-equity swaps (DES) are not necessarily employed in Japan for equity financing for debt-reducing restructuring (hereafter restructuring issuances) using common stock. Kim et al. (2019) determine that research on this topic remains limited in the U.S. setting and report that many financially distressed firms in Korea engage in restructuring issuances through DES. Financial distress is a key factor influencing a firm’s capital structure. From this perspective, it is economically rational for financially distressed firms to issue new equity to avoid bankruptcy triggered by default. However, under financial distress, firms typically face a debt overhang problem (Myers, 1977), which makes it unlikely that new investors would be willing to subscribe to equity given its lower seniority in the capital structure (Senbet & Seward, 1995). Moreover, Kim et al. (2019) explain that existing creditors in Korea sometimes become equity holders through in-kind contributions, acquiring control rights over the firm via DES. Although a non-negligible number of restructuring-related issuances are observed in Japan, explicit cases of swaps involving common stocks are

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rare. Second, the instruments used for restructuring issuances such as the types of equity securities issued as considerations are diverse in Japan. Contrary to Kim et al. 's (2019) framework, some studies suggest that financially distressed Japanese firms seeking to avoid bankruptcy often utilize preferred stock as the means of equity financing (e.g., Tsukahara, 2016, 2018, 2023; Kimura, 2022). In such cases, we pose a significant yet underexplored question concerning the types of firms that engage in restructuring issuances using common stock: Do these firms resemble those observed in Korea? If so, why is that the case? To the best of our knowledge, the literature provides limited empirical evidence on this matter.

To address the research gap, this study empirically examines the economic motivations of Japanese firms that undertake restructuring issuances within Japan's institutional context. We posit that restructuring issuances in Japan may differ in substance, depending on the type of equity instrument employed. To clarify this, we conduct an empirical investigation using archival data. Specifically, following previous studies, we discuss the possibility that firms experiencing a higher degree of financial distress are more likely to issue equity restructuring. Additionally, among firms that undertake restructuring issuances, we attempt to identify the determinants of the choice between common stock and preferred stock as issuance instruments. When a restructuring issuance changes the capital structure, it leads to a dilution of the control rights held by existing shareholders. To avoid this, we hypothesize that, in cases involving large-scale changes in capital structure, firms are more likely to choose the issuance of preferred stock, which is a security with restricted voting rights.

Overall, we find that the higher the probability of bankruptcy, the more likely a firm is to issue restructuring equity. Furthermore, we find that the larger the scales of restructuring, the more likely firms are to use preferred stocks in their restructuring equity issuance. The study's findings contribute to the literature in two ways. First, although prior studies identify a clear pattern in Korea, where financially distressed firms often address such issues as part of broader restructuring strategies, global academic research on this topic remains limited. By documenting the tendencies observed in Japan, a country whose economic and institutional contexts differ from those of Korea, we contribute to the growing body of knowledge on the economic motivations underlying this form of equity financing. Second, this study offers insights into the practical use of financial instruments with characteristics of equity (FICE). FICE are hybrid instruments with debt- and equity-like features, and their appropriate accounting treatment has long been debated in standard-setting processes. In this respect, our study sheds light on the use of preferred stocks in restructuring equity issuances, particularly in cases where firms may seek to avoid the dilution of control rights, thereby providing evidence that may inform ongoing discussions about the economic substance of FICE in corporate financing.

The remainder of this study is structured as follows. Section 2 reviews the relevant literature. Section 3 presents descriptive evidence of the restructuring of equity issuances in Japan. Section 4 develops the hypotheses, and Section 5 reports the empirical results. Finally, section 6 concludes the study.

## 2. PREVIOUS RESEARCH

Research on restructuring issuances remains relatively scarce in the U.S. Kim et al. (2019) attribute this lack of attention to theoretical and institutional constraints. Theoretically, conflicts of interest between shareholders and creditors give rise to the "debt overhang" problem (Myers, 1977), making equity issuance an inherently difficult mechanism for resolving financial distress (Senbet & Seward, 1995). Institutionally, U.S. regulations impose restrictions on commercial banks' ownership of equity in nonfinancial firms, limiting their ability to make concessions by restructuring issuances. Nevertheless, DES are relatively common in the U.S. during the early 1980s, and several studies examine how the market responds to these events (e.g., Finnerty, 1985; Rogers & Owers, 1985; Lys & Sivaramakrishnan, 1988; Defeo et al., 1989; Hand, 1989; Chewning et al., 1998). Before the tax reform introduced under the Deficit Reduction Act of 1984, the cancellation of debt through DES is not treated as taxable income, which incentivized many firms to pursue such transactions (Hand, 1989). These studies collectively indicate that the average market reaction to announcements of DES is negative.

However, since the 1990s, restructuring issuances, including DES, have received relatively little scholarly attention in U.S. literature. By contrast, DES have become a more commonly observed restructuring tool in other countries, including Germany (Jostarndt, 2007), the U.K. (Franks & Sanzhar, 2006), and Korea (Kim et al., 2019). Japan has also seen several such transactions in practice (see Section 3). These developments highlight the potential value of examining restructuring issuances using non-U.S. samples, including those from Japan. Accordingly, this study highlights the unique characteristics of restructuring issues in the Japanese context by adopting a comparative framework using institutional and empirical insights from Kim et al.'s (2019) analysis.

## 2.1 Restructuring issuance in Korea

Kim et al. (2019) document that among 3,184 equity issuance events by publicly listed firms in Korea between 2000 and 2013, more than one-third is by DES. Furthermore, they demonstrate that firms issuing equity often exhibit signs of severe financial distress in the period immediately preceding issuance, face a high likelihood of subsequent changes in corporate control, and predominantly allocate proceeds toward the repayment of existing debt rather than increasing R&D expenditures. Their findings suggest that new equity issuances by financially distressed firms in Korea frequently serve as a form of restructuring issuance, that is, either as a direct substitute for existing liabilities through DES or to raise funds for debt repayment. In many cases, common shares with voting rights are issued through private placements to unrelated third parties or DES to major creditors such as banks. As such, the larger the scale of the restructuring issuance, the greater the likelihood of ownership dilution for incumbent shareholders and changes in controlling shareholders. Empirical evidence confirms that changes in corporate control often follow these restructuring issues, indicating that the equity issuance market plays a critical role in the acquisition and restructuring of financially distressed firms in Korea.

## 2.2 Restructuring issuance in Japan

While similar financing behavior is observed in Japan, where distressed firms also raise capital for debt repayment, an important distinction lies in the financial instruments used. Unlike Korea, where common equity is predominantly issued, Japanese firms tend to rely on preferred stocks for such purposes. Tsukahara (2023) points out that, in the context of DES in Japan, preferred stocks are more commonly used than common stocks. Furthermore, they examine the financial conditions of Japanese firms issuing preferred stocks and finds that these issuers are generally in severe financial distress; this tendency is particularly pronounced among firms conducting DES. Although various financial indicators improve following capital restructuring, they remain below the industry averages for the same period. Similarly, Kimura (2022) performs a case-based analysis of 16 firms listed in the First Section of the Tokyo Stock Exchange that publicly announced preferred stock issuances between 2017 and 2021. They reveal that 13 of the 16 issuances occurred in 2021, suggesting that they are driven by the need to address financial deterioration resulting from the COVID-19 pandemic. Moreover, 15 out of the 16 issuances involve “non-participating and cumulative” preferred stock, a structure bearing debt-like characteristics. Additionally, Kobayashi (2015) suggests that in Japan, DES are typically conducted by firms experiencing extreme financial distress and are understood by creditors as measures akin to debt forgiveness (Kobayashi, 2015). These findings indicate a clear tendency of financially distressed firms in Japan to issue preferred stocks. Accordingly, while Kim et al. (2019) characterize a substantial portion of restructuring equity issuances in Korea, especially those in the form of DES, as involving common equity, the evidence suggests that comparable restructuring is more often executed through the issuance of preferred stocks in Japan.

One potential explanation for this difference lies in the regulatory constraints imposed on banks in Japan, which are the primary counterparties to DES. Under the Banking Act and Antimonopoly Act, banks are generally prohibited from acquiring more than 5% of the voting rights of a single firm<sup>1</sup>. Although both laws provide exceptions that permit banks to exceed this threshold when acquiring shares through DES as part of a rational corporate rehabilitation plan, holding such shares for more than one year still requires approval from the Prime Minister and the Japan Fair Trade Commission. To avoid triggering these regulatory requirements, preferred stock, typically issued without voting rights, is often used instead of common stock.

Taken together, these observations suggest that, while there is a clear difference in the choice of equity instrument (common stock in Korea versus preferred stock in Japan) for restructuring issues involving DES, both countries exhibit a similar functional use of equity issuance as a mechanism for distressed firms to convert existing debt into equity. Thus, DES-based restructuring issuances serve comparable purposes in both markets. In contrast, for restructuring issues that are not executed as DES, that is, those in which firms issue equity and use the proceeds to repay existing debt rather than directly swapping debt for equity with the same counterparty, clear differences emerge between Japan and Korea. Unlike in Korea, where such issuances predominantly involve common stocks, common and preferred stocks are observed in Japan. Given that regulatory restrictions under the Banking Act and related statutes are unlikely to apply to non-DES restructuring issuances, the choice between common and preferred stocks in Japan is unlikely to be driven by legal constraints. This suggests the existence of other rational considerations underlying the differential use of common and preferred stocks in Japanese restructuring issues.

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<sup>1</sup> Article 16-4 of the Banking Act and Article 11 of the Antimonopoly Act.

### 3. DESCRIPTIVE ANALYSIS OF RESTRUCTURING ISSUANCE IN JAPAN

#### 3.1 Issuance characteristics

Figure 1 presents the proportion (based on the number of cases) of equity issuance events in Japan that fall into the following categories: common stock offerings for debt repayment purposes (“Restructuring\_CS”), common stock offerings not for debt repayment purposes (“NOT\_Restructuring\_CS”), preferred stock offerings (“Restructuring\_PS”), and preferred stock offerings in the form of DES (“Restructuring\_PSDES”). Cases in which stock is issued or granted as compensation are excluded. Data on equity issuances are drawn from the INDB Funding Eye database provided by the I-N Information Center. The sample covers the period from 1990 to the end of June 2024, which corresponds to the full period available in the database as of July 2024. Since the database enables tracking of the stated use of proceeds for each common stock issuance, we define restructuring equity issuance in this study as cases in which the intended use of funds is recorded as either “loan repayment” or “bond redemption.”<sup>2</sup>

With respect to preferred stock issuance events as well, we follow the methodology of Tsukahara (2023) and obtain the data from the Funding Eye database, updating the sample period accordingly. Nevertheless, due to inherent limitations of the database, it is not possible to directly determine whether each preferred stock issuance was intended for restructuring purposes. However, taking into account the financial conditions of issuing firms immediately prior to issuance (as discussed later in this study) as well as prior research (e.g., Tsukahara, 2023), we infer that nearly all such issuances can be classified as restructuring equity issuances. Furthermore, since the database enables the identification of cases in which debt is converted into equity through in-kind contributions, we also report these instances.

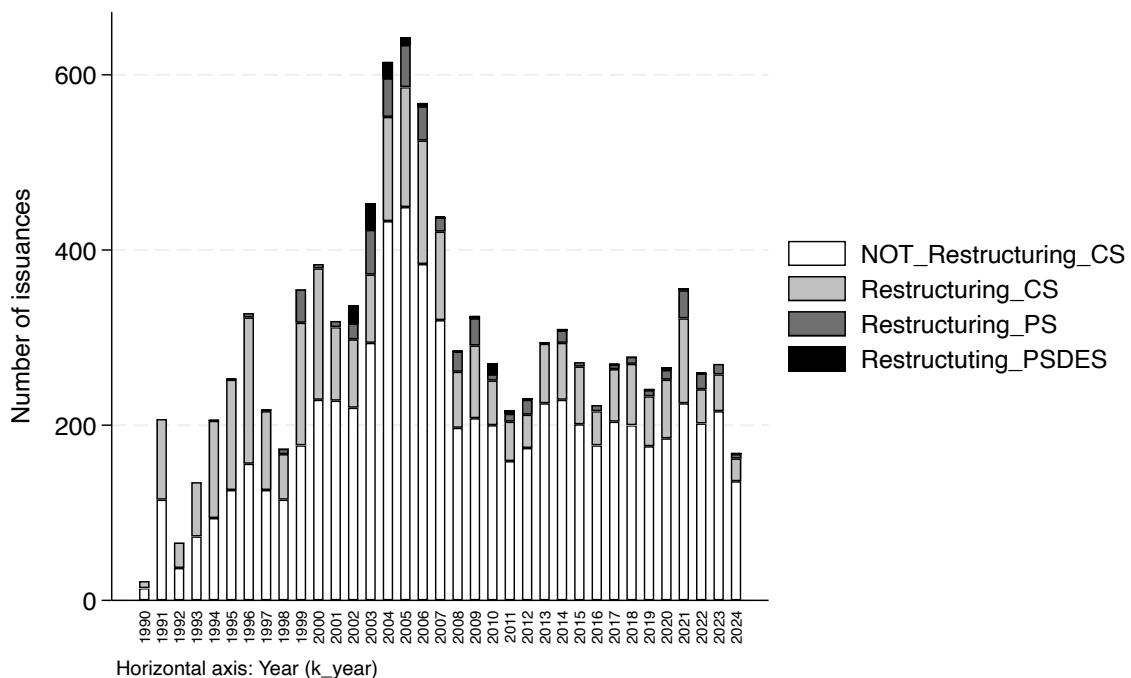
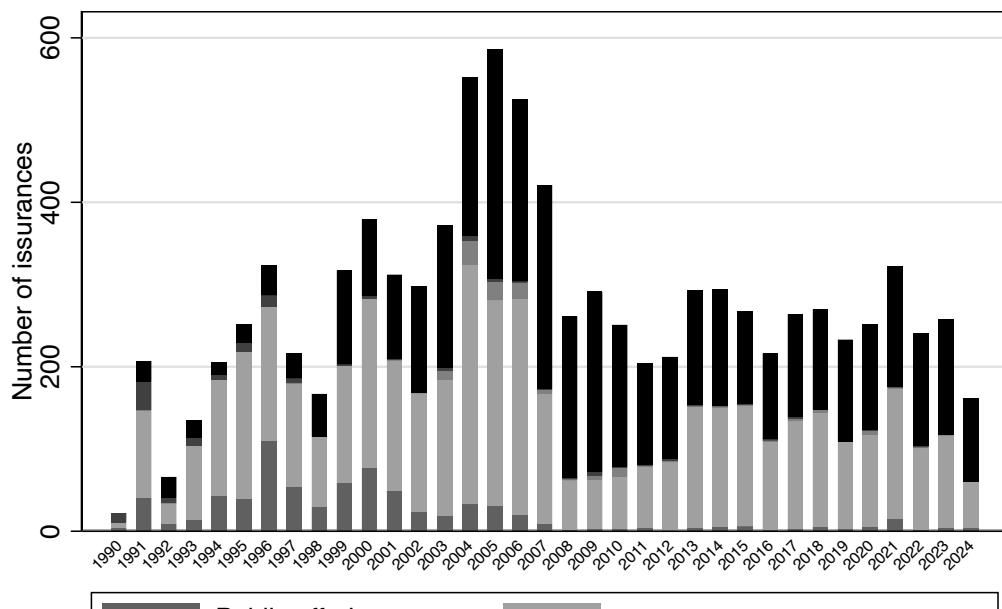


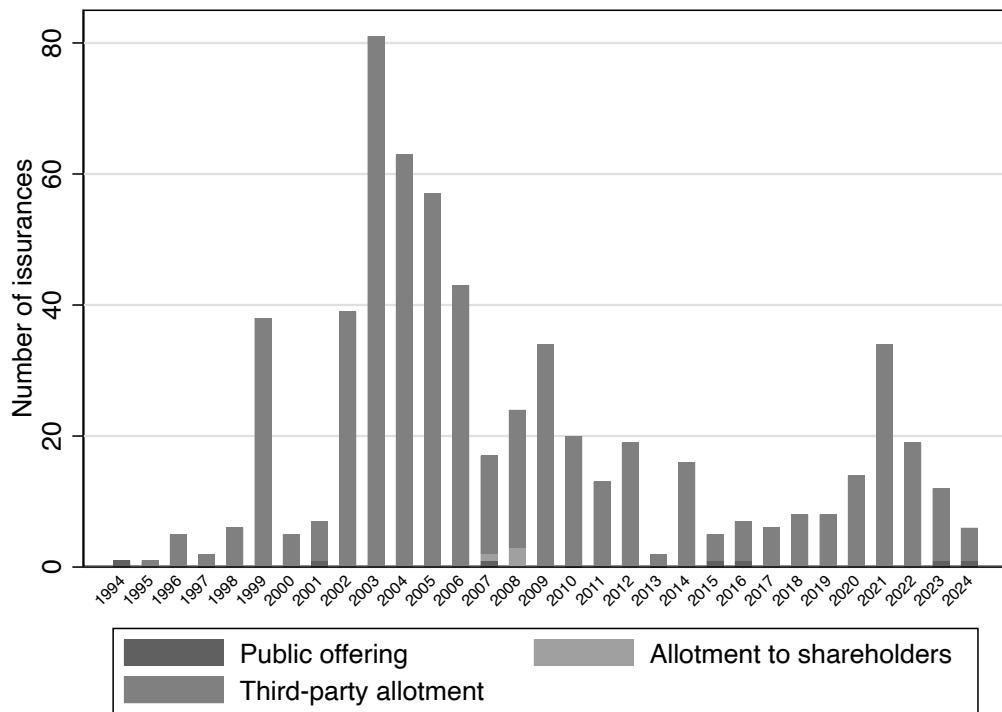
Fig. 1. Proportion of restructuring issuances in total equity issuances

As Figure 1 illustrates, although debt repayment is not the most frequently recorded use of proceeds, such cases are consistently observed each year, indicating the persistent presence of issuances aimed at restructuring. In addition, it is evident that the number of preferred stock issuances is smaller than that of common stock issuances.

<sup>2</sup> Among the other identifiable categories of use provided in the database, two items appear potentially relevant to the focus of this study: “in-kind contributions” and “funds for improving financial soundness.” However, we do not treat these as restructuring equity issuances for two reasons. First, in-kind contributions are not necessarily limited to the conversion of debt into equity. Moreover, funds allocated for improving financial soundness are not always used for debt repayment.



Panel A: Common stock (RI)



Panel B: Preferred stock

Fig. 2. Offering methods used in restructuring issuances

Figure 2 illustrates year-by-year changes in equity issuance methods. Panel A of Figure 2 presents a breakdown of the methods of restructuring equity issuances using common stocks. Although third-party allotments have become more prominent in recent years, a notable number of offerings are still made via public or secondary offerings, suggesting that existing creditors are not necessarily investors in such issuances. Meanwhile, Panel B

of Figure 2 presents the methods used for preferred stock issuances. Although this includes DES-related and standard-preferred stock issuances, most are conducted through third-party allotments.

Table 1. Number of issuance cases by type (RI and preferred stock).

N	RI by Common Stock			Preferred Stock Issuance		
	NO	YES	Total	NOT DES	DES	Total
Average Offering Amount (JPY million)	6,979.25	9,008.11	7,555.98	41,759.43	15,494.82	36,695.34
Year of Issuance Resolution						
1990	14 (0.2%)	8 (0.3%)	22 (0.2%)			
1991	115 (1.7%)	92 (3.4%)	207 (2.1%)			
1992	37 (0.5%)	29 (1.1%)	66 (0.7%)			
1993	73 (1.1%)	62 (2.3%)	135 (1.4%)			
1994	94 (1.4%)	111 (4.0%)	205 (2.1%)	1 (0.2%)	0 (0.0%)	1 (0.2%)
1995	126 (1.8%)	126 (4.6%)	252 (2.6%)	1 (0.2%)	0 (0.0%)	1 (0.2%)
1996	156 (2.3%)	167 (6.1%)	323 (3.3%)	5 (1.0%)	0 (0.0%)	5 (0.8%)
1997	126 (1.8%)	90 (3.3%)	216 (2.2%)	2 (0.4%)	0 (0.0%)	2 (0.3%)
1998	115 (1.7%)	52 (1.9%)	167 (1.7%)	6 (1.2%)	0 (0.0%)	6 (1.0%)
1999	177 (2.6%)	140 (5.1%)	317 (3.3%)	38 (7.7%)	0 (0.0%)	38 (6.2%)
2000	229 (3.3%)	150 (5.5%)	379 (3.9%)	5 (1.0%)	0 (0.0%)	5 (0.8%)
2001	228 (3.3%)	84 (3.1%)	312 (3.2%)	7 (1.4%)	0 (0.0%)	7 (1.1%)
2002	220 (3.2%)	78 (2.8%)	298 (3.1%)	18 (3.6%)	21 (17.8%)	39 (6.4%)
2003	294 (4.3%)	78 (2.8%)	372 (3.9%)	51 (10.3%)	30 (25.4%)	81 (13.2%)
2004	433 (6.3%)	119 (4.3%)	552 (5.7%)	44 (8.9%)	19 (16.1%)	63 (10.3%)
2005	449 (6.5%)	137 (5.0%)	586 (6.1%)	48 (9.7%)	9 (7.6%)	57 (9.3%)
2006	384 (5.6%)	141 (5.1%)	525 (5.4%)	39 (7.9%)	4 (3.4%)	43 (7.0%)
2007	320 (4.6%)	101 (3.7%)	421 (4.4%)	16 (3.2%)	1 (0.8%)	17 (2.8%)
2008	197 (2.9%)	64 (2.3%)	261 (2.7%)	23 (4.7%)	1 (0.8%)	24 (3.9%)
2009	208 (3.0%)	83 (3.0%)	291 (3.0%)	31 (6.3%)	3 (2.5%)	34 (5.6%)
2010	200 (2.9%)	51 (1.9%)	251 (2.6%)	7 (1.4%)	13 (11.0%)	20 (3.3%)
2011	159 (2.3%)	45 (1.6%)	204 (2.1%)	9 (1.8%)	4 (3.4%)	13 (2.1%)
2012	174 (2.5%)	38 (1.4%)	212 (2.2%)	17 (3.4%)	2 (1.7%)	19 (3.1%)
2013	225 (3.3%)	68 (2.5%)	293 (3.0%)	2 (0.4%)	0 (0.0%)	2 (0.3%)
2014	229 (3.3%)	65 (2.4%)	294 (3.0%)	14 (2.8%)	2 (1.7%)	16 (2.6%)
2015	201 (2.9%)	66 (2.4%)	267 (2.8%)	5 (1.0%)	0 (0.0%)	5 (0.8%)
2016	177 (2.6%)	39 (1.4%)	216 (2.2%)	7 (1.4%)	0 (0.0%)	7 (1.1%)
2017	204 (3.0%)	60 (2.2%)	264 (2.7%)	5 (1.0%)	1 (0.8%)	6 (1.0%)
2018	200 (2.9%)	70 (2.6%)	270 (2.8%)	8 (1.6%)	0 (0.0%)	8 (1.3%)
2019	176 (2.5%)	57 (2.1%)	233 (2.4%)	7 (1.4%)	1 (0.8%)	8 (1.3%)
2020	185 (2.7%)	67 (2.4%)	252 (2.6%)	11 (2.2%)	3 (2.5%)	14 (2.3%)
2021	225 (3.3%)	97 (3.5%)	322 (3.3%)	32 (6.5%)	2 (1.7%)	34 (5.6%)
2022	202 (2.9%)	39 (1.4%)	241 (2.5%)	18 (3.6%)	1 (0.8%)	19 (3.1%)
2023	216 (3.1%)	42 (1.5%)	258 (2.7%)	12 (2.4%)	0 (0.0%)	12 (2.0%)
2024	136 (2.0%)	26 (0.9%)	162 (1.7%)	5 (1.0%)	1 (0.8%)	6 (1.0%)

Table 1 reports the annual averages of the offering amounts (i.e., the total amount raised per issuance), along with the number of issuances and their proportions for each year. Over the sample period, 28.7% of the 9,675 common stock issuances are classified as restructuring equity issuances. Note that the average offering amounts are calculated based on raw values without adjustments for outliers. The average offering amount is higher for restructuring equity issuances (JPY 9,008.11 million) than for other equity issuances (JPY 6,979.25 million). For reference, this table also includes information on preferred stock issuances. Among these, approximately 18.4% are identified as DES cases, and the average offering amount for preferred stocks is substantially higher than that for common stocks.

### 3.2 Financial characteristics of issuing firms

Table 2. Pre-issuance financial conditions by capital policy type.

	(1) No Equity Issuance (N = 154,416)	(2) Common Stock Issuance (Non-Restructuring) (N = 6,232)	(3) Common Stock Issuance (Restructuring) (N = 2,583)	(4) Preferred Stock Issuance (All) (N = 275)	(5) Restructuring Common + Preferred Stock Issuance (N = 101)
Current Ratio	1.97 (1.44)	2.13 (1.52)	1.44 (1.21)	1.00 (0.86)	0.91 (0.78)
Quick Ratio	1.49 (1.04)	1.64 (1.11)	1.08 (0.89)	0.63 (0.51)	0.50 (0.43)
Equity Ratio	0.41 (0.40)	0.41 (0.39)	0.32 (0.31)	0.08 (0.04)	0.05 (0.03)
Interest Coverage Ratio	76.97 (7.36)	65.15 (11.32)	29.87 (7.74)	-4.14 (1.18)	-0.36 (0.88)
D/E Ratio	1.83 (0.66)	2.03 (0.71)	2.56 (1.09)	9.88 (4.52)	12.28 (5.15)
Retained Earnings to Total Assets	0.22 (0.24)	0.04 (0.13)	-0.01 (0.11)	-0.14 (-0.02)	-0.25 (-0.09)
ROA(net income-based)	0.02 (0.02)	0.02 (0.03)	0.00 (0.03)	-0.07 (-0.01)	-0.10 (-0.02)
ROE	0.05 (0.06)	0.03 (0.09)	0.02 (0.10)	-0.40 (-0.16)	-0.47 (-0.23)
Sales Growth Rate	5.60 (3.41)	15.06 (7.49)	14.51 (8.92)	-5.09 (-3.67)	-8.84 (-5.18)
Operating Profit Growth Rate	25.84 (6.15)	51.38 (17.73)	37.27 (20.47)	-87.71 (-13.14)	-91.74 (-7.88)
Net Income Growth Rate	-10.08 (7.28)	-8.97 (21.85)	-15.51 (25.45)	-536.88	-606.20
				(-37.04)	(-64.44)

The reported statistics represent means (medians). Each variable is winsorized at the top and bottom 0.05%.

Table 2 presents the representative financial characteristics of firms at the end of the fiscal year immediately preceding their equity issuances, focusing on firms that issued equity for debt repayment. Column (1) reports on firms that do not engage in equity issuance. Column (2) presents the firms that issued common stocks for purposes other than debt repayment. Column (3) focuses on firms that restructure their equity issuances using common stock. In Japan, DES using preferred stocks are a restructuring tool for debt repayment. Accordingly, Column (4) presents the financial characteristics of firms issuing preferred stocks based on Tsukahara's (2023) analysis. Column (5) presents firms that issued common and preferred stocks in the same accounting period. Overall, firms in Columns (4) and (5), which involve preferred stock issuances, appear to be in severe financial distress. Tsukahara (2023) further reports that firms explicitly identified as conducting DES with preferred stocks tend to have worse financial conditions.

While we do not perform statistical tests and report only averages and medians, the firms in Column (3) exhibit slightly weaker short-term financial stability (liquidity) than the firms in Columns (1) and (2); although, their conditions are not as serious as those of the firms in Columns (4) and (5). A similar pattern is observed in structural stability indicators, such as the debt-to-equity and equity ratios. Concerning profitability, the indicators do not suggest that the firms in Column (3) are severely poor. This result is consistent with the observed growth rates.

## 4. HYPOTHESES DEVELOPMENT

A unique feature of restructuring issuances in Japan is the coexistence of two distinct financing methods: issuance of common stock and issuance of preferred stock to raise funds for the repayment of existing debt. This study interprets this duality because of firms deliberately choosing between common and preferred equity based on rational considerations. Therefore, we develop and test hypotheses concerning the underlying reasons for choosing this instrument.

Before analyzing the factors driving the differential use of common and preferred stocks, we first examine if Japanese firms engaging in restructuring issuances share similar characteristics with their Korean counterparts. Korean firms experiencing significant financial distress tend to undergo restructuring (Kim et al., 2019). If

Japanese restructuring issuers are also, on average, financially distressed, this would suggest that the primary objective of common and preferred stock issuances is the same, namely, financial rehabilitation, with differences in instrument choice reflecting secondary strategic considerations. Accordingly, to verify the nature of Japanese restructuring issuers, we test the following hypothesis:

H1: Firms with greater financial distress are more likely to conduct a restructuring issuance.

If H1 holds and financially distressed firms in Japan engage in restructuring issuances regardless of whether they use common or preferred stocks, it would suggest that the primary goal in both cases is financial recovery. In this context, one plausible rationale for the differential use of equity instruments is the degree to which the management and existing controlling shareholders seek to avoid changes in ownership structure and corporate control, an outcome largely determined by whether or not issued shares carry voting rights.

Restructuring issuances in Korea predominantly involve common stocks with voting rights, increasing the likelihood of post-issuance changes in corporate control (Kim et al., 2019). If managers or existing controlling shareholders in Japan wish to prevent such changes, the issuance of non-voting preferred stocks may serve as an effective mechanism. Indeed, in a questionnaire survey of Japanese firms, Sasaki et al. (2015) find that a majority of respondents cite the potential dilution of specific shareholders' ownership stakes as a primary consideration when undertaking equity financing, indicating managerial concern about the implications of equity issuance for corporate control. However, preferred stocks typically entail higher dividend commitments than common stocks, which increases a firm's cost of capital. Under this trade-off, we expect firms to issue common stock—bearing lower dividend costs—when the scale of issuance is sufficiently small such that dilution and control transfer risks are minimal. Conversely, in larger issuances where dilution and control losses are more imminent, firms may prefer the preferred stock to protect existing control structures despite higher capital costs. Based on this, we test the following hypothesis:

H2: The larger the scale of restructuring issuances, the more likely the firm is to issue preferred stock.

## 5. RESEARCH DESIGN

To test H1, we conduct a probit regression analysis based on the following model, following Kim et al. (2019).

$$\text{Restructuring} = \beta_1 + \beta_2 \text{ZScore} + \beta_3 \text{LnAssets} + \beta_4 \text{PBR} + \beta_5 \text{CFO} + \beta_6 \text{Return} + \beta_7 \text{SalesGrows} + \text{Industry} + \text{Year} + \varepsilon \quad (1)$$

The dependent variable, Restructuring, is a dummy variable that takes the value of 1 if a firm issues new equity for debt repayment (i.e., restructuring equity issuance), and 0 otherwise. The variable of interest is the ZScore, which represents the probability of bankruptcy based on Altman (1968) (see Table 1 for the formula). We expect the coefficient of this variable to be negative. Following Kim et al. (2019), our control variables are as follows: LnAssets, is the natural logarithm of total assets; PBR, which is the price-to-book ratio; CFO, which is operating cash flow scaled by total assets; Return, which is the stock return over the past year; and SalesGrows, which is the sales growth rate. To account for unobserved heterogeneity, we include industry fixed effects (Industry) and year fixed effects (Year) in our model.

To test H2, we use the model specified in Equation (2). The dependent variable, RestPref, is a dummy variable that takes the value of one if the restructuring equity issuance involves the preferred stock, and 0 otherwise.

$$\text{RestPref} = \beta_1 + \beta_2 \text{IssueRatio} + \beta_3 \text{LnAssets} + \beta_4 \text{PBR} + \beta_5 \text{CFO} + \beta_6 \text{Return} + \beta_7 \text{SalesGrows} + \text{Industry} + \text{Year} + \varepsilon \quad (2)$$

The variable of interest is the IssueRatio, calculated as the amount of equity issued divided by the market capitalization immediately before issuance. A larger IssueRatio implies a greater dilution effect from equity issuances. According to H2, when the dilution effect is substantial, firms are more likely to issue preferred stocks than common stocks to avoid diluting voting rights. Therefore, we expect the coefficient of IssueRatio to be positive.

### 5.1 Sample selection

In this study, we analyze data from the fiscal years ending March 2010 to March 2022. The sample is restricted to firms that meet the following criteria:

- Listed on a Japanese stock exchange
- Have a fiscal year of 12 months
- Operates in non-financial industries (excluding banks, securities firms, and insurance companies)
- Have all necessary data available from the databases used in this study

Data on restructuring equity issuances are obtained from the INDB Funding Eye, provided by IN Information Center Co., Ltd. Data on corporate governance and stock returns were obtained from Cges, published by Nikkei Media Marketing Inc. Financial data are sourced from NEEDS-Financial QUEST, also provided by Nikkei Media Marketing, Inc., with consolidated financial statements preferentially used. The industry classification follows the Nikkei Medium Industry Classification. We obtain 36,747 firm-year observations, including 359 firm-year observations involving restructuring equity issuances. To mitigate the influence of outliers, all continuous variables (excluding dummy variables) are winsorized at the top and bottom 1%.

## 6. RESULTS

Table 3 presents the descriptive statistics, and Table 4 reports the correlation matrix.

Table 3. Descriptive statistics.

	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Q1</b>	<b>Median</b>	<b>Q3</b>	<b>Max</b>
Restructuring	36,747	0.011	0.105	0.000	0.000	0.000	0.000	1.000
RestPref	1715	0.046	0.210	0.000	0.000	0.000	0.000	1.000
ZScore	36,747	4.989	5.696	0.448	2.321	3.340	5.198	40.132
IssueRatio	1715	0.149	0.200	0.000	0.024	0.091	0.188	1.207
LnAssets	36,747	10.494	1.793	6.098	9.244	10.333	11.558	15.323
PBR	36,747	1.688	2.145	0.237	0.630	0.988	1.752	13.876
CASH	36,747	0.220	0.164	0.013	0.099	0.176	0.295	0.781
CFO	36,747	0.058	0.075	-0.267	0.027	0.060	0.095	0.281
Return	36,747	0.032	0.138	-0.425	-0.045	0.026	0.104	0.454
SalesGrows	36,747	1.042	0.181	0.590	0.963	1.026	1.096	2.141

Table 4. Correlation matrix.

	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>	<b>(7)</b>	<b>(8)</b>	<b>(9)</b>	<b>(10)</b>
Restructuring	(1)	0.382	-0.174	0.324	0.100	0.060	-0.145	-0.040	0.030	-0.042
RestPref	(2)	0.382	-0.226	0.197	0.096	0.006	-0.088	-0.088	-0.174	-0.150
ZScore	(3)	-0.117	-0.109	-0.256	-0.216	0.362	0.525	0.262	0.217	0.307
IssueRatio	(4)	0.212	0.230	-0.161	-0.108	-0.018	-0.130	-0.101	0.007	-0.044
LnAssets	(5)	0.086	0.090	-0.216	-0.069	-0.277	-0.413	0.254	0.107	0.016
PBR	(6)	0.059	0.049	0.440	-0.066	-0.288	0.311	0.012	0.099	0.171
CASH	(7)	-0.146	-0.083	0.571	-0.114	-0.413	0.383	0.071	0.048	0.125
CFO	(8)	-0.038	-0.075	0.041	-0.099	0.288	-0.128	-0.020	0.247	0.254
Return	(9)	0.032	-0.176	0.119	-0.040	0.061	0.059	0.035	0.239	0.245
SalesGrows	(10)	-0.032	-0.132	0.216	-0.065	-0.018	0.137	0.166	0.191	0.196

Table 5 reports the estimation results of Equation (1). Column (2) shows that the coefficient on ZScore is -0.041 (statistically significant at the 1% level), suggesting that firms with a higher probability of bankruptcy are more likely to restructure their equity issuances. Thus, H1 is supported. Column (4) shows that the coefficient of IssueRatio is 1.094 (statistically significant at the 5% level), indicating that firms tend to choose preferred stocks to restructure equity issuances when the proportion of new equity issued relative to existing outstanding shares is high, that is, when the potential dilution effect is large. Thus, H2 is supported.

Table 5. Regression results.

Dependent Variables	Restructuring		RestPref	RestPref
	(1) H1	(2) H1		
ZScore		-0.041*** (-4.39)		
IssueRatio				1.094** (2.28)
LnAssets	0.003 (0.23)	0.005 (0.39)	0.075 (1.32)	0.082 (1.42)
PBR	0.086*** (11.42)	0.107*** (13.33)	0.037 (1.16)	0.045 (1.38)
CASH	-1.479*** (-8.52)	-0.946*** (-5.16)	-0.426 (-0.47)	-0.275 (-0.31)
CFO	-2.096*** (-7.23)	-1.827*** (-5.73)	-0.317 (-0.31)	0.024 (0.02)
Return	0.488*** (3.04)	0.565*** (3.45)	-4.308*** (-6.53)	-4.028*** (-6.22)
SalesGrows	0.069 (0.60)	0.146 (1.30)	-1.120** (-2.44)	-0.959** (-2.09)
Constant	-2.354*** (-9.27)	-2.466*** (-9.81)	-0.637 (-0.61)	-1.114 (-1.01)
Industry	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
Log pseudo likelihood	-2068.04	-2040.27	-115.94	-113.47
Observations	36,747	36,747	359	359

## 7. CONCLUSION

This study empirically examines the economic motivations underlying restructuring issuances conducted by Japanese firms within the context of Japan's institutional and economic environments. Building on insights from Kim et al. (2019), we first explore the possibility that financially distressed firms predominantly undertake restructuring issuances. We empirically examine the factors that drive Japanese firms to employ not only common stocks but also preferred stocks as financing instruments for restructuring issuances.

Our results show that firms with a high probability of financial distress are more likely to undertake restructuring. In addition, we find that as the size of the restructuring increases, firms are more likely to issue preferred stocks rather than common stocks. These findings suggest that, on average, Japanese firms experiencing financial difficulties conduct restructuring issuances, which is consistent with the literature. However, for preferred stock issuances, our results imply that firms may seek to avoid ownership dilution by issuing securities with limited or no voting rights in exchange for a dividend preference. Since the dilution of control rights is more salient in larger offerings, the choice of preferred stock appears to be more prevalent when the scale of restructuring issuances is substantial.

Despite our study's implications, it has one limitation. Our study does not directly examine the specific motivations for issuing common stock in restructuring contexts. Future research should address this gap by more explicitly considering the potential benefits that firms may derive from issuing common equity and by continuing to explore the strategic considerations shaping the choice of financing instruments in restructuring transactions.

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