

## INTERNATIONAL REAL ESTATE REVIEW

# Financing Patterns and Property Acquisitions of Sponsor-backed REITs: Evidence from J-REIT Markets

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By using data on 51 real estate investment trusts (REITs) and 755 real estate deals from 2003–2011 in Japan, this study presents evidence that the funding approach decisions of a sponsor-backed REIT differ from those of a REIT without a sponsor. The implications derived from the presented empirical analyses are threefold. First, with regard to the determinants of the choice of the funding approach, under a continuous high stock price trend or a rise in the stock price of a REIT, the probability of choosing stock issuance increases when the REIT and sponsor firm strike real estate deals. Second, the literature asserts that real estate asset liquidity and debt choice are positively related. However, our results suggest that under a high stock price trend, a REIT chooses stock issuance even when it purchases real estate assets that have a high degree of liquidity. Third, debt issuance is chosen when a REIT and its sponsor firm make numerous and large real estate deals when the stock price of the REIT falls.

### **Keywords**

Real Estate Investment Trusts, Stock Price, Stock Issuance, Debt Issuance, Sponsor Firm

## 1. Introduction

In this study, we investigate how the real estate investment trust (hereafter REIT)–sponsor firm relationship relates to REIT financing patterns by analyzing REIT funding approaches. Hence, the main purpose of the study is to examine the REIT–sponsor firm relationship, funding approach, and stock price by using REIT samples. Since real estate deal partners and shareholders often overlap as sponsor firms, the shared interests of REITs and sponsor firms have been debated since the establishment of the Japanese market over a decade ago. However, in the present study, we extend the works of previous authors by defining the sponsor firm as not only the major shareholder but also a real estate deal partner as declared by each REIT itself in the disclosed financial report. We also assume that the sponsor firm appoints a chief executive officer (CEO) for the REIT.

The motivation of our study is to confirm a common REIT market structure across countries by examining J-REIT markets. Wong et al. (2013) claim that major shareholders perform a significant role in stock public offerings. While they assume that REIT sponsor firms are the major shareholders, however, sponsor firms, although often minor shareholders in Japan, have a great influence over REIT management, because they typically also serve as the real estate deal partners and appoint CEOs for the REITs. Although the relationship between REITs and commercial banks has been examined by Hardin and Wu (2010) and Ooi et al. (2010), and that between REITs and external advisors has been discussed by Striewe et al. (2013), few scholars have studied the relationship between REITs and other non-financial firms. In the case of REITs in Japan, most sponsor firms are real estate businesses, urban development businesses, or other businesses except banks and advisory firms. Given the absence of conclusive findings on this topic, we are motivated to focus on the prevailing funding approaches in order to investigate the benefits and costs of the REIT–sponsor firm relationship. Hence, we bridge this gap in the literature by presenting evidence that the REIT–sponsor firm relationship influences the funding approach. In addition, our findings confirm those of recent works on the REIT funding approach that report a significant relationship with stock price.

We define the “sponsor firm” based on the following information material. The regulatory framework of the Japanese Financial Supervisory Agency stipulates that all publicly listed REITs must submit annual securities reports to the supervisory authority besides publicly disclosing them. This framework also requests the reporting of the names of sponsor firms that have common interests with the REIT. We use this information along with annual financial, daily stock price and real estate deal data from 2003–2011 to examine our hypotheses. This dataset enables us to identify the firm from which a REIT purchased the real estate, and investigate whether it is same as the sponsor firm and how stock price is influenced by the real estate investment deal, controlling for other possible determinants.

Specifically, by using the above dataset, we examine our hypotheses and derive the following evidence. First, we present evidence that a continuous high stock price trend or a rise in stock price determines the stock issuance of the REIT and that the probability of selecting stock issuance further increases when the funding for the real estate deal is provided by the sponsor firm. Second, our evidence lends support to the hypothesis that stock issuance is primarily chosen even when a REIT deals in real estate assets that have a high degree of liquidity in the secondary market under a high stock price trend. Third, the presented empirical results demonstrate that a low stock price promotes either debt issuance or bank borrowing. Whether debt issuance or bank borrowing is chosen, however, depends on the funding size.

The remainder of the paper is organized as follows. We review the existing literature in the next section and show how they relate to our study in Section 3, where we also present our hypotheses. In Section 4, we introduce our empirical strategy and present the data used to examine our propositions. In Section 5, we report the empirical results, and discuss the results and present the conclusions in Sections 6 and 7, respectively.

## **2. Literature Review**

### **2.1 Stock Price, Sponsor Relationship, and Stock Issuance**

Previous studies have discussed the relationship between stock price and stock issuance decision, the impact of real estate liquidity on the debt to equity ratio, and the determinants of debt issuance based on REIT samples. On the relationship between stock price and the stock issuance decision, Billett et al. (2007) and Dittmar and Thakor (2007) assert that stock issuers need to achieve a certain future project revenue that is consistent with the views of concentrated blockholders when they choose stock issuance. This so-called disagreement theory considers any conflicts of interest between external stakeholders and stock issuers, and thus, it supports the finding of a positive relationship between the stock price of a firm and its stock issuance decision only when issuers and shareholders share the same views about the future profitability of the project.

Ambrose and Bian (2010) assert that an increase in stock price volatility encourages managers to enhance future earnings management, and stock price and future earnings are positively related as a result. While Ambrose and Bian (2010) do not mention the relationship between the stock price trend and funding approach, Boudry et al. (2010) and Ooi et al. (2010) both find a positive relationship between stock price and the probability of stock issuance. Their empirical evidence supports the timing theory, which confirms the positive relationship between stock price and the probability of stock issuance without considering conflicts of interest between shareholders and stock issuers.

Hardin and Wu (2010) and Ooi et al. (2010) consider the relationship between REITs and external financial firms with regard to the influence on funding patterns and conclude that the REIT–bank relationship influences the funding approach decision. Hardin and Wu (2010) show evidence that REITs that have strong business relationships with more than one commercial bank frequently issue debt securities. Ooi et al. (2010) state that REITs that conclude credit line contracts with at least one commercial bank rarely become insolvent and enjoy easy access to external funding resources. These studies commonly assert that the relationship with banks influences the funding approach decision.

## **2.2 Impact of Real Estate Liquidity on Funding**

Shleifer and Vishny (1992) theoretically assert that highly liquid tangible assets allow a firm to have a high debt to equity ratio. Giambona et al. (2008) also find empirical support for this theory based on REIT sample observations. In addition, Brown and Riddiough (2003) conclude that the real estate liquidity and debt to equity ratio of REITs are positively related. In summary, the findings in the existing literature indicate that a higher degree of real estate liquidity means a higher debt to equity ratio.

The existing literature employs various definitions of real estate liquidity. Geltner et al. (2001) use the length of the maturity period of the property leasing contract that each REIT concludes with final users to represent the degree of REIT real estate asset liquidity. They conclude that a short leasing maturity period enables REITs to renovate leasing property and that this improves future financial strength, which positively influences the debt to equity ratio. Likewise, Benmelch et al. (2005) use the level of residential property regulations as a proxy for the degree of residential real estate liquidity, while Giambona et al. (2008) explore and integrate property regulations, leasing maturity periods, and other factors to ascertain the degree of real estate liquidity.

## **2.3 Determinants of Debt Issuance and Bank Borrowing**

The literature also asserts that stock issuance and debt issuance are explained by different theories. Boudry et al. (2010) and Ooi et al. (2010) state that the trade-off theory can be used to explain the debt issuance decisions of a REIT. The conclusions of Boudry et al. (2010) and Ooi et al. (2010) imply that debt issuance is not explained by the timing theory, whereas the trade-off theory implies that debt issuance and the various costs of debt are negatively related. Meanwhile, Bondt (2005), who studies the determinants of debt security issuance for non-financial firms, finds that the costs of debt do not directly influence the debt issuance decision, because initial fixed costs are embedded when the firm initially issues securities. Thus, marginal costs do not increase when the firm additionally issues debt securities following the disbursement of these initial fixed costs. In addition, Davis (2001) and Bolton and Freixas

(2006) suggest that limited growth in domestic bank lending induces the development of the debt security market regardless of the cost of debt. A conclusion of their theoretical models asserts that many firms depend on commercial bank borrowings in the initial stage of direct financing market development. However, this fast-growing bank borrowing demand rapidly exceeds the required bank capital, and these borrowers are accordingly forced to turn to the debt security market.

### 3. Background and Hypotheses

As shown in Table 1, the proportion of REIT–sponsor firm real estate deals is 54.1 percent, while 78.1 percent of REIT executive officers are sent by the sponsor firms. This represents the uniqueness of the REIT market structure in Japan. The average sponsor firm ownership ratio of REITs is 12.1 percent, with the minimum ratios being 0.0 percent in the cases of the United Urban Investment Corp. and Global One Real Estate Investment Corp. as of March 31, 2014. Table 1 suggests that while the sponsor firm ownership ratio alone does not dominate the management of the subsidiary REIT, the opposite is true when it is coupled with information that regard directors from sponsor firms. This suggests that when the sponsor firm is a shareholder, however minor, the firm might have an incentive to increase the REIT stock price through the real estate deal. This is the background of our hypotheses in this study.

Our first hypothesis concerns the relationships among stock price, REITs and sponsor firms, and funding approaches. As mentioned in the previous section, the literature on REIT funding approaches supports the timing theory. While we share the view that stock price and the probability of stock issuance are positively related, we also consider the degree to which the existence of another determinant, namely, the REIT–sponsor firm relationship, influences the stock issuance choice by including variables that represent this relationship. Griffith et al. (2011) suggest that the REIT ownership structure influences CEO compensation. By following the logic of Griffith et al. (2011), we assume that the engagement with a deal partner influences the choice of financial methodology of the REIT. Thus, we define the sponsor firm as a shareholder and a real estate deal partner of the REIT that is explicitly reported in the annual securities report as a stakeholder firm, which leads to the following hypotheses.

**Hypothesis 1:** A REIT in which the real estate investment decision is made under a continuous high stock price trend prefers stock issuance. The REIT is more likely to choose it when the REIT and sponsor firm share interests in the real estate investment deal.

**Table 1 Ownership Ratios and Number of Real Estate Investment Deals of the Selected J-REITs**

(a) REIT	(b) Year of Foundation	(c) Sponsor Firm	(d) Sponsor Ownership Ratio	(e) Total Assets	(f) Number of Directors	(g) CEOs from Sponsor Firms	(h) Real Estate Deals in 2003-11	(i) REIT-Sponsor Deal Ratio
Nippon Building Fund Inc.	2001	Mitsui Fudosan Co., Ltd.	3.3%	1,047,991	1	1	92	73.9%
Japan Real Estate Investment Corp.	2002	Mitsubishi Estate Co., Ltd.	1.7%	821,942	1	1	13	84.6%
Japan Retail Fund Investment Corp.	2001	Mitsubishi Corp.	51.0%	787,686	1	0	13	100.0%
Hankyu REIT, INC.	2004	Hankyu Corp.	4.0%	477,703	1	1	157	31.2%
United Urban Investment Corp.	2003	Marubeni Corporation	0.0%	477,564	1	1	24	41.7%
Advance Residence Investment Corp.	2006	Ito-chu Corp.	2.8%	410,989	1	1	226	38.1%
Japan Prime Realty Investment Corp.	2002	Tokyo Tatemono Co., Ltd.	5.5%	404,720	1	0	20	95.0%
ORIX JREIT Inc.	2001	ORIX Real Estate Corp.	2.7%	378,711	1	1	18	100.0%
Daiwa Office Investment Corp.	2005	Daiwa Securities Co., Ltd.	32.6%	352,786	1	1	79	34.2%
Mori Trust Sogo REIT, Inc.	2001	Mori Trust, Co., Ltd.	24.8%	327,316	1	1	67	34.3%
Kenedix Office Investment Corp.	2005	Kenedix.	0.0%	323,800	1	0	96	38.5%
Sekisui House SI Investment Corp.	2005	Sekisui House, Ltd.	4.9%	313,395	1	1	98	60.2%
Nippon Accommodations Fund.	2005	Mitsui Fudosan Co., Ltd.	3.8%	273,872	2	2	71	26.8%
Frontier Real Estate Investment Corp.	2004	Mitsui Fudosan Co., Ltd.	5.9%	266,223	1	1	55	45.5%
Japan Excellent, Inc.	2006	Nippon Steen Kowa Real Estate, Ltd.	6.4%	264,097	1	1	29	24.1%
Mori Hills REIT Investment Corp.	2006	Mori Building Co., Ltd.	19.2%	252,716	1	1	9	11.1%
Nomura Real Estate Office Fund, Inc.	2003	Nomura Real Estate Development Co., Ltd.	4.1%	240,800	1	1	57	49.1%
Daiwa House Residential Investment Corp.	2005	Daiwa House Industry Co. Ltd.	10.7%	229,981	1	1	97	40.2%
Tokyu REIT, Inc.	2003	Tokyu Corp.	5.0%	229,622	1	1	17	41.2%
Japan Logistics Fund, Inc.	2005	Mitsui Corp.	0.0%	223,587	1	1	16	43.8%
Premier Investment Corp.	2002	NTT Urban Development Inc.	4.4%	217,960	1	1	128	78.1%
Activia Properties Inc.	2012	Tokyu Land Corp.	10.5%	191,841	1	1	27	77.8%
Top REIT, Inc.	2005	Mitsui Sumitomo Trust Bank	2.1%	186,169	1	1	91	36.3%
Industrial & Infrastructure Fund Investment Corp.	2007	No Sponsor Firm	0.0%	176,907	1	0	20	30.0%
Nomura Real Estate Residential Fund, Inc.	2006	Nomura Real Estate Development Co., Ltd.	9.5%	168,019	1	1	122	45.1%
Fukuoka REIT Co. Ltd.	2005	Fukuoka Jisho Co., Ltd.	10.1%	167,800	1	1	74	66.2%
Global One Real Estate Investment Corp.	2003	Meiji Yasuda Life Insurance Company	0.0%	160,991	1	1	72	61.1%
MID REIT, Inc.	2006	MID Urban Development Co., Ltd.	5.0%	157,670	1	0	52	88.5%
Heiwa Real Estate REIT, Inc.	2002	Heiwa Real Estate Co., Ltd.	17.1%	147,669	1	1	19	42.1%
Ichigo Real Estate Investment Corp.	2011	Ichigo Trust PTE, Ltd.	38.4%	120,501	1	0	147	32.0%
Kenedix Residential Investment Corp.	2011	Kenedix.	100.0%	99,031	1	1	30	63.3%
Invincible Investment Corp.	2002	Life Capital Properties, Inc.	0.0%	79,176	1	1	194	76.8%
Starts Proceed Investment Corp.	2005	Starts Corp.	14.7%	47,994	1	1	28	75.0%
		Mean	12.1%	303,855			68.4	54.1%
		S.D.	19.7%	217,929			55.5	24.0%

**Note:** 1. The figures for (a)–(g) and (i) are as of March 31, 2014.

2. (e) Total Assets are in millions of JPY.

**Source:** The latest annual security reports of each J-REIT as of March 31, 2014

**Hypothesis 2:** A REIT in which the real estate investment announcement induces a stock price rise prefers stock issuance. The REIT is more likely to choose it when the REIT and sponsor firm share interests in the real estate investment deal.

Hypotheses 1 and 2 stand in direct opposition to the stylized facts presented in the literature. According to Hypotheses 1 and 2, a REIT issues stock under a high stock price trend and the REIT and sponsor firm share common interests, even though the liquidity of the real estate asset is high. In this regard, the consensus in the literature and Hypotheses 1 and 2 are conflicting. We follow Shleifer and Vishny (1992), Brown and Riddiough (2003), and Giambona et al. (2008) and use quantitative proxies in order to represent the degree of real estate asset liquidity. Instead of adopting qualitative information on residential property regulations and leasing maturity periods, we assume that the frequency with which real estate assets are sold in the secondary market and these transacted values can serve as an objective proxy of the degree of real estate asset liquidity. Based on this quantitative information, we define the real estate assets that have a high degree of real estate liquidity as office buildings with the following two characteristics: they are located in the five major wards of Tokyo, and they have trust beneficiary rights. It might be better to employ a variable that represents the relationship between the sales price of the real estate in the secondary market and the market value at that time. However, due to data limitations, we proxy the real estate liquidity by the usage and location of the real estate. As shown in Table 2, these types of real estate assets are frequently traded in the secondary market, and display large total values, total floor area, and total number of deals transacted. Based on these proxies, we formulate the following hypothesis:

**Hypothesis 3:** A REIT generally chooses debt when it purchases a high degree of real estate asset liquidity. However, a REIT primarily prefers stock issuance even though the degree of real estate asset liquidity is high when stock issuance requirements have been satisfied.

By following Hypotheses 1–3, we propose the debt issuance determinant hypothesis. Like Davis (2001), Bondt (2005), and Bolton and Freixas (2006), this study supposes that the marginal cost of debt issuance does not influence the decision to issue debt or pursue bank borrowing, but stock price does affect the debt issuance coupled with the REIT–sponsor firm relationship. In other words, we suppose that debt issuance and bank borrowing can be explained by the disagreement and the timing theories, but not by the trade-off framework. We follow this theory to hypothesize that, under the expectation of a stock price fall in the future, a REIT chooses debt issuance or bank borrowing rather than stock issuance. Whether or not a sponsor firm relates to the funding approach depends on the size of the funding value. In this case, when the deal partner is a sponsor firm and the size of the funding value is large, the REIT chooses debt issuance, because, as the literature asserts, vast bank borrowing requires the bank to increase additional capital under the

expectation of a stock price fall in the post-real estate deal period. This leads to the fourth hypothesis.

**Hypothesis 4:** A REIT selects debt issuance under a stock price fall when the current deal partner is the sponsor firm. Debt issuance is also preferred to bank borrowing when the value of the real estate deal is large.

## 4. Empirical Strategy

### 4.1 Model

This study empirically investigates which factors influence stock and debt issuance. To this end, we employ four independent variable groups, namely, variables that relate to stock price ( $X^{stock}$ ), firm-specific ( $X^{REIT}$ ), REIT real estate asset type ( $X^{type}$ ), and real estate deal ( $X^{deal}$ ) factors. The following empirical models are thus employed:

$$Stock \cdot Issuance_{ij} = X_i^{stock} \beta_1 + X_i^{REIT} \beta_2 + X_{ij}^{type} \beta_3 + X_{ij}^{deal} \beta_4 + \varepsilon_{ij}, i = 1, \dots, N, j = 1, \dots, K \quad (A)$$

$$Debt \cdot Issuance_{ij} = X_i^{stock} \chi_1 + X_i^{REIT} \chi_2 + X_{ij}^{type} \chi_3 + X_{ij}^{deal} \chi_4 + \mu_{ij}, i = 1, \dots, N, j = 1, \dots, K \quad (B)$$

Equations (A) and (B) are used to verify the determinants of stock issuance (debt issuance). We do not estimate these two models simultaneously, because the sequential estimation of (A) and (B) maximizes the observations of (A). We employ *Stock Issuance* (*Bond Issuance*) as the dependent variable, which equals one when the REIT finances the real estate investment by stock issuance (debt issuance), and zero otherwise.  $X^{stock}$ ,  $X^{REIT}$ ,  $X^{type}$ , and  $X^{deal}$  are the independent variable groups.

For the variable group  $X^{stock}$ , *Stock Price* is defined as the stock returns of REIT  $i$  for 90 operating days prior to the announcement of the new real estate investment  $j$  minus Tokyo Stock Exchange (TSE) REIT Index returns for those 90 operating days. *Stock Price* is employed to verify Hypothesis 1. *Stock Issue Cost* is defined as the inverse value of the price/earnings ratio of REIT  $i$  in the financial year of real estate investment  $j$  minus  $0.5 \times$  the averaged debt security interest rate of REITs that belong to the same credit rating of REIT  $i$  in the year of real estate investment  $j$  minus  $0.5 \times$  long-term bank borrowing contract interest rate of REIT  $i$  in the year of real estate investment  $j$ . The definition of this variable is also explained in Table 3. Tidwell et al. (2013) suggest that a credit rating change influences the trading volume and price of securities, and borrowing interest rate of REITs. We thus employ the averaged interest rates by credit rating. When the dependent variable is *Bond Issuance*, we employ *Bond Issue Cost* instead of *Stock Issue Cost*, which is defined as the averaged debt security interest rate of REITs that belong to the same credit rating group of REIT  $i$  in the year of real estate investment  $j$  minus  $0.5 \times$  the inverse value of the price/earnings ratio of REIT  $i$  in the current financial year of real estate investment  $j$  minus  $0.5 \times$  long-term bank borrowing contract interest rate of REIT  $i$  in the year of real estate



investment  $j$ . The definition of this variable is also explained in Table 3. The distribution of the credit ratings of REITs that made real estate investments from 2003–2011 is shown in Table 4.

Ooi et al. (2007) point out that the earnings of REITs are inversely related to their stock prices when these prices are underpriced or overpriced. Accordingly, Models (A) and (B) should employ various stock price proxies to confirm robustness. Thus, to examine Hypothesis 2, we alternatively employ the cumulative abnormal returns of REIT  $i$  when the REIT announces real estate investment  $j$ . We employ the following event windows, because cumulative abnormal returns reflect the deal announcement a few days before the announcement. Two cumulative abnormal stock returns are employed. The first is the 3-day cumulative abnormal returns  $CAR(-1,+1)$ , which is defined as the total value of the actual stock returns of REIT  $i$  minus its theoretical stock returns on the day of, the day after, and the day before the announcement of real estate investment  $j$ . The second is the 21-day cumulative abnormal returns  $CAR(-10,+10)$ , which is defined as the total cumulative value of the actual stock returns of REIT  $i$  minus its theoretical cumulative stock returns of 10 days on both sides of the day of the announcement of real estate investment  $j$ , including the current day. The theoretical stock returns of REIT  $i$  are predicted by estimating a linear ordinary least squares (OLS) regression with REIT  $i$  and TSE REIT Index returns for 250 operating day samples immediately before real estate investment  $j$ .

## 4.2 Variable Definitions and Expected Results

For the independent variable group  $X^{REIT}$ , we employ the return on assets (*ROA*) of REIT  $i$  as a proxy of profitability and the debt to equity ratio (*Debt to Equity*) as a proxy of financial strength. The latest financial results for real estate investment  $j$  are employed for these two measures. We also employ *Sponsor* as one of the variables of  $X^{REIT}$ , which equals one when the real estate assets in investment  $j$  are provided by the sponsor firm of REIT  $i$ , and zero otherwise. We do not employ a variable for the secondment of a CEO from the sponsor firm, as the relevant historical data are limited.

With regard to REIT real estate asset type variables  $X^{type}$ , we employ a variable that describes whether the real estate included in the deal is to be used as an office building (*Office*) or residential property (*Residence*). *Office* equals one when the purpose of the real estate investment is for use as an office building, and *Residence* equals one when its purpose is for residential property business use, and zero otherwise. In addition, we employ a variable for the type of real estate (*Area*), which equals one when the real estate is located in one of the five major wards of Tokyo (i.e., Chiyoda, Chuo, Minato, Shibuya, and Shinjuku wards), and zero otherwise.

**Table 2 Ranking of J-REIT Real Estate Assets Sold in a Secondary Market by Type, Category, and Location from 2001–2011**

	Purpose of Use		Real Estate Type	
A. Market Value Based (Total: JPY 1.079 trillion)	1	Office Building (64.5%)	1	Real Estate Trust Beneficiary Right (79.6%)
	2	Residential Property (24.3%)	2	Real Estate Asset (20.4%)
	3	Commercial Facility (8.2%)	3	Others (0.0%)
B. Floor Area Based (Total: 1,836 Thousands m <sup>2</sup> )	1	Office Building (48.5%)	1	Real Estate Trust Beneficiary Right (78.7%)
	2	Residential Property (31.5%)	2	Real Estate Asset (21.2%)
	3	Commercial Facility (11.9%)	3	Others (0.0%)
C. Number of Deals (Total: 305 Deals)	1	Residential Property (41.3%)	1	Real Estate Trust Beneficiary Right (52.8%)
	2	Office Building (20.7%)	2	Real Estate Asset (20.0%)
	3	Commercial Facility (3.3%)	3	Others (27.2%)
	Area		Ownership Right	
A. Market Value Based (Total: JPY 1.079 trillion)	1	Chiyoda, Chuo, and Minato Wards (47.3%)	1	100% Ownership for Both Land and Building (75.9%)
	2	Shibuya and Shinjuku Wards (10.3%)	2	100% Ownership Only for Land (19.5%)
	3	Other 18 Tokyo Wards (11.9%)	3	Others (4.6%)
B. Floor Area Based (Total: 1,836 Thousands m <sup>2</sup> )	1	Chiyoda, Chuo, and Minato Wards (24.3%)	1	100% Ownership for Both Land and Building (88.6%)
	2	Shibuya and Shinjuku Wards (7.8%)	2	100% Ownership Only for Land (5.7%)
	3	Other 18 Tokyo Wards (12.3%)	3	Others (5.7%)
C. Number of Deals (Total: 305 Deals)	1	Chiyoda, Chuo, and Minato Wards (13.1%)	1	100% Ownership for Both Land and Building (56.1%)
	2	Shibuya and Shinjuku Wards (14.4%)	2	100% Ownership Only for Land (9.2%)
	3	Other 18 Tokyo Wards (8.5%)	3	Others (34.8%)

**Source:** Author’s calculations based on the TOREIT database provided by Tokyu Real Estate Inc.

**Note:** 1. “Market Value Based” refers to the values of J-REIT real estate assets sold in a secondary market from 2001–2011 divided by total values of J-REIT real estate assets sold. “Floor Area Based” denotes the floor areas of J-REIT real estate assets sold, and “Number Deals” denotes the number deals J-REIT real estate assets sold.

- The data on real estate deals for which the sales price fell by more than 20 percent compared with the purchased price are excluded from the sample.
- We employ the purpose of use and type of real estate assets traded in the secondary market as proxy variables of the degree of real estate liquidity. This is because of our data limitation in calculating the degree of real estate liquidity.

$X^{type}$  also includes those variables that represent whether real estate  $j$  is covered by a trust beneficiary rights contract (*Trust Contract*) and the ownership rights of real estate  $j$  (*Ownership*). *Trust Contract* equals one when real estate  $j$  is covered by a trust beneficiary rights contract with trust banks or other institutions, and zero otherwise. When both the ownership right of the land and the building of real estate  $j$  are perfectly guaranteed, legal, and belong 100 percent to a new owner (i.e., the REIT, as the purchaser) after the deal, *Ownership* equals one, and it equals zero even when the real estate partly includes land lease rights. While Hardin et al. (2009) confirm that multifamily properties owned by REITs generate higher rents than those owned by non-REITs, we suppose that trust beneficiary rights contracts of properties owned by REITs are one of the determinants that increase property rents. The independent variables for Equations (A) and (B) also include the total market deal value of real estate investment  $j$  (*Transaction Value*) for variable group  $X^{deal}$ . In addition, Equations (A) and (B) both employ 50 individual REIT dummy variables and 8 year-dummy variables. The details of each dependent and independent variable are described in Table 3.

The foregoing discussions support Hypotheses 1 and 2. This finding is consistent with the timing and the disagreement theories, when the parameter of *Stock Price* (or *CAR*) and that of the intersection of *Stock Price* (or *CAR*) and *Sponsor* have significantly positive relationships with the dependent variable *Stock Issuance* for Equation (A). Hypothesis 3 is also supported, as the parameters of *Office*, *Area*, *Trust Contract*, and *Ownership* are found to have significantly positive relationships with the dependent variable *Stock Issuance* in Equation (A). Hypothesis 4 is supported when the parameter of *Stock Price* (or *CAR*) has a significant negative relationship with the dependent variable *Bond Issuance* and the parameter of the intersection of *Stock Price* (or *CAR*) and *Sponsor* has a significant relationship with the dependent variable *Bond Issuance* in Equation (B). In the case of the REIT observations, the parameter of *ROA* is expected to be insignificant with respect to the dependent variables, while those of *Debt to Equity* and *Bond Issuance Cost* are also expected to be insignificant if the findings are inconsistent with the trade-off theory.

### 4.3 Data

This study employs empirical data from the TOREIT database of Tokyu Real Estate Inc., Bloomberg L.P., and the Thomson Bank One database. These three data sources contain delisted, merged, and newly listed REIT deals, stock prices, and financial data on the 51 REITs that were recorded as real estate purchasers from 2003–2011. The total number of REIT real estate deals included in this study is 755.

Table 3 Definition of Variables

	Variable	Definition	Expected Parameter Sign	Source
<b>Dependent Variable</b>	<i>Stock Issuance</i>	Equals one when REIT $j$ issues stock when it makes real estate investment $i$ , otherwise zero.	Dependent Variables	Bloomberg
	<i>Bond Issuance</i>	Equals one when REIT $j$ issues debt security when it makes real estate investment $i$ , otherwise zero.	Dependent Variables	Bloomberg
<b><math>X^{stock}</math>: Stock Price Variable</b>	<i>Stock Price</i>	Defined as 90-operating-day REIT $j$ stock returns prior to announcement of the new real estate investment $i$ minus 90-operating-day Tokyo Stock Exchange REIT index returns.	Stock Issuance + Debt Issuance -	Bloomberg
	<i>CAR(-1,+1)</i>	Defined as the total value of actual REIT $j$ stock returns minus theoretical REIT $j$ stock returns on the day of, the day after, and the day before announcement of real estate investment $j$ .	Dependent Variables	Bloomberg
	<i>CAR(-10,+10)</i>	Defined as the total value of actual REIT $j$ stock returns minus theoretical REIT $j$ stock returns of 10 days on both sides of the day of announcement of real estate investment $j$ , including the current day.	Dependent Variables	Bloomberg
	<i>Stock Issue Cost</i>	Relative financing cost of stock issuance of REIT $j$ . $1/PER - (0.5 \times \text{REIT debt security interest rate} + 0.5 \times \text{long-term bank borrowing contract rate})$ .	Stock Issuance -	Thomson Reuters
	<i>Bond Issue Cost</i>	Relative financing cost of bond issuance of REIT $j$ . $\text{REIT debt security interest rate} - (0.5 \times 1/PER + 0.5 \times \text{long-term bank borrowing contract rate})$ .	Debt Issuance -	Thomson Reuters

(Continued...)

(Table 3 Continued)

	Variable	Definition	Expected Parameter Sign	Source
$X^{REIT}$ : Firm-specific Factor Variable	<i>ROA</i>	Return on assets of REIT $j$ in the previous financial year of real estate investment $i$ .	Security Issuance +/-	Thomson Reuters
	<i>Debt to Equity</i>	Debt to equity ratio of REIT $j$ in the previous financial year of real estate investment $i$	Stock Issuance + Debt Issuance -	Thomson Reuters
	<i>Sponsor</i>	Equals one when REIT $j$ purchases real estate $i$ from sponsor firm of REIT $j$ , otherwise zero.	Stock Issuance + Debt Issuance +/-	Tokyu Real Estate Inc.
$X^{type}$ : Invested Real Estate Type, Category, and Location Variable	<i>Office</i>	Equals one when real estate $i$ is for use as an office building, otherwise zero.	Stock Issuance + Debt Issuance +/-	Tokyu Real Estate Inc.
	<i>Residence</i>	Equals one when real estate $i$ is for use as a residential property, otherwise zero.	Stock Issuance - Debt Issuance +/-	Tokyu Real Estate Inc.
	<i>Trust Contract</i>	Equals one when real estate $i$ is covered by trust beneficial rights, otherwise zero.	Stock Issuance +/- Debt Issuance +	Tokyu Real Estate Inc.
	<i>Area</i>	Equals one when real estate $i$ is located in the five major wards of Tokyo, i.e., Chiyoda, Chuo, Minato, Shibuya, and Shinjuku wards; otherwise zero.	Stock Issuance + Debt Issuance +/-	Tokyu Real Estate Inc.
	<i>Ownership</i>	Equals one when the ownership right of both the land and the building of real estate $i$ are perfectly guaranteed and when it fully belongs to a new owner, otherwise zero.	Stock Issuance +/- Debt Issuance +	Tokyu Real Estate Inc.
$X^{deal}$ : REIT Real Estate Investment $i$ 's Deal Variables	<i>Transaction Value</i>	Total Market Deal Value of Real Estate $i$ (thousands Japanese Yen)	+	Tokyu Real Estate Inc.

Note: "PER" denotes price earnings ratio of REIT  $i$  in year  $t$  and is defined as stock price of REIT  $i$  divided by earnings per share.

The TOREIT database covers all REIT real estate deal data from the period 2003–2011. The number of real estate deals dramatically increased from 32 in 2003 to 185 and 161 in 2006 and 2007, respectively. The number then decreased to just 15 deals in 2009 and recovered to 30 and 32 deals in 2010 and 2011, respectively (Table 4). The TOREIT database includes deal data along with information such as the announcement date, market value (*Transaction Value*), type (*Office* or *Residence*), location (*Area*), relationship with the sponsor firm (*Sponsor*), and other conditions (*Trust Contract and Ownership*; Table 5).

Bloomberg data are used to ascertain security issuance information, daily stock price, and TSE REIT index data. We obtain *Stock Issuance* and *Bond Issuance* from this data source and also use it to calculate *Stock Price*, *CAR(-1,+1)*, and *CAR(-10,+10)* (Table 5). The Bloomberg data also provide the credit ratings of Rating and Investment Information, Inc. (R&I), the Japan Credit Rating Agency, Inc. (JCR), Standard and Poor's Rating Services (S&P), and Moody's Investors Service (Moody's) as well as interest rate data on debt securities (Table 4). We obtain REIT financial data from the Thomson One database. This database provides annual financial statement data on REITs from 2003–2011, from which we calculate the stock issuance cost (*Stock Issue Cost*), debt issuance cost (*Bond Issue Cost*), return on assets (*ROA*), and debt to equity ratio (*DER*) (Table 5). We then match these various data to empirically investigate our hypotheses.

**Table 4 Annual Distribution of REIT Real Estate Deals by REIT Credit Ratings**

Total	AA+	A+	BBB+	BB+	B+	CCC+	No Credit Ratings	Average Interest Rate of Debt Securities	Average Interest Rate of Bank Borrowing	
	AA	A	BBB	BB	B	CCC				
	AA-	A-	BBB-	BB-	B-	CCC-				
2003	32	5	12	0	1	0	0	14	2.011	1.855
2004	75	35	32	1	1	0	0	6	1.966	1.909
2005	128	43	56	18	5	0	0	6	1.994	1.906
2006	185	57	83	26	15	0	1	3	2.167	2.131
2007	161	42	72	29	14	0	1	3	1.993	1.997
2008	97	32	47	12	5	0	0	1	1.710	2.011
2009	15	6	5	2	1	0	0	1	1.923	1.903
2010	30	13	14	3	0	0	0	0	1.499	1.756
2011	32	9	19	3	0	0	0	1	1.271	1.333
Total	755	242	340	94	42	0	2	35	1.837	1.867

**Note:** We quote credit ratings from R&I, JCR, S&P, and Moody's. The definitions of the ratings provided by R&I, JCR, and S&P are consistent, while we redefine that of Moody's as Aa = AA, Baa = BBB, Ba = BB, and Caa = CCC. When a REIT has ratings from more than two agencies, we count R&I as the first priority, JCR as the second, and S&P as the third, according to the descending order of the total number of credit ratings provided to REITs.

**Table 5 Descriptive Statistics****Panel A: Descriptive Statistics of the Continuous Variables (2003–2011)**

	Stock Price	CAR(-1,+1)	CAR(-10,+10)	Stock Issue Cost	Bond Issue Cost
Mean	0.011	0.004	0.016	0.013	-0.006
S.D.	0.058	0.026	0.116	0.033	0.015
N	755	755	755	755	755

	ROA	Debt to Equity	ln(Transaction Value)
Mean	0.016	0.464	14.992
S.D.	0.015	0.488	1.112
N	755	755	755

**Panel B: Funding Approach and Real Estate Investment Attributes (2003–2011)**

	Stock Issuance	Bond Issuance	Sponsor	Office	Residence
Yes=1	250	112	192	228	236
	33.1%	14.8%	25.4%	30.2%	31.3%
No=0	505	643	563	527	519
	66.9%	85.2%	74.6%	69.8%	68.7%
Total	755	755	755	755	755

	Trust Contract	Area	Ownership
Yes=1	377	221	495
	49.9%	29.3%	65.6%
No=0	378	534	260
	50.1%	70.7%	34.3%
Total	755	755	755

**5. Empirical Results****5.1 Stock Price, Sponsor Relationship, and Stock Issuance**

Table 6a presents the empirical results of Equation (A) with the dependent variable of *Stock Issuance*. The results in Columns (1)–(4) show that all the parameters of the independent variable *Stock Price* have positive and significant relationships with *Stock Issuance*. These results suggest that a high stock price trend until right before the additional real estate investment announcement positively influences the choice of funding approach, as claimed by many studies. In particular, the results in Columns (1)–(4) show that all the parameters of the intersection of *Stock Price* and *Sponsor* are significantly positive, thus suggesting that stock price positively relates to the stock issuance decision when the real estate deal is made with a sponsor firm. The results also show that the parameters of *Stock Issue Cost* are significantly negative, thus suggesting that funding cost statistically influences the stock issuance decision. In summarizing the above results, stock price, relationship with the sponsor firm, and stock issuance costs are major determinants of the stock issuance decision.

Moreover, the type of real estate  $X^{type}$  influences the funding decision as follows. The results in Columns (1) and (3) of Table 6a indicate that *Office* and *Trust Contract* significantly and positively influence stock issuance. These variables solely influence the dependent variable of *Stock Issuance*, while their parameters are also significant when these variables are intersected with *Sponsor*. The average marginal effects of *Stock Price* on *Stock Issuance* when *Sponsor* equals one also support the positive relationship among the REIT–sponsor firm relationship, stock price, and stock issuance irrespective of the value (zero or one) taken by *Office* and *Trust Contract* (see the lower part of Table 6a). Neither the parameter of *Residence* nor that of the intersection of *Residence* and *Sponsor* is significant in Column (2). The parameter of *Ownership* is significantly negative, whereas that of the intersection of *Ownership* and *Sponsor* is significantly positive in Column (4) in Table 6a.

Table 6b presents the empirical results of Equation (A) with the independent variables  $CAR(-1,+1)$  and  $CAR(-10,+10)$  instead of *Stock Price*. We did not employ *Residence*, *Ownership*, *Residence*  $\times$  *Sponsor*, and *Ownership*  $\times$  *Sponsor* in this estimation, because the parameters of these variables are reported as being insignificant in Columns (1)–(4). The results in Columns (5)–(8) show that all the parameters of the independent variables of  $CAR(-1,+1)$  or  $CAR(-10,+10)$  that represent a rise in stock price immediately before and after the real estate investment announcement have a positive and significant relationship with *Stock Issuance*. The results in Columns (5)–(8) also show that all the parameters of the intersection of  $CAR(-1,+1)$  and *Sponsor* as well as those of  $CAR(-10,+10)$  and *Sponsor* are both significantly positive. These results suggest that the rise in stock price positively relates to the stock issuance decision when the real estate deal is made with a sponsor firm.

The results in Columns (5) and (6) also suggest that the intersection of *Office* and *Sponsor* positively influences stock issuance, as does the intersection of *Trust Contract* and *Sponsor* in Columns (7) and (8). The average marginal effects of  $CAR(-1,+1)$  on *Stock Issuance* when *Sponsor* equals one also indicate the positive relationship among the REIT–sponsor firm relationship, rise in stock price, and stock issuance regardless of the value of *Office* shown in the lower part of Table 6b. The average marginal effects of  $CAR(-10,+10)$  on *Stock Issuance* when *Sponsor* equals one are also significantly positive irrespective of the value (zero or one) that *Trust Contract* takes.



**Table 6. Empirical Results: Stock Issuance Determinants**

Panel A: Impact of Stock Price, REIT–Sponsor Firm Relationship, Purpose of Use of the Real Estate Investment, and Type of Stock Issuance

Specification Dependent Variable /Independent Variable	Probit	Probit	Probit	Probit
	<i>Stock Issuance</i>	<i>Stock Issuance</i>	<i>Stock Issuance</i>	<i>Stock Issuance</i>
	(1)	(2)	(3)	(4)
<i>Stock Price</i>	4.662 *** (2.660)	4.758 *** (2.710)	4.288 ** (2.440)	4.363 ** (2.490)
<i>Stock Price</i> <sup>2</sup>	61.676 *** (4.750)	61.856 *** (4.750)	62.312 *** (4.770)	60.176 *** (4.630)
<i>Stock Price</i> × <i>Sponsor</i>	9.897 *** (2.880)	10.143 *** (2.970)	11.787 *** (3.390)	10.862 *** (3.170)
<i>Stock Issue Cost</i>	-11.762 * (-1.660)	-13.093 * (-1.710)	-13.115 * (-1.700)	-13.373 * (-1.740)
<i>ROA</i>	17.611 *** (2.680)	17.038 *** (2.560)	20.379 *** (3.060)	18.398 *** (2.810)
<i>Debt to Equity</i>	0.840 *** (3.240)	0.893 *** (3.450)	0.861 *** (3.280)	0.896 *** (3.440)
<i>Transaction Value</i>	0.029 (0.410)	0.030 (0.420)	0.005 (0.080)	-0.003 (-0.050)
<i>Sponsor</i>	0.101 (0.520)	-0.086 (-0.530)	-0.020 (-0.080)	-0.463 * (-1.820)
<i>Office</i>	0.376 ** (2.100)			
<i>Residence</i>		-0.194 (-0.980)		
<i>Trust Contract</i>			0.508 *** (3.160)	
<i>Ownership</i>				-0.658 *** (-3.600)
<i>Office</i> × <i>Sponsor</i>	0.304 ** (2.090)			
<i>Residence</i> × <i>Sponsor</i>		0.146 (0.440)		
<i>Trust Contract</i> × <i>Sponsor</i>			0.010 ** (2.140)	
<i>Ownership</i> × <i>Sponsor</i>				0.524 * (1.730)
<i>Time Trend</i>	1.986 (0.970)	1.946 (0.990)	1.889 (1.040)	2.017 (0.960)
<i>Constant</i>	-2.278 ** (-2.190)	-2.097 * (-1.880)	-2.190 ** (-2.110)	-1.184 *** (-1.090)
<i>Year Dummy</i>	yes	yes	yes	yes
<i>Firm Dummy</i>	yes	yes	yes	yes
<i>Observations</i>	755	755	755	755
<i>LR chi2</i>	380.7 ***	377.3 ***	387.8 ***	389.5 ***
<i>Pseudo R2</i>	0.394	0.391	0.402	0.403

Average Marginal Effects on Pr( <i>Stock Issuance</i> )				
<i>Stock Price</i> :	$X^{type} : Office$	$X^{type} : Residence$	$X^{type} : Trust Contract$	$X^{type} : Ownership$
× <i>Sponsor</i> (=0) × $X^{type}$ (=0)	0.002 (1.410)	0.001 (1.060)	0.001 (0.500)	0.006 (0.640)
× <i>Sponsor</i> (=1) × $X^{type}$ (=0)	1.8E-04 * (1.810)	-0.001 (-0.570)	1.6E-05 ** (2.010)	-0.002 (-1.120)
× <i>Sponsor</i> (=0) × $X^{type}$ (=1)	0.001 (1.360)	0.001 (1.100)	4.2E-05 (0.040)	0.001 (1.250)
× <i>Sponsor</i> (=1) × $X^{type}$ (=1)	0.002 ** (2.110)	0.000 (-0.140)	0.002 * (1.930)	0.001 (0.470)

**Note:** \*\*\*, \*\*, and \* denote significance at the 1, 5, and 10 percent levels, respectively.

Panel B: Impact of Cumulative Abnormal Stock Returns, REIT–Sponsor Firm Relationship, Purpose of Use of the Real Estate Investment, and Type of Stock Issuance

Specification	Probit	Probit	Probit	Probit
Dependent Variable /Independent Variable	<i>Stock Issuance</i>	<i>Stock Issuance</i>	<i>Stock Issuance</i>	<i>Stock Issuance</i>
	(5)	(6)	(7)	(8)
<i>CAR(-1,+1)</i>	1.007 ** (2.390)		1.018 ** (2.400)	
<i>CAR(-1,+1)</i> <sup>2</sup>	-20.219 *** (-2.610)		-20.111 *** (-2.600)	
<i>CAR(-10,+10)</i>		0.741 ** (2.220)		0.810 ** (2.260)
<i>CAR(-10,+10)</i> <sup>2</sup>		-19.455 *** (-2.560)		-18.880 *** (-2.510)
<i>CAR(-1,+1) × Sponsor</i>	0.729 ** (2.110)		0.735 ** (2.130)	
<i>CAR(-10,+10) × Sponsor</i>		0.399 ** (2.210)		0.452 ** (2.190)
<i>Stock Issue Cost</i>	-15.889 ** (-2.330)	-17.550 ** (-2.300)	-17.811 ** (-2.570)	-16.924 ** (-2.400)
<i>ROA</i>	15.689 ** (2.370)	16.332 ** (2.440)	17.804 *** (2.660)	16.355 *** (2.510)
<i>Debt to Equity</i>	0.908 *** (3.930)	0.944 *** (3.860)	0.958 *** (4.120)	0.943 *** (3.960)
<i>Transaction Value</i>	0.028 (0.410)	0.059 (0.760)	0.011 (0.160)	0.056 (0.810)
<i>Sponsor</i>	0.119 (0.640)	-0.116 (-0.690)	0.016 (0.070)	-0.097 (-0.710)
<i>Office</i>	0.279 * (1.680)	0.269 * (1.710)		
<i>Trust Contract</i>			0.371 ** (2.250)	0.369 ** (2.210)
<i>Office × Sponsor</i>	0.397 * (1.700)	0.411 * (1.810)		
<i>Trust Contract × Sponsor</i>			0.157 * (1.670)	0.162 * (1.770)
<i>Time Trend</i>	1.991 (0.960)	1.960 (1.100)	2.030 (0.980)	2.000 (1.120)
<i>Constant</i>	-1.873 * (-1.800)	-2.269 ** (-2.110)	-1.813 * (-1.740)	-0.778 (-0.660)
<i>Year Dummy</i>	yes	yes	yes	yes
<i>Firm Dummy</i>	yes	yes	yes	yes
<i>Observations</i>	616	616	616	616
<i>LR chi2</i>	210.3 ***	210.4 ***	212.5 ***	220.8 ***
<i>Pseudo R2</i>	0.252	0.250	0.254	0.255

Average Marginal Effects on Pr( <i>Stock Issuance</i> )				
	$X^{type} : Office$	$X^{type} : Office$	$X^{type} : Trust$ <i>Contract</i>	$X^{type} : Trust$ <i>Contract</i>
<i>CAR(-1,+1):</i>	0.001 *		0.001	
<i>× Sponsor (=1) × X<sup>type</sup> (=0)</i>	(1.690)		(1.630)	
<i>CAR(-10,+10):</i>		0.001		0.001
<i>× Sponsor (=1) × X<sup>type</sup> (=0)</i>		(1.590)		(1.690)
<i>CAR(-1,+1):</i>	0.008 **		0.001 **	
<i>× Sponsor (=1) × X<sup>type</sup> (=1)</i>	(2.030)		(2.240)	
<i>CAR(-10,+10):</i>		0.001		0.001
<i>× Sponsor (=1) × X<sup>type</sup> (=1)</i>		(1.390)		(2.370)

Note: \*\*\*, \*\*, and \* denote significance at the 1, 5, and 10 percent levels, respectively.

### 3.2 Stock Price, Real Estate Asset Liquidity, and Debt Choice

Tables 7a and 7b present the empirical results of the determinants of debt issuance. The major difference between Tables 6 and 7 is that the parameters of *Stock Price* are all significantly negative for the results in Columns (9)–(13) in Table 7a and (14)–(18) in Table 7b, whereas they are significantly positive in Tables 6a and 6b. Meanwhile, none of the parameters of the intersection of *Stock Price* and *Sponsor* is significant in Table 7a, but the parameters of the intersection of *CAR*(-1,+1) and *Sponsor* are all negatively significant in Table 7b, whereas they were positively significant in Tables 6a and 6b. *Stock Issue Cost* negatively influences the choice of stock issuance and the signs of the parameters are consistent with our expectations in Tables 6a and 6b; however, those of *Bond Issue Cost* are insignificant in Tables 7a and 7b.

As for the relationship between debt and the type of real estate  $X^{type}$ , Column (10) in Table 7a shows that *Residence* is negatively related to *Bond Issuance*, which implies that debt issuance is avoided when the REIT invests in real estate to be used as a residential property. The relationships between *Bond Issuance* and all the other  $X^{type}$  variables are not significant, however, which suggests that the type, area, and ownership right of real estate do not relate to the choice of debt issuance as the funding approach. Meanwhile, the empirical results presented in Columns (10) and (11) of Table 7a indicate that the intersections of *Residence* and *Sponsor* and of *Area* and *Sponsor* positively relate to *Bond Issuance*. *Residence* and *Area* are the only two variables that influence debt issuance when the real estate deal is with the sponsor firm. The remaining three empirical results in Table 7a suggest that none of the other variables of  $X^{type}$  significantly influence the debt issuance decision.

Columns (9)–(13) in Table 7a and Columns (14)–(18) in Table 7b also indicate that *Debt to Equity* has a positive relationship with *Bond Issuance*. Thus, even a highly profitable REIT chooses debt issuance over stock issuance, even under a high debt to equity ratio condition, for instance. Moreover, while Tables 6a and 6b indicate that the relationship between *Transaction Value* and *Stock Issuance* is not significant, that between *Transaction Value* and *Bond Issuance* is positively related in Columns (9)–(11) of Table 7a and Columns (14)–(15) and (17) of Table 7b. These results suggest that a REIT tends to choose debt issuance when the deal value is large.

**Table 7 Empirical Results: Debt Issuance Determinants**

Panel A: Impact of Stock Price, REIT–Sponsor Firm Relationship, Purpose of Use of the Real Estate Investment, and Type of Debt Issuance

Specification	Probit	Probit	Probit	Probit	Probit
Dependent Variable /Independent Variable	<i>Bond Issuance</i>	<i>Bond Issuance</i>	<i>Bond Issuance</i>	<i>Bond Issuance</i>	<i>Bond Issuance</i>
	(9)	(10)	(11)	(12)	(13)
<i>Stock Price</i>	-5.671 *** (-2.750)	-5.331 *** (-2.560)	-5.802 *** (-2.810)	-5.939 *** (-2.850)	-5.767 *** (-2.800)
<i>Stock Price</i> <sup>2</sup>	20.740 *** (2.890)	20.839 *** (2.870)	20.512 *** (2.870)	20.614 *** (2.850)	20.651 *** (2.890)
<i>Stock Price</i> × <i>Sponsor</i>	-3.074 (-1.010)	-3.508 (-1.130)	-2.583 (-0.800)	-1.909 (-0.640)	-2.653 (-0.860)
<i>Bond Issue Cost</i>	23.522 (1.560)	23.246 (1.550)	23.979 (1.540)	21.814 (1.450)	24.888 (1.610)
<i>ROA</i>	18.580 * (1.690)	15.315 (1.330)	17.225 (1.560)	19.994 * (1.840)	17.127 (1.570)
<i>Debt to Equity</i>	1.832 *** (4.540)	1.920 *** (4.610)	1.822 *** (4.480)	1.803 *** (4.470)	1.870 *** (4.630)
<i>Transaction Value</i>	0.119 ** (2.230)	0.101 ** (2.020)	0.077 * (1.790)	0.114 (1.180)	0.097 (0.990)
<i>Sponsor</i>	0.446 (1.550)	0.240 (1.140)	-0.056 (-0.220)	-0.049 (-0.160)	0.236 (0.730)
<i>Office</i>	0.247 (0.880)				
<i>Residence</i>		-0.581 * (-1.680)			
<i>Area</i>			0.019 (0.090)		
<i>Trust Contract</i>				0.044 (0.180)	
<i>Ownership</i>					-0.269 (-1.140)
<i>Office</i> × <i>Sponsor</i>	-0.259 (-0.700)				
<i>Residence</i> × <i>Sponsor</i>		0.310 *** (2.630)			
<i>Area</i> × <i>Sponsor</i>			0.898 ** (2.350)		
<i>Trust</i> × <i>Sponsor</i>				0.551 (1.420)	
<i>Ownership</i> × <i>Sponsor</i>					0.051 (0.130)
<i>Time Trend</i>	2.114 (1.160)	2.060 (1.110)	1.998 (1.190)	1.964 (1.210)	2.210 (1.150)
<i>Constant</i>	-5.632 *** (-3.740)	-5.132 *** (-3.360)	-4.891 *** (-3.200)	-5.573 *** (-3.720)	-4.964 *** (-3.200)
<i>Year Dummy</i>	yes	yes	yes	yes	yes
<i>Firm Dummy</i>	yes	yes	yes	yes	yes
<i>Observations</i>	677	677	677	677	677
<i>LR chi2</i>	297.9 ***	299.3 ***	305.2 ***	300.0 ***	298.6 ***
<i>Pseudo R2</i>	0.480	0.483	0.492	0.484	0.482

Average Marginal Effects on Pr( <i>Bond Issuance</i> )					
<i>Stock Price:</i>	$X^{type}:$ <i>Office</i>	$X^{type}:$ <i>Residence</i>	$X^{type}:$ <i>Area</i>	$X^{type}:$ <i>Trust</i> <i>Contract</i>	$X^{type}:$ <i>Ownership</i>
× <i>Sponsor</i> (=0) × $X^{type}$ (=0)	-0.007 ** (-2.210)	-0.010 ** (-2.390)	-0.008 ** (-2.340)	-0.008 ** (-2.190)	-0.010 ** (-2.320)
× <i>Sponsor</i> (=1) × $X^{type}$ (=0)	-0.007 (-0.820)	-0.017 (-0.860)	-0.007 (-1.020)	-0.010 (-0.930)	-0.012 (-0.092)
× <i>Sponsor</i> (=0) × $X^{type}$ (=1)	-0.009 ** (-2.230)	0.004 ** (2.380)	0.005 ** (2.200)	-0.008 ** (-2.230)	-0.007 ** (-2.340)
× <i>Sponsor</i> (=1) × $X^{type}$ (=1)	-0.012 (-0.870)	0.005 (0.520)	0.008 (1.000)	-0.011 (-0.970)	-0.008 (-0.880)

Note: \*\*\*, \*\*, and \* denote significance at the 1, 5, and 10 percent levels, respectively.

Panel B: Impact of Cumulative Abnormal Stock Returns, REIT–Sponsor Firm Relationship, Purpose of Use of the Real Estate Investment, and Type of Debt Issuance

Specification	Probit	Probit	Probit	Probit	Probit
Dependent Variable /Independent Variable	<i>Bond Issuance</i>	<i>Bond Issuance</i>	<i>Bond Issuance</i>	<i>Bond Issuance</i>	<i>Bond Issuance</i>
	(14)	(15)	(16)	(17)	(18)
<i>CAR(-1,+1)</i>	-6.800 *	-6.284 ***	-7.209 *	-6.876 *	-6.930 ***
	(-1.650)	(-1.510)	(-1.740)	(-1.650)	(-1.690)
<i>CAR(-1,+1)<sup>2</sup></i>	78.863	81.815 *	80.812	82.474 *	83.981 *
	(1.640)	(1.680)	(1.640)	(1.700)	(1.730)
<i>CAR(-1,+1) × Sponsor</i>	-20.339 ***	-19.885 ***	-20.895 ***	-19.826 ***	-21.287 ***
	(-3.110)	(-3.020)	(-3.030)	(-3.000)	(-3.210)
<i>Bond Issue Cost</i>	18.873	18.441	17.355	16.909	20.409
	(1.180)	(1.160)	(1.050)	(1.050)	(1.270)
<i>ROA</i>	9.980	6.853	8.626	12.107	8.253
	(0.830)	(0.560)	(0.710)	(1.010)	(0.690)
<i>Debt to Equity</i>	1.851 ***	1.966 ***	1.844 ***	1.782 ***	1.908 ***
	(4.410)	(4.560)	(4.330)	(4.230)	(4.530)
<i>Transaction Value</i>	0.127 **	0.111 **	0.093	0.127 **	0.103
	(2.330)	(2.140)	(0.950)	(2.320)	(1.060)
<i>Sponsor</i>	0.374	0.233	-0.003	-0.113	0.386
	(1.350)	(1.100)	(-0.010)	(-0.380)	(1.200)
<i>Office</i>	0.160				
	(0.580)				
<i>Residence</i>		-0.522			
		(-1.340)			
<i>Area</i>			0.158		
			(0.720)		
<i>Trust Contract</i>				-0.051	
				(-0.210)	
<i>Ownership</i>					-0.227
					(-0.960)
<i>Office × Sponsor</i>	-0.158				
	(-0.430)				
<i>Residence × Sponsor</i>		0.213 **			
		(2.450)			
<i>Area × Sponsor</i>			0.717 *		
			(1.910)		
<i>Trust × Sponsor</i>				0.664	
				(1.520)	
<i>Ownership × Sponsor</i>					-0.202
					(-0.520)
<i>Time Trend</i>	1.994	2.010	2.110	1.978	1.994
	(1.130)	(1.090)	(0.994)	(1.040)	(1.160)
<i>Constant</i>	-5.752 ***	-5.355 ***	-5.271 ***	-5.725 ***	-5.156 ***
	(-3.830)	(-3.510)	(-3.430)	(-3.810)	(-3.330)
<i>Year Dummy</i>	yes	yes	yes	yes	yes
<i>Firm Dummy</i>	yes	yes	yes	yes	yes
<i>Observations</i>	548	548	548	548	548
<i>LR chi2</i>	241.8 ***	243.3 ***	249.5 ***	245.0 ***	244.0 ***
<i>Pseudo R2</i>	0.427	0.430	0.441	0.433	0.431

Average Marginal Effects on Pr( <i>Bond Issuance</i> )					
<i>CAR(-1,+1):</i>	$X^{Dpe};$ <i>Office</i>	$X^{Dpe};$ <i>Residence</i>	$X^{Dpe};$ <i>Area</i>	$X^{Dpe};$ <i>Trust</i> <i>Contract</i>	$X^{Dpe};$ <i>Ownership</i>
$\times$ <i>Sponsor</i> (=0) $\times$ $X^{Dpe}$ (=0)	-0.005 *	-0.005 *	-0.006 *	-0.005 *	-0.005 *
	(-1.720)	(-1.710)	(-1.760)	(-1.750)	(-1.710)
$\times$ <i>Sponsor</i> (=1) $\times$ $X^{Dpe}$ (=0)	-0.002	0.001	-0.001	-0.001	-0.001
	(-0.570)	(0.040)	(-0.280)	(-0.320)	(-0.250)
$\times$ <i>Sponsor</i> (=0) $\times$ $X^{Dpe}$ (=1)	0.005	-0.005	0.006	-0.005	0.006
	(1.490)	(-1.220)	(1.280)	(-1.220)	(1.500)
$\times$ <i>Sponsor</i> (=1) $\times$ $X^{Dpe}$ (=1)	-0.001	0.002	2.1E-04	-0.001	-0.002
	(-0.340)	(0.600)	(0.070)	(-0.380)	(-0.590)

Note: \*\*\*, \*\*, and \* denote significance at the 1, 5, and 10 percent levels, respectively.

## 6. Discussion

In terms of Hypotheses 1 and 2, our empirical results suggest that the probability of stock issuance increases when the REIT continuously experiences a high stock price trend or the investment announcement induces a stock price rise. We interpret these results as supporting the timing theory and being in agreement with the literature. In addition, the probability of stock issuance further increases when the real estate deal partner is the sponsor firm of the REIT. According to the disagreement theory, even with a high stock price, a firm cannot choose stock issuance as its funding approach without shareholder approval. While our empirical results lend some degree of support to this case, we cannot conclude which explanatory power is larger, that of the timing theory or that of the disagreement theory. By definition, the sponsor firm of a REIT is not only the shareholder of the REIT but also its major real estate deal partner. Moreover, the sponsor firm also sends its CEO to the REIT, thus implying the existence of mutual interests. Our 755 REIT deal observations statistically suggest that such stakeholder sponsors are involved in real estate transactions, thereby influencing the stock issuance decision. Our interpretation of these results is that the sponsor firm aims to maximize shareholder value in this way. Accordingly, the commitment of the sponsor firm is encouraged when the REIT chooses stock issuance as its funding approach while purchasing real estate assets from the sponsor firm, because a high stock price increases the shareholder value of the REIT, thus implying an increase in the asset value of the sponsor firm. To achieve this goal, the REIT sponsor firm provides not only real estate assets but also human resources and other facilities in order to increase the shareholder value of the REIT. As of March 31, 2014, the CEOs of 27 of the 33 REITs were appointed by their respective sponsor firms (Table 1). In this regard, this REIT–sponsor firm relationship is similar to the bank–firm relationship in Japan. Moreover, this close-knit relationship influences the selection of stock issuance as the funding approach.

Second, with regard to Hypothesis 3, our empirical evidence shows that a high degree of real estate asset liquidity does not always promote debt issuance and bank borrowing, but does often encourage stock issuance when the requirements of Hypotheses 1 and 2 are satisfied. In this regard, we employ various proxies of real estate asset liquidity (i.e., real estate type, area, and legislative rights) based on the common characteristics of frequently traded real estate in the secondary market, and we find that the degree of liquidity of some types of real estate assets is positively related to those investment returns. Consequently, contrary to the findings of Benmelch et al. (2005) and Giambona et al. (2008), who assert a positive relationship between the degree of real estate asset liquidity and the choice of the debt financing approach, our empirical evidence suggests that a REIT chooses stock issuance when the real estate investment is expected to increase stock returns even though it invests in real estate with a high degree of real estate asset liquidity. Thus, our

empirical results suggest that this positive relationship influences the choice of stock issuance and accordingly allow us to conclude that the degree of real estate liquidity does not always dominate the funding approach, and stock issuance is primarily preferred to debt issuance and bank borrowing even when a REIT purchases liquid real estate assets.

Third, the empirical results for Hypothesis 4 suggest that the lower the stock price, the higher the probability of selecting debt issuance as the preferred funding approach. With regard to these empirical results, our interpretation is as follows. Although bond issuance is not always chosen under the 90-operating-day low stock price trend, even when dealing with the sponsor firm, it is selected when the cumulative abnormal return immediately decreases after the investment announcement and the real estate deal partner is the sponsor firm. This finding implies that the funding approach decision of the REIT and the sponsor firm is made immediately after the real estate investment decision. Therefore, we conclude that Hypothesis 4 is partially supported: bond issuance is explained by the timing and the disagreement theories. In addition, the results also indicate that debt issuance costs inconsistently influence the funding approach decision under the theoretical framework, which suggests that a decrease in the costs of debt does not always promote the debt issuance decision.

Fourth, our results implicitly suggest that most REITs unexceptionally choose long-term bank borrowing when the requirements for stock issuance and debt issuance are not satisfied (which is often the case). This is because REITs are allowed to employ only three types of funding approaches: stock issuance, bond issuance, and bank borrowing. REITs are requested to return internal funds to investors for tax reasons. Therefore, the current real estate deal partner and transaction value are the two main determinants of the choice of long-term bank borrowing. The presented empirical results suggest that transaction value size positively influences the choice of debt issuance, whereas it does not significantly relate to stock issuance. Accordingly, it is clear that long-term bank borrowing is consequently chosen when the deal partner is not the sponsor firm and the transaction value is small. In other words, commercial banks expect the REIT to make small real estate investments when they conclude lending contracts with the REIT. Therefore, the empirical results presented in Tables 6 and 7 suggest that long-term bank borrowing is chosen under low stock price trends when the real estate investment value is small and when it is used for generating low returns from residential properties, for instance.

Therefore, in line with the findings presented by Billett et al. (2007) and Dittmar and Thakor (2007), this study partially supports the disagreement theory in the case of stock issuance and debt issuance. Moreover, we also reconfirm the relevance of the timing theory in the cases of stock and debt issuances in line with Asquith and Mullins (1986), Graham and Harvey (2001), Baker and Wurgler (2002), and Gomes and Phillips (2012). We

accordingly conclude that the choice of the funding approach for REITs in Japan is explained by two existing theories, namely, the disagreement and the timing theories. Our inference of these mixed findings is that previous studies use REIT samples from the U.S., in which the sponsor–firm relationship is unremarkable compared with the REIT market in Japan. We thus conclude that the existence of the REIT–sponsor firm relationship causes different funding behavior.

## **7. Conclusion**

The REIT–sponsor firm relationship in the REIT market of Tokyo tends to be negatively interpreted by practical investors. The major reasons for this negative perception are explained by our conclusions. The REIT–sponsor firm relationship influences the decision to favor stock issuance when stock price is continuously high until immediately before the investment decision or an announcement of a new real estate investment induces a stock price rise. However, the relationship does not affect the bank borrowing decision. Therefore, external investors tend to perceive that sponsor firms actively perform and commit to the real estate transaction when highly profitable real estate deals are made between the REIT and sponsor firm. However, they commit passively as the REIT handles less profitable real estate assets with a non-sponsor firm, and most external investors regard stock public offerings as often being made in the latter case. Accordingly, this finding suggests that REITs aim to maximize the profit of the sponsor firm. However, our conclusions also imply that the REIT–sponsor firm relationship often contributes to increasing the returns of external investors when the sponsor aggressively provides real estate assets that maximize the corporate value of REITs. Our remaining research interest therefore lies in understanding the incentives of the sponsor and parent firms that provide highly profitable real estate assets to be used as office buildings in the major wards of Tokyo, for instance, to their REIT subsidiary. Understanding the incentives of these sponsor firms would clarify the microstructures of the REIT market in Japan, since most REIT sponsor firms are real estate agents, urban development firms, and other firms involved in real estate businesses as well as the owners of real estate assets.

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