

# THE UNDERPRICING OF A-REIT IPOs IN AUSTRALIA DURING 2002 TO 2008

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## ABSTRACT

*This study analyses 45 Australian Real Estate Investment Trust (A-REIT) initial public offerings (IPOs) in Australia from January 2002 to June 2008, since the introduction of the single responsible entity to oversee the activities of listed property trusts (LPTs) rather than the trustee and manager roles. The study finds that this sample of A-REIT IPOs had a significant 3.37% underpricing and that the direct costs of capital raising help explain this indirect cost of underpricing. There is some evidence to suggest that A-REIT IPOs that seek to raise more equity capital have less underpricing, while those that are subscribed to more quickly have higher underpricing. The findings offer insights for issuers who seek to maximize the value of the A-REIT at the time of the IPO, underwriters who guarantee the success of the capital raising and for investors who are looking to invest in Australian A-REIT IPOs.*

**Keywords:** underpricing, A-REITs, IPOs.

## INTRODUCTION

The underpricing of initial public offerings (IPOs) has been discussed in the literature for around forty years. Underpricing is the term used when the issue price of the shares of a company raising public equity capital and seeking to list on a stock exchange is below the closing price of the shares on the first day of listing. As such, underpricing theoretically allows subscribing investors the opportunity of making substantial first day listing returns. The international evidence as summarised in Loughran, Ritter and Rydqvist (1994) and updated in Ritter (2003) has documented that subscribing investors made handsome double-digit (for example US IPOs - 15.7%, UK IPOs - 12%, Swiss IPOs - 35.8%, Italian IPOs -27.1%) or even triple-digit (for example Chinese IPOs - 948.6%) statistically significant positive first day returns, on average. These studies are however of industrial company IPOs.

Subscribing investors to Real Estate Investment Trust (REIT) IPOs have on average, not earned anywhere near the industrials IPOs in terms of first day returns. Wang, Chan and Gau (1992) report on 87 US REIT IPOs for the 1971 to 1988 period and discover a statistically significant 2.82% overpricing, which means investors on average lost 2.82% of their subscriptions on the first day of listing. Later work by

Ling and Ryngaert (1997) on 85 US REIT IPOs during 1991 to 1994 identified a 3.60% average first day return to subscribers. In Australia, Dimovski and Brooks (2006a) report an average 1.2% underpricing return (but it is not a statistically significantly different to zero return) on 37 listed property trust (LPT) IPOs during 1994 to 1999.

The purpose of this paper is to investigate the underpricing returns of Australian A-REIT IPOs from January 2002 to June 2008 and extend the work in Dimovski and Brooks (2006b) which investigated only a small sample of 20 LPT IPOs from 2002 to 2004 and speculated that the post 2000 LPT IPOs may have more valuation uncertainty than those before 2000. Prior to June 30, 2000, Australian LPTs engaged both a Manager (to manage the activities of the trust) and a Trustee (to grant approval for property acquisitions and disposals). The *Managed Investments Act 1998* removed the separate roles of Manager and Trustee and allowed only for a Single Responsible Entity role. This removal of the trustee safeguard was an important institutional event that permits further examination of Australian LPT IPO first day returns. It is also worth noting that recently the Australian Stock Exchange (ASX) formally re-labelled these listed property trusts from LPTs to A-REITs to reflect Australian REITs as compared to other international REITs such as J-REITs for Japanese REITs or S-REITs for Singaporean REITs reflecting the country in which the listed real estate entity is listed.

A total of 45 A-REIT IPOs raised over \$6.86 billion of public equity capital from January 2002 to June 2008. This compares to around \$7.15 billion raised during 1994 to 1999 by 37 A-REIT IPOs. Dimovski and Brooks (2006a) point out that this amount is about three times the equity capital raised by the mining and resources IPOs and about one third of that raised by all industrials IPOs over the same period. Clearly, A-REIT IPOs are an important part of the Australian capital market and worthy of investigation. It is also noteworthy that no A-REIT IPOs listed during 2000 and 2001. The mean underpricing return for the 2002 to 2008 A-REIT IPOs was 3.37% and statistically significantly different to zero while the median return was 2.7%.

The importance of A-REITs to institutional investors is well documented in Newell and Peng (2008), while Newell (2007) reported on the huge inflows of capital from the superannuation funds into listed property assets. Given the superannuation guarantee levy on employers such capital flows are unlikely to disappear. It is also worth noting that KPMG (2007) suggested Australia held around 16% of the global value of REITs and hence is an important market to consider.

This study also follows a highly influential paper in the IPO literature by Beatty and Ritter (1986). They argue that the lower the uncertainty about the value of an IPO, the lower the underpricing needed to attract subscribers. Given the linkage between uncertainty and underpricing, this study seeks to identify the factors that might influence uncertainty and hence underpricing. The results suggest that the direct costs

of capital raising help explain the indirect cost of underpricing and that A-REIT IPOs that seek to raise more equity capital have less underpricing while those that are subscribed to more quickly have higher underpricing.

The plan of this paper is as follows. In section 2 we briefly summarise some of the underpricing literature. Section 3 presents the model. Section 4 reports our results. Section 5 makes some concluding comments.

## **RELATED LITERATURE**

This section is in two parts. The first part discusses the major theoretical explanations for underpricing and the second part summarises some relevant previous property trust and REIT IPO research.

### **Theoretical explanations for underpricing**

Regrettably there isn't one complete explanation for underpricing. Many theoretical explanations have been offered to explain underpricing. Most of the models suggest that the issuer and the underwriter deliberately and knowingly underprice, or that the subscribing investor expects the issue to be underpriced.

The first three explanations discussed here are often referred to as the information asymmetry explanations. Baron (1982) argues that underwriters have superior information regarding market conditions and the demand for the IPO's shares. For the underwriter to raise the required equity capital for the IPO firm, the firm allows the underwriter to determine the issue price, which allows for some underpricing. Rock (1986) suggests there are two categories of investors that seek shares in IPOs - informed and uninformed. He argues that the informed (and likely more influential) investors crowd out the uninformed (and likely less influential) leaving the uninformed buying more of the less profitable issues. In order to compensate the uninformed for this "winner's curse" and to induce subscribers to future IPOs, issuers underprice. A third explanation is put forward by Allen and Faulhaber (1989) and by Welch (1989). They suggest that underpricing encourages new investors to see the quality of the IPO company which later allows the company to make subsequent equity issues at a higher price. As such, these companies recoup some of that underpricing.

The next three explanations argue an underwriter monopsony power because they have most control over the price at which the IPO is offered. Tinic's (1988) insurance hypothesis suggests that underpricing is like an insurance policy protecting the underwriters and the issuing firm from lawsuits. Chalk and Peavy (1987) suggest that underwriters might issue shares to preferred clients but then recoup this favour by charging higher fees for later services to these clients. This also allows less money to

be spent on marketing the issue. Benveniste and Spindt (1989) suggest that underwriters allow new issues to be underpriced to encourage investors to subscribe to the IPO and fill the new issue. Otherwise investors will simply wait until after listing to purchase the shares.

Ruud (1993) however suggests that underpricing may not be a deliberate decision prior to the listing. She suggests that underwriters actually price support the issue after it is listed. This is unlikely in Australia because price support activities by underwriters are illegal under the *Corporations Law* of Australia.

Except for Ruud's (1993) paper, all of the explanations subscribe to the broad idea that uncertainty, issue price and underpricing are related. It was Beatty and Ritter's (1986) paper, however, that more formally and empirically argued that reducing the uncertainty about an IPO's valuation reduces the need for underpricing. Since that study, researchers have found that lower underpricing is associated in firms that:

- have higher issue prices [Chalk and Peavy (1987)]
- employ higher quality underwriters [Carter and Manaster (1990)]
- employ higher quality auditors [Beatty (1989)]
- have existing borrowing relationships [James and Weir (1990)]
- have high earnings potential [Koop and Li (2001)]

## **Previous property trust and REIT IPO research**

One of the first major papers examining the underpricing of REIT IPOs was by Wang et al (1992). They investigated 87 US REIT IPOs over the 1971 to 1988 period and found a surprising 2.82% average overpricing loss to the subscribing investors. Even Wang et al (1992) found it difficult to understand why subscribers invested in these IPOs and suggest that it may have been ignorance.

Ling and Ryngaert (1997) extend Wang et al's (1992) work by investigating 85 US REIT IPOs from 1991 to 1994. They report a 3.60% underpricing and suggest this might have been due to the greater involvement of institutional investors. They use Rock's (1986) argument that the institutional investors are the more informed investors and hence offer to buy underpriced new issues and avoid buying overpriced new issues.

In Australia, Dimovski and Brooks (2006a) investigated 37 property trust IPOs during 1994 to 1999 and report an average 1.2% underpricing. They find that the underpricing can in part be explained by prospectus forecast profit distributions (or dividends) and the market sentiment towards property trusts from the date of the prospectus to the date of listing. They argue that higher dividend forecasting trusts are riskier and hence higher underpricing is found in such trusts. In some follow up work on 20 property trust IPOs during 2002 to 2004, Dimovski and Brooks (2006b)

speculate that post 1999 LPT IPOs may offer higher underpricing than earlier IPOs given the merging of the trustee and manager roles into a single responsible entity role. Fund managers can indeed take this role.

## DATA AND METHODS

A total of 45 Australian A-REIT IPOs listed on the Australian Stock Exchange from January 2002 to June 2008. The primary source of the data for this study was the *Connect 4 Company Prospectuses* database. Appendix 1 identifies the entities from their prospectus information. The trusts are categorized as retail, office or other and gross proceeds reported. All observations are equally weighted, they are not weighted by size.

This study extracted variables from each of the A-REIT IPO prospectuses for the above period. Most of these variables have been found useful in explaining the level of underpricing return in previous studies. The variables to be tested are defined as follows:

- A STAPLED dummy (0 or 1) variable is recorded for those A-REITs that issued stapled securities. Such securities generally consist of a unit in a trust and a share in a company. The unit and the share are not tradable without the other. The trust is likely to be the holder of income producing real estate while the company is likely to be involved in property development activities;
- The issue price (ISSUEPRI) [Chalk and Peavy (1987), Ibbotson, Sindelar and Ritter (1994)];
- A PROSENTI variable that records the change in the A-REIT Index from the date of the prospectus to the day of the listing [Dimovski and Brooks (2006a)];
- A TIMETOLIST variable that records the number of days from the date of the prospectus to the day of listing [Lee, Taylor and Walter (1996)];
- the logarithm of the total capital sought (LNPROCEEDS) [Ibbotson, Sindelar and Ritter (1994)];
- the logarithm of the forecasted gearing ratio (LNDEBTTOASS) variable reflects the target gearing of the A-REIT IPO;
- the underwritten (UWRITTEN) variable is a (0 or 1) dummy variable reflecting no underwriter (0) or an underwriter (1) was used in the IPO

[Dimovski and Brooks (2004) and adapted from the underwriter reputation variables in Carter and Manaster (1990)];

- the direct costs of raising the equity capital as a percentage of the capital sought to be raised (PERCTOTCOST) variable [Ritter (1984)];
- the next full year forecast of distribution (dividend) per unit [Dimovski and Brooks (2006a)];

An ordinary least squares regression model is performed on the data. The dependent variable is underpricing return (RETURN). This is the closing price of the shares (plus any options) on the first day of listing minus the issue price, the result of which is then divided by the issue price. The closing prices were obtained from the IRESS database.

The regression model with underpricing return as the dependent variable is:

$$\text{RETURN} = \beta_0 + \beta_1\text{STAPLED} + \beta_2\text{ISSUEPRI} + \beta_3\text{PROSENTI} + \beta_4\text{TIMETOLIST} + \beta_5\text{LNPROCEEDS} + \beta_6\text{LNDEBTTOASS} + \beta_7\text{UWRITTEN} + \beta_8\text{PERCTOTCOST} + \beta_9\text{DIVYLD} + \varepsilon \quad (1)$$

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

The first variable (STAPLED) is included because it is possible that entities engaged in property development activities have more variability of cash flows than those earning pure rental streams and hence may be considered more risky and may offer higher underpricing returns to subscribers. The ISSUEPRI variable is included because it has been found significant in Chalk and Peavy (1987). They argue that lower issue price IPOs are more underpriced. The IPOs in this data set all identified a fixed issue price for the units offered in their prospectus. It is possible that the time between the prospectus and the date of listing may be influenced by the market sentiment towards A-REIT investments. As in Dimovski and Brooks (2006a), this study includes a PROSENTI variable to test the hypothesis that the more positive (negative) the sentiment of investors towards the A-REIT sector, the more (less) the price that is paid for new issue units upon listing and hence the more (less) the underpricing return.

The TIMETOLIST variable is expected to have a negative coefficient as in Lee et al (1996) showing greater underpriced issues are subscribed to more quickly. The LNPROCEEDS variable has been found to be significant in previous empirical underpricing research and is expected to be negatively related to underpricing. The LNDEBTTOASS variable is used to test if leverage influences underpricing. The dummy UWRITTEN variable tests whether the involvement of an underwriter

allowed more underpricing. In Australia, IPOs do not need to be underwritten to list. A total of 35 of these 45 A-REIT IPOs are underwritten. The DIVYLD variable is the forecast of distributions/dividends for the next forthcoming full year and was found to be positive and significant to the level of underpricing in Dimovski and Brooks (2006a). The dividend forecasts are return estimates and are subject to Australian and Securities Investments Commission scrutiny at the time the prospectus is lodged with the commission. These returns forecasts need to be commensurate with the risks associated with the A-REIT investments, hence it is expected that the higher the forecast dividend the greater the risk of the IPO and the need for a greater underpricing.

## RESULTS

Table 1 reports the ordinary least squares (OLS) regression results. There were three observations that did not forecast dividends and were excluded from the Table 1 results. One observation had an underpricing return over 3.5 standard deviations from the mean return. This outlier observation is removed from the model and modified regression results reported. This identification of outliers over 3.5 standard deviations is consistent with Dimovski and Brooks (2006a). In addition, rather than removing the outlier IPOs, Table 1 also reports winsorized OLS results. Winsorizing refers to the setting of the observations which are above the 99<sup>th</sup> percentile value to the 99<sup>th</sup> percentile value so as not to excluded some observations as outliers. A variety of standard regression diagnostics are reported. In testing for non-normal errors, a Jarque-Bera statistic is reported. In testing for heteroscedasticity, a White (1980) test is applied. In testing for omitted variables or model misspecification, a Ramsey Reset test is applied and reported.

For the overall model in Table 1, the results of the regression analysis suggest that the PERCTOTCOST variable has explanatory power with regard to the amount of underpricing return. The coefficient is positive and between 0.67 and 0.71 suggesting that holding all the other variables constant, for a 1% increase in the direct costs as a percentage of capital raised there is about a 0.67% to 0.71% increase in underpricing return to subscribers. As argued in Ritter (1984), it appears the riskiness on the A-REIT IPO assets is partially explained by the direct costs of going public.

Since the dividend yield variable is not particularly useful in this first table, it is removed in Table 2 so as to allow all 45 A-REIT IPOs to be included in the sample. Again the PERTOTCOST variable is useful. So too now are the TIMETOLIST and LNPROCEEDS variables which both have negative coefficients. This suggests the quicker the issue is listed, the greater the underpricing return and this is consistent with Rock (1986) and Lee et al (1996) who argue that more profitable issues (more underpriced) are taken up more quickly by more informed investors. The negative coefficient on the amount of capital sought suggests the greater the amount of capital

sought, the lower the underpricing and is consistent with Ibbotson et al (1994). To test for robustness, the model is tested again when the outlier observation is removed and winsorized. All three variables are still useful.

The findings are similar in Table 3 which removes the UWRITTEN variable (which has a fairly high correlation of 0.66 with LNPROCEEDS and may unnecessarily influence the model) and PROSENTI which doesn't appear to influence the model much at all. Again the model is run for all 45 A-REIT IPOs, when the outlier is removed and when the outlier is winsorized. The significant variables are again PERTOTCOST, LNPROCEEDS and TIMETOLIST. While many of the A-REIT IPOs during 2002-8 offered stapled securities to subscribers and were expected to have higher uncertainty about their future cash flows (because of their likely property development activities) and hence higher underpricing, only the Table 2 regressions reflect the STAPLED variable as being mildly significant to the level of underpricing. This variable was not significant in the Table 3 regressions.

**Table 1: Regression results for the underpricing of LPT IPOs in Australia: Jan 2002 to June 2008**

	42 IPOs		Outliers Removed 41 IPOs		Winsorized 42 IPOs	
	Coef.	Pr.	Coef.	Pr.	Coef.	Pr.
C	0.201	0.362	0.283	0.119	0.241	0.203
STAPLED	-0.039	0.120	-0.032	0.111	-0.036	0.096
ISSUEPRI	-0.028	0.103	-0.024	0.082	-0.026	0.075
PROSENTI	-0.168	0.499	-0.126	0.531	-0.147	0.487
TIMETOLIST	-0.001	0.097	-0.001	0.128	-0.001	0.089
LNPROCEEDS	-0.013	0.278	-0.017	0.078	-0.015	0.141
LNDEBTTOASS	-0.117	0.302	-0.163	0.083	-0.139	0.153
UWRITTEN	0.013	0.735	0.026	0.401	0.019	0.553
PERCTOTCOST	0.716	0.041	0.676	0.018	0.697	0.021
DIVYLD	0.771	0.487	0.218	0.810	0.501	0.596
R Squared	0.331		0.392		0.378	
Adj R Squared	0.143		0.215		0.203	
Jarque Bera	19.672	0.000	1.105	0.575	1.413	0.493
White Test	10.763	0.824	12.582	0.703	13.501	0.636
Reset Test	0.087	0.768	3.416	0.430	1.926	0.657



**Table 2: Regression results for the underpricing of LPT IPOs in Australia: Jan 2002 to June 2008**

	All		Outliers		Winsorized	
	45 IPOs		44 IPOs		45 IPOs	
	Coef.	Pr.	Coef.	Pr.	Coef.	Pr.
C	0.344	0.008	0.338	0.002	0.341	0.003
STAPLED	-0.043	0.074	-0.034	0.082	-0.039	0.062
ISSUEPRI	-0.030	0.076	-0.025	0.067	-0.027	0.057
PROSENTI	-0.192	0.420	-0.148	0.447	-0.171	0.405
TIMETOLIST	-0.002	0.030	-0.001	0.072	-0.001	0.033
LNPROCEEDS	-0.019	0.054	-0.020	0.013	-0.020	0.022
LNDEBTTOASS	-0.127	0.240	-0.173	0.056	-0.149	0.112
UWRITTEN	0.033	0.318	0.038	0.157	0.035	0.213
PERCTOTCOST	0.677	0.044	0.644	0.020	0.661	0.023
R Squared	0.305		0.367		0.352	
Adj R Squared	0.151		0.222		0.206	
Jarque Bera	22.688	0.000	0.560	0.756	0.818	0.664
White Test	9.655	0.787	10.818	0.700	11.901	0.614
Reset Test	3.337	0.482	3.980	0.345	3.296	0.442

**Table 3: Regression results for the underpricing of LPT IPOs in Australia: Jan 2002 to June 2008 - fewer variables**

	All		Outliers Removed		Winsorized	
	45 IPOs		44 IPOs		45 IPOs	
	Coef.	Pr.	Coef.	Pr.	Coef.	Pr.
C	0.286	0.012	0.271	0.004	0.279	0.005
STAPLED	-0.035	0.125	-0.026	0.166	-0.031	0.121
ISSUEPRI	-0.026	0.107	-0.022	0.102	-0.024	0.087
TIMETOLIST	-0.002	0.018	-0.001	0.048	-0.001	0.020
LNPROCEEDS	-0.013	0.071	-0.014	0.029	-0.014	0.038
LNDEBTTOEQ	-0.069	0.467	-0.110	0.171	-0.089	0.285
PERCTOTCOST	0.649	0.045	0.597	0.027	0.624	0.027
R Squared	0.272		0.318		0.308	
Adj R Squared	0.157		0.207		0.199	
Jarque Bera	19.436	0.000	0.426	0.808	0.563	0.755
White Test	6.548	0.834	8.808	0.640	8.290	0.657
Reset Test	5.284	0.333	4.575	0.359	4.586	0.360

## CONCLUSION

This study examined 45 A-REIT IPOs in Australia for the period January 2002 to June 2008. What it found is that the mean underpricing return for these IPOs is 3.37% and statistically significant. The model used to investigate variables that might help explain the level of underpricing in this industry sector is also particularly useful. Our findings are consistent with prior industrial company IPO studies, suggesting that the direct cost of capital raising, the time the new issue takes to list and the size of the issue are important elements in the level of underpricing.

The underpricing results for the A-REIT IPO in this 2002-8 period are quite different to the earlier 1994 to 1999 period. Underpricing in the earlier period was not statistically significantly different to zero while it was statistically significantly different to zero in the 2002-8 period. This suggests more uncertainty about the value of these post 2000 A-REIT IPOs than previously. In the earlier period, the size of the capital raising was not a significant explanatory variable as to the level of underpricing. This is consistent with a data set where larger and smaller capital raisings are both supported by appropriately valued property assets, whereas in the latter period it appears smaller trusts may have had more uncertainty about the value of their assets.

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## Appendix 1. A-REIT IPOs: 2002-8

COMPANY NAME	Retail/Office/Other	Proceeds \$'000
Macquarie Prologis	other	281475
Record Realty	office	38500
Acumen Capital PSF	other	64700
Westralia PT	other	4416
Westpac Office Trust	office	182500
Rabinov Diversified Property Trust	other	3000
Galileo America Trust	retail	331520
ALE Property Group	other	62000
MFS Diversified Trust	other	15015
Macquarie DDR Trust	retail	547800
Indigo Pacific Capital	other	15000
ING RE Entertainment Fund	other	26150
Village Life	other	56713
Rubicon America	office	32000
Peet & Co	other	85800
Tishman Speyer Office	office	560000
Trinity Consolidated	other	78000
Macarthur Cook	other	70000
Babcock and Brown Japan Property	retail	280000
JF US Industrial	other	241445
S8 Property trust	other	29000
Trafalgar Corporate	other	113100
Mariner American	retail	50000
Reckson New York	office	263400
European Investors Global	other	30300
ING Real Estate Healthcare Fund	other	30500
Multiplex Acumen Prime Property Fund	other	169100
Challenger diversified	other	535600
Rubicon Japan Trust	other	178600
Galileo Japan Trust	other	284000
MacarthurCook Asian	other	80000
Challenger Kenidix Japan Trust	retail	300000
Multiplex European	other	246950
Orchard Industrial Property Fund	other	205000
Prime Retirement and Aged Care Prop Trust	other	100000
Abacus Property Group	other	40700
Valad Property Grp	office	210000
Valad Opportunity No 11	other	33000
Charter Hall Group	other	264000
APN /UKA European Retail	retail	180100
Compass Hotel Group	other	123000
Rubicon Europe Trust	other	258700
Cheviot Kirribilly Vineyard Property Group	other	800
Headley Gaming and Leisure Prop Fund	other	126000
MacarthurCook Industrial Prop Fund	other	37000

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