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FACTORS INFLUENCING THE PERFORMANCE OF LISTED PROPERTY TRUSTS

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ABSTRACT

A variance decomposition procedure is used to assess the proportion of LPT volatility that is attributable to stock, bond and property factors over 1985-2004. The dynamics of this LPT performance is also assessed. Property is seen to only make a small contribution to LPT variability, with the contribution of property only marginally increasing in recent years with the increased maturity of the LPT sector. The importance of stocks in LPT performance has decreased significantly, with bonds being the most dominant component in LPT performance in recent years.

INTRODUCTION

Listed property trusts (LPTs) have been a successful indirect property investment vehicle in Australia. At November 2004, the LPT sector had total assets of over $100 billion, comprising over 1500 institutional-grade properties in diversified and sector-specific portfolios (Property Investment Research, 2004a). LPTs currently account for over $73 billion in market capitalisation, representing over 8% of the total Australian stockmarket capitalisation (UBS Warburg, 2004).

Table 1 presents an overall profile of the LPT sector at November 2004. Currently, LPTs account for approximately 8% of institutional asset allocations and account for 49% of all institutional-grade property in Australia (Garing et al, 2004). LPTs have performed strongly compared to the other major asset classes over the last ten years (see Table 2), being the best performed sector over the 3, 5 and 10-year holding periods. LPT risk levels (10.44% over 1985-2004) are significantly below stockmarket risk (19.23%) (Property Council of Australia, 2004), reflecting the defensive characteristics of LPTs. Sector-specific LPTs have also typically outperformed the corresponding direct property sector over these various holding periods.

LPT and stockmarket performance in Australia is correlated (r = .63 over 1985-2004) (Property Council of Australia, 2004) and it has been shown that there is not long-

term market integration between LPTs and the stockmarket (Wilson and Okunev, 1996, 1999; Wilson et al, 1998). This evidence of market segmentation suggests that there are diversification benefits from including LPTs in an investment portfolio, particularly in conditions of increased stockmarket volatility (Newell and Acheampong, 2001). Both diversified and sector-specific strategies are equally effective for LPT portfolio diversification (Newell and Tan, 2003), with LPTs also showing evidence of superior property selection and market timing (Peng, 2004). The establishment of an LPT futures market in August 2002 further enhanced the stature of LPTs, with institutions being able to use LPT futures as an effective risk management tool for hedging their LPT exposure (Newell and Tan, 2004).

Overall, this has seen the significant maturity of the LPT sector since the early 1990s, as well as the LPT sector having undergone considerable structural change in recent years. This has included increased levels of international property, increased levels of debt, increased use of stapled securities structures and significant mergers and acquisitions (Oliver, 2004). While LPTs are listed on the stockmarket, their underlying assets are direct property. Hence, the issue of how much of LPT performance is attributable to direct property performance and how much to stockmarket performance has been actively debated in recent years.

Previous research has shown that US REITs are viewed as a hybrid of stocks and bonds (eg: Karolyi and Sanders, 1998; Ling and Naranjo, 1997; Peterson and Hsieh, 1997), with a limited role for property in REIT pricing (Clayton and Mackinnon, 2003) and REITs becoming increasingly integrated with the stockmarket (Ling and Naranjo, 1999). However, with the increased investment stature and maturity of REITs since 1992, the ability of stock and bond factors to explain REIT returns has reduced since the early 1990s (Liang and McIntosh, 1998), with the unexplained variation taken as increasingly attributable to direct property, and REITs increasingly reflecting the nature of the underlying property assets.

Similarly, a number of international studies have recently assessed the significance of direct property in indirect property performance using style analysis, with studies conducted in the US (eg: Chiang and Lee, 2002; Gallo et al, 2000; Liang and McIntosh, 1998; Myer and Webb, 1996), UK (Lee, 1999; Stevenson, 2001), Australia (Newell, 2001) and Hong Kong (Newell et al, 2004).

In further examining this issue, Clayton and MacKinnon (2000,2003) used a variance decomposition procedure to assess the relative importance of stock, bond and property factors in explaining REIT performance over 1978-98. Over this period, large cap stocks were seen to be the dominant factor in accounting for a large proportion of REIT volatility, with direct property making a negligible contribution to REIT volatility. With increasing REIT maturity in the 1990s, sub-period analyses revealed a significantly reduced large cap effect and increased significance for a small cap effect and importantly, for an increasingly significant property factor over these subsequent sub-periods. This was reflected in the property factor accounting for only 0.4% of REIT volatility over 1979-84, but increasing to 14.7% of REIT volatility over 1992-98 (Clayton and MacKinnon, 2000, 2003).

Given the increasing property investment stature of LPTs in Australia, the purpose of this paper is to use this variance decomposition approach to assess the proportion of

LPT volatility that is attributable to stock, bond and property factors over 1985-2004. This is assessed at an LPT sector, LPT sub-sector and individual LPT level. The dynamics of this LPT performance are also assessed to determine if LPT performance has reflected more direct property performance in recent years, as the LPT sector has matured as a significant asset class in Australia.

METHODOLOGY

Data

Total returns were obtained for June 1985-June 2004 (Property Council of Australia, 2004; UBS Warburg, 2004) for the following:

- overall LPT sector (LPT300)
- LPT sub-sectors: office, retail, industrial, diversified (since June 1994)
- individual LPTs: GPT, Stockland, Westfield
- direct property: total, office, retail, industrial
- equivalent stockmarket (All Ordinaries) and bond (All Maturities) sectors.

The PCA direct property indices are the benchmark series for commercial property in Australia, based on the performance of 500 commercial properties valued at over $45 billion at June 2004. Table 3 presents the property portfolio characteristics for the PCA property indices (PCA, 2004).

As the PCA direct property indices are only available six-monthly (quarterly from September 1995), all analyses were done six-monthly. The PCA direct property series were not de-smoothed (eg: using the Fisher et al (1994) methodology), as the PCA series is less affected by valuation-smoothing than other international direct property benchmarks such as NCREIF and IPD (Newell and MacFarlane, 1998).

Variance decomposition procedure

To assess the determinants of the volatility of LPTs, the following multi-factor model was used:

$$r_{LPT} = b_O + b_P r_P + b_B r_B + b_S r_S \qquad (1)$$

where r_{LPT}, r_B, r_P and r_S are LPT returns, direct property returns, bond returns and stock returns respectively, and b_P, b_B and b_S are the LPT sensitivities to the respective property, bond and stock factors. After identifying the components of LPT volatility attributable to direct property, bond and stock factors, any remaining unexplained variation is taken to be attributable to idiosyncratic factors.

To apply this variance decomposition procedure used by Clayton and Mackinnon (2000, 2003) in assessing US REITs, uncorrelated factors are required in equation (1) above. The uncorrelated "pure" factors are determined as per Giliberto (1990) using the following procedure:

- the "pure" property factor is the residual of the regression of direct property returns on bond returns and stock returns

- the "pure" bond factor is the residual of the regression of bond returns on "pure" property returns and stock returns,

with these pure property factor, pure bond factor and stock factor being uncorrelated and used in equation (1) for this LPT variance decomposition regression.

The relative contributions to LPT volatility by each factor are given as:

- Property factor contribution = $b_P^2 \sigma_P^2 / \sigma_{LPT}^2$ (2)
- Bond factor contribution = $b_B^2 \sigma_B^2 / \sigma_{LPT}^2$ (3)
- Stock factor contribution = $b_S^2 \sigma_S^2 / \sigma_{LPT}^2$ (4)

where σ_P^2, σ_B^2, σ_S^2 and σ_{LPT}^2 are the property factor, bond factor and stock factor variances, with the remaining relative contribution being attributable to idiosyncratic factors.

This variance decomposition procedure was applied over June 1985-June 2004, as well as for the two sub-periods of June 1985-December 1993 and June 1994 – June 2004. The sub-period break-point of December 1993 was chosen as it coincides with the LPT sector becoming a more mature asset class compared to the 1980s. To assess the dynamics of this LPT variability and the changing relative contributions by property, bonds and stocks to LPT variability over the nineteen year period of June 1985-June 2004, the variance decomposition procedure was also applied to rolling 8-year data periods. This procedure was applied for the overall LPT sector, LPT sub-sectors (office, retail, industrial, diversified) and individual LPTs (Stockland, GPT and Westfield).

RESULTS AND DISCUSSION

LPT performance analysis

Table 4 presents the performance analysis (average annual returns and annual risk) for the LPT sector, LPT sub-sectors, individual LPTs, as well as for direct property, shares and bonds over June 1985 - June 2004 and for the sub-periods of June 1985 - December 1993 and June 1994 - June 2004. The strong LPT performance at low risk is clearly evident across all timeframes, with LPT risk having decreased significantly since 1994 as the LPT sector experienced significant growth in market capitalisation and increased asset class maturity.

The inter-asset correlation matrix for 1985 - 2004 and two sub-periods are shown in Tables 5a -5c, with the LPT sub-sector correlation matrix for June 1994-June 2004 given in Table 5d. Considerable variation in the inter-asset correlations are evident over the sub-periods that directly impact on LPTs. In particular:

- LPTs have become less correlated with stocks over this period, with the correlation decreasing from r = .74 to r = .29

- LPTs have become more correlated with bonds over this period, with the correlation increasing from r = .26 to r = .68

- LPTs were less correlated with industrial property (r = -.06 to r = -.35)

- stocks and bonds have become more correlated (r = .01 to r = .25)

- LPT sub-sectors showed considerable variation in their correlations, ranging from r = .28 to r = .85,

with these changing asset correlations with LPTs likely to impact on the asset contributions to the LPT variance decompositions over the sub-periods (see next section).

LPT variance decomposition

Table 6 presents the relative contribution of the property, bond and stocks factors to LPT variability over June 1985 - June 2004. The following factors in the LPT variance decomposition procedure were used in developing three models:

- model #1: "pure" property factor, "pure" bond factor, stocks factor

- model #2: property factor, "pure" bond factor, "pure" stocks factor

- model #3: property factor, bond factor, stocks factor.

These three models were used to test the robustness of the relative contributions of the factors to LPT variability. In particular, model #1 can potentially under-estimate the property factor contribution and model #2 can potentially over-estimate the property component. Model #3 uses the original factors, without the factors being uncorrelated. The similarity of the relative contributions of the various factors to LPT variability in the three models (see Table 6) confirms the robustness of the LPT variance decomposition procedure regarding the order of orthogonalisation of the factors. This is further confirmed in the significant R^2 values for the regression models (see equation 1) in determining the factor sensitivities (ie: b_P, b_B, b_S) to be used for determining the factor contributions (see equations 2-4). For example, in model #1 above, R^2 is 0.50, with similar R^2 values seen for the remaining variance decomposition regression models. As such, emphasis in this discussion of the results will focus on the standard model #1.

Over the full 20-year period of June 1985-June 2004, the main factor contributing to LPT variability was stocks (38.9%), with bonds (10.7%) playing less of a role. Importantly, the contribution by property (0.3%) to LPT variability over this 20-year period was negligible. Of the LPT variability unexplained by the property , bond and stocks factors, the idiosyncratic factor was 50.1%.

The relative contribution of the three factors to the variability of leading LPTs (ie: Stockland, GPT, Westfield) over June 1985 - June 2004 is shown in Table 7. In each case, the contribution by property to LPT volatility was very low; being 0.2% (GPT), 2.1% (Westfield) and 2.8% (Stockland). The significant contribution by stocks is clearly evident, being 28.5% (Stockland) - 31.6% (Westfield); with bond contributions

being 10.8% (GPT) - 15.0% (Westfield). In each case, unexplained variation accounted for 51.3% - 58.3% of the LPT variation.

Impact of sub-periods on LPT variance decomposition

Given the growth in LPT maturity over the second half of this 1985-2004 period, it is important to assess whether there are differences in the contributions by these property, bond and stocks factors over the sub-periods of 1985 - 1993 (emerging LPT sector) and 1994 - 2004 (maturing LPT sector). Table 8 gives these relative contributions over these two time sub-periods. Importantly:

- the property contribution only marginally increased from 0.3% to 3.6%, even though this later period of 1994 - 2004 was characterised by increased LPT maturity and the expectation of significantly more property performance being evident in LPT performance; this being evident for US REITs, which saw the property contribution to REIT performance increase from 0.4% in 1979-84 to 14.7% in 1992-98 (Clayton and MacKinnon, 2000, 2003)

- the relative contribution by stocks reduced significantly (from 64.2% to 4.4%), while the bond contribution increased significantly (from 6.8% to 25.5%); this increased bonds contribution to LPT performance reflects the stability of the rental cash-flows from high-quality tenants on long-term leases from the landmark properties typically seen in LPT property portfolios (see Table 1)

- the level of idiosyncratic risk in LPT performance has increased considerably from 28.7% to 66.5%; this increase being similar to that seen for US REITs (13.7% to 62.5%) (Clayton and MacKinnon, 2000, 2003)

- the property contribution for individual LPTs remains low, with only Stockland having a significant and increasing contribution by property to its volatility; increasing from 9.6% to 19.5%.

LPT sub-sectors with their sector-specific portfolios would be expected to have a more significant property effect in their performance. As seen in Table 9, only office LPTs have a significant property contribution (21.7%), with the other LPT sub-sectors having a stronger bond effect and lesser stocks effect in their performance. In each case, idiosyncratic risk was high, ranging from 40.7% (industrial LPTs) to 75.9% (office LPTs).

Overall, this sub-period analysis has emphasised that, with the increased maturity of the LPT sector, the property effect has not significantly increased its contribution to LPT variability, with the more significant contribution being increased bond-like features in LPT performance, as well as increased importance by idiosyncratic factors and the markedly reduced impact of stocks on LPT variability.

Dynamics of LPT volatility

The previous sub-period analysis has highlighted the continued minor role by property and the increasingly significant role by bonds in contributing to LPT variability. To gain a fuller sense of the dynamics of these changing contributions by property, bonds and stocks to LPT performance, the LPT variance decomposition procedure was applied to rolling eight-year periods over June 1985 - June 2004. Table

10 presents the dynamics of these factor contributions to LPT volatility over this 20-year period, with Table 11 presenting the equivalent dynamics for the LPT sub-sectors over June 1994 - June 2004.

Over this 20-year period, the property contribution to LPT performance has been consistently low; the maximum level being 6.1% over 1993 - 2001 (see Table 10). The contribution by bonds to LPT volatility has steadily increased over this period from 5% in 1985 - 1992 to 59.6% in 1996 - 2004, while the contribution by stocks has steadily reduced from 69.3% over 1986 - 1994 to only 13.2% over 1996 - 2004. Idiosyncratic risk has steadily increased over this period, being consistently over 50% in recent years.

For the LPT sub-sectors in recent years, similar trends are evident concerning the low levels of property effects and the increasing levels of bond effects in LPT volatility (see Table 11).

PROPERTY INVESTMENT IMPLICATIONS

Since 1992, LPTs have developed into a significant, well-performed and mature property investment vehicle with quality property assets. While it would be expected that property would play an increasingly important role in LPT performance as the LPT sector matured, this study has shown that property only makes a minor contribution to LPT volatility over 1985 - 2004, with these levels being consistently low in all sub-periods. The increasingly important contribution to LPT performance has been bonds, with the previously significant contributor by stocks having reduced dramatically in recent years. Importantly, there is still high and increasing levels of idiosyncratic risk which is unexplained by property, bonds and shares; this also being evident in equivalent studies of US REITs (Clayton and MacKinnon, 2000, 2003).

These increasing levels of idiosyncratic risk have a number of possible causes. Firstly, a major cause has been identified as the increased institutionalisation of stock ownership (Campbell et al, 2001). This has seen institutional investors dominate the stock market, often demonstrating coordinated trading and generating increased turnover. This has clearly been evident with US REITs (Graff and Young, 1997), with institutional investors accounting for 53% of REIT stocks in 1998 and preferring the larger, more liquid REITs (Ciochetti et al, 2000). Similarly, for LPTs, institutional investors account for approximately 70% of LPT stocks, with high levels of LPT liquidity evident in recent years. For example, in 2004, monthly LPT liquidity was an average of 6.9% of the LPT market cap; representing over 82% annual turnover for LPTs (UBS Warburg, 2004).

A second cause has been advances in information technology (Campbell et al, 2001), with more frequent and detailed LPT information from LPT analysts becoming increasingly available in a timely manner for institutional investors to act on in their LPT investment strategy decision-making. A third cause of these high levels of idiosyncratic risk relates to possible omitted variables in the LPT variance decomposition regression (see equation 1) (Clayton and MacKinnon, 2003). This potentially sees an important variable that may influence LPT pricing not being captured by the current property, bond and stock factors. For example, the growth rate

in real per capita consumption has been identified as a driver of US REIT returns (Ling and Naranjo, 1997, 1999).

Overall, while direct property is the underlying asset in all LPTs, this study has shown that property is only a small contributor to LPT performance over 1985 - 2004. Importantly, this contribution by property to LPT performance has not increased in recent years as the LPT sector has matured into a significant property investment vehicle and asset class that is strongly supported by both institutional and retail investors. Increasingly, LPT performance has been more influenced by a bond factor, with a marked reduction in the influence of stocks on LPT performance in recent years. This raises ongoing property investment issues; particularly concerning whether LPTs are the most effective property vehicles to obtain direct property exposure. In particular, unlisted property trusts and property syndicates are more likely to perform like their underlying direct property assets; with both unlisted property trusts and property syndicates having become increasingly popular in recent years.

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Table 1: LPT sector profile: November 2004[(1)]

LPT	Market capitalisation ($B)	Total assets ($B)	# of properties
Diversified	**$24.59B**	**$30.54B**	**464**
Stockland	$7.59B	$7.21B	102
GPT	$7.34B	$8.21B	78
Mirvac	$3.36B	$3.97B	43
DB RREEF	$2.80B	$5.03B	172
Multiplex	$2.57B	$4.09B	21
James Fielding	$0.42B	$0.56B	9
Macquarie Leisure	$0.21B	$0.22B	6
Thakral	$0.20B	$0.76B	18
Grand Hotel	$0.09B	$0.49B	15
Office	**$8.55B**	**$12.32B**	**129**
Investa Property	$3.09B	$4.46B	39
Commonwealth Property	$1.69B	$2.62B	26
Macquarie Office	$2.07B	$3.10B	33
ING Office	$1.32B	$1.77B	24
Valad Property	$0.39B	$0.37B	7
Retail	**$32.68B**	**$45.66B**	**548**
Westfield	$23.86B	$31.81B	125
Centro Properties	$3.93B	$4.53B	67
Gandel Retail	$2.00B	$3.81B	22
Macquarie CountryWide	$1.13B	$1.59B	112
Macquarie DDR	$0.84B	$1.94B	22
Bunnings Warehouse	$0.43B	$0.58B	50
Galileo	$0.34B	$0.82B	45
ALE Property	$0.16B	$0.58B	105
Industrial	**$5.83B**	**$7.28B**	**295**
Macquarie Goodman Industrial	$3.39B	$4.09B	139
ING Industrial	$1.42B	$1.69B	55
Macquarie ProLogis	$0.82B	$1.50B	101
Total	**$71.45B**	**$95.80B**	**1,436**

Source: UBS Warburg (2004), PIR (2004)
(1): LPTs shown are those in ASX300; 10 LPTs which are not in ASX300 account for an additional $2.00B

Table 2: Asset class performance analysis: June 2004 [(1)]

Asset class	Average annual return (%)			
	1Y	3Y	5Y	10Y
Direct property	10.91%(3)	10.43%(2)	10.63%(2)	10.07%(2)
Office	7.43%	7.63%	8.78%	8.81%
Retail	13.87%	12.94%	12.24%	10.98%
Industrial	12.98%	12.94%	12.80%	13.83%
LPTs	**17.22%(2)**	**14.82%(1)**	**14.08%(1)**	**12.28%(1)**
Office	5.90%	7.50%	9.40%	9.10%
Retail	24.40%	18.00%	15.40%	14.20%
Industrial	14.30%	17.20%	15.90%	12.90%
Diversified	15.10%	15.10%	14.70%	12.30%
Stocks	22.37% (1)	4.93% (4)	7.41% (3)	10.02% (3)
Bonds	1.86% (4)	5.20% (3)	5.61% (4)	7.85% (4)

Sources: PCA (2004), UBSW (2004)

[(1)]: Ranks of major asset classes given in brackets

Table 3: PCA index portfolio characteristics: June 2004

Property sector	Number of properties	Value ($B)
CBD office	129	$16.8B
Non-CBD office	62	$2.3B
Retail	221	$24.4B
Industrial	88	$1.7B
Total	500	$45.3B

Table 4: LPT performance analysis: 1985 - 2004[(1)]

Sector	June 1985 - June 2004		June 1985 - Dec 1993		June 1994 - June 2004	
	Average annual return	Annual risk	Average annual return	Annual risk	Average annual return	Annual risk
LPTs	13.09%	10.63%	14.82%	13.04%	11.62%	8.24%
Office	n.a.	n.a.	n.a.	n.a.	9.83%	6.18%
Retail	n.a.	n.a.	n.a.	n.a.	12.96%	11.54%
Industrial	n.a.	n.a.	n.a.	n.a.	13.77%	8.53%
Diversified	n.a.	n.a.	n.a.	n.a.	11.66%	9.00%
Direct property	10.32%	6.47%	10.39%	9.59%	10.26%	1.11%
Office	8.63%	8.04%	8.19%	11.94%	9.00%	1.28%
Retail	13.32%	3.78%	15.85%	4.69%	11.17%	1.95%
Industrial	11.82%	5.58%	9.35%	7.91%	13.96%	1.18%
Stocks	14.10%	15.53%	20.05%	20.52%	9.13%	8.67%
Individual LPTs						
GPT	12.95%	13.97%	14.69%	15.56%	11.46%	12.75%
Stockland	16.53%	15.01%	21.45%	17.16%	12.40%	12.67%
Westfield	16.26%	15.58%	19.84%	17.72%	13.23%	13.62%

[(1)] LPT sub-sectors are only available from UBS Warburg for June 1994- June 2004

Table 5a: Inter-asset correlation matrix: June 1985 - June 2004

	LPTs	Total property	Office property	Retail property	Industrial property	Stocks	Bonds
LPTs	1.00						
Total property	-.15	1.00					
Office property	-.15	.99	1.00				
Retail property	-.24	.76	.68	1.00			
Industrial property	-.10	.85	.86	.45	1.00		
Stocks	.62	-.06	-.05	-.14	.02	1.00	
Bonds	.43	-.23	-.23	-.10	-.36	.17	1.00

Table 5b: Inter-asset correlation matrix: June 1985 - Dec 1993

	LPTs	Total property	Office property	Retail property	Industrial property	Stocks	Bonds
LPTs	1.00						
Total property	-.17	1.00					
Office property	-.17	.99	1.00				
Retail property	-.32	.88	.84	1.00			
Industrial property	-.06	.90	.90	.72	1.00		
Stocks	.74	-.05	-.03	-.29	.09	1.00	
Bonds	.26	-.33	-.33	-.36	-.39	.01	1.00

Table 5c: Inter-asset correlation matrix: June 1994 - June 2004

	LPTs	Total property	Office property	Retail property	Industrial property	Stocks	Bonds
LPTs	1.00						
Total property	-.27	1.00					
Office property	-.11	.52	1.00				
Retail property	-.32	.79	-.08	1.00			
Industrial property	-.35	.23	.19	.08	1.00		
Stocks	.29	-.32	-.36	-.16	.10	1.00	
Bonds	.68	-.53	-.30	-.46	-.20	.25	1.00

Table 5d: LPT sub-sector correlation matrix: June 1994 - June 2004

	LPTs	Office LPTs	Retail LPTs	Industrial LPTs	Diversified LPTs	Total property	Stocks	Bonds
LPTs	1.00							
Office LPTs	.54	1.00						
Retail LPTs	.93	.28	1.00					
Industrial LPTs	.59	.80	.32	1.00				
Diversified LPTs	.96	.50	.85	.60	1.00			
Total property	-.27	-.06	-.25	-.12	-.23	1.00		
Stocks	.29	.12	.25	.21	.25	-.32	1.00	
Bonds	.68	.23	.64	.20	.71	-.53	.25	1.00

Table 6: Relative contribution of factors to LPT variability: June 1985 - June 2004

Factors	Model #1 (%)	Model #2 (%)	Model #3 (%)
Property factor	0.3%	1.8%	0.3%
Bond factor	10.7%	17.5%	10.2%
Stocks factor	38.9%	36.7%	32.0%
Idiosyncratic factor	50.1%	44.0%	57.5%

Table 7: Relative contribution of factors to individual LPT variability: June 1985 - June 2004

Factors	Stockland			GPT			Westfield		
	Model #1 (%)	Model #2 (%)	Model #3 (%)	Model #1 (%)	Model #2 (%)	Model #3 (%)	Model #1 (%)	Model #2 (%)	Model #3 (%)
Property factor	2.8%	6.2%	3.0%	0.2%	0.3%	0.2%	2.1%	5.0%	2.2%
Bond factor	13.7%	17.5%	11.3%	10.8%	17.5%	11.8%	15.0%	21.8%	14.5%
Stocks factor	28.5%	26.4%	21.7%	28.8%	23.9%	23.0%	31.6%	28.3%	22.6%
Idiosyncratic factor	55.0%	49.9%	64.0%	60.2%	58.3%	65.0%	51.3%	44.9%	60.7%

Table 8: Relative contribution of factors to LPT variability: sub-period analysis

First sub-period: June 1985 – Dec 1993				
Factors	**LPT (%)**	**Stockland (%)**	**GPT (%)**	**Westfield (%)**
Property factor	0.3%	9.6%	0.4%	1.4%
Bond factor	6.8%	0.1%	8.2%	9.8%
Stocks factor	64.2%	42.3%	52.9%	50.3%
Idiosyncratic factor	28.7%	48.0%	38.5%	38.5%

Second sub-period: June 1994 – June 2004				
Factors	**LPT (%)**	**Stockland (%)**	**GPT (%)**	**Westfield (%)**
Property factor	3.6%	19.5%	4.1%	0.6%
Bond factor	25.5%	24.0%	15.8%	32.8%
Stocks factor	4.4%	0.2%	7.0%	7.8%
Idiosyncratic factor	66.5%	56.3%	73.1%	58.8%

Table 9: Relative contribution of factors to LPT sub-sector variability: June 1994 - June 2004

Factors	Office LPTs (%)	Retail LPTs (%)	Industrial LPTs (%)	Diversified LPTs (%)	LPT sector (%)
Property factor	21.7%	0.1%	7.4%	7.3%	3.6%
Bond factor	1.9%	36.1%	22.9%	24.4%	25.5%
Stocks factor	0.5%	2.8%	29.0%	2.9%	4.4%
Idiosyncratic factor	75.9%	61.0%	40.7%	65.4%	66.5%

Table 10: Dynamics of LPT variability: June 1985 - June 2004

Time period	Property factor (%)	Bond factor (%)	Stocks factor (%)	Idiosyncratic factor (%)
Dec 1985 – June 1993	0.2%	5.2%	68.3%	26.4%
Dec 1986 – June 1994	0.4%	1.2%	69.3%	29.1%
Dec 1987 – June 1995	1.9%	2.2%	60.9%	35.0%
Dec 1988 – June 1996	2.2%	11.6%	30.5%	55.8%
Dec 1989 – June 1997	0.1%	10.9%	40.8%	48.1%
Dec 1990 – June 1998	1.2%	13.4%	56.2%	29.2%
Dec 1991 – June 1999	0.8%	30.4%	16.9%	51.8%
Dec 1992 – June 2000	0.1%	35.0%	14.9%	50.0%
Dec 1993 – June 2001	6.1%	18.9%	24.3%	50.7%
Dec 1994 – June 2002	1.7%	35.0%	4.9%	58.4%
Dec 1995 – June 2003	3.9%	35.5%	2.6%	58.0%
Dec 1996 – June 2004	0.1%	59.6%	13.2%	27.1%

Table 11: Dynamics of LPT sector variability: June 1994 - June 2004

Time period	Office LPTs				Retail LPTs			
	Property factor (%)	Bond factor (%)	Stocks factor (%)	Idiosyncratic factor (%)	Property factor (%)	Bond factor (%)	Stocks factor (%)	Idiosyncratic factor (%)
Dec 1994 - June 2002	0.5%	25.3%	14.1%	60.1%	7.0%	52.6%	1.6%	38.8%
Dec 1995 - June 2003	3.0%	21.6%	15.9%	59.5%	2.1%	49.3%	2.7%	45.9%
Dec 1996 - June 2004	0.5%	43.1%	27.7%	28.7%	0.4%	42.3%	12.0%	45.3%

Time period	Industrial LPTs				Diversified LPTs			
	Property factor (%)	Bond factor (%)	Stocks factor (%)	Idiosyncratic factor (%)	Property factor (%)	Bond factor (%)	Stocks factor (%)	Idiosyncratic factor (%)
Dec 1994 - June 2002	17.5%	26.1%	24.4%	32.0%	1.4%	46.5%	6.9%	45.2%
Dec 1995 - June 2003	5.9%	35.2%	25.6%	33.3%	4.1%	56.8%	6.4%	32.7%
Dec 1996 - June 2004	0.4%	34.2%	28.8%	36.6%	0.3%	73.5%	20.8%	5.4%