

An Exploratory Study of the Performance Characteristics of the Property Vehicles Listed on the New Zealand Stock Exchange (NZX)

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Abstract

There are two listed property investment vehicles on the New Zealand Stock Exchange (NZX), namely Listed Property Trusts (LPTs) and Listed Property Investment Companies (LPICs). The proportion of New Zealand LPTs to LPICs has varied over the years. The more recent trend for LPTs to corporatise has resulted in a significant reduction in the number of Trusts on the NZX in 2010 and has encouraged two further Trusts to consider corporatising in 2012.

The objective of this exploratory study was to determine whether LPTs performed differently to LPICs in order to determine if LPTs should be treated as a separate asset class. The study developed separate performance indices for the LPTs and LPICs in order to examine the performance characteristics of these property vehicles over the study period December 1993 to September 2011. The effect of different market conditions on the performance of these vehicles was also assessed by analysing the performance of LPTs and LPICs over specified sub-periods. Data for this study were sourced from the following databases: NZX Company Research, RBNZ, and PCNZ/IPD.

The results revealed that the performance characteristics of these two entities differed over the study period December 1993 to September 2011, which suggests that LPICs and LPTs can be treated as separate asset classes. However performance analysis of these entities over the three sub-periods (pre-Asian crisis, post Asian crisis to pre-GFC, and post-GFC) showed that the differences between LPTs and LPICs reduced post-GFC, and that the performance characteristics of these entities are now more aligned.

Keywords: Listed Property Trust, property, real estate, performance, New Zealand.

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Introduction

Listed Property Vehicles (LPVs) have been established in New Zealand since 1982. The earlier vehicles that listed on the New Zealand Stock Exchange (NZX) were structured as limited liability companies, and it was not until 1993 that the first unit trust structure listed on the NZX. Currently there are ten LPVs listed on the NZX, consisting of six Listed Property Investment Companies (LPICs) and four Listed Property Trusts (LPTs).

The recent corporatisation of two LPTs in 2010 caused a significant reduction in the number of property trusts on the NZX. In 2012 it is expected that this corporatisation trend will continue after two further Trusts recently announced that they too are considering this potential change to their corporate structure, subject to unit holders' approval.

According to recently completed independent reports converting from a Unit Trust to a Company structure involves significant costs (KordaMentha, 2010; Samuel, 2010, 2011). Determining whether LPTs and LPICs have performed differently historically and hence justify these costs, will have both theoretical and practical implications for scholars, investors, managers and other property industry stakeholders.

The purpose of the research is to reveal whether LPTs performed differently to LPICs by assessing the performance characteristics of New Zealand LPVs, as separate LPT and LPIC sub-sectors, over the study period 31 December 1993 to 31 September 2011, in order to determine whether LPTs can be treated as a separate asset class to LPICs. The study had the following objectives:

1. To build separate Gross (Total Return) Indices for the LPT sub-sectors and for the LPIC sub-sector
2. To compare these new indices over the study period to the NZX Property Sector Index and the market indices for shares, real estate, and government bonds.
3. To reveal any performance differences between LPTs and LPICs over the study period and the three sub-periods.
4. To determine the reward-to-risk ratios of each LPV sub-sector and rank them against the LPV Sector and Markets.
5. To reveal any property portfolio diversification benefits for investors by investing in either LPV sub-sector.
6. To extend knowledge of the investment characteristics of New Zealand LPVs.
7. To provide information that will provide greater understanding of the New Zealand listed property market and the overall property investment market and thereby assist scholars with future studies.

Literature review

Listed Property is one of the main asset classes in New Zealand (NZ). Scholars (e.g. Hobbs, 1994; KordaMentha, 2010; Samuel, 2010, 2011; Stokes, 2000), listed property market (corporate) researchers (e.g. Forsyth-Barr, 2011; FundSource & NZX-Limited, 2010), and constituents of the NZX Property Sector have previously analysed the trends, differences and relative performance of NZ listed property against other major asset classes but it appears that no previous studies have analysed the performance and diversification benefits of the LPT sub-sector and the LPIC sub-sector (of the NZX Property Sector) as separate asset classes.

Most Listed Property Vehicle (LPV) studies (e.g. Brockman, French, & Tamm, 2010; Newell & Eves, 2007; Newell, Ting, & Acheampong, 2002), in the US, UK, Europe, Asia and Australasia, have focused on: (1) the performance of the LPVs, (2) the management structures and activities, and (3) the role of real estate sectors, types and locations, in a LPV portfolio. Depending on the country being researched, LPVs have either been classified as Real Estate

Investment Trusts (REITs) or Listed Property Trusts (LPTs), both of which by definition appear to include Listed Property Investment Companies (LPICs).

The traditional methods predominantly used to research LPVs have been data and content analysis of return series data from private and public databases, public domain documents, surveys (mail, email, web-based), and one-on-one interviews with people directly responsible for the management of the LPVs investment properties. Studies (e.g. Newell et al., 2002; Osmadi, 2010) that have focused on analysing the performance of LPVs have used a variety of performance measures typically to compare financial results, assess the relativity of reward-to-risk ratios, and evaluate the diversification benefits of LPVs in a mixed asset portfolio.

The Types of Listed Property Vehicles (LPVs) in New Zealand

There are the two types of Listed Property Vehicles (LPVs) in New Zealand, which comprise the NZX Property Sector, namely Listed Property Trusts (LPTs) and Listed Property Investment Companies (LPICs). LPTs are Unit Trusts established under the Unit Trusts Act 1960 and LPICs are limited liability companies created under the Companies Act 1993.

Between 1982 and 1992 the NZX Property Sector was comprised of only LPICs. The first property Trust listed on the NZX in 1993, reportedly due to investor demand (Jeremy Simpson, 2012). The failure of Companies during and after the Stock Market Crash in 1987 drove investors to invest in alternative vehicles that were less risky, such as Trusts, which were perceived to offer better governance by means of the Trust rules that were set out in the Trusts Deed and the oversight of the Trustee (Jeremy Simpson, 2012).

It appears that New Zealand LPVs are similar (Fraser, 1993; Hobbs, 1994; Jeremy Simpson, 2010), to Asia-Pacific REITs in that: (1) they are investment vehicles, either structured as a Trust or a Company, that invest in a pool of professionally managed (either externally or internally) property assets and are listed on the Stock Exchange, (2) the entities underlying assets provide capital growth, and the steady rental stream provides investors with income via regular distributions, and (3) a main benefits of LPVs are that they provide investors “with greater diversification and liquidity with a smaller capital outlay than they would achieve if they invested directly in the property market” and high yields (CFA-Institute, 2011).

The key difference between these vehicles is the tax benefits they use to attract investors. Asia-Pacific REITs investors benefit from flow-through taxation. New Zealand LPV investors benefit from the lower tax the LPVs are now required to pay on their investment income: the recent tax changes allow LPVs (with PIE status) to pay tax on investment income based on the tax rates of their investors, who typically have a low marginal tax rate of 19.5%, rather than on the high flat rate of 33% (IRD, 2011).

The significance of New Zealand’s listed property market

Forsyth Barr’s (2011) research showed that as at 31 October 2011, the property sector had a total asset value of \$7.8 billion, comprising nine LPVs (CDL Investments New Zealand Limited is excluded in their report as the entity does not hold investment property and is deemed to be purely a residential development company) that hold mostly diversified portfolios with some sector-specific portfolios. These nine LPVs accounted for over \$4.3 billion in market capitalisation (NZX), representing 11% of the total NZX market capitalisation. Table 1 presents a profile of these nine current constituent LPVs grouped under the NZX Property Sector.

New Zealand LPVs have been a successful indirect property investment over the last ten years, returning 8.3% to outperform all the other major asset classes in New Zealand (FundSource & NZX-Limited, 2010). Table 2 shows that the NZX Gross Property Index,

over 1, 3, 5 and 7 year investment horizon periods (ending 31 October 2011) has outperformed the NZX50 Gross Index by a considerable margin, particularly over the 7 year period where the NZX Property Sector (57.0%) had almost three times the returns of the NZX50 which produced a total return of just 18.5% (Craigs-Investment-Partners., 2010).

Table 1: Profile of the New Zealand LPVs (excluding CDL Investments) as at 31 October 2011

Listed Property Entity	NZX Code	Property Investment Vehicle*	Total Assets (NZD \$m)	Market Capitalisation (NZD \$m)	Effective Date: Annual Report	Year Listed	Sector
AMP NZ Office Limited	ANO	LPIC	\$1,284	\$838	30/06/2010	1997	Office
Argosy Property Trust	ARG	LPT	\$975	\$449	31/03/2010	2002	Diversified
DNZ Property Fund Limited	DNZ	LPIC	\$654	\$309	31/03/2010	2010	Diversified
Goodman Property Trust	GMT	LPT	\$1,618	\$958	31/03/2010	1999	Diversified
Kermadec Property Fund Limited	KPF	LPIC	\$102	\$50	31/03/2010	1993	Diversified
Kiwi Income Property Trust	KIP	LPT	\$2,113	\$1,031	31/03/2010	2006	Diversified
NPT Limited	NPT	LPIC	\$175	\$79	31/03/2010	1996	Diversified
Property For Industry Limited	PFI	LPIC	\$345	\$251	31/12/2009	1994	Industrial
Vital Healthcare Property Trust	VHP	LPT	\$533	\$341	30/06/2010	1999	Health
TOTALS			\$7,799	\$4,306			

Sources: (Forsyth-Barr, 2011; J. H. Simpson, 2010)

Table 2: Total Returns for the NZX Property Sector and NZX50 Gross Indices

Investment Horizon	1 Year	3 Year	5 Year	7 Year
NZX Gross Property Index	9.0%	27.8%	9.2%	57.0%
NZX 50 Gross Index	0.8%	18.1%	-11.9%	18.5%

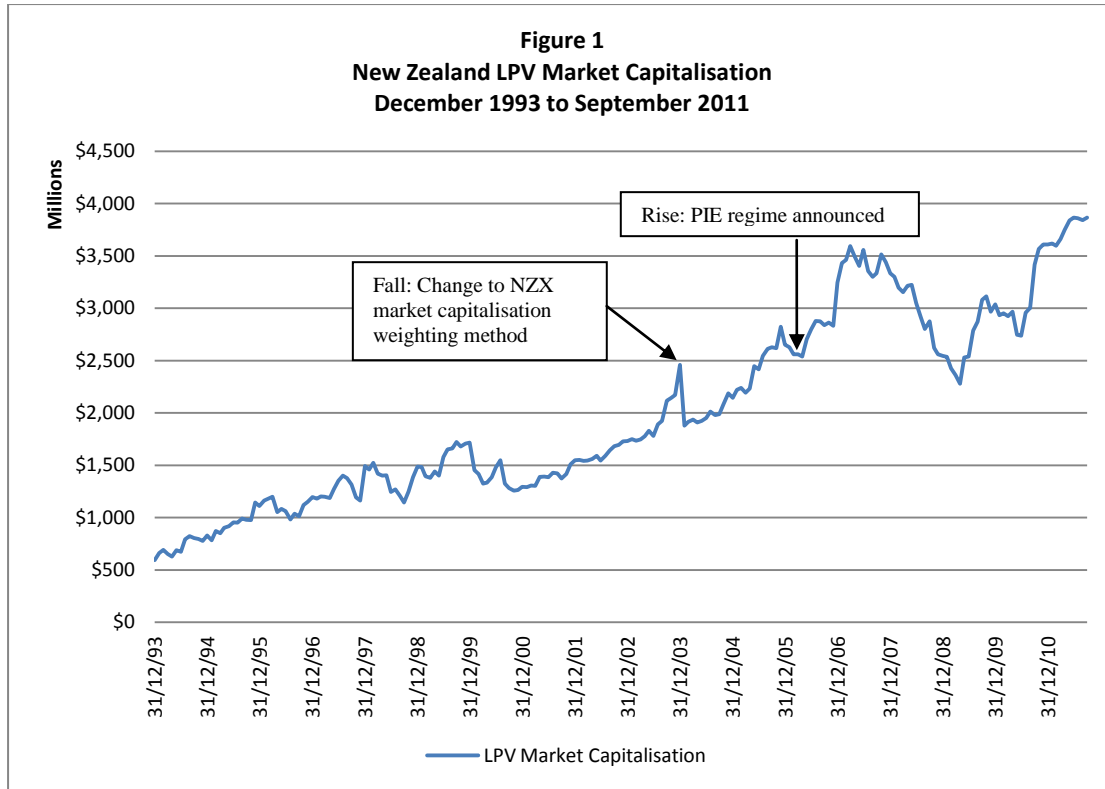
Source: (Craigs-Investment-Partners., 2010).

Notes: Returns are shown to period ending 31 October 2011. Assuming distributions are reinvested

Figure 1 illustrates how the market capitalisation of New Zealand LPVs has trended over the period 31 December 1993 to 30 September 2011. Significant changes to this trend occur in January 2004 and December 2006.

The impact of the Asian Crisis and the Global Financial Crisis (GFC) can be seen in Figure 1 but there are also two other noticeable shifts. The sharp fall in the market capitalisation in January 2004 is due to the change to the equity indices method used by the NZX, moving from full market capitalisation weighting to free float market capitalisation weighting: free float is the portion of indexed shares that are freely tradeable. The sharp increase in the market capitalisation in December 2006 was reportedly due to increased investor interest after the Government announced its intention to introduce the PIE regime in October 2007, which would result in improved returns for investors on a lower marginal tax rate (KordaMentha, 2010).

Prior to December 1999 LPICs were the major contributor to the market capitalisation of the NZX Property Sector. From January 2000 LPTs became the major contributor to the value of the LPV Sector, peaking between August 2008 and 2009 at 90%. By the end of 2010 and early 2011, the contribution made by LPTs reduced significantly (approximately 20%) with the impact of: (1) the corporatisation of two trusts, namely AMP NZ Office Trust (APT), which was New Zealand's largest Trusts, and National Property Trust (NAP), and (2) the new listing of a property investment company, namely DNZ Property Fund Limited (DNZ). Currently there are four LPTs that contribute 65% of the value of the NZX Property Sector, with the remaining six LPICs making up the balance.



Source: NZX Database.

The structural trends of LPVs in New Zealand

Fundamentally entities are concerned with increasing their attractiveness as an investment opportunity and improving the performance of an entity is one way of doing that. Some New Zealand LPVs have proposed and completed restructuring initiatives to improve their performance; these are shown in table 3. Most New Zealand LPVs are externally managed and over the years they have all (except for DNZ who internalised the management function of their portfolio) changed their management fee structure to a tiered structure, which has a reduced management base fee, a performance fee component and an additional fee component.

Table 3 Restructuring initiatives of New Zealand LPVs

	Code	Corporatisation	Internal Management Structure	Tiered Management Fee Structure
AMP NZ Office Limited	ANO	✓		✓
Argosy Property Trust	ARG	P	P	✓
DNZ Property Fund Limited	DNZ		✓	
Goodman Property Trust	GMT			✓
Kermadec Property Fund Limited	KPF			✓
Kiwi Income Property Trust	KIP			✓
NPT Limited	NPT	✓	✓	
Property For Industry Limited	PFI			✓
Vital Healthcare Property Trust	VHP	P	P	✓

Key: ✓ = completed, P = Proposed

Governance and agency problems have been a protracted issue for entities worldwide. There has been an on-going debate in the corporate world, about which structures (ownership, management, and management fees) are most appropriate when attempting to improve the performance of a LPV. The purpose of restructuring initiatives appear to be universal and the ideal governance structures appear to have similar objectives: (1) to properly incentivise Managers to consistently act in the Investor's best interests, (2) to ensure greater transparency, control and accountability for Investor's (3) to minimise conflicts of interests between the Manager and investors, and (4) to uphold good governance standards.

The impact of the various structural options on the performance of New Zealand LPVs has been examined more recently in New Zealand (KordaMentha, 2010; Samuel, 2010, 2011) and these independent reports reveal that performance improvements are expected to ensue from restructuring.

In order to judge the impact of restructuring Samuel's (2010) study assessed the structural options holistically, analysing the fairness of the consideration paid to stakeholders for their interests and the impact of restructuring on the financial results. The study explored the benefits of restructuring on the financial results by comparing The National Property Trust's financial results for 2010 against adjusted results post-restructuring for the same year and found that the results differed in terms of the earnings per share, net tangible assets per share, gearing (debt to equity ratio), liquidity of shares, and distributions. The differences in the termination payments to the Manager of the Trust were also analysed by comparing management internalisation transactions costs in New Zealand and Australia. Samuel (2010) concluded that in time, based on the studies analysed improved results, it is expected internally managed LPVs in New Zealand will be viewed by investors in the market more favourably.

Ownership Structure

Analysts (KordaMentha, 2010; Samuel, 2010, 2011; Jeremy Simpson, 2011) expect that the market price for a LPV will not be materially influenced if a Unit Trust corporatises because the underlying nature of the business will not have changed. In time though these analysts expect restructuring will result in overall performance improvement benefiting investors through higher returns.

New Zealand investors reportedly once perceived that a Unit Trust structure, which has a Trust Deed to govern the relationship between the Trustee and the Manager, offered better governance (Jeremy Simpson, 2011). Over the years investor expectations have changed and to remain attractive Trusts have chosen to amend their Trust Deeds to provide both a governance structure more aligned with a company's Board (allowing investors the chance to appoint or remove independent board members), and the provision for regular meetings (which increases the Managers accountability to investors and improves the disclosure of strategies and performance).

The perception in New Zealand nowadays is that a Trust structure no longer has a purpose and that the benefits of a company structure, which has both a constitution to govern the relationship between the Board and the Manager, more independent directors, and better takeover flexibility, best serve stakeholders' interests.

Management Structures

According to Jeremy Simpson (2011) the key drivers of the performance of New Zealand LPVs has been the quality of the Board and the management contracts. The recent internalisation of the management function by some LPVs in New Zealand is a shift that mirrors the trend in both the US and Australia over the past decade (KordaMentha, 2010).

Investors have always been concerned with how well externally managed LPVs govern the relationship between the Manager and the Trustee, or the Board. Samuel (2010, 2011) found that in Australia an internal management structure is preferred because it resolves the issues associated with externally managed models: internal management eliminates the potential conflict of interest between managers and investors, reduces management costs, and eases the path for takeovers or mergers.

US studies (Cannon & Vogt, 1995; Capozza & Seguin, 2000; Howe & Shilling, 1990) that examined LPV performance in relation to management structure, found that externally managed REITs, between 1973 and 1992, tended to underperform internally managed

REITs. More recent US studies (Brockman et al., 2010) found that, between 1993 and 2007, externally managed REITs were no longer tending to underperform compared with internally managed REITs, which they suggested was due to investors responding to the earlier findings and mitigating the underperformance through how they acted (KordaMentha, 2010).

Management Fee Structure

Historically most LPVs in New Zealand were externally managed. This common practice for LPICs was reportedly due to the management contracts offering lucrative prospects for the Managers and for Trusts was because they were required under the Unit Trusts Act to externalise the management function of the portfolio (Jeremy Simpson, 2012).

Nowadays most LPVs in New Zealand are still externally managed and fees leakage, associated with external management, continues to be one of the major concerns for LPV investors in New Zealand because of reduced returns. Investor pressure over time on these externally managed LPVs has resulted in a Management Fees Structure, that comprises of the following three components: (1) a tiered Base Management Service Fee, to reduce the base Management Fee originally set, (2) a Performance Fee, to further align the Manager's and investors' interests, and (3) Additional Fees which can cover a range of extra services the Manager provides.

The performance fee component achieves alignment by rewarding the Manager when the LPV performance is comparatively superior, linking returns of the Manager and Investors more closely, and strengthening the Manager's incentives to optimise the portfolio. It appears that there is no New Zealand listed property market research that compares LPV performance prior to and after the introduction of this fee change.

The only area of concern left for some investors and stakeholders is the additional fee component which impacts on investor returns. KordaMentha (2010) found that additional fees can be a significant proportion of the overall Management fee and that typically these fees are poorly disclosed in terms of unit costs and the additional services provided.

The performance of LPVs: Measurement & Analysis

The reason entities exist and why they are promoted is to generate earnings primarily to increase investor wealth. Assessing the performance characteristics of these entities is fundamental to both investment theory (selection and optimisation) and investment activity (evaluating and estimating). Performance measures are used to analyse the performance of investment assets in order to determine their characteristics and hence assist investors make decisions regarding asset allocation and selection (Bodie, Kane, & Marcus, 2011; Brigham & Ehrhardt, 2009).

Previous studies both in New Zealand and overseas have used total return series over a specific period to assess LPV performance against other asset classes, such as stocks, real estate and government bonds (Newell et al., 2002; Osmadi, 2010; Jeremy Simpson, Leach, & Hunter, 2011; Stokes, 2000). These studies either created or used existing total return index series to analyse performance trends, differences, and relationships.

Researchers (Herdson, 2010; Samuel, 2010, 2011) have highlighted that the performance of listed property entities worldwide tend to be subdued post-crises before recovering. Difficult economic climates can constrain bank funding and reduce institutional investment activity impacting on LPV earnings, distributable profit, share price and the value of their property assets. In order to determine the effect of different market conditions on the performance of LPVs some studies (e.g. FundSource & NZX-Limited, 2010; Osmadi, 2010) examined the performance characteristics and diversification benefits of LPVs over specific sub-periods. These studies used key dates of economic crises to define these sub-periods. The Asian

Crisis (July 1998) and the Global Financial Crisis (October 2008) are two common crises dates researchers have previously used, during the period December 1993 to October 2011, to separate sub-periods, and these can be adopted by this study.

When comparing the returns of investment classes, such as stocks, real estate and bonds, the most appropriate series to use, according to the NZX (2010), are the Gross (Total Return) Index series as these series consider the total returns of the asset when evaluating the historic returns. LPV total returns are comprised of distributions (dividends) and capital gains.

Studies (KordaMentha, 2010; Samuel, 2010, 2011) have found that there are various factors that have impacted on New Zealand LPV returns and these include: restructuring initiatives, the economic climate, the current market condition and market interest rates, the demand and supply of premium industrial space, retail space, and office accommodation, and the entities financial condition, projected earnings, distributions, and their properties' values and net yields.

Method

The first stage of the research involved reviewing the relevant literature to gather information that will reveal the current propositions regarding the performance of Listed Property Vehicles (LPVs) and the methods previously used to analyse and evaluate equity performance. The second stage of the research involved collecting data from the following data bases: New Zealand Stock Exchange (NZX) Company Research, Reserve Bank of New Zealand (RBNZ), and Property Council of New Zealand/IPD (NZPC/IPD). The third stage of the research involved building separate Gross (total return) Indices series, from the data collected, for the two NZX property sub-sectors, namely the LPT sub-sector and the LPIC sub-sector.

The fourth stage of the research involved examining the performance trends, differences, and relationships of these separate sub-sectors, over the period December 1993 to September 2011. In order to determine the performance trends and differences the Gross Indices created in the study for the LPV sector and sub-sectors were compared against other market total return indices (stocks, commercial real estate and bonds). To evaluate the diversification benefits, of combining the separate LPV sub-sectors in a mixed asset investment portfolio, the study developed an inter-asset correlation matrix over the study period. The impact of market conditions on these indirect property vehicles was examined using the same analysis methods over the three sub-periods: pre-Asian crisis (December 1993 to June 1998), post Asian crisis to pre-GFC (July 1998 to September 2008), and post GFC (October 2008 to September 2011).

Gross (total return) index development

The separate performance series developed for the LPV Sector, the LPT sub-sector, the LPIC sub-sector are monthly Gross (Total Return) Indices over the time period December 1993 to September 2011. Table 4 shows the constituent data collected to create the separate indices and the formula's shown are the equations used to calculate the index values from the data collected. These equations are the same formulas used by the NZX to create their Equity Indices, such as the NZX50 Gross Index and the NZX All Gross Index.

Table 4 Constituent Data Collected

Database	Indices created	Total Return Data Collected	Frequency
NZX	<ul style="list-style-type: none"> • LPT Gross Index • LPIC Gross Index • Overall LPV Gross Index 	<ul style="list-style-type: none"> • Last price, • Adjusted opening price • Dividends per share • Indexed shares (full and free float) 	Monthly

Gross Index Formula

$$GI_t = \frac{\sum [Indexed\ Shares \times Last\ Price] + \sum [Indexed\ Shares \times Distributions\ per\ Share]}{\sum [Indexed\ Shares \times Adjusted\ Opening\ Price]} \times GI_{t-1}$$

Or

$$GI_t = \frac{[Latest\ Index\ Market\ Cap] + [Total\ Distributions\ Ex\ Today]}{[Index\ Market\ Capitalisation\ at\ Start\ of\ Day]} \times GI_{t-1}$$

Term or symbol	Definition
GI_t	The current Gross Index level
GI_{t-1}	The previous trading day's closing Gross Index level
\sum	Sum across each index constituent security
Indexed Shares	The number of shares for each security included in the index
Last Price	Price from most recent price-setting trade for each security. If there is no price setting trading in a security on a given trading day, the adjusted opening price will be used for index calculation.
Adjusted Opening Price	Previous trading day's closing price for each security, adjusted for pro-rata corporate actions such as capital reconstructions, share splits and rights issues, but not distributions.
Distributions per Share	Distribution amount per share, for dividends (or other distributions) that have gone ex on the current trading day, converted to New Zealand dollars and rounded to \$0.001.
Market Cap	Full Market Cap and the free float market cap (which is the Free float portion of shares of a security)

Historically the New Zealand Stock Market (NZX) “has paid an unusually high dividend yield, the highest of any developed market”, which means “the Capital Index series tends to understate the historic returns of the market by several percentage points” (NZX-Limited, 2010, p. 9). Therefore the performance of the NZX is measured using the Gross Index series.

The Gross Index series mathematical formula adopts the NZX Capital Index series formula (which is based on the Paasche formula), but includes in the numerator reference to distributions, such as dividends. The new indices developed, mirror the NZX All Gross Index method over the study period, adopting the variations to the formula, which are shown in Table 5. The first variation adopted was the change to the weighting method for the Gross Index and the second variation was to the change to the return method for calculating the dividends.

Table 5 NZX All Gross Index Method changes (31 December 1993 to 30 September 2011)

Effective Date	New Method	Old Method
1 January 2004	Free float market capitalisation weighting	Full market capitalisation weighting
1 October 2005	Dividends excluded NZ tax credits, such as imputation credits	Dividends included NZ tax credits, such as imputation credits

Table 6 presents the performance benchmark series used in the study. Previous studies have used similar benchmarks “to provide some insight into the performance of various asset classes” (FundSource & NZX-Limited, 2010). These indices provide a broad measure of performance for New Zealand Shares, New Zealand Government Bonds and New Zealand Commercial Real estate.

Table 6 New Zealand asset class gross (total return) indices used in the study

Database	Performance Series	Frequency
NZSX	NZX All Gross (Total Return) Index, Property Sector Gross Index	Monthly
NZDX	ANZ All Government Bond Index	Monthly
NZPC/IPD	Total Return Index	Quarterly (interpolated monthly)

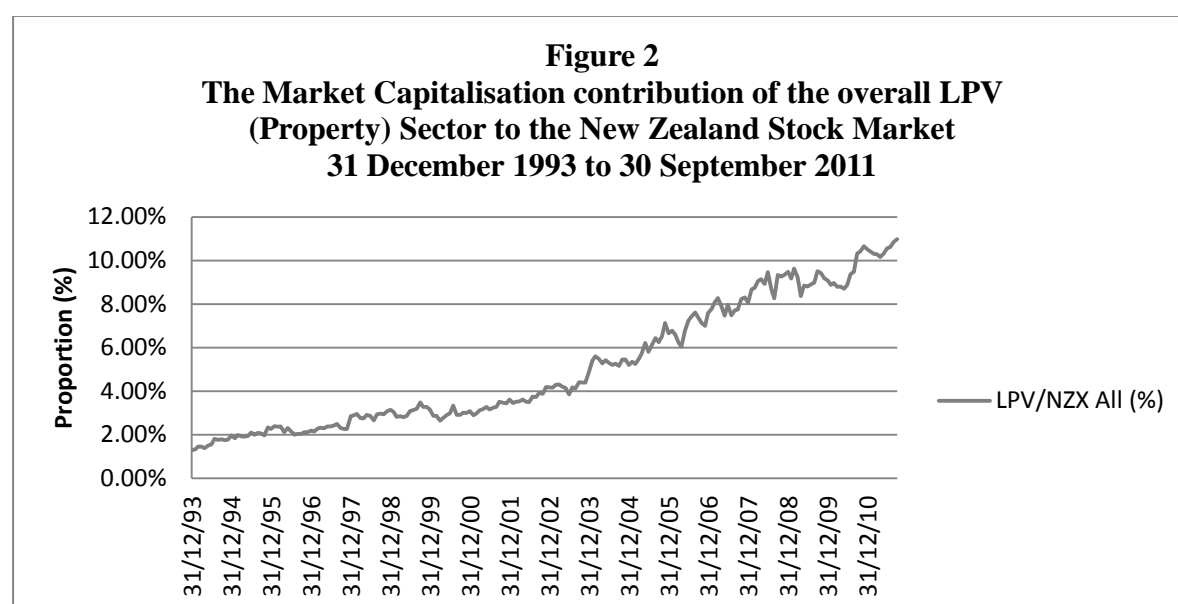
In order to calculate the risk-adjusted returns using the Sharpe measure, the New Zealand 90 Day Bank Bill rate and the 10 Year Government Bond Rate (Monthly frequency) were also collected from the Reserve Bank of New Zealand (RBNZ) database.

Results and Discussion

The following results are based on the analysis of the return series for New Zealand LPV Sector, the LPT sub-sector, the LPIC sub-sector and the major asset classes, namely NZ Shares, NZ Government Bonds and NZ Commercial Real Estate.

The significance of New Zealand's listed property market

Figure 2 illustrates the growing proportion that the LPV (Property) Sector has contributed to the market capitalisation of the New Zealand Stock Market (NZX All), climbing from 1% to 11%, over the 18 year period, 1993 to 2011.



Data Source: NZX

Table 7 details the market capitalisation contributions the overall LPV (Property) Sector has made to the NZ Stock Market (NZX All), as at the 31 December 1993, and at the end of each of the key economic sub-periods.

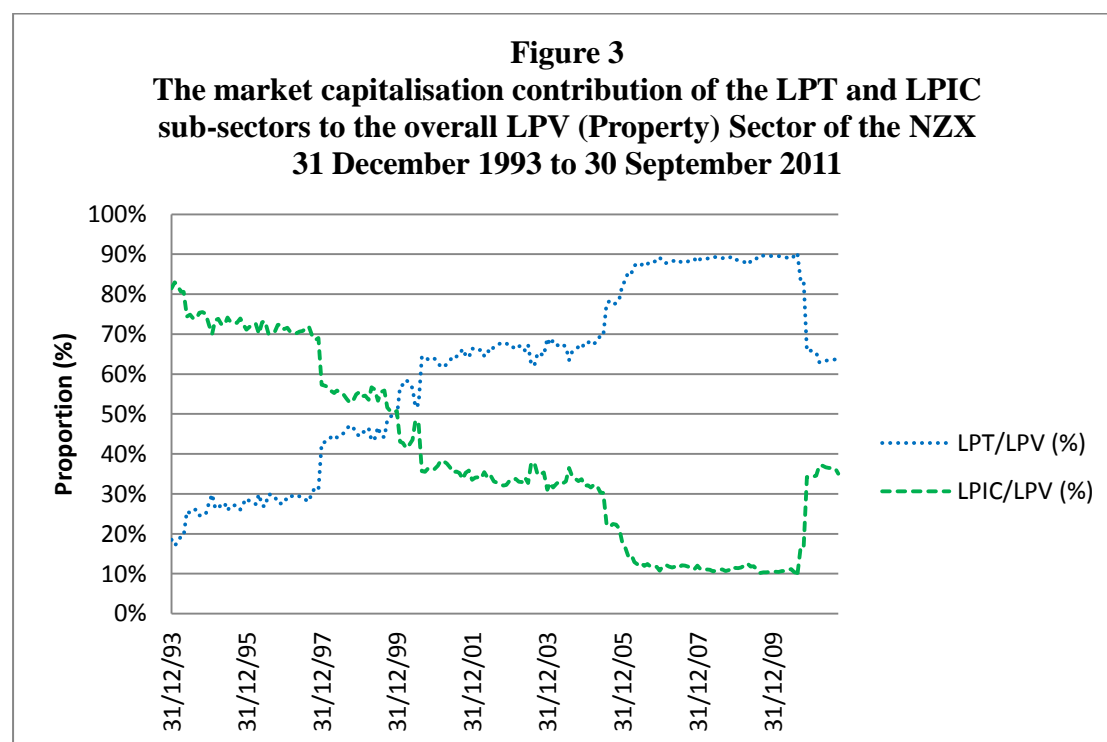
Table 7 Market Capitalisation Contribution: LPV Sector to the NZX All

As At	Market Capitalisation		NZX All
	LPV Sector	NZX All	LPV %
31-Dec-93	\$593,494,207	\$45,804,995,220	1%
30-Jun-98	\$1,244,999,873	\$43,560,263,786	3%
30-Sep-08	\$2,875,757,637	\$30,834,929,515	9%
30-Sep-11	\$3,865,545,786	\$35,213,075,382	11%

Data Source: NZX

Further proportional analysis, shown in figure 3, highlights that the market capitalisation contributions of the LPT sub-sector and the LPIC sub-sector to the overall LPV (Property) Sector have varied over the 18 year study period. In 1993 the ratio of LPT value to LPIC value was approximately 20:80, but with the growth both in number and maturity of LPTs this balance equalised early 2000.

The value contribution of LPTs was significant post January 2000, peaking at approximately 90:10. Post-GFC investor pressure for LPTs to convert to LPICs resulted in New Zealand's largest Trust corporatising in October 2010, which reduced the value of the LPT sector by approximately 20%, a substantial reduction. By September 2011 the value ratio had reduced to 65:35.



Data Source: NZX

Table 8 details the value contribution ratios of the LPT and LPIC sub-sectors to the overall LPV sector, as at the 31 December 1993, and at the end of each sub-period. These findings clearly show that prior to the recent conversion of the Trusts LPTs contributed the majority of the value (NZD \$2.6 billion) to the LPV (property) sector.

Table 8 Market Capitalisation Proportions: LPT sub-sector to the LPIC sub-sector

As At	Market Capitalisation		Property (LPV) Sector	
	LPT Sub-Sector	LPIC Sub-Sector	LPT %	LPIC %
31-Dec-93	\$110,120,542	\$483,373,665	19%	81%
30-Jun-98	\$558,603,194	\$686,396,679	45%	55%
30-Sep-08	\$2,568,115,087	\$307,642,549	89%	11%
30-Sep-11	\$2,512,070,559	\$1,353,475,227	65%	35%

Data Source: NZX

Between 1993 and 1999 the number of trusts grew from one to six, remained steady at this number between 2000 and 2009, after which the numbers reduced to four as a result of the trend to corporatise. The LPICs by comparison have been developing since 1982 so by December 1993 there were eight companies listed. In 1994 the number of LPICs peaked at nine. By 1996 the numbers had reduced to seven but these numbers remained steady oscillating between seven and six LPICs until 2004, at which point the numbers began to reduce dwindling to three in 2009. The recent trend to corporatise has increased LPIC numbers back to six in September 2011 and it is expected in 2012 there will be a further increase to eight LPICs (and a reduction to two LPTs) due to the corporatisation intentions of two further trusts.

Comparative Performance Analysis

This section presents and discusses the results of the comparative performance analysis of the LPT sub-sector, the LPIC sub-sector and the other selected asset classes in the New Zealand investment market. The results reveal that the LPTs and LPICs had different performance characteristics over the study period and sub-periods.

Figure 4 compares the Gross (Total Return) Indices series of the asset classes and clearly illustrates the low volatility of the LPT sub-sector, the overall NZ LPV Sector, bond market, and commercial real estate market (NZPC/IPD) compared to the higher volatility of the LPIC sub-sector and the New Zealand Stock Market (NZX All). This analysis also illustrates that over the three sub-periods, LPTs and LPICs have both outperformed New Zealand shares and Government bonds. These sub-sectors also performed strongly against commercial real estate. The Asian crisis appears to have negatively impacted on stocks and LPICs, as illustrated in the downward trend in performance post-1998, whereas LPTs and real estate both seem unaffected showing a slight upward trend.

The results also show that after August 2000 there was a rapid improvement in the performance of the LPIC sub-sector, which resulted in the overall LPV sector outperforming the other major asset classes during this period. Post GFC the results suggest that this crisis had a negative impact on stocks, LPICs and LPTs, with a 1 year lagged impact on commercial real estate.

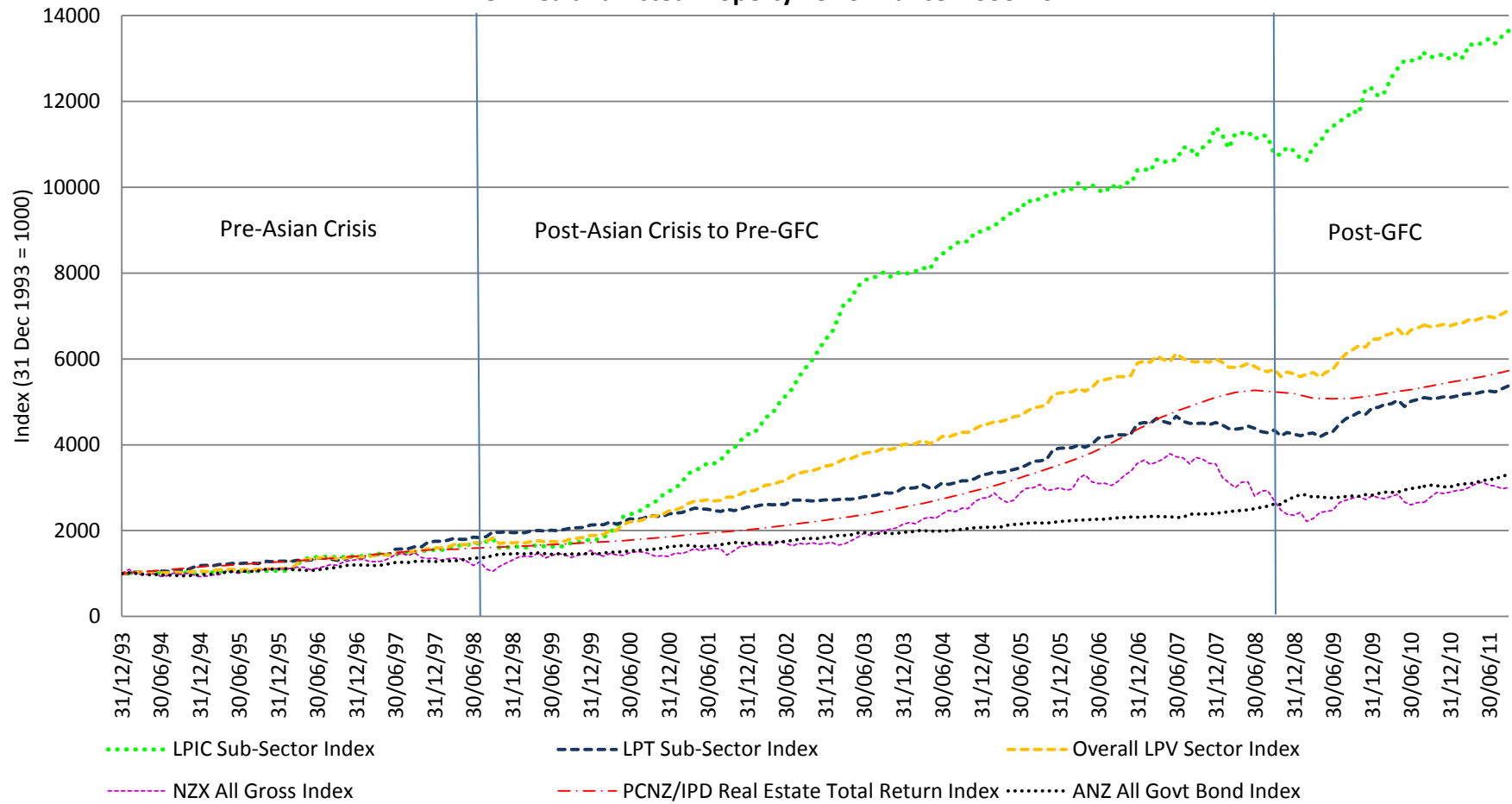
Table 9 presents the comparative performance analysis for the various asset classes for the period December 1993 to September 2011. These findings reveal that the LPV sector's average annual returns (11.07%) over this period were superior to commercial real estate (9.83%), Government bonds (6.39%), and stocks (NZX All = 6.21%). During this period the LPIC sub-sector (14.72%) outperformed the LPT sub-sector (9.47%) and the major asset classes. These results suggest that investing solely in the LPT sub-sector would have provided lower returns than investing in either the LPIC sub-sector or the overall LPV sector.

Table 9 presents the risk analysis of the asset classes between December 1993 and September 2011 and reveals that the volatility of stocks (48.34%) was significantly above other asset classes, whilst commercial real estate (6.14%) was well below the other asset classes over the study period. The annual risk for the overall LPV sector (19.42%) was similar to the risk for LPTs (19.26%) but lower than the risk for the LPIC sub-sector (28.15%). On a risk-adjusted basis, over the 18 year period, stocks (Sharpe measure = 0) were the least performed of the asset classes, whilst real estate (0.56) topped the rankings. Comparing the LPV sub-sectors, the LPICs (0.28) had the strongest risk-adjusted performance compared to the LPTs (0.17).

Table 9 Comparative Performance Analysis from 31 December 1993 to 30 September 2011

Sector	Average annual Return (%)	Annual Risk (%)	Return- to-Risk Ratio	Sharpe Index	Risk Adjusted Ranking
LPT	9.61	19.26	0.50	0.17	4
LPIC	14.40	28.15	0.51	0.28	2
LPV	11.06	19.42	0.57	0.24	3
NZX All	6.21	48.34	0.13	0.00	5
NZPC/IPD	9.83	6.14	1.60	0.56	1
Govt Bonds	6.39	n/a	n/a	n/a	n/a

Figure 4
New Zealand Listed Property Performance: 1993-2011



Tables 10, 11, and 12 present the comparative performance analysis for the asset classes over the sub-period 31 December 1993 to 30 June 1998 (Pre-Asian Crisis), 1 July 1998 to 30 September 2008 (Post-Asian Crisis to Pre-GFC), and 1 October 2008 to 30 September 2011 (Post-GFC) respectively. The sub-periods are divided by key dates of economic crises. This analysis was carried out to assess the effect of different market conditions on the performance of LPTs and LPICs.

Table 10 Comparative Performance Analysis: 31 December 1993 to 30 June 1998 (Pre-Asian Crisis)

Sector	Average annual Return (%)	Annual Risk (%)	Return-to-Risk Ratio	Sharpe Index	Risk Adjusted Ranking
LPT	13.64	24.39	0.56	0.23	2
LPIC	11.83	29.62	0.40	0.12	4
LPV	12.07	22.78	0.53	0.17	3
NZX All	3.75	47.95	0.08	-0.09	5
NZPC/IPD	10.33	4.46	2.32	0.88	1
Govt Bonds	8.14	n/a	n/a	n/a	n/a

Table 11 Comparative performance analysis: 1 July 1998 to 30 September 2008 (Post-Asian Crisis to Pre-GFC)

Sector	Average annual Return (%)	Annual Risk (%)	Return-to-Risk Ratio	Sharpe Index	Risk Adjusted Ranking
LPT	8.40	17.33	0.48	0.10	4
LPIC	17.28	30.12	0.57	0.35	2
LPV	11.56	19.05	0.61	0.26	3
NZX All	8.03	50.54	0.16	0.03	5
NZPC/IPD	11.61	5.78	2.01	0.85	1
Govt Bonds	6.67	n/a	n/a	n/a	n/a

Table 12 Comparative Performance Analysis: 1 October 2008 to 30 September 2011 (Post-GFC)

Sector	Average annual Return (%)	Annual Risk (%)	Return-to-Risk Ratio	Sharpe Index	Risk Adjusted Ranking
LPT	7.68	16.29	0.47	0.27	3
LPIC	8.37	15.19	0.55	0.34	1
LPV	7.81	14.81	0.53	0.31	2
NZX All	3.67	41.75	0.09	0.01	4
NZPC/IPD	3.02	4.77	0.63	-0.05	5
Govt Bonds	3.24	n/a	n/a	n/a	n/a

These results show that pre-Asian crisis, LPT returns (13.64%) outperformed the other asset classes (range = 3.75% to 12.07%), but between 1998 and 2008 LPT returns significantly dropped (8.40%), before reducing further post-GFC (7.68%). By comparison LPIC returns (11.83%), pre-Asian crisis, performed slightly below both the LPT sub-sector and the overall LPV sector (12.07%), after which they increased significantly (17.28%) between 1998 and 2008, outperforming all the other asset classes (range = 6.67% to 11.61%), before dropping back considerably post-GFC (8.37%), whilst still managing to outperform the other classes. Overall in all three sub-periods the results show that LPTs, LPICs and the overall LPV sector

outperformed New Zealand share returns, and that the overall LPV sector also performed strongly against the major asset classes in each sub-period.

Over the three sub-periods the results show that the volatility of stocks (annual risk = 47.95%, 50.54%, and 41.75%) remained significantly above other asset classes, whilst real estate (annual risk = 4.46%, 5.78%, and 4.77%) remained well below other asset classes. The annual risk for LPTs (24.39%, 17.33%, and 16.29%) and LPICs (29.62%, 30.12%, and 15.19%) was relatively similar pre-Asian crisis and post-GFC, but between the Asian Crisis and the GFC these results support investor perceptions that LPTs were less risky than LPICs.

Relative analysis of listed property returns found that the volatility of LPT returns and LPIC returns differed over the three sub-periods. The LPTs annual risk reduced over the three periods from 24.39% to 16.29%, with the biggest reduction (8.10%) occurring after the Asian crisis. Pre-GFC, the volatility of LPIC's returns remained higher in the first two sub-periods (29.62%, and 30.12% respectively) compared to LPT's returns, before dropping to 15.19% post-GFC, which was slightly below the annual risk of LPTs during this same sub-period.

On a risk-adjusted basis stocks remained the least performed of all the asset classes pre-GFC (Sharpe = -0.09 and 0.03 respectively) before improving slightly (0.01) post-GFC. Commercial real estate by comparison topped the rankings over the first two sub-periods (0.88 and 0.85 respectively) then toppled to last place (-0.05). Despite the steady decline of the risk-adjusted returns for the overall LPV sector over the three sub-periods (0.17 to 0.26 to 0.31), this sector still maintained a mid-rank position compared to the other asset classes. The best performed LPV sub-sector was the LPICs, which moved up the rankings over the three sub-periods from fourth (0.12), to second (0.35), to first place (0.34) despite the sub-sectors Sharpe measure increasing. By comparison the LPT sub-sector ranking declined, from second (0.23) to fourth place (0.10) post-Asian crisis, despite an improving Sharpe ratio, then recovered slightly post-GFC (0.27) ranking third.

The sub-period comparative analysis revealed that historically the performance characteristics of LPTs and LPICs differed during these separated periods between December 1993 and September 2008. Post-GFC the LPT and LPIC sub-sector performance metrics both improved and became more aligned. These results suggest in the New Zealand context where the LPTs have become more like LPICs, through Trust Deed amendments and the introduction of PIE status, that corporatisation may be a costly restructuring option when the performance benefits appear to be minimal.

Diversification Benefits Analysis

The findings from the diversification benefits analysis from 31 December 1993 to 30 September 2011 are detailed in this section. Panel 1 presents the inter-asset correlation matrix over the 18 year period and highlights the association measures for LPTs and LPICs when combined with other assets.

**Panel 1 Inter-asset Correlation Matrix
(31 December 1993 to 30 September 2011)**

	LPT	LPIC	LPV	NZX All
LPT	1.00			
LPIC	-0.35	1.00		
LPV	0.97	-0.10	1.00	
NZX All	-0.70	0.42	-0.63	1.00

The performance of the LPIC sub-sector was very weakly negatively correlated ($r = -0.10$) to the overall LPV sector and weakly positively correlated (0.42) to the stock market. In

contrast the performance of the LPT sub-sector was highly positively correlated (0.97) to the overall LPV sector, weakly negatively correlated (-0.35) to the LPIC sub-sector and strongly negatively (-0.70) correlated with the stock market (NZX All). The strong negative association of the LPT sub-sector and the stock market (-0.70) suggest that diversification benefits might have ensued if these assets were combined in an investment portfolio, whereas the LPIC sub-sector over this period does not offer the same benefits. Overall these results indicate that the LPT sub-sector and the LPIC sub-sector performed differently over this period in regard to mixed asset considerations and reveal that LPTs offered better risk-reduction benefits for investors when combined with New Zealand shares.

Panels 2 to 4 present the inter-asset correlation matrices over the sub-periods 31 December 1993 to 30 June 1998 (Pre-Asian Crisis), 1 July 1998 to 30 September 2008 (Post-Asian Crisis to Pre-GFC), and 1 October 2008 to 30 September 2011 (Post-GFC) respectively. The results show that the diversification benefits of the LPT sub-sector and the LPIC sub-sector varied when combined with either sub-sector with other asset classes over these three sub-periods.

**Panel 2 Inter-asset Correlation Matrix: Pre-Asian Crisis
(31 December 1993 to 30 June 1998)**

	LPT	LPIC	LPV	NZX All
LPT	1.00			
LPIC	0.67	1.00		
LPV	0.92	0.91	1.00	
NZX All	0.48	0.85	0.72	1.00

**Panel 3 Inter-asset Correlation Matrix: Post-Asian Crisis to Pre-GFC
(31 July 1998 to 30 September 2008)**

	LPT	LPIC	LPV	NZX All
LPT	1.00			
LPIC	-0.68	1.00		
LPV	0.99	-0.55	1.00	
NZX All	-0.47	0.58	-0.41	1.00

**Panel 4 Inter-asset Correlation Matrix: Post-GFC
(31 October 2008 to 30 September 2011)**

	LPT	LPIC	LPV	NZX All
LPT	1.00			
LPIC	-0.10	1.00		
LPV	0.34	0.90	1.00	
NZX All	0.50	0.75	0.92	1.00

Panel 2 shows that during the pre-Asian period both the LPT and LPIC sub-sectors were positively correlated ($r = 0.67$) with each other and highly correlated with the overall LPV sector (LPT: 0.92 and LPIC: 0.91). Although neither sub-sector offered any diversification benefits when combined with New Zealand shares, the results highlight that the association measure was stronger between the LPIC sub-sector performance (0.85) and New Zealand shares than between the LPT sub-sector performance (0.48) and the stock market. These results reveal that there was a strong association between New Zealand listed property and New Zealand shares before the Asian crisis.

Panel 3 presents the inter-asset correlation matrix between the Asian Crisis and the Global Financial Crisis (GFC). These results highlight the different characteristics ($r = -0.68$) of the LPT sub-sector and the LPIC sub-sector over this sub-period and the resulting potential diversification benefits. In a mixed asset portfolio, LPIC sub-sector performance had no diversification benefits when combined with the stock market, whereas further diversification benefits could be gained by either combining the LPT sub-sector (-0.47) with the stock market or the overall LPV sector (-0.41) with New Zealand shares.

Panel 4 shows that post-GFC the performance of the LPV sub-sectors continued to differ. The results highlight the weak negative association measure of the performance of the LPT's ($r = -0.10$) with the performance of the LPIC, suggesting continued diversification benefits potential over this sub-period. During the post-GFC period the results also reveal that the performance of the New Zealand listed property market realigned with New Zealand shares. The overall LPV sector (0.92) and the LPT sub-sector (0.50) show strengthened positive associations during this sub-period compared to the pre-Asian crisis period, whilst the LPIC sub-sector has a slightly reduced association (0.75).

Conclusion

This study offers insights into the performance characteristics of LPICs and LPTs. In particular the study revealed that, between 1993 and 2011, LPICs offered more attractive performance features than LPTs, having stronger average annual returns and better risk-adjusted returns. Over this period LPTs were less risky than LPICs, which supports previous observations (Jeremy Simpson, 2012).

More importantly this study revealed that when these LPV performance characteristics were further examined over three sub-periods, it could be seen that the superior performance of LPICs over the 18 year period was linked to the performance achieved between 1998 and 2008 and that in the other sub-periods LPICs only performed slightly better than LPTs. Post GFC the performances characteristics of both the LPIC sub-sector and LPT sub-sector have almost aligned, with LPICs achieving slightly better returns (LPIC: 8.37%, LPT: 7.68%), risk-adjusted returns (LPIC: Sharpe = 0.34, LPTs Sharpe = 0.27) and being marginally less risky (LPIC: 15.19%, LPT: 16.29%).

The study also highlighted that despite LPICs outperforming LPTs over the 18 year period, this was offset by the lack of diversification benefits offered when combined with New Zealand shares in a mixed asset portfolio. By comparison LPTs provided significant diversification benefits over the period 1993 to 2011, linked to the post-Asian crisis sub-periods.

These findings suggest that LPICs and LPTs can be treated as separate asset classes as they have shown differences in their performance over the 18 year period. Further analysis needs to be undertaken to determine the cause of these performance differences.

Pre-GFC it appears that corporatising a trust offered substantial performance improvements but post-GFC these improvements are marginal, which challenges the level of improvement benefits expected versus the costs involved with corporatisation in the New Zealand context. It appears this conversion option, in today's economic climate, could be regarded as a set of Emperor's new clothes.

Limitations

Data collection was limited by the availability of the required data and the cost of the data. Initial exploration for key data using the DataStream database revealed that not all current and past New Zealand LPVs were available through this database, a problem previously experienced by other researchers (Ince & Porter, 2006; Wu, 2011). Bond market and commercial real estate market (NZPC/IPD) data were also costly to obtain and hence limited the correlation analysis carried out in this study. The small number of LPVs is a further limitation for this study.

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