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The Pricing and Underwriting Costs of Japanese REIT IPOs

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ABSTRACT

This study investigates 40 Japanese REIT IPOs during 2001 to 2006 and finds evidence that higher final offer prices are reflected in higher underpricing levels by such IPOs. There is also some evidence that suggests the engagement of one of the big 3 Japanese underwriting firms suggests less money is left on the table. Economies of scale in underwriting fees for Japanese REIT IPOs are also found. Specifically, the percentage underwriting fees decrease with higher amounts of equity capital sought but that the percentage fee decreases at a diminishing rate.

1. Introduction

Much of the literature into initial public offerings (IPOs) has focused on the anomaly of investors being able to make substantial returns, on average, by subscribing to new share issues and hypothetically selling at the closing price on the first day of listing. This anomaly has been termed "underpricing", since the literature has consistently, over the past forty years established that on average, the issue or offer price by the issuing company is below the first day's trading price. The vast majority of this literature has however concentrated on industrial company IPOs (see for example Loughran, Ritter and Rydqvist (1994) and Ritter (2003)). The literature on the underpricing of real estate investment trust (REIT) IPOs has not been nearly so clearly consistent.

The range of first day returns for United States REIT IPOs has been from a significant 2.82% overpricing (Wang et al., 1992) during the period 1971 to 1988 (although Below et al., 1995 argue that REIT IPOs during this period were correctly priced and that the overpricing result of Wang et al., 1992 is due to them using the bid price to calculate the first day returns) to a significant 3.60% underpricing (Ling and Ryngaert, 1997) during 1991 to 1994. In Australia, which now holds around 16% of the global value of REITs (KPMG, 2007), the REIT counterpart is called a listed property trust or simply LPT. Dimovski and Brooks (2006a) identified an average 1.2% (but not significant) first day return to subscribers for a sample set of 1994 to 1999 Australian LPT IPOs. In more recent work on Australian LPT IPOs Dimovski and Brooks (2006b) reported a significant 2.6% average underpricing for 1994 to 2004 LPT IPOs. The purpose of this current paper is to add to the international REIT IPO literature by investigating the level of underpricing and factors influencing equity capital raising costs in the substantial Japanese REIT (J-REIT) IPO market.

The first two J-REITs listed on the Tokyo Stock Exchange (TSE) on September 10, 2001. A further 38 J-REIT initial public offerings (IPOs) followed the path to listing by the end of 2006. In total, the 40 J-REITs raised over 1.8 trillion yen (around US$15 billion using August 2007 currency rates) of public equity capital. This amount is substantial indeed and is nearly half of the equity capital raised by 197 U.S. REITs during 1980 to 1999 as identified in Chen and Lu (2006). The success of the REIT listings in Japan soon prompted other Asian neighbours including Singapore, Malaysia, Korea, Taiwan and Hong Kong to legislate for the creation and subsequent listing of REITs within their own countries and their own country stock exchanges.

The structure of this paper is as follows. In section 2 we briefly summarise some previous property IPO research. Section 3 identifies the data and methodology. In section 4 we report the results of our analysis. Section 5 contains our conclusions.

2.   Previous Property IPO Cost of Equity Raising Research

There are two major areas of investigation into the costs of equity capital raising by property IPOs. The first is in the underpricing of property IPOs (which is an indirect cost to the issuer) and a more recent body of enquiry has occurred into the direct costs of capital raising.

In the area of the underpricing of property IPOs, research has been done into the two major types of property IPOs. The first type is the trust structure type, identified by REIT IPOs in the U.S. and by LPT IPOs in Australia. In brief, these are where a trust entity owns and earns income from property assets but must pass on 95% (or more) of the earnings to the beneficiaries (unit holders) of the trust. As a result, the trust itself is not assessed for tax on the income but the beneficiaries are. The second type of property IPO research relates to property companies that own property and hence may earn rental income from property investments or may actually trade in property. These entities pay tax at the ordinary company tax rate and have no obligation to pay any dividends at all. Property companies are common in the U.K. and in many other parts of Europe such as France and Sweden. The following discussion relates to these two property IPO types.

The Underpricing of REIT and LPT IPOs

One of the first major papers in the area of REIT IPO pricing was Wang et al. (1992). This study of 87 U.S. REIT IPOs during the period 1971 to 1988 identified a significant 2.82% overpricing to subscribers. While offering three plausible explanations for the relatively large differences in underpricing between industrial company and REIT IPOs, even Wang et al. (1992) conceded it was difficult to understand why subscribers subscribed to the new issues given the on average overpricing of REIT IPOs and suggested it could have been ignorance on the part of these investors. They did however provide three explanations for the large differences in underpricing. Firstly, they suggested that more uninformed investors subscribed to REIT IPOs; secondly, that REIT IPOs prior to 1989 had a restricted ability to grow because they were required to liquidate their holdings at some future point in time; thirdly that the underlying real estate assets gave a clear basis of support for the REIT IPO valuation.

Ling and Ryngaert (1997) followed Wang et al. (1992) by investigating the underpricing of 85 U.S. REIT IPOs during the 1991 to 1994 period. Contrary to Wang et al. (1992), Ling and Ryngaert (1997) report a significant 3.60% average first day underpricing return to subscribers. Ling and Ryngaert (1997) point out that institutional investors had substantial stake holdings in the 1991 to 1994 REIT IPO data set and that post 1990 REIT IPOs were not obliged to liquidate asset holdings at some time in the future.

Dimovski and Brooks (2006a) investigate a sample of 37 Australian property trust IPOs during 1994 to 1999. An expanded study by Dimovski and Brooks (2006b) of 58 property trust IPOs followed for the period 1994 to 2004. Such IPOs in the earlier period included both trustees (who had a fiduciary responsibility to protect the assets and income for and on behalf of the beneficiaries) and managers (who were responsible for managing the assets professionally), property trust IPOs for the period after 2000 need only appoint a single "responsible entity". Dimovski and Brooks (2006b) suggest that the removal of the trustee safeguard may have resulted in greater uncertainty about the IPO and hence a higher underpricing of those property trust IPOs that listed since 2000. Both papers confirm that higher dividend forecasting property trust IPOs appear to signal higher uncertainty about the future cash flows of the trust and hence have higher underpricing. Glascock et al. (2004) confirm however that REITs are generally viewed as lower risk investments. As such, their underpricing is likely to be lower than industrial company IPOs.

The Underpricing of Property Company IPOs

Sahi and Lee (2001) investigated a sample of 48 U.K. property IPO companies during 1986 to 1995. While 26 of these were property investment companies showed a 4.11% average first day return, it was not statistically significantly different from zero. The other 22 were property trading companies that showed a 12.14% statistically significant first day return. Sahi and Lee (2001) however suggest caution in the interpretation of the latter result because 21 of the 22 property trading company IPOs listed during 1986 to 1989 which was a period in which the property market and property sector were booming.

Chan, Stohs and Wang (2001) examined 56 property IPO companies and 343 non property IPO companies in Hong Kong over the period 1986 to 1997. They find the average first day returns comparable for both categories (16.21% for the former and 18.96% for the latter). They suggest that

the underlying real estate holding may not be the key difference in explaining the underpricing of property IPOs versus industrial company IPOs.

Brounen and Eichholtz (2001) investigated the underpricing of 83 European property companies over the period 1990 to 2000 to find a market adjusted underpricing of 3.43%, Using data from 54 British, French and Swedish property company IPOs during 1984 to 1999, Brounen and Eichholtz (2002) report a smaller but still statistically significant market adjusted 2.55% underpricing return.

Direct Costs of Capital Raising for Property IPOs

Chen and Lu (2006) investigated 197 U.S. REIT IPOs over the period 1980 to 1999, which raised slightly over US$31 billion. They report a bimodal clustering of gross spreads at 6.5% and 7% and that spreads for REIT IPOs had decreased significantly in the 1990s. Chen and Lu (2006) also argue that higher gross spreads and overpricing in the 1980s reflected greater marketing effort by underwriters to less informed individual investors.

Dimovski and Brooks (2007) investigate 58 Australian property trust IPOs from 1994 to 2004 and find underwriting, legal, accounting and valuation costs average around 3.3%, 0.39%, 0.23% and 0.12% respectively of proceeds raised. They also confirm clear economies of scale in direct capital raising costs and that property trust IPOs that employ more debt are likely to have higher direct capital raising costs.

3. Data and Methodology

The sample includes all J-REIT IPOs listed on the TSE from September 10, 2001 to December 31, 2006. Individual company prospectuses were used for a majority of the data. Some of the data has also been checked with Nomura Securities. The data sought includes variables from the previous LPT and REIT IPO studies that have been found to be statistically significant in explaining the level of underpricing and money left. The closing price at the end of the first day's trading was obtained from Nomura Securities. This closing price was deducted from the final offer price and the result divided by the final offer price to calculate the underpricing return to the subscribers of the REIT IPO. While underpricing refers to the percentage return made by subscribers, money left is the aggregate amount of underpricing times the number of shares issued. It is, as the name suggests the amount of money

left by the company to subscribers. The following elements of data were extracted from each of the prospectuses of the 40 J-REIT IPOs:

- OFFERPRICE - is the offer or issue price per unit paid by the IPO subscribers [Chalk and Peavy (1987), Ibbotson, Sindelar and Ritter (1994), Bradley et al (2006)];

- BIG3UNDERWRITER - is a binary variable of 1 if the underwriter is one of the big 3 underwriting firms of Nomura, Nikko or Diawa and 0 if otherwise [Kutsuna, Smith and Smith (2007)];

- FOREIGNUNDERWRITER - is a binary variable of 1 if a foreign underwriter was involved in the underwriting and 0 if otherwise [Kutsuna, Smith and Smith (2007)];

- LNCAPRAISED - is the total equity capital sought [Michaelly and Shaw (1994), Ibbotson, Sindelar and Ritter (1994)];

- MKTSENTI - is a variable derived by calculating the discrete return on the TSE index (TOPIX) between the final offer price and closing price on the day of listing [Dimovski and Brooks (2004)];

- REITSENTI - is a variable derived by calculating the discrete return on the TSE REIT index between the final offer price and closing price on the day of listing [Dimovski and Brooks (2006a)];

- UWRITINGFEE - is the percentage gross spread on the capital raising [Kutsuna and Smith (2004)];

- FORCDIVYLD - is the next full year forecast of the percentage distribution (dividend) per unit [Dimovski and Brooks (2006a)];

Table 1 provides some descriptive industry characteristics for the 40 REIT IPOs over the 2001 to 2006 period. While REITs have been a popular and long standing investment in the U.S. for over 40 years, their only recent introduction to the Japanese market meant that a specific REIT index would take some time to be introduced. The TSE REIT index was introduced in 2003. Given that the first six J-REIT IPOs laid the foundations for the TSE REIT index and that the understanding of J-REITs and J-REIT pricing and valuations may have evolved during the 2001 to 2002 period, Table 1 also provides descriptive industry characteristics for the 34 REIT IPOs that listed during the 2003 to 2006 period. It is also worth noting the average price of land in the Tokyo prefecture peaked in 1991 at 38.5 million yen per square meter (about US$335,000 per square meter) to a low in 1997 of 12.8 million yen per square meter (about US$111,000 per square meter). The average price of land in the Tokyo prefecture remained at around this level to 2001 when it was recorded at 13.3 million yen per square meter (about US$115,000 per square meter) but then in 2002 it increased over 40% in that one year to 18.7

million yen per square meter (about US$162,000 per square meter). Since 2002 the average price of land in the Tokyo prefecture has been much more steady and has increased to 20, 21, 22 and 24.4 million yen respectively in each of the years from 2003 to 2006.

(insert table 1 about here)

The mean underpricing return to subscribers for the 40 sample set of REIT IPOs was around one half of one percent and for the more recent 34 sample set it was around three quarters of one percent. Neither of these returns is statistically significantly different to zero. Returns ranged from negative 11% to positive 22%. The mean money left by the issuers was around 640 million yen (approximately US$5.5 million) and 750 million yen (approximately US$6.4 million) for the 40 sample set and 34 sample set respectively. These money left aggregates are also not statistically significantly different to zero. Given Beatty and Ritter's (1986) explanation that underpricing reflects *ex ante* uncertainty about the future cash flows (and hence valuation) of the firm, the underpricing and money left measures of J-REIT IPOs suggest, on average, that they fairly priced. Final offer prices for J-REITs ranged from 200 thousand yen (approximately US$1,700) to 880 thousand yen (approximately US$7,500) with a mean of around 550 thousand yen (approximately US$4,700). Around three quarters of the J-REITs used one of the top three Japanese underwriters to help with the capital raising and nearly half used a foreign underwriter as well.

It is worth noting that during this same 2001 to 2006 period, a total of 122 industrial company IPOs listed on the TSE. The TSE has two divisions; in brief Division 1 is a market for very large companies while Division 2 is a market for relatively smaller companies. During this 2001 to 2006 period, 40 industrial company IPOs listed as Division 1 companies while 82 listed as Division 2 companies. The average underpricing return for each of these was 16.1% and 29.3% respectively, both of which are significantly different to zero and in clear contrast in terms of underpricing to the 40 REIT IPOs during this period.

The average J-REITs gross proceeds raised were around 45 billion yen (approximately US$385 million). The smallest equity capital raising was around 3.5 billion yen (approximately US$38 million) and the biggest was nearly 17.8 billion yen (approximately US$1.5 billion). Underwriting fees ranged from 3.5% to 5% with an average of around 3.75% of the capital raised. This is lower than the average 5.66% underwriting fee charged on bookbuilding to Japanese industrial company IPOs as reported in Kutsuna and Smith (2004). The forecast dividend yield for the next full financial year ranged from 2.8% to 6.6% with the mean average of around 4.5 (while Japanese prime lending rates were around 2% during this 2001 to 2006 period).

An ordinary least squares regression (OLS) model is run on the data using underpricing (UPRICING) and money left (MONEY LEFT) as dependent variables. Underpricing is calculated as the closing price of the trust's units divided by the offer price, minus 1. Money left is the underpricing multiplied by the number of units offered at the IPO. Closing prices were obtained from the Nomura and the TSE.

The ordinary least squares regression models with UPRICING and MONEY LEFT as the dependent variables are:

$$UPRICING = \beta_0 + \beta_1 OFFERPRICE + \beta_2 BIG3UWRITER + \beta_3 FOREIGNUWRITER +$$
$$\beta_4 LNCAPRAISED + \beta_5 MKTSENTI \text{ (or } \beta_5 REITSENTI) + \beta_6 UWRITINGFEE +$$
$$\beta_7 FORCDIVYLD + \varepsilon \qquad (1)$$

$$MONEYLEFT = \beta_0 + \beta_1 OFFERPRICE + \beta_2 BIG3UWRITER + \beta_3 FOREIGNUWRITER +$$
$$\beta_4 LNCAPRAISED + \beta_5 MKTSENTI \text{ (or } \beta_5 REITSENTI) + \beta_6 UWRITINGFEE +$$
$$\beta_7 FORCDIVYLD + \varepsilon \qquad (2)$$

where all the variables are as defined previously, the β's are unknown parameters to be estimated and ε is assumed $\sim N(0, \sigma^2)$.

The OFFERPRICE and LNCAPRAISED variables have been included in many industrial company IPO studies as well as the REIT IPO studies previously mentioned. It is expected that higher offer prices and larger capital raisings suggest greater certainty about the IPO and hence lower underpricing would be expected from such IPOs.

The BIG3UWRITER and FOREIGNUWRITER variables are often discussed in the literature surrounding the institutional setting of Japanese IPOs (see for example Kutsuna, Smith and Smith, 2007). Both of these types of underwriters would carry substantial reputation capital and using Carter and Manaster (1990) and Michaelly and Shaw (1994) it would be expected that REIT IPOs employing either of these types of underwriters would be less underpriced.

The MKTSENTI or REITSENTI variables reflect the change in the TOPIX index or J-REIT index from the date of the offer price is finalized to the date of listing. It is expected that the more positive (negative) the mood of the market in this short intervening period the higher (lower) the underpricing. An investment banker's compensation for underwriting the IPO is reflected in the underwriting fee, or

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spread. As Chen and Lu (2006) note that underwriting fees may well be associated with the uncertainty of a successful issue and Beatty and Ritter (1986) argue that underpricing is associated with uncertainty about the issue, it would not be unreasonable to expect an association between underwriting fee and underpricing. As such, this variable is included to test the hypothesis that uncertainty about the J-REIT IPO may be reflected in the underwriter fee itself. The FORCDIVYLD variable reflects the next full year's forecasted distribution from the trust. Dimovski and Brooks (2006a) argue that such a measure may be considered as a proxy for risk amongst REIT IPOs in that J-REIT IPOs offering higher forecast dividend yields may offer higher underpricing returns to subscribers.

The underwriting fees (or spread) are generally the largest single expense for most REIT IPOs. The second purpose of this study was to investigate possible factors influencing these underwriting fees. As such, an ordinary least squares regression model with UWRITINGFEE (as a percentage) as the dependent variable was developed and is expressed as:

$$UWRITINGFEE = \beta_0 + \beta_1 BIG3UWRITER + \beta_2 FOREIGNUWRITER + \beta_3 LNCAPRAISED +$$
$$\beta_4 LNCAPRAISEDSQ + \beta_5 OVERALLOT + \beta_6 FORCDIVYLD + \varepsilon \quad\quad (3)$$

where LNCAPRAISEDSQ is calculated by squaring the LNCAPRAISED, OVERALLOT is a binary variable identifying whether an overallotment option was given to the underwriters, and all the other variables are as defined previously, the β's are unknown parameters to be estimated and ε is assumed $\sim N(0, \sigma^2)$.

The BIG3UWRITER and FOREIGNUWRITER variables examine whether employing such underwriters influences the underwriting spread. Chen and Lu (2006) examined underwriter spreads relating to REIT IPOs specifically. They suggest that lower ranked underwriters charged higher gross spreads than higher ranked underwriters. Our model investigates whether such a relation may occur in the J-REIT IPO context. Given that the big 3 underwriters and the foreign underwriters are all highly prestigious investment banks, it is expected such firms may be associated with lower underwriting fees.

As in Chen and Lu (2006) it is expected that there is a strong association between the size of the capital raising and the underwriting fee. Our model employs the LNCAPRAISED and LNCAPRAISEDSQ variables to examine that even though larger capital raising IPOs should benefit with lower spreads, whether this benefit decreases at a diminishing rate. The OVERALLOT variable is included in the model because the overallotment option may be of financial benefit to the

underwriters since they have the option to buy additional shares from the issuer at the offering price. The FORCDIVYLD variable is included since J-REIT IPO forecasted dividend yields appear quite attractive and hence may be useful to underwriters in marketing the issue. As such, this variable may influence underwriting fees.

4. Results

The regression results related to the factors influencing the underpricing and money left characteristics of J-REIT IPOs are presented in Tables 2 and 3. Table 4 reports the regression results relating to factors influencing the underwriting fees of J-REIT IPOs. A range of diagnostic tests were used in analyzing the data. A Jarque-Bera test for normality, a White test for heteroskedasticity and a Ramsey Reset test for omitted variables were applied on the data and the results reported.

Table 2 reports the regression results for the J-REIT IPOs during 2001 to 2006. Panel A of Table 2 reports the regression results for factors influencing underpricing while Panel B of Table 2 reports the regression results for factors influencing money left. The first row of each of the panels reports the results for all 40 IPOs. The second row of each of the panels reports the results when one outlier observation with an underpricing return of over three standard deviations is removed from the data set. While statistically significant in the second row, the pairwise correlations between the explanatory variables LNCAPRAISED and UWRITINGFEE is relatively high; about 0.80. These high pairwise correlations may suggest that a possible multicollinearity problem exists in the model. The third and fourth rows remove the UWRITINGFEE and LNCAPRAISED variables respectively. The FORCDIVYLD variable is also removed from each of the rows since it does not appear particularly useful as an explanatory variable.

Rows three and four identify OFFERPRICE as being the only significant explanatory variable in the underpricing (Panel A) model. This suggests J-REIT IPOs with higher final offer prices tend to have higher underpricing. The OFFERPRICE variable is also significant in rows three and four in the MONEYLEFT (Panel B) model. This suggests J-REIT IPOs with higher final offer prices tend to have higher aggregate underpricing, or more money left by the issuers. This finding is contrary to the penny stock findings of Chalk and Peavy (1987), Ibbotson, Sindelar and Ritter (1994) and Bradley et al (2006), but these IPOs are anything but penny stock IPOs. Recall the average offer price of these J-REIT IPOs was 550,000 yen (around US$4700) with the lowest one offering at 200,000 yen (around US$1700) and the highest at 880,000 yen (around US$7500). These findings suggest there is more uncertainty about higher priced J-REIT IPO issues than lower priced ones, perhaps because the

investment per unit is so substantial that subscribers may be concerned about the liquidity and marketability (possible greater bid-ask spreads and thinner market) of higher priced issues. The BIG3UWRITER variable is also significant in the money left model. It appears that employing the largest three investment banking firms to underwrite J-REIT IPOs tended to allow issuers to leave less money on the table for subscribers.

(insert table 2 about here)

To further test the robustness of the models, Table 3 reports the regression results for the J-REIT IPOs during 2003 to 2006. This shorter time period still considers 34 IPOs and it allowed almost two years for investors, investment banks and issuers better understand the pricing of J-REIT IPOs. The TSE REIT index was also introduced in 2003 and the REITSENTI variable is included in the model to replace MKTSENTI. The OFFERPRICE variable remains a useful explanatory variable in the underpricing model of Panel A and the money left model of Panel B. Interestingly the BIG3UWRITER variable no longer remains useful in the money left model.

(insert table 3 about here)

Table 4 reports the regression results relating to factors influencing the underwriting fees of J-REIT IPOs. Consistent with Chen and Lu (2006) and Dimovski and Brooks (2007) it appears that clear economies of scale exist, larger capital raisings (LNCAPRAISED) benefit with lower underwriting fees. Table 4 identifies this feature in the whole data set of the 40 IPOs during 2001 to 2006 and also in the reduced data set of 34 IPOs during 2003 to 2006. The significance of the LNCAPRAISEDSQ variable suggests however that the decrease in underwriting fees occurs at a diminishing rate.

(insert table 4 about here)

5. Conclusion

Japanese REIT IPOs backed by tangible property with lease agreements offering relatively secure future cash flows appear to have been popular with the investors. While U.S. REIT IPOs have been found to have been statistically significantly underpriced and European and Hong Kong Property IPO companies also significantly underpriced, J-REIT IPOs do not on average show significant underpricing.

This study however uncovers that the final offer price of J-REIT IPOs is a significant factor influencing the first day return to subscribers and in determining the amount of money left by the issuing firm itself. While J-REIT IPO offer prices are substantial indeed, it appears that higher offer prices tend to allow higher underpricing returns and more money left. There is also some evidence to suggest that the engagement of one of the big 3 Japanese investment banks to underwrite a J-REIT IPO issue may allow the issuing firm to leave less money on the table for subscribers. Finally while Chen and Lu (2006) find some evidence of clustering in underwriting fees, this study identifies economies of scale in underwriting fees relative to larger IPO equity capital raisings.

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Table 1: Descriptive Statistics for Characteristics of Japanese REIT IPOs 2001 to 2006

	N	Mean	SD	Min	Max
Underpricing 2001-2006 (%)	40	0.511	7.342	-11.068	22.545
Underpricing 2003-2006 (%)	34	0.758	7.866	-11.068	22.545
Money Left 2001-2006 (JPY millions)	40	644.629	3175.655	-5677.200	11973.260
Money Left 2003-2006 (JPY millions)	34	759.573	3374.583	-5677.200	11973.260
Offer Price 2001-2006 (JPY thousands)	40	517.375	113.798	200	880
Offer Price 2003-2006 (JPY thousands)	34	525.735	108.245	200	880
Big 3 Underwriter 2001-2006	40	0.750	0.439	0	1
Big 3 Underwriter 2003-2006	34	0.735	0.448	0	1
Foreign Underwriter 2001-2006	40	0.471	0.507	0	1
Foreign Underwriter 2003-2006	34	0.475	0.506	0	1
Proceeds 2001-2006 (JPY millions)	40	45354.41	31075.22	3555.00	177815.00
Proceeds 2003-2006 (JPY millions)	34	45533.67	32705.58	3555.00	177815.00
Underwriting fee 2001-2006 (%)	40	3.74	0.400	3.500	5.000
Underwriting fee 2003-2006 (%)	34	3.76	0.400	3.500	5.000
Forecast Dividend Yield 2001-2006(%)	40	4.611	0.081	2.830	6.660
Forecast Dividend Yield 2003-2006(%)	34	4.439	0.065	2.830	5.770

TABLE 2: Factors influencing underpricing and money left by Japanese REIT IPOs 2001 to 2006

This table reports the OLS results of factors influencing the underpricing and money left characteristics of Japanese REIT IPOs along with R^2 values and standard regression diagnostics. The table reports OLS parameter estimates and p-values (in parentheses). The number of observations (N) is also recorded.

Panel A	C	OFFER PRICE	BIG3 UWRITER	FOREIGN UWRITER	LNCAP RAISED	MKTSENTI	UWRTING FEE	FORC DIVYLD	R^2 ADJ R^2	Jarque-Bera test	White test	Reset test
UPRICING N=40	99.322 (0.242)	0.012 (0.472)	-2.342 (0.425)	-0.368 (0.881)	3.549 (0.213)	-8.423 (0.825)	4.854 (0.360)	-191.455 (0.311)	0.176 -0.003	13.359 (0.001)	7.669 (0.810)	0.050 (0.611)
UPRICING (1) N=39	-184.140 (0.015)	0.023 (0.108)	-3.371 (0.168)	1.242 (0.546)	5.624 (0.023)	-31.641 (0.324)	10.272 (0.029) **	-20.804 (0.896)	0.296 0.137	0.817 (0.665)	8.179 (0.771)	-0.031 (0.647)
UPRICING (2) N=39	-42.100 (0.267)	0.019 (0.099) *	-2.655 (0.294)	0.936 (0.633)	1.378 (0.408)	-20.416 (0.538)			0.163 0.036	0.734 (0.693)	3.311 (0.828)	0.152 (0.099)
UPRICING (3) N=39	-23.851 (0.125)	0.029 (0.017) **	-2.416 (0.337)	1.503 (0.485)		-20.088 (0.544)	2.695 (0.379)		0.165 0.039	0.825 (0.662)	4.541 (0.805)	0.063 (0.453)
Panel B												
MONEY LEFT N=40	-30480.79 (0.392)	8.158 (0.243)	-2032.308 (0.106)	121.762 (0.906)	1101.784 (0.356)	-4108.515 (0.799)	1309.095 (0.557)	-72145.33 (0.364)	0.218 0.047	2.651 (0.266)	9.923 (0.623)	0.000 (0.027)
MONEY LEFT (4) N=39	-55185.20 (0.115)	11.276 (0.092) *	-2331.893 (0.049) **	590.661 (0.547)	1706.083 (0.138)	-10871.00 (0.476)	2887.092 (0.187)	-22441.10 (0.447)	0.274 0.110	1.648 (0.439)	12.047 (0.442)	0.000 (0.054)
MONEY LEFT (5) N=39	-15728.05 (0.372)	11.188 (0.038) **	-2099.778 (0.072) *	526.916 (0.589)	463.560 (0.538)	-7941.007 (0.597)			0.219 0.101	1.144 (0.564)	8.142 (0.420)	0.000 (0.007)
MONEY LEFT (6) N=39	-8221.184 (0.241)	13.917 (0.011) **	-2019.791 (0.082) *	695.758 (0.477)		-7719.330 (0.607)	710.506 (0.608)		0.216 0.098	1.668 (0.434)	10.229 (0.249)	0.000 (0.059)

(1) Removal of 1 outlier. (2) Removal of 1 outlier and removal of FORCDIVYLD and UWRITINGFEE variables. (3) Removal of 1 outlier and removal of FORCDIVYLD and LNCAPRAISED variables. (4) Removal of 1 outlier. (5) Removal of 1 outlier and removal of FORCDIVYLD and UWRITINGFEE variables. (6) Removal of 1 outlier and removal of FORCDIVYLD and LNCAPRAISED variables.

* = significant at the 10% level, ** = significant at the 5% level, *** = significant at the 1% level.

TABLE 3: Factors influencing underpricing and money left by Japanese REIT IPOs 2003 to 2006

This table reports the OLS results of factors influencing the underpricing and money left characteristics of Japanese REIT IPOs along with R^2 values and standard regression diagnostics. The table reports OLS parameter estimates and p-values (in parentheses). The number of observations (N) is also recorded.

Panel A	C	OFFER PRICE	BIG3 UWRITER	FOREIGN UWRITER	LNCAP RAISED	REITSENTI	UWRTING FEE	FORC DIVYLD	R^2 ADJ R^2	Jarque-Bera test	White test	Reset test
UPRICING N=34	-93.275 (0.291)	0.018 (0.355)	-0.661 (0.843)	-0.909 (0.739)	2.974 (0.322)	114.364 (0.119)	6.798 (0.243)	-270.463 (0.312)	0.278 0.084	14.244 (0.001)	11.220 (0.510)	-0.016 (0.805)
UPRICING (1) N=33	-165.616 (0.035)	0.029 (0.085) *	-1.092 (0.692)	0.863 (0.708)	4.469 (0.082) *	95.974 (0.115)	11.565 (0.025) **	-27.057 (0.906)	0.378 0.204	7.882 (0.019)	6.283 (0.901)	-0.002 (0.969)
UPRICING (2) N=33	-14.786 (0.731)	0.023 (0.102)	-0.964 (0.735)	1.039 (0.667)	0.132 (0.946)	78.368 (0.224)			0.218 0.073	0.314 (0.855)	5.194 (0.737)	0.069 (0.406)
UPRICING (3) N=33	-41.472 (0.029)	0.036 (0.009) ***	-0.329 (0.902)	1.444 (0.526)		102.019 (0.101)	6.012 (0.093) *		0.296 0.166	1.353 (0.508)	3.631 (0.889)	-0.048 (0.406)
Panel B												
MONEY LEFT N=34	-23374.83 (0.525)	10.817 (0.188)	-1368.053 (0.331)	25.982 (0.982)	688.340 (0.582)	49423.20 (0.109)	1868.210 (0.441)	-94263.80 (0.399)	0.311 0.126	3.445 (0.179)	12.284 (0.423)	0.000 (0.192)
MONEY LEFT (4) N=33	-43770.79 (0.226)	13.850 (0.082) *	-1489.605 (0.261)	525.796 (0.632)	1109.874 (0.354)	44238.30 (0.126)	3238.119 (0.176)	-25637.26 (0.814)	0.351 0.170	4.325 (0.115)	10.914 (0.536)	0.000 (0.137)
MONEY LEFT (5) N=33	-1761.874 (0.927)	12.957 (0.041) **	-1391.589 (0.276)	618.868 (0.565)	-150.471 (0.861)	39251.06 (0.172)			0.289 0.157	1.026 (0.599)	4.546 (0.805)	0.000 (0.060)
MONEY LEFT (6) N=33	-14787.15 (0.081)	16.364 (0.009) ***	-1237.077 (0.314)	713.711 (0.492)		45804.09 (0.106)	1976.057 (0.219)		0.327 0.203	2.525 (0.283)	7.525 (0.481)	0.000 (0.341)

(1) Removal of 1 outlier. (2) Removal of 1 outlier and removal of FORCDIVYLD and UWRITINGFEE variables. (3) Removal of 1 outlier and removal of FORCDIVYLD and LNCAPRAISED variables. (4) Removal of 1 outlier. (5) Removal of 1 outlier and removal of FORCDIVYLD and UWRITINGFEE variables. (6) Removal of 1 outlier and removal of FORCDIVYLD and LNCAPRAISED variables.

* = significant at the 10% level, ** = significant at the 5% level, *** = significant at the 1% level,

TABLE 4: Factors influencing underwriting fees for Japanese REIT IPOs.

This table reports the OLS results of factors influencing the underwriting fees of Japanese REIT IPOs along with R^2 values and standard regression diagnostics. The table reports OLS parameter estimates and p-values (in parentheses). The number of observations (N) is also recorded.

	C	BIG3 UWRITER	FOREIGN UWRITER	LNCAP RAISED	LNCAP RAISEDSQ	OVERALLOT	FORC DIVYLD		R^2 ADJ R^2	Jarque-Bera test	White test	Reset test
UWRTINGFEE N=40 +++	85.631 (0.000)	0.004 (0.962)	-0.017 (0.806)	-6.424 (0.000) ***	0.125 (0.000) ***	0.060 (0.457)	2.121 (0.629)		0.731 0.682	0.053 (0.974)	19.998 (0.010)	-0.040 (0.921)
UWRTINGFEE N=34 +++	89.302 (0.000)	-0.058 (0.561)	0.007 (0.928)	-6.721 (0.000) ***	0.131 (0.000) ***	0.172 (0.254)	-0.416 (0.946)		0.746 0.689	0.009 (0.996)	16.429 (0.037)	-0.002 (0.996)

+++ White (1980) heteroskedasticity corrected parameter and p-values are reported.
*** = significant at the 1% level,