

FACTORS INFLUENCING THE DIRECT COSTS OF PROPERTY TRUST IPOs

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ABSTRACT

Underwriting, legal, accounting and valuation costs average around 3.3%, 0.39%, 0.23% and 0.12% of proceeds raised and are substantial costs to property trust initial public offering (IPO) issuers. As such, identifying factors that influence these costs is important. This paper investigates factors influencing these costs as well as the total direct costs of raising equity capital by property trust IPOs in Australia from 1994 to 2004. The results suggest clear economies of scale in direct costs. In addition, IPOs that employ more debt are likely to have higher capital raising costs while those that have proportionally higher net asset values and offer stapled securities (and likely to be engaged in property development activities) have lower capital raising costs.

Keywords: IPOs, property trusts, costs of capital raising, initial public offerings.

INTRODUCTION

The literature on the initial public offerings (IPOs) of Real Estate Investment Trusts (REITs) and their Australian equivalent of Listed Property Trusts (LPTs) is useful and growing (see for example Wang, Chan and Gau (1992), Ling and Ryngaert (1997), Ghosh, Nag and Sirmans (2000), Brounen and Eichholtz (2001), Brounen and Eichholtz (2002) and Dimovski and Brooks (2006)). Much of the attention in this literature has been on the indirect cost of underpricing of these IPOs. Underpricing refers to the first day's trading price being, on average, higher than the issue or offer price. As such, IPO issuers generally incur, on average, a small but significant indirect cost of raising equity capital. They also incur direct costs in raising capital such as underwriting, stock broking, legal, accounting, valuation, listing, printing, advertising and postage costs. The purpose of this paper is to focus on some of these direct costs.

Dimovski (2006) reports that in Australia, 57 LPT IPOs raised nearly A\$10 billion during 1994 to 2004. This suggests the average LPT IPO raised around A\$170 million. The average LPT IPO in turn incurred an average 6.1% direct cost of capital raising, of which underwriting, legal, accounting and valuation costs involved in the IPO averaged around 3.3%, 0.39%, 0.23% and 0.12% respectively or around A\$6.8 million per average IPO. Clearly underwriting, legal, accounting and valuation costs are substantial costs to LPT IPO issuers and identifying factors that influence these costs is important. This paper investigates factors that influenced these direct costs of LPT IPOs in Australia from 1994 to 2004.

Our findings suggest that LPT IPOs have economies of scale in so far as direct capital raising costs are concerned. In addition, those LPT IPOs that choose to use a lower debt to equity ratio benefit from lower capital raising costs as do those which have a higher net asset value and those who offer stapled securities which suggests they are engaged in development activities as well as passive income activities. Underwriting fees also tend to be lower if named institutional investors are involved at the outset of the IPO.

The remainder of this paper is as follows. Section 2 briefly summarises some of the literature in the area. Section 3 presents the regression model for investigating some factors that may influence some of the direct costs identified. Section 4 reports our empirical results. Section 5 gives our conclusions.

RELATED LITERATURE

The following discussion is classified in two parts. The first part briefly reviews some of the literature on the cost of underwriting which is usually the largest of the direct costs. The second part identifies some of the more general overall direct cost of capital raising literature.

Cost of underwriting literature

In the United States, Chen and Ritter (2000) investigated 1,111 IPOs during 1995 to 1998 to report that underwriting gross spreads paid to investment banks clustered at 7% of moderate sized (US \$20 million to US \$80 million) equity capital raisings. They suggest that this “strategic pricing” permitted underwriters to maintain economic profit at reasonable levels. It is worth noting however that this data set did not include REIT IPOs.

Butler and Hwang (2003) using 366 Hong Kong IPOs during 1991 to 2000 report a similar clustering phenomenon. The gross spreads however cluster much lower at

2.5% and are not related to issue size. They suggest that this lower fee is because IPOs are often vastly oversubscribed and offer little risk to bankers. Such oversubscriptions also limit the need for after market price support activities.

Torstila (2001) examined 565 IPOs during 1986 to 1999 by European issuers. He finds that the European offerings have a spread of around 3.75% (except for those technology oriented EUSDAQ or Neuer Markt exchanges which have spreads of around 6%). He suggests that government privatizations appear to have enjoyed lower spreads and those IPOs bound for joint US/Europe listings have had higher spreads. In a later paper, Torstila (2003) analyses the clustering pattern of gross spreads in 27 countries to conclude that the clustering of gross spreads occurs in many other markets around the world. He argues that clustering patterns are not necessarily evidence of collusive practices amongst investment bankers.

In Australia, How and Yeo (2000) do not find any clustering of fees at a particular percentage. They report an average underwriting fee of 3.7% for industrial company IPOs during 1980 to 1996. In Taiwan, Chen, Fok and Wang (2006) investigate IPOs in that country during 1989 to 1999 to report an average underwriting fee of 0.99%; far lower than that reported in other countries. No evidence of clustering is noted by these authors.

Direct cost of capital raising literature

Lee, Lochhead, Ritter and Zhao (1996) report an average total direct cost of raising equity capital by US IPOs during 1990 to 1994 of 11%. Their evidence suggests that the average percentage total direct costs of raising equity are lower the greater the proceeds sought. More specifically, there are economies of scale in direct costs to IPO issuers. Atlantic and Hansen (2000) argue that there may be systematic differences of company quality in different proceeds raising brackets. They argue that larger proceeds raising firms are higher quality firms while lower proceeds raising firms are generally lower quality.

Kooli and Suret (2002) investigated both Canadian IPOs during 1997 to 1999 to advise that total direct costs over this period averaged around 14%. They confirm Ritter's (1987) finding that best efforts underwriting contracts are more costly than firm commitment offerings. Chen and Wu (2002) report a cheaper direct cost of capital raising for Hong Kong IPOs during 1991 to 1996 of around 10%. Again, they corroborate the economies of scale argument. While studies in the costs of capital raising area generally focused on industrial companies, Dimovski (2006) reports the direct capital raising costs of Australian LPT IPOs during 1994 to 2004. He finds that average total direct costs are around 6.1%, however they average

nearly 8% for LPT IPO capital raisings of up to A\$65 million and average just over 4% for capital raisings of over A\$150 million.

An interesting study by Dunbar (1995) argues that the direct costs of raising equity capital are related to the complexity of the issue. The difficulty is however in the measuring of “complexity”. Kaserer and Kraft (2003) suggest it is not easy to justify why an IPO’s complexity is inversely related to size. They find that German IPOs (from 1993 to 1998) do not seem to benefit from economies of scale.

DATA AND METHODS

The sample consists of 57 Australian property trust IPOs that raised sufficient public equity capital to list on the Australian Stock Exchange during 1994 to 2004. Cost of capital raising data was collected from the prospectuses of the IPOs located in the *Connect 4 Company Prospectuses* database.

The relationship between total direct costs and variables that may influence these costs is now examined by the regression model. Log-linear relationships are mainly explored because of their superior linear estimation ability.

$$\text{LNTOTCOSTS} = \beta_0 + \beta_1 \text{LNPROCEEDS} + \beta_2 \text{LNINSTIT} + \beta_3 \text{LNDEBTOEQ} + \beta_4 \text{POST1999} + \beta_5 \text{UWRITTEN} + \beta_6 \text{LNNETAV} + \beta_7 \text{STAPLED} + \varepsilon \quad (1)$$

LNTOTCOSTS is the natural log of the total direct costs of the capital raising. LNPROCEEDS reflects the logarithm of the size of the equity proceeds to be raised. LNINSTIT identifies the proportional equity involvement of a large investor/institution who has committed a certain level of equity support at the outset of the capital raising in the prospectus. This variable is calculated using the formula $\ln(1 + \% \text{investor/institution holding})$. One is added to the percentage holding because some IPOs have a zero investor/institution holding. LNDEBTOEQ reflects the forecasted position of debt to equity once the capital is raised, listing takes place debt is borrowed and target properties are acquired. This variable is calculated using the formula $\ln(1 + \% \text{debt to equity})$. One is added to the percentage debt to equity because some IPOs have a zero debt.

POST1999 is a dummy variable identifying if the IPO sought to list after 1999. UWRITTEN is a dummy identifying if the IPO is underwritten. LNNETAV identifies the net asset value of each unit of the trust. STAPLED is a dummy variable identifying those trusts that issued stapled securities consisting of a unit in a trust and a share in a company where the trust is the holder of income producing real estate and the company involved in property development activities. The β s are unknown parameters to be estimated and ε is assumed $\sim N(0, \sigma^2)$.

LNPROCEEDS directly tests the economies of scale view of Lee, Lochhead, Ritter and Zhao (1996) and Chen and Wu (2002) but now as it might relate to property trusts. A significant and positive coefficient of less than 1 suggests for a 1 percent increase in proceeds there is a less than 1 percent increase in the total direct costs. The LNINSTIT and LNDEBTOEQ variables have been used in IPO underpricing cost studies (Ling and Ryngaert, 1997; Dimovski and Brooks, 2006) and will be tested here to determine any influence on direct costs. The LNINSTIT variable is used to test whether larger proportional investor/institutional support guaranteed from the start of the IPO adds credibility to the issue and reduces total direct costs. A negative coefficient is expected on the LNINSTIT variable suggesting greater large investor/institutional support at the time of the IPO, the more credible the issue and the lower total direct costs. The LNDEBTTOEQ variable tests whether a proportionally larger debt to equity position by the LPT IPO increases total direct costs. A higher level of debt in a firm may lead to an increasing risk of financial distress. The underwriters, lawyers, accountants and valuers may all take more care and therefore may charge more for their contributions and certifications to the prospectus. A positive coefficient is expected.

Since 30 June 2000, the *Managed Investments Act 1998* removed the separate roles of Manager and Trustee. These two roles have been merged into one single Responsible Entity role. The POST1999 variable tests whether LPT IPOs since this institutional environmental change are different in respect of the direct costs of raising capital. As Australian IPOs are not required to be underwritten to list, the UWRITTEN variable tests this influence on total direct costs. Finally NETAV and STAPLED are used to test whether such LPT IPO features are significantly related to total direct costs.

Underwriting, legal, accounting and valuation costs are often also identified in the prospectuses of property trust IPOs and are often substantial costs to property trust IPO issuers. So, in addition to investigating factors that influence total direct costs, we turn our attention to factors that might influence four elements of the total direct costs - namely underwriting, legal, accounting and valuation costs of property trust IPOs in Australia. Again, the constant elasticity model approach is used for superior linearity.

The regression models with the natural log of underwriting (LNUCOSTS), natural log of legal (LNL COSTS), natural log of accounting (LNACOSTS) and natural log of valuation (LNV COSTS) costs as the dependent variables are as follows:

$$\text{LNUCOSTS} = \beta_0 + \beta_1 \text{LNPROCEEDS} + \beta_2 \text{LNINSTIT} + \beta_3 \text{LNDEBTOEQ} + \beta_4 \text{POST1999} + \beta_5 \text{LNNETAV} + \beta_6 \text{STAPLED} + \varepsilon \quad (2)$$

$$\begin{aligned} \text{LNL COSTS} = & \beta_0 + \beta_1 \text{LNPROCEEDS} + \beta_2 \text{LNINSTIT} + \beta_3 \text{LNDEBTOEQ} + \\ & \beta_4 \text{POST1999} + \beta_5 \text{UWRITTEN} + \beta_6 \text{LNNETAV} + \beta_7 \text{STAPLED} \\ & + \varepsilon \quad (3) \end{aligned}$$

$$\begin{aligned} \text{LNACOSTS} = & \beta_0 + \beta_1 \text{LNPROCEEDS} + \beta_2 \text{LNINSTIT} + \beta_3 \text{LNDEBTOEQ} + \\ & \beta_4 \text{POST1999} + \beta_5 \text{UWRITTEN} + \beta_6 \text{LNNETAV} + \beta_7 \text{STAPLED} \\ & + \varepsilon \quad (4) \end{aligned}$$

$$\begin{aligned} \text{LNV COSTS} = & \beta_0 + \beta_1 \text{LNPROCEEDS} + \beta_2 \text{LNINSTIT} + \beta_3 \text{LNDEBTOEQ} + \\ & \beta_4 \text{POST1999} + \beta_5 \text{UWRITTEN} + \beta_6 \text{LNNETAV} + \beta_7 \text{STAPLED} \\ & + \varepsilon \quad (5) \end{aligned}$$

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

Table 1 identifies some of the descriptive statistics for total direct costs, underwriter costs, legal costs, accountant costs, valuation costs related to proceeds raised and other possible factors influencing capital raising costs. Percentage of proceeds raised for each of the total direct costs, underwriter costs, legal costs, accountant costs, valuation costs is also calculated to allow for an easier overview of the variables. While the mean total direct cost per LPT IPO in A\$ is \$7,504,000, the total direct costs as a percentage of proceeds are 6.104%. This suggests the average LPT IPO retains around 94 cents of each \$1 it raises. The mean underwriting cost per LPT IPO in A\$ is \$5,193,000 while underwriting costs as a percentage of proceeds averages 3.246%. Similarly the mean legal cost per LPT IPO in A\$ is \$426,000 while legal costs as a percentage of proceeds averages 0.397%. There is no apparent stipulated legal fee structure or fixed fee structure in relation to IPOs. The complexity of the IPO and geographical spread of assets owned most often requires the use of more than one legal firm. The mean accounting cost per LPT IPO in A\$ is \$237,000 while accounting costs as a percentage of proceeds averages 0.227%. The mean valuer's cost per LPT IPO in A\$ is \$136,000 while underwriting costs as a percentage of proceeds averages 0.122%.

Table 1: Descriptive statistics for capital raising costs

	N	Mean	SD	Min	Max
Total direct costs (\$'000s)	57	7,504	7,565	430	39,200
Total direct costs (% of proceeds)	57	6.104	3.055	2.200	16.710
Underwriting costs ('\$000s)	47	5,193	4,366	375	21,400
Underwriting costs (% of proceeds)	47	3.246	1.395	0.920	6.400
Legal costs (\$'000s)	40	426	454	65	2,240
Legal costs (% of proceeds)	40	0.397	0.287	0.050	1.270
Accounting costs (\$'000s)	48	237	264	10	1,200
Accounting costs (% of proceeds)	48	0.227	0.245	0.020	1.080
Valuation costs (\$'000s)	39	136	118	10	455
Valuation costs (% of proceeds)	39	0.122	0.117	0.020	0.640
Proceeds (\$'000s)	57	169,560	192,807	3,000	789,883
Large investor/institut. investment (\$'000s)	57	25,855	70,878	0	387,883
Debt to equity ratio	57	0.265	0.173	0.0000	0.698
Underwritten (Y/N)	57	0.842	0.368	0.0000	1.0000
Net Asset Value per unit	57	0.0947	0.040	0.830	1.03
Stapled (Y/N)	57	0.123	0.331	0.0000	1.0000

The average IPO raised around A\$169,560,000 in equity capital, had around \$25,885,000 of large investor/institutional involvement at the outset of the IPO, a 0.265 debt to equity ratio and a 94.7 cent per \$1 net asset value. A total of 84% of the LPT IPOs were underwritten and around 12% were offered as stapled securities.

RESULTS

Table 2 shows the multiple ordinary least squares regression results between the natural logs of total direct costs, underwriting costs, legal costs, accounting costs and valuation costs and the previously discussed explanatory variables for the 57 property trust IPOs. Standard regression diagnostics are also reported.

Table 2: Factors influencing the direct costs of capital raising

	C	LN PROCEEDS	LN INSTIT	LN DEBITTOEQ	POST 1999	UWRITTEN	LN NETAV	STAPLED	R ² ADI R ²	Jarque- Bera test	White test	Reset test
LN TOTCOSTS N=57	3.646 (0.026)	0.769 (0.000)	-0.214 (0.425)	0.738 (0.035)	0.148 (0.131)	0.078 (0.613)	-6.196 (0.027)	-0.340 (0.023)	0.904 0.890	0.894 (0.640)	16.014 (0.141)	-0.003 (0.947)
LN UNDERCOSTS N=47 ***	-0.087 (0.971)	0.770 (0.000)	-0.953 (0.027)	0.265 (0.590)	0.266 (0.021)		-1.068 (0.783)	-0.106 (0.276)	0.836 0.812	0.163 (0.922)	28.483 (0.002)	-0.054 (0.324)
LN LEGALCOSTS N=40	-1.044 (0.817)	0.703 (0.000)	1.043 (0.140)	0.106 (0.890)	0.145 (0.508)	-0.625 (0.076)	-1.579 (0.816)	-0.077 (0.826)	0.537 0.436	1.329 (0.514)	9.969 (0.533)	0.181 (0.479)
LN ACCCOSTS N=48	4.274 (0.335)	0.600 (0.000)	0.518 (0.530)	1.699 (0.080)	-0.022 (0.936)	0.196 (0.624)	-10.226 (0.174)	0.146 (0.722)	0.503 0.415	0.821 (0.663)	11.817 (0.378)	-0.246 (0.207)
LN VALCOSTS N=39	-0.710 (0.830)	0.539 (0.000)	0.602 (0.352)	2.100 (0.010)	-0.014 (0.957)	0.367 (0.276)	-2.674 (0.641)	-0.469 (0.183)	0.673 0.599	2.931 (0.231)	6.220 (0.858)	-0.060 (0.679)

*** White (1980) heteroskedasticity corrected parameter and p-values are reported.

The results of the regression analysis suggest that clear economies of scale in direct costs exist in the IPO equity capital raising process. Total direct costs and each of the elements of underwriting, legal, accounting and valuer's costs all benefit as the proceeds raised rises. For every 1% increase in proceeds raised, total direct costs rise around 0.77%, and underwriting costs rise 0.77%, while legal costs rise 0.70%, accounting costs rise 0.60% and valuation costs 0.54%.

In addition, IPOs that employ more debt are likely to have higher total capital raising costs. Such IPOs tend also to have a 2.1% increase in valuation costs for every 1% increase in proceeds raised on the average. While total costs in aggregate do not appear to be significantly influenced by the level of large investors or institutional involvement, underwriting costs do appear to be influenced – if the proportion of large investor/institutional involvement increases by 1%, underwriting costs tend to decrease by around 0.95%.

There is evidence suggesting that those that have proportionally higher net asset values have lower capital raising costs. Property trust IPOs with higher net asset values may be seen to be offering greater certainty to investors and using Tinic (1988), offering less risk against lawsuits to the certifying parties and hence lower capital raising costs. There is some (but not strong) evidence suggesting also that those IPOs that offer stapled securities (and likely to be engaged in property development activities) have lower capital raising costs. While such IPOs are thought to be more complicated in structure, they are often formed from existing LPTs with a known history and likely to benefit in terms of issue costs because of this known background. Underwriting fees also tend to be lower if named institutional investors are involved at the outset of the IPO.

To test the robustness of the regression results, various checks have been made. A correlation matrix has been run and no obvious multicollinearity issues appear. Some individual variables have also been excluded one at a time with no major impact on the broad findings. In addition, an alternative specification is run where the dependent variables of total direct costs, underwriting costs, legal costs, accounting costs, valuation costs are normalized by size. The results are reported in Table 3. While IPO size is now not an explanatory variable and the goodness of fit values decrease, the previously significant explanatory variables generally remain significant. The only explanatory variable not remaining significant using this alternative specification is LNINSTIT and only in relation to underwriting costs.

Table 3: Factors influencing the direct costs of capital raising using costs normalized by proceeds raised

	C	LN INSTIT	LN DEBTTOEQ	POST 1999	UWRITTEN	LN NETAV	STAPLED	R ² ADJR ²	Jarque- Bera test	White test	Reset test
NORM TOTCOSTS N=57	0.549 (0.000)	0.035 (0.049)	0.055 (0.028)	0.009 (0.197)	-0.020 (0.037)	-0.737 (0.000)	-0.018 (0.090)	0.443 0.376	5.238 (0.073)	12.390 (0.192)	2.155 (0.681)
NORM UNDERCOSTS N=47 ***	0.146 (0.112)	-0.012 (0.404)	0.012 (0.407)	0.009 (0.039)		-0.175 (0.202)	-0.002 (0.687)	0.224 0.129	4.262 (0.119)	19.240 (0.014)	-126.548 (0.006)
NORM LEGALCOSTS N=40 ***	0.020 (0.358)	0.004 (0.180)	0.003 (0.322)	0.001 (0.405)	-0.005 (0.000)	-0.019 (0.542)	-0.001 (0.582)	0.523 0.427	6.540 (0.038)	18.966 (0.025)	-57.134 (0.654)
NORM ACCCOSTS N=48 ***	0.033 (0.064)	0.004 (0.148)	0.004 (0.179)	-0.000 (0.954)	-0.001 (0.426)	-0.047 (0.077)	0.000 (0.782)	0.205 0.089	47.951 (0.000)	14.776 (0.097)	102.032 (0.736)
NORM VALCOSTS N=39	0.0160 (0.061)	0.002 (0.144)	0.003 (0.027)	-0.000 (0.509)	0.000 (0.761)	-0.023 (0.076)	-0.001 (0.162)	0.357 0.237	18.664 (0.000)	17.589 (0.040)	734.527 (0.023)

*** White (1980) heteroskedasticity corrected parameter and p-values are reported.

Table 4: Factors influencing the direct costs of capital raising testing for non-linearity in economies of scale

LN PROCEEDS SQUARED	LN INSTIT	LN DEBT TOEQ	POST 1999	UWRITTEN	LN NETAV	STAPLED	R ² ADJR ²
-0.105 (0.526)	-0.114 (0.621)	0.781 (0.030)	0.150 (0.128)	0.048 (0.769)	-6.601 (0.023)	-0.348 (0.021)	0.904 0.888
-0.054 (0.126)	-0.920 (0.034)	0.329 (0.523)	0.277 (0.016)		-1.237 (0.744)	-0.121 (0.221)	0.843 0.815
-0.006 (0.949)	1.048 (0.147)	0.104 (0.894)	0.149 (0.518)	-0.639 (0.129)	-1.432 (0.844)	-0.074 (0.837)	0.537 0.418
-0.015 (0.837)	0.565 (0.514)	1.713 (0.082)	-0.022 (0.935)	0.186 (0.648)	-10.448 (0.174)	0.137 (0.743)	0.503 0.401
-0.098 (0.084)	0.737 (0.244)	2.130 (0.008)	0.017 (0.945)	0.355 (0.275)	-4.392 (0.437)	-0.573 (0.100)	0.705 0.626

*** White (1980) heteroskedasticity corrected parameter and p-values are reported

An interesting finding in this study is evidence of economies of scale. One further test is run to examine if there is any evidence of non linearity in economies of scale. This can be determined by introducing a LNPROCEEDSSQUARED variable in addition to LNPROCEEDS. The LNPROCEEDSSQUARED variable is calculated by squaring LNPROCEEDS. By introducing this additional variable, the models now test whether the size of the capital raising has an increasing or decreasing effect on the various direct costs. The results are reported in Table 4. Except for some evidence of a decreasing effect with the valuation costs, there is no evidence of turning points in the quadratic for the total direct costs, underwriter costs, legal costs and accounting costs.

CONCLUSION

This study adds to the international literature on LPT IPOs with an examination of the direct costs of raising equity capital by LPTs in Australia during 1994 to 2004. There is clear evidence of economies of scale in that the percentage of total direct, underwriter, legal, accounting and valuation costs as proportions of proceeds raised are all reduced as greater proceeds are raised. There is also evidence in this study to suggest that the total direct costs can be reduced by property trusts utilizing lower debt to equity ratios, having higher proportional net asset values and offering stapled securities.

In so far as those IPOs which employ underwriters, it appears that underwriters of post 1999 property trust IPOs are seeking and getting higher underwriting fees than before this period. This study also finds that valuation costs are influenced by the level of the debt to equity ratio in that a given percentage change in debt ratios can influence an even higher percentage change in valuation fees.

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