# ANALYSING THE DELEVERAGED PERFORMANCE OF AUSTRALIAN WHOLESALE PROPERTY FUNDS

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# ABSTRACT

This research examines the impact of debt on the performance of Australian unlisted wholesale property funds. The research benchmarked eight leading property funds leveraged and deleveraged performance to the corresponding property market indices. The results for the 2002-2009 period were mixed as to the leveraged property funds outperforming their respective property market indices. On removing debt, only one property fund managed to beat both the return and risk reading from the corresponding property market index. The marked variations between leveraged and deleveraged performance had limited impact on property fund rankings as it appeared the variation in commercial property lending rates had a greater impact than property fund leverage levels, which averaged 15.31%.

To add to the familiar risk and return benchmarks, the risk adjusted performance (RAP) measure, first outlined by Modigliani and Modigliani (1997), provided a comparative return for a given level of risk. On quarterly unleveraged property fund data, the RAP 1.74%–3.25% range highlighted the considerable differences in the property funds performance for a given level of risk. Of the eight selected property funds, only one provided excess returns from portfolio selection. This RAP approach is a powerful investment tool, as it can highlight the property fund manager's asset allocation capabilities to add value.

Keywords: Unlisted property funds, commercial property, investment analysis, property leverage

# **INTRODUCTION**

Financial leverage is commonplace in major commercial property transactions, as commercial property assets are generally large in terms of capital price and unit value. By forming a hybrid asset, combining equity and debt, there is an opportunity for investors to increase the value of their property investment exposure and possible returns. This can be achieved by a strategic asset allocation strategy with a portfolio of properties offering diversification benefits and lowering unsystematic risk.

In detailing the benefits of debt, the performance of a leveraged property investment can be distorted to the return and risk profile of the underlying commercial property portfolio. The geared and ungeared performance differential can have widespread ramifications as evident in the recent global financial crisis. In Australia, the exceedingly poor performance of many securitised property investments can mainly be attributed to the capital markets and not directly to the fundamentally sound, albeit slightly overpriced, underlying commercial property markets; see Allen (2010) and Rees and Ballantyne (2010) for property market commentary and the global financial crisis.

To better understand the impact of debt on property, the securitised property investment and the underlying property market requires a similar asset pricing mechanism. By their very nature, the liquid public markets (A-REITs) re-price in real time and in the shortterm are generally driven by the performance of the wider equity market. This leaves the private property equity market (unlisted wholesale property market) whose unit pricing mechanism is driven from the same property valuations which form the direct property market performance benchmarks. Comparing the performance of unlisted wholesale property funds (diversified and sector specific), before tax and fees, with the comparable underlying property market data, the impact of leverage can be shown on return and risk profiles.

Additionally, removing the debt multiplier, the research highlights the long term ability of the property fund manager's asset allocation strategy to outperform the corresponding property market indices. This can be achieved by applying the Modigliani and Modigliani (1997) risk adjusted performance (RAP) model, as the risk relative to debt and asset allocation can be separated by attribution analysis. This approach is a powerful investment tool as it can show the property fund manager's asset allocation capability to add value rather than employing debt to seek enhanced total returns.

The Australian unlisted wholesale property market has grown rapidly, from less than AU\$20 billion in 2003 to AU\$69 billion in 2010. Like other financial asset classes, the rapid growth in the Australian unlisted property market has been accompanied by a commensurate increase in the number of Australian unlisted property funds. In Spring 2010, there were 1,260 properties in over 120 unlisted wholesale property funds ranging from less than AU\$1 million to over AU\$5 billion. These property funds are mainly focused at high net wealth individuals and institutional investors, as they have a high unit cost compared to the low unit cost of retail (syndicate) property funds (PIR 2010).

In undertaking this research, it should be noted that the analysis presented here is not intended to endorse particular property funds, but rather to illustrate the impact of debt on past performance of the selected property funds. In recognising future performance is separate from past returns, highlighting historical underlying property fund performance, the level of property fund debt and asset allocation strategy could provide a good indication of a property fund's future performance when compared to associated peers and selected benchmarks.

Following this introduction, Section two provides a literature review covering leverage, unlisted wholesale property funds and the growing application of the RAP model. Section three details the selected property data and associated methodology. Section four provides the empirical findings and the implications for fund managers. The last section provides the concluding comments.

# LITERATURE REVIEW

The impact of leverage on property performance is well documented in Australian literature (Chikolwa 2010, Newell and Keng 2005, Rowland 2010) and in leading overseas texts (Baum 2009, Brown and Matysiak 2000, Brueggeman and Fisher 2008, Geltner *et al* 2007). The structure and features of property debt is extensively covered, as is property's distinctive characteristics which are attractive to property lenders and investors (for example: illiquidity, relatively high barrier to entry, heterogeneous, low correlation to alternative asset classes, leases providing income stability, periodic appraisal based values, relatively inefficient marketplace and limited supply).

The consequences of borrowing can be shown to increase the likely returns on the investor's equity, although potential capital losses can be magnified and create difficulties in meeting regular loan payments. Financial leverage expands the range of possible returns and increases the level of risk. To understand the impact of financial leverage, three return measures must be distinguished, namely: the return on the property, debt and equity (Geltner *et al* 2007, Rowland 2010).

Historically, the extent of leverage varies with investment strategies, property markets and ownership structures. A key aspect is the investor profile, investment objectives and ownership tax liabilities. For example, superannuation funds and sovereign wealth funds generally have strong equity flows and prefer investments with low gearing levels and less onerous tax liabilities. Their focus is on the exposure to the underlying property market, which historically offers considerable diversification benefits to alternative asset classes (Newell 2007a and Rowland 2010).

As noted by Higgins (2010) and Newell (2007b), to invest in commercial property, many large global and local institutional investors select unlisted wholesale property funds, as the funds offer major investors access to the private property equity market without requiring extensive time and property management expertise. These funds can offer access to experienced property fund managers, investor representation on management steering committees, access to quality properties (which are seldom available on the open market) and possible alignment with the appointed property fund manager for future development opportunities.

To add to the familiar risk and return analysis, the Modigliani and Modigliani (1997) risk adjusted performance (RAP) equation has been successfully applied to a number of past property research studies. For example, Fisher (2000) RAP analysis on Australian commercial property market data highlighted the attributes of retail property investments to the ASX A-REIT index. Likewise, Higgins and Ng (2009) applied the RAP techniques to show that Australian securitised property funds outperformed the ASX A-REIT index from a mixture of active portfolio selection and simply taking on additional risk exposure. More recently, Lee (2010) adjusted the RAP model to compare, over time, new and old REIT allocations in mixed US asset portfolios.

# DATA AND METHODOLOGY

#### Data

The research is limited by accessible Australian unlisted wholesale property data. With propriety ownership restricting the availability of current property funds and market data, the research utilizes *Mercer Unlisted Property Funds Index* which was available for 2002-2009. They produced an array of indices on the performance of leading unlisted property funds. To reflect the total returns from properties owned by the funds, a pre-tax and pre-fees index was selected of eight leading property funds. The chosen property funds all have a continuous dataset from 2002. The property funds are details in Table 1.

Unlisted wholesale property fund	Code	Managers	Property type	Portfolio size (\$ million)	No. of buildings	Debt funding %
AMP Property Income Fund	AMP I	AMP	Div	849	40	12.0%
Aust. Prime Property Commercial Fund	APPFC	Lend Lease	Office	1,030	8	23.8%
Aust Prime Property Retail Fund	APPFR	Lend Lease	Retail	3,058	9	7.9%
Aust. Prime Property Industrial Fund	APPFI	Lend Lease	Indust	528	23	19.8%
DEXUS Wholesale Direct Property Fund	DAM	DEXUS Real Estate	Div	2,857	14	20.7%
Private Property Syndicate	PPS	Colonial First State Property	Div	816	37	27.2%
Industry Superannuation Property Trust Core Fund	ISPT	Industry Super. Property Trust	Div	5,554	87	15.4%
Investa Commercial Property Fund	Investa	Investa Property Group	Office	1,036	11	22.3%

Table 1: Composition of selected Australian unlisted property funds: June 2009

Source: Mercer 2009, PIR 2008

Table 1 illustrates the eight selected property funds. All are managed by leading property organisations and vary relating to property types, portfolio size, number of buildings and debt funding levels. In total, the property funds manage AU\$15.7 billion of commercial properties as at June 2009. The research covers seven years (28 quarterly data points) of the selected Australian property funds and corresponding property markets. The property funds data includes total returns, gearing levels and fund size. For more information on the selected property funds and their managers, see Higgins (2010).

To determine the underlying performance of property funds, the extent of property fund leverage needs to be examined; see Table 2.

	Mean	Median	Standard deviation	Minimum value	Maximum value	Range
AMP I	12.20%	13.06%	5.21%	4.20%	22.5%	18.31%
APPFC	14.42%	11.05%	11.99%	0.00%	38.0%	38.00%
APPFR	12.75%	6.50%	9.35%	2.90%	31.3%	28.40%
APPFI	10.39%	10.00%	8.13%	0.00%	22.0%	22.00%
DAM	14.16%	14.00%	3.65%	0.00%	20.7%	20.67%
PPS	24.01%	25.75%	4.89%	16.20%	29.0%	12.80%
ISPT	12.55%	12.56%	5.38%	4.30%	26.2%	21.94%
Investa	21.96%	24.00%	5.81%	4.10%	30.0%	25.90%

Table 2: Property funds gearing levels: 2002-2009

Source: Mercer 2009

Table 2 illustrates the different property fund gearing levels, with an overall average gearing level of 15.31%. In many instances, fund debt levels changed dramatically with property transactions and equity raising; for example, in December 2003, APPFC gearing went from 1% to 38%. Alternatively, some property funds appear to have a more constant debt level; for example, PPS (2004 onwards) gearing level was in a relatively narrow range of 22% to 28%. In noting over time the changing debt levels, in most instances property fund debt levels increased from 2008 onwards. This seems to coincide with the global financial crisis which surfaced in 2008 and generally resulted in lower commercial property values.

On knowing individual property fund performance, the IPD/PCA Property Investors Digest series details the performance of the overall and the sector specific property markets. The composition of the IPD/PCA Property Investors Digest June 2009 series is detailed in Table 3.

$- \cdots - \mathbf{r} - \mathbf$						
Туре	Coverage (\$billion)	No. of buildings				
Total	66	906				
Office	25	306				
Retail	32	326				
Industrial	6	237				

Table 3: IPD property digest: June 2009

Source: IPD 2009

Table 3 details the extensive commercial property market coverage in the IPD/PCA Property Investors Digest. Those property funds detailed in Table 1 could provide performance details to be incorporated into the IPD/PCA Property Investors Digest. However individual property fund portfolios made up less than 10% of the corresponding IPD/PCA Property Investors index. Therefore, the performance of the property funds would have nominal influence on the corresponding IPD/PCA Property Investors Digest.

To deleverage the property funds, a commercial property lending rates series needs to be applied as part of the return on equity formula. Unlike home lending rates, which are published by the Reserve Bank of Australia (RBA), non residential property lending rates are commercially sensitive and in a competitive financial environment the information is not publically available. Additionally, commercial lending rates can vary considerably depending on the lender, property fund manager, investment strategy and the property portfolio. On discussion with industry property researchers, the RBA corporate bond "A" grade yield time series was selected as a suitable proxy for commercial property lending rates. For the period covered, the average interest rate was 6.35% per annum with a wide  $\pm 1.36\%$  standard deviation.

### Methodology

The return on equity is the percentage rate earned by the investor on the property fund returns after meeting the loan commitment. There is a requirement to know the return on the property, loan interest rate and percentage that is borrowed. On knowing the return on equity, the equation can be rearranged to reveal the return on the underlying property. Please see equation one:

$$r = (1 - m)e + (i \times m)$$
(1)

where:

r	=	Return on property
е	=	Return on equity
i	=	Loan interest rate
т	=	Percentage that is borrowed (gearing)

The equation is relatively straightforward. Comparing return on equity to the loan interest rate will indicate if the property return is positive or negative. The return on property will be more pronounced depending on the gearing level. The risk being the return on property may be less than the loan interest rate, which occurred as a consequence of the recent global financial crisis.

The RAP methodology follows the classic Modigliani and Modigliani (1997) paper. The basic concept underlying RAP is the trade-off between risk and return, being to adjust the fund returns to the level of risk in the benchmark series. This is defined as:

$$RAP_{p} = (\sigma_{m}/\sigma_{p}) (r_{p} - r_{f}) + r_{f}$$
(2)

where:

$\sigma_{\rm m}$	=	Standard deviation of benchmark/market
$\sigma_p$	=	Standard deviation of asset p
r <sub>p</sub>	=	Return of fund p
r <sub>f</sub>	=	Risk free rate of return

The RAP model allows the individual fund risk level to match that of the property market by adjusting the level of leverage in the fund. The risk measure, as the dispersion of fund return, can be improved by increasing the level of debt in the fund make-up. Conversely, the level of risk can be decreased by selling risky fund assets in order to purchase risk-free assets (e.g. 90 day Bank Bills). By adjusting the individual fund return to the benchmark return, the difference can be demonstrated to be from either increase/decreased risk or better/worse portfolio allocation based on attribution analysis. This can be best demonstrated graphically:

#### Figure 1: Graphical representation of risk adjusted return



As shown in Figure 1, point P is the fund performance. It has return Rp and risk Sp. The benchmark property market performance M, has return Rm and risk Sm. The line

connecting P and the risk-free rate Rt is the Sharpe performance line. The point on that line that has the same risk as the benchmark Rm is the RAP. The difference between RAP and the fund return can be disseminated into risk based return and allocation based return (Hopkins and Action 1999).

# **EMPIRICAL FINDINGS**

The first step is to examine the leveraged and deleveraged performance of the selected property funds to the corresponding property market data; for example, Investa Commercial Property Fund performance is compared to IPD/PCA Property Investors Office market index.

Table 4 details the quarterly risk and returns for the property funds and corresponding property market indices.

performance: 2002 - 2009								
	Leveraged	property	De-leve	eraged				
	fui	nd	propert	ty fund	Property	markets		
	Return	Risk	Return	Risk	Return	Risk		
AMP I	2.56%	2.50%	2.47%	2.15%	2.66%	2.12%		
APPFC	1.76%	4.20%	1.86%	3.36%	2.37%	2.49%		
APPFR	3.46%	2.08%	3.19%	1.85%	2.96%	1.91%		
APPFI	2.16%	2.22%	2.18%	1.83%	2.45%	2.20%		
DAM	2.37%	3.46%	2.32%	2.90%	2.66%	2.12%		
PPS	3.47%	4.57%	3.02%	3.35%	2.66%	2.12%		
ISPT	2.14%	2.89%	2.13%	2.48%	2.66%	2.12%		
Investa	2.46%	4.47%	2.27%	3.55%	2.37%	2.49%		

Table	4:	Property	funds	and	associated	property	markets	quarterly
perform	man	ce: 2002 - 2	009					

Table 4 shows the comparative performance of the property funds and associated property markets. The leveraged performance for the property funds, apart from APPFR, PPS and Investa, had lower returns, and every property fund had a higher risk profile compared to the corresponding property market. After de-leveraging the property fund performance, the returns were generally slightly lower compared to a substantial drop in the risk profile. This can be illustrated by examining the excess (relative) performance of the property funds to the corresponding benchmark property market data (see Table 5).

	property market performance. 2002-2007							
	Leveraged		De-le	<b>De-leveraged</b>		Leveraged		veraged
	Excess		Excess		Excess		Excess	
	return	Ranking	return	Ranking	risk	Ranking	risk	Ranking
AMP I	-0.10%	4	-0.20%	4	0.38%	3	0.04%	3
APPFC	-0.61%	8	-0.50%	7	1.71%	6	0.87%	6
APPFR	0.51%	2	0.24%	2	0.17%	2	-0.06%	2
APPFI	-0.29%	5	-0.27%	5	0.01%	1	-0.37%	1
DAM	-0.30%	6	-0.34%	6	1.34%	5	0.78%	5
PPS	0.81%	1	0.35%	1	2.45%	8	1.23%	8
ISPT	-0.53%	7	-0.53%	8	0.77%	4	0.37%	4
Investa	0.09%	3	-0.09%	3	1.98%	7	1.06%	7

Table 5: Excess property funds quarterly performance to corresponding
property market performance: 2002-2009

Table 5 presents the property funds quarterly leveraged and deleveraged excess risk and returns to that of the associated property markets. On removing debt, the changes in risk profile of the property funds were substantially more than the equivalent returns. This can be demonstrated by examining the difference between average excess leveraged and deleveraged returns (leveraged 0.40% and deleveraged 0.32%) and the average excess leveraged and deleveraged and deleveraged risk (leveraged 1.10% and deleveraged 0.60%). In part, the changes in the risk profile of the deleveraged property funds were due to volatility surrounding the substantially higher commercial property lending rates caused by the global financial crisis.

The spike in commercial lending rates associated with the global financial crisis can explain APPFI and APPFC higher deleveraged returns to the corresponding leveraged returns. Both property funds appeared to increase their property portfolios in 2006 and 2007 respectively by increasing the property fund debt. This resulted in higher gearing levels which were exposed to the global financial crisis.

In identifying the changes in the property funds return and risk profiles, the ranking of the property fund leveraged and deleveraged remained relatively unchanged. As property fund gearing levels vary considerably, between 0% - 38% (see Table 2), it would suggest that the volatility in the commercial property lending rates has a greater impact on relative property fund performance than equivalent levels of gearing. Sensitivity analysis on property fund returns based on gearing levels and interest rates can be covered in a separate research paper.

The impact of gearing on the individual property funds can be further examined by looking at the Sharpe performance, which is a measure of reward per unit of risk. Table 6 details the Sharpe performance for the leveraged and deleveraged property funds and corresponding property markets.

	Sharpe ratio				
	Prop	erty fund	Property		
	Leveraged	<b>De-leveraged</b>	market		
AMP I	0.47	0.50	0.60		
APPFC	0.09	0.14	0.39		
APPFR	1.00	0.98	0.82		
APPFI	0.35	0.43	0.48		
DAM	0.28	0.32	0.60		
PPS	0.46	0.49	0.60		
ISPT	0.26	0.30	0.60		
Investa	0.24	0.25	0.39		

Table 6: Property funds and a	associated property markets Sharpe performance:
2002-2009	

Table 6 results highlight the impact of leverage on the property funds. Generally all have a higher Sharpe performance with the removal of debt from the property funds. The level of gearing appears to have limited impact between the leveraged and deleveraged Sharpe performance.

There appears to be some consistency in the relationship between the Sharpe performance and the property funds return and risk profile. According to the Sharpe performance results, the top two performing funds were the retail (APPFR) and Industrial (APPFI) property funds. Similarly, the leveraged and deleveraged office property funds (APPFC and Investa) Sharpe performance had the lowest relationship with the office market Sharpe performance.

An alternative to the standard risk and return analysis is the RAP measure. The RAP model adjusts the individual property fund risk level, so to match corresponding property market risk. This is done by adjusting the level of leverage in the fund (ie selling risky property fund assets to buy a risk-free asset - 90 day bank bills). Table 7 presents the risk-adjusted return and the results of the attribution analysis to detail the excess return relative to portfolio selection and adding additional risk.

	Leverage factor	Risk adjusted return	Excess return relative to index	Excess return from portfolio selection	Excess return from additional risk
AMP I	-1.63%	2.45%	-0.20%	-0.22%	0.02%
APPFC	-25.84%	1.74%	-0.50%	-0.62%	0.12%
APPFR	3.29%	3.25%	0.24%	0.30%	-0.06%
APPFI	20.28%	2.34%	-0.27%	-0.11%	-0.16%
DAM	-26.98%	2.07%	-0.34%	-0.59%	0.25%
PPS	-36.71%	2.42%	0.35%	-0.24%	0.60%
ISPT	-14.70%	2.02%	-0.53%	-0.64%	0.11%
Investa	-29.89%	2.01%	-0.09%	-0.36%	0.26%

 
 Table 7: Deleveraged property funds risk-adjustment performance and attribution analysis

Table 7 illustrates the differences in quarterly property funds performance for a given level of property market risk. The 1.74% - 3.25% risk adjusted return range highlighted the extent of borrowing and lending (see leverage factor column) to adjust the risk of the portfolio to that of the risk in the benchmark property market indices. The negative leverage highlights the fact that in many instances, the associated property markets performed better than the selected property funds. The leverage for a property fund return to match the corresponding property market risk can be better shown graphically. For example, Investa is required to have a -29.89% leverage through adjusting the level of risk in the property fund. This will achieve a RAP risk adjusted return of 2.01%; see Figure 2.

#### Figure 2: Graphical representation of risk adjusted return



Figure 2 provides a graphical representation of the mechanics of the risk-adjusted performance measure. The capital market line connects the risk free rate and the office market risk and return. The gradient equates to its Sharpe performance. The difference in vertical distance from the office market to Investa Sharpe performance represents the portion of the return that is generated through allocation based decisions. In this instance a negative (-0.36%) return. Only APPFR provided excess returns from the portfolio selection.

The property funds' performance in relation to the corresponding property market indices is a concern. However, this may relate to the IPD/PCA property market index structure, as property transaction costs and building refurbishment time and costs are outside the index methodology. Historically, the differential between property fund performance and corresponding property market index may also explain why several property fund managers' fee structures are related to the property fund performance to a bond market benchmark.

## CONCLUSION

The Australian unlisted wholesale property market has developed into a major investment class, as it offers institutional investors access to the private property equity market without requiring extensive time and property investment and management experience. Currently, the Australian unlisted wholesale property funds has over AU\$69 billion of commercial property under management.

On available data (2002-2009), this research examined the quarterly performance, before tax and management fees, of eight leading property funds. The research compared the leveraged and deleveraged property fund performance to the corresponding underlying property markets. Overall, apart from AFFPR, the property funds returns and risk profiles were below the equivalent property market data. On removing debt, compared to returns, the property funds risk levels were much closer to the respective property market risk profiles. This, in part, appeared to relate more to variations in commercial property lending rates than property fund gearing levels.

The risk-adjusted performance (RAP) measure provides a comparative return for a given level of risk. The RAP 1.74%–3.25% range highlighted the differences in the deleveraged property funds performance for a given level of risk. Of the eight selected property funds, only one (APPFR) had excess returns from portfolio selection.

This research demonstrates the benefits of analysing property funds performance to the underlying property markets. By deleveraging the property funds, the risk profiles change substantially, being much closer to the benchmark property market datasets. The RAP approach provides a measure of return for a defined level of risk, with the benchmark excess, in part, attributed to portfolio selection. This performance information can provide valuable additional information for an astute investor.

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