THE SIGNIFICANCE AND PERFORMANCE OF JAPAN REITs IN A MIXED-ASSET PORTFOLIO

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ABSTRACT

REITs in Japan (J-REITs) are the largest REIT market in Asia and the 5th largest REIT market globally. To examine the attractiveness of J-REITs for investors, this paper assesses the significance, risk-adjusted performance and portfolio diversification benefits of J-REITs in a mixed-asset portfolio context in Japan over 2001-2011. Amongst the major asset classes, J-REITs delivered the best risk-adjusted returns and portfolio diversification benefits over 2001-2011, with enhanced risk-adjusted returns in the post-GFC period. Key strategic issues for the ongoing development of the J-REIT market are also identified.

Keywords: Japan, Asia REITs, J-REITs, risk-adjusted returns, portfolio diversification, post-GFC performance

INTRODUCTION

REITs have emerged as significant property investment vehicles in Asia over the last ten years. At June 2011, there were 98 REITs in seven Asian REIT markets with a total market capitalisation of over US$96 billion and accounting for 11.8% of the global REIT market (Macquarie Securities, 2011). This has seen REITs established in both the developed markets in Asia (Japan, Singapore, Hong Kong) and the emerging markets in Asia (Malaysia, Taiwan, Thailand and South Korea).

Amongst these Asian REIT markets, Japan was the first to establish a REIT market (J-REITs) in September 2001. The 34 J-REITs established by June 2011 now sees Japan as the largest Asian REIT market and the 5th largest REIT market globally. With the listed property sector in Japan also being the 3rd largest globally, this sees J-REITs providing an important property investment focus compared to the property development focus of the listed property companies in Japan. The importance of J-REITs is further reinforced by the strong investor acceptance of J-REITs by both local and international investors, reflecting the key features of portfolio diversification, liquidity, market size, property portfolio quality and the performance by J-REITs. Given the stature of Japan as a leading global economic and financial force, the scale of the Japan property market and the significant stature of J-REITs as a listed property investment vehicle, it is important to assess the significance and risk-adjusted performance of J-REITs to identify the potential role of J-REITs in a mixed-asset portfolio in Japan for local and international property investors.

The purpose of this paper is to assess the significance, risk-adjusted performance, portfolio diversification benefits and role of J-REITs in a mixed-asset portfolio in Japan over the ten-year period of October 2001 – February 2011. Sub-period analyses are also conducted to assess the impact of the global financial crisis (GFC) on the investment dynamics of J-REITs; particularly in the post-GFC period. Issues for the ongoing strategic development of J-REITs are also assessed. This is in the context of very limited property research having previously been conducted on property and REITs in Japan.

SIGNIFICANCE OF COMMERCIAL PROPERTY IN JAPAN

Japan is one of the most globally competitive business environments, being ranked #6 globally and #2 in Asia (WEF, 2010), as well as being seen as one of the least corrupt countries in Asia (#3) and globally (#17) (TI, 2010). While Japan has low levels of GDP growth predicted for 2011 (-1.2%), this is expected to recover in 2012 (+4.5%) (JLL, 2011). The Japan stockmarket ($3.8 trillion at Dec. 2010) is the 3rd largest stockmarket globally and the largest in Asia, accounting for 7% of the world's stockmarket wealth and only exceeded by the US NYSE and NASDAQ stockmarkets (WFE, 2011). Japan also has some of the world's largest pension funds with significant investment portfolios; this includes the

Government Pension Investment Fund (#1 globally; $1.3 trillion) and the Local Government Employees Fund (#7 globally; $180 billion) (APREA, 2010).

Japan's investment-grade property market ($2.5 trillion) is the 2nd largest globally; only exceeded by the US ($6.6 trillion). This sees Japan accounting for 10.4% of global investment-grade property and 45% of investment-grade property in Asia. In comparison, the other developed property markets in Asia have a much lesser investment profile; namely Singapore ($204 billion; #20 globally; 0.9% of global market; 3.7% of Asia market) and Hong Kong ($198 billion; #21 globally; 0.8% of global market; 3.6% of Asia market) (Pramerica, 2011). The Japan property market is classified as "transparent", being ranked #26 globally and #4 in Asia; exceeded by the other "transparent" Asian property markets of Singapore (#16), Hong Kong (#18) and Malaysia (#25) (JLL, 2010). Overall, Japan is the most significant property market in Asia and a significant focus for global property investors.

This sees Japan as a leading property investment market globally for both domestic and global property investors. In 2010, Japan accounted for $21.4 billion in commercial property transactions, being #5 globally and only exceeded by the US, UK, Germany and France. This saw Japan accounting for 6.1% of global property transactions and 34.2% of property transactions in Asia. In the first half of 2011, this investment stature of the Japan property market has been further confirmed ($12.1 billion in transactions; #4 globally; 5.6% of global; 33.6% of Asia). This saw Tokyo as the second largest commercial property investment market globally in 2010, only exceeded by London and exceeding both New York (#3) and Paris (#4) (Real Capital Analytics, 2011).

The listed property sector in Japan is #3 globally ($130 billion at June 2011; 6.7% of global market) and #2 in Asia (15.7% of Asia market); only exceeded in Asia by Hong Kong (Macquarie Securities, 2011). The listed property sector in Japan accounts for 7.6% of the direct property market in Japan. Of this listed property sector, listed property companies account for 68% of listed property exposure on the Tokyo stockmarket, while J-REITs account for 32% (Macquarie Securities, 2011). Leading listed property companies in Japan include Mitsubishi Estate, Mitsui Fudosan, Sumitomo Realty and Development, Aeon Mall and Nomura Real Estate Holdings; these being amongst the largest listed property companies globally and with a focus on property development activities. To assess direct property performance in Japan, IPD produce an annual performance index from 2002, comprising 2,239 properties with an asset value of over US$105 billion (IPD, 2011). Most of the previous property research regarding Japan commercial property has been focused on listed Japan property companies and their role in a pan-Asia or global property company portfolio (eg: Liow and Adair, 2009; Liow and Sim, 2006; Newell et al, 2009).

Overall, this section has highlighted the important economic and financial stature of Japan, as well as the stature and significance of commercial property and listed property in Japan, both at a local and global level. The following section will provide fuller details regarding the significance and stature of REITs in Japan.

DEVELOPMENT OF REITs IN JAPAN

Japan established the first REIT market in Asia in September 2001. Table 1 lists full details of the current regulatory structure and features of J-REITs. Whilst having considerable scale, J-REITs are seen to have less upside than several other Asian REIT markets (eg: Singapore, Hong Kong), being rated as #5/7 for overall potential, #7/7 for market growth, #5/7 for REIT opportunity and #3/7 for regulatory support (Trust, 2011). J-REITs account for 32% of listed property exposure in Japan, significantly above the REIT market contributions in Singapore (25%), Hong Kong (5%), Malaysia (19%) and Taiwan (11%) (Macquarie Securities, 2011).

Table 1: Regulatory structure and characteristics of J-REITs

- Only external managers are allowed
- Property to comprise at least 75% of assets
- No geographic restrictions; but no overseas acquisitions have been made as the requirements on the valuation of overseas properties are ambiguous
- Property development is restricted; at least 50% of total assets must be income-producing and unlikely to be sold within one year
- No restrictions on gearing
- At least 90% income distribution is required
- Tax transparent
- Legislation: Investment Trust and Investment Company Act

Sources: CB Richard Ellis (2011a), EPRA (2011)

Table 2 highlights the significance of J-REITs in a global and Asian context at June 2011. This saw 34 J-REITs with a total market capitalisation of $41.7 billion, accounting for 5.1% of the global REIT market and 42.9% of the Asian REIT market. J-REITs are ranked the 5th largest REIT market globally (out of 22 REIT markets) and the largest REIT market in Asia (out of seven REIT markets) (Macquarie Securities, 2011). The number of J-REITs has reduced from a peak of 42 at 2008, following M&A activity in recent years.

Table 2: Significance of J-REITs: June 2011

Country	# REITs	Market cap (US$)	% global REITs	% Asia REITs	Global REIT rank	Asia REIT rank
Japan	**34**	**$41.7B**	**5.1%**	**42.9%**	**#5**	**#1**
Singapore	24	$31.4B	3.8%	32.4%	#7	#2
Hong Kong	8	$16.9B	2.1%	17.5%	#8	#3
Malaysia	14	$3.9B	0.5%	4.0%	#12	#4
Taiwan	8	$2.3B	0.3%	2.3%	#15	#5
Thailand	6	$0.5B	0.1%	0.5%	#20	#6
South Korea	4	$0.2B	<0.1%	0.2%	#22	#7
Asia	98	$96.8B	11.8%	100.0%		
Global	511	$818B	100.0%			

Source: Macquarie Securities (2011)

The strong recovery from the GFC by the Asian REIT markets is shown in Table 3, with this recovery in Asia being more significant than that seen in the mature REIT markets of the US, Australia and UK. This has seen the market capitalisation of the J-REIT sector increase by 67% in the post-GFC period of March 2009 - June 2011.

Table 3: Asia REIT performance: Q2 2011

	1Y	3Y	5Y
Japan	34.6%	4.9%	2.8%
Singapore	33.8%	7.6%	13.6%
Hong Kong	38.8%	19.8%	14.8%
Taiwan	34.6%	10.0%	8.9%
US	34.0%	5.3%	2.3%
UK	54.1%	-7.9%	NA
Australia	34.6%	-5.3%	-3.8%

Source: S&P (2011)

J-REITs have performed strongly in the last year; particularly in comparison to the other major asset classes in Japan including direct property (see Table 4). At June 2011, J-REITs were trading at a small discount to NAV (6%), with an average yield of 5.0% compared to the 1.0% yield on 10-year bonds (ARES, 2011). The Association for Real Estate

Securitisation (ARES) is the professional association representing J-REITs, producing J-REIT performance indices (4) and regular J-REIT reports, as well as the Asia Pacific Real Estate Association (APREA) representing J-REITs in a pan-Asia context. To highlight the investment features of J-REITs in a local and global context, the dynamics of this performance of J-REITs over 2001 – 2011 will be examined more fully in the empirical results and discussion section of this paper.

Table 4: J-REIT performance: Dec. 2010

Asset class	Average annual total returns			
	1Y	3Y	5Y	8Y
J-REITs	34.4%	-9.5%	-1.3%	6.4%
Direct property	0.4%	-2.1%	3.5%	5.0%
Shares	1.0%	-13.6%	-10.0%	2.3%
Bonds	3.5%	3.4%	3.0%	NA

Source: IPD (2011)

To confirm the global and Asian stature of J-REITs, Table 5 presents the general profile of the leading J-REITs at June 2011. In total, J-REITs have 1,868 properties, investing in the office (56%), retail (18%), residential (18%) and industrial, hotel/resort sectors. The number of properties in their portfolios range from 9 – 183, with an average portfolio size of 53 properties. This property exposure is achieved using both sector-specific portfolios (57% of J-REITs) and diversified portfolios (43% of J-REITs). This sees the leading J-REITs having significant stature as well as major sponsors; eg:

- Nippon Building Fund: #2 in Asia; #33 globally; sponsor is Mitsui Fudosan
- Japan Real Estate Investment: #4 in Asia; #42 globally; sponsor is Mitsubishi Estate.

To reinforce the stature and quality of the J-REIT property portfolios, Figure 1 presents a selection of major investment properties held in these J-REIT portfolios.

Overall, this sees J-REITs having a significant profile amongst the Asian REITs, accounting for 2/Top10, 10/Top 20 and 24/Top 50 Asian REITs; as well as 2/Top 50 REITs globally (Macquarie Securities, 2011). Institutional investors in Japan have supported J-REITs in their portfolios, citing the attractive features of stable cashflow, improved returns, portfolio diversification and liquidity as their key reasons for investing in J-REITs. This has seen 66% of general institutional investors in Japan having J-REITs in their portfolios (ARES, 2010). International listed property investors are also significant players in the J-REIT market via pan-Asia and global property securities funds. This has seen international property investors being the leading players in the J-REIT market in 2009-2011, accounting for approximately 45% of J-REIT trading activity, compared to only 20% by individuals and 15% by banks (ARES, 2011).

Whilst the Global Financial Crisis (GFC) adversely impacted on J-REITs, seeing the J-REIT market capitalisation reduce by 69% over June 2007 – March 2009, the J-REIT sector has responded positively in the post-GFC period. This was achieved through government and Bank of Japan support providing sufficient financing (eg: Real Estate Market Stabilisation Fund, Asset Purchase Program), involvement of new J-REIT sponsors, M&A activity for sector consolidation and J-REITs recapitalising via fund raising and acquiring new assets in 2010 – 2011 (ARES, 2011).

A key event that has impacted the ongoing development of J-REITs has been the March 2011 earthquake and tsunami in Japan. While J-REITs had only 3% of their assets in the affected area and damage was minimal, ongoing indirect effects on J-REITs have been evident (JLL, 2011). In the office sector, business contingency plans are being developed by tenants to consider the re-distribution of their operational functions (Tokyo versus Osaka, Fukoaka), the seismic compliance of office buildings and in-house power generation requirements for power shortages. For retail property, this has been impacted on by reduced consumer confidence and lost tourism, while industrial property has seen supply chain disruptions, with power shortages expected to see continued business disruption due to the lack of a national power grid. The ongoing fear of radiation contamination from the Fukushima nuclear powerplant has added further uncertainty, with investors and tenants generally adopting a wait and see approach regarding their ongoing plans. However, these factors are expected to have a limited lasting impact, with international investors already returning to the Japan property markets and J-REITs being active in the market (CBRE, 2011b; JLL, 2011). This has subsequently seen J-REITs undertake additional capital raisings as well as major property acquisitions in the post-earthquake period. While the J-REIT market has softened in the first half of 2011, J-REITs continued to be active buyers; particularly in the office sector (CBRE, 2011b).

Table 5: Profile of leading J-REITs: June 2011

J-REIT	Date established	Number of properties	Market cap. (US$)	Property sectors	Asia REIT rank
Nippon Building Fund	Sept 2001	64	$5.8B	Office	#2
Japan R. E. Invest.	Sept 2001	56	$4.7B	Office	#4
Japan Retail Fund	March 2002	59	$2.6B	Retail	#10
United Urban Invest.	Dec 2003	90	$2.4B	Diversified	#11
Mori Trust Sogo REIT	Feb 2004	13	$2.4B	Diversified	#12
Advance Residence Invest.	March 2010	183	$2.0B	Residential	#13
Nomura R. E. Office Fund	Dec 2003	50	$2.0B	Office	#14
Japan Prime Realty	June 2002	56	$2.0B	Diversified	#15
Frontier R. E. Invest.	Aug 2004	24	$1.8B	Retail	#17
Orix JREIT	June 2002	61	$1.5B	Diversified	#19
Nippon Accommodation Fund	Aug 2006	74	$1.4B	Residential	#21
Daiwa Office Invest.	Oct 2005	35	$1.3B	Office	#23
Japan Logistics Fund	May 2005	28	$1.3B	Industrial	#24
Tokyu REIT	Sept 2003	26	$1.1B	Diversified	#26
Japan Excellent	June 2006	19	$1.0B	Office	#30

Sources: APREA (2011), ARES (2011), CBRE (2011a)

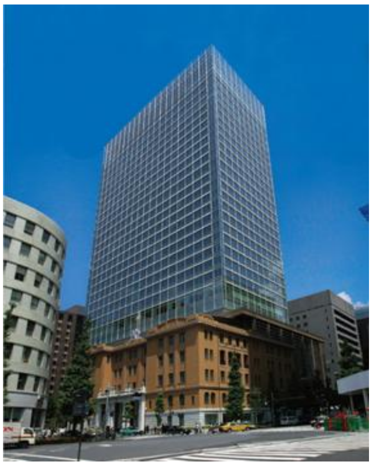
However, given the recent establishment of REITs in Asia, only limited property research has been conducted in this increasingly important area. In the case of J-REITs, this has involved J-REIT IPO issues (Kutsuna et al, 2008) and equity issuance issues (Ong et al, 2011), as well as J-REITs in a broader pan-Asia REIT context (Cheok et al, 2011; Chiang et al, 2008; Kim, 2009; Kudus and Sing, 2011; Ooi et al, 2006) or in a global REIT context (Su et al, 2010). No property research has been published as yet on the rigorous empirical performance analysis of J-REITs and their role in a portfolio.

Overall, J-REITs are an important Asian REIT market, accounting for 43% of the Asia REIT market and 32% of listed property exposure on the Japan stockmarket, providing local and international investor choice regarding their listed property exposure and accessing quality investment properties in the Japan property market. Importantly, J-REITs have shown size, maturity and significance moving forward from the GFC. The subsequent sections of this paper will assess the risk-adjusted performance and portfolio diversification benefits of J-REITs in a portfolio over 2001-2011, as well as assessing the role of J-REITs in a mixed-asset portfolio and the impact of the GFC on J-REIT performance.

Figure 1: Selection of J-REIT properties

Shiodome Building

Kitanomaru Square



Mitsubishi UFJ Trust & Banking

Shibuya Cross Tower

Tokyo Opera City Building

ON Building

Tokyo Shiodome Building

GYRE

Higashi Totsuka Aurora City

Sources: Various J-REIT websites

METHODOLOGY

Data sources

Monthly total returns were assessed over the ten-year period of October 2001 – February 2011 for J-REITs, shares, listed property companies and bonds. The J-REIT index used was the S&P J-REIT total return index, with all performance series accessed using Datastream. Property company shares were also assessed as they have traditionally been the source of listed property exposure on the Japan stockmarket, include some of the largest listed property companies globally and still account for 68% of this listed property exposure in Japan. Direct property was not considered, due to the institutional-grade property performance benchmark by IPD for Japan only being available annually since 2002. The period of October 2001 – February 2011 represents the full timeframe over which J-REITs are available.

Statistical analysis

For the various J-REIT, shares, property company and bond series, risk-adjusted total returns were assessed over October 2001 – February 2011. Average annual returns were calculated as the annualised average monthly return. Risk-adjusted returns were assessed using the Sharpe ratio. Mixed-asset portfolio diversification benefits were assessed using correlation analysis. Efficient frontiers and asset allocation diagrams were also used to highlight the strategic contribution of J-REITs in the Japan mixed-asset portfolio. The full time period of October 2001 – February 2011 was also broken down into the three sub-periods of Oct. 2001 – Aug. 2007 (pre-GFC), Sept. 2007 – June 2009 (during GFC) and July 2009 – Feb. 2011 (post-GFC) to assess the impact of the GFC on J-REIT investment dynamics; particularly concerning the post-GFC dynamics of J-REITs. All analyses were done using Excel, with the optimal portfolios and efficient frontiers done using Solver.

RESULTS AND DISCUSSION

Risk-adjusted returns

The risk-adjusted performance analysis for J-REITs over October 2001 – February 2011 is presented in Table 6. J-REITs (7.11% p.a.) outperformed all of the other asset classes. This was achieved with J-REIT risk (19.22%) only being marginally more than the risk for shares (18.13%) and significantly less than the risk for property companies (27.56%). On a risk-adjusted basis (via Sharpe ratio), this saw J-REITs as the #1 asset class, ahead of bonds (#2), property companies (#3) and shares (#4). This highlights the strong risk-adjusted performance of J-REITs over the full timeframe of its operation as an effective property investment vehicle in Japan.

Table 6: J-REIT risk-adjusted performance: Oct. 2001 – Feb. 2011

Asset class	Average annual return	Annual risk	Sharpe ratio	Performance rank
J-REITs	7.11%	19.72%	0.35	1
Property companies	4.64%	27.56%	0.16	3
Shares	1.03%	18.13%	0.05	4
Bonds	1.04%	3.77%	0.23	2

Diversification benefits

Table 7 presents the inter-asset correlation matrix for J-REITs over this ten-year period. J-REITs are seen to provide some degree of portfolio diversification benefits with shares (r = 0.58), and also providing more diversification benefits than from property companies with shares (r = 0.82). J-REITs also provided portfolio diversification benefits with bonds (r = -0.02). A degree of differentiation in performance was also seen between J-REITs and property companies (r = 0.62), highlighting their different roles of property investment versus property development in Japan. Overall, J-REITs are seen to be providing portfolio diversification benefits, with these benefits being more significant than those provided by property companies.

Table 7: Inter-asset correlations: Oct. 2001 – Feb. 2011

	J-REITs	Property companies	Shares	Bonds
J-REITs	1.00			
Property companies	0.62*	1.00		
Shares	0.58*	0.81*	1.00	
Bonds	-0.02*	-0.32*	-0.38*	1.00

*: significant correlation (P<5%)

J-REITs in the portfolio

The efficient frontiers involving J-REITs are shown in Figure 2. A portfolio involving shares, bonds and J-REITs is seen to out-perform a portfolio of shares, bonds and property companies across the portfolio risk spectrum. A portfolio of shares, bonds, J-REITs and property companies across the expanded portfolio risk spectrum was only seen to match the efficient frontier of shares, bonds and J-REITs.

Figure 2: Efficient frontiers: Oct. 2001 – Feb. 2011

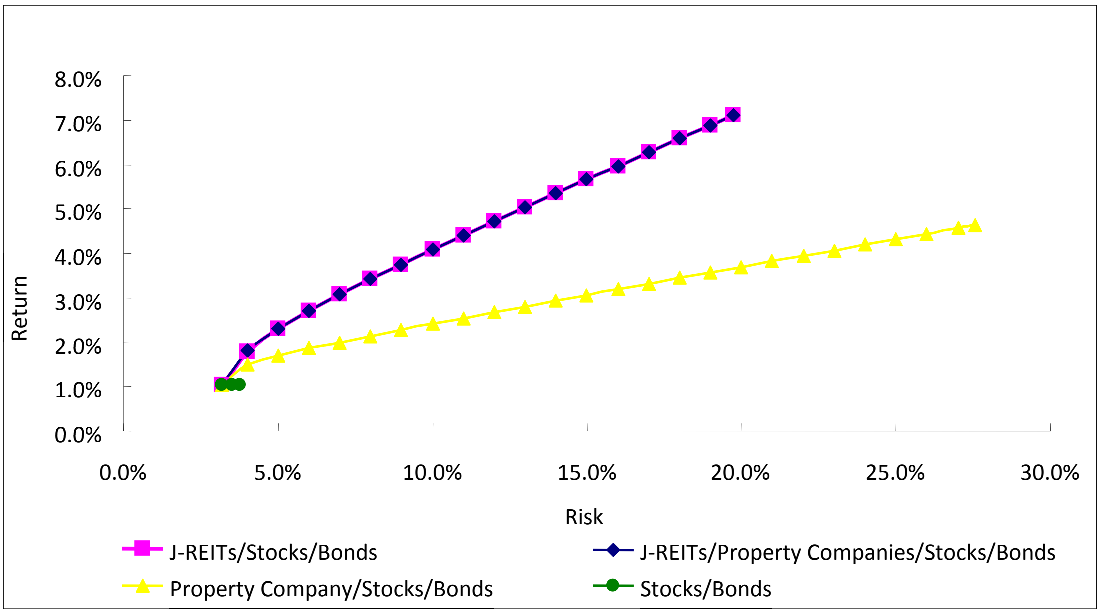
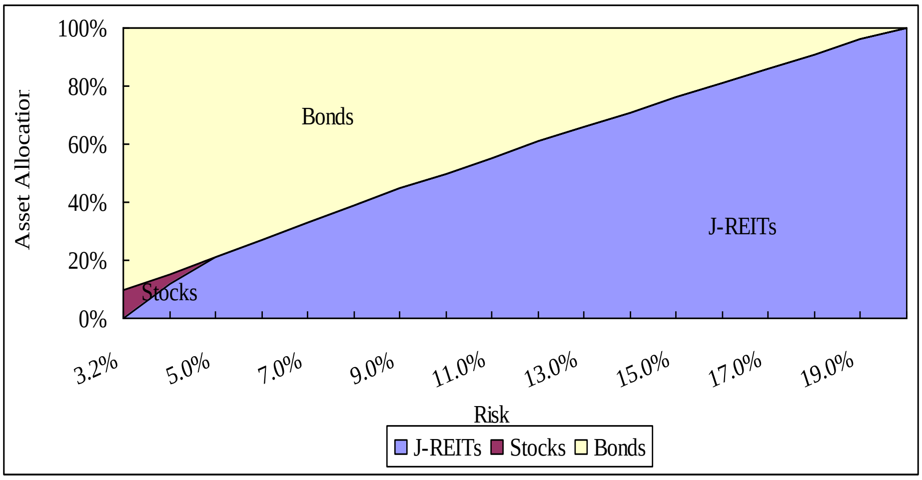


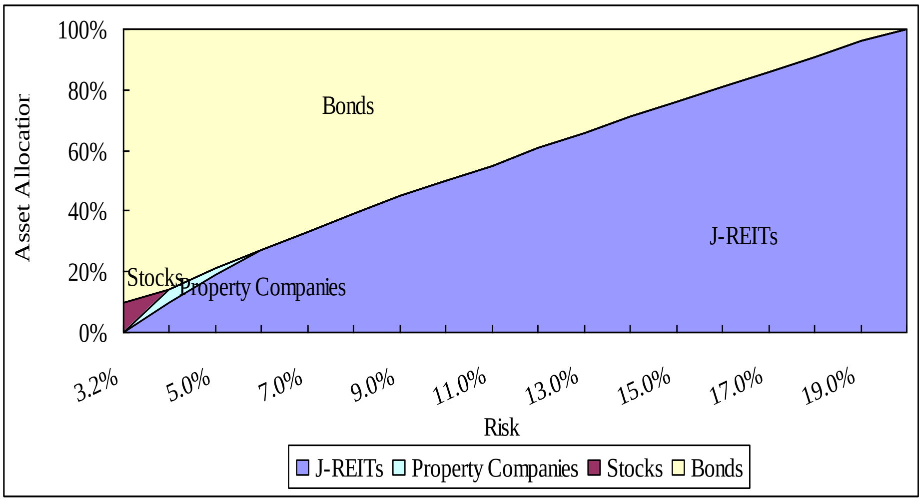
Figure 3 shows the respective asset allocations at various portfolio risk levels. In a portfolio with shares and bonds, J-REITs contribute to the portfolio across the entire risk spectrum at significant levels (see Figure 3: panel A). Even when property companies are also included in the portfolio, J-REITs continue to play the more significant role, with an insignificant role by property companies (see Figure 3: panel B). This sees J-REITs in the portfolio across the entire portfolio risk spectrum at significant levels, reflecting the strong risk-adjusted performance of J-REITs compared to the other asset classes. It also highlights the added value role of J-REITs compared to property companies in Japan for investors seeking listed property exposure in Japan.

Figure 3: Asset allocations: Oct. 2001 – Feb. 2011

Panel A: J-REITs included



Panel B: J-REITs and property companies included



SUB-PERIOD PERFORMANCE ANALYSIS

The above analysis over the full ten-year period of Oct. 2001 – Feb. 2011 has highlighted the dominant role of J-REITs in a portfolio, with property companies seen to be playing a far less significant role. As this period involves the GFC, it is important to do this analysis over different sub-periods to more fully understand the investment dynamics of J-REITs under different market conditions. In this case, the three sub-periods of Oct. 2001 – Aug. 2007 (pre-GFC), Sept. 2007 – June 2009 (GFC) and July 2009 – Feb. 2011 (post-GFC) were assessed.

Risk-adjusted returns

Table 8 presents the risk-adjusted performance of J-REITs over these three sub-periods. Despite being impacted by the GFC, J-REITs have delivered the strongest returns (14.35% p.a.) in the post-GFC period, clearly out-performing the other asset classes in this post-GFC period. While J-REIT risk increased during the GFC (14.30% to 30.74%), this was only marginally above the risk for shares (26.22%) and below that for the higher risk for property companies (36.82%). Importantly in the post-GFC period, J-REIT risk (18.17%) was below the risk for shares (18.24%) and property companies (22.11%). This saw J-REIT risk reducing by 41% in the post-GFC period, with stockmarket risk only reducing by 30%.

Table 8: Sub-period performance analysis

Asset class	Oct 01–Aug 07			Sept 07–Jun 09			Jul 09–Feb 11		
	Annual return	Annual risk	Sharpe ratio	Annual return	Annual risk	Sharpe ratio	Annual return	Annual risk	Sharpe ratio
J-REITs	19.16%	14.30%	1.33 (1)	-28.44%	30.74%	-0.94 (3)	14.35%	18.17%	0.78 (1)
Property companies	17.37%	25.14%	0.69 (3)	-29.52%	36.82%	-0.81 (2)	7.51%	22.11%	0.33 (3)
Shares	10.05%	14.28%	0.70 (2)	-25.04%	26.22%	-0.97 (4)	3.55%	18.24%	0.19 (4)
Bonds	0.48%	3.92%	0.09 (4)	2.21%	3.85%	0.46 (1)	1.76%	3.22%	0.51 (2)

On a risk-adjusted returns basis, J-REITs were the best-performed asset class in the post-GFC period, as well as in the pre-GFC period. This superior risk-adjusted performance by J-REITs in the post-GFC period was well ahead of that seen for shares (#4) and property companies (#3). This saw J-REITs delivering superior risk-adjusted returns to shares in each of the three sub-periods. Overall, this confirms the robustness and stature of J-REITs as an asset class in Japan, as well as specifically seeing J-REITs delivering superior risk-adjusted performance compared to listed property companies for those investors seeking listed property exposure in Japan.

Portfolio diversification benefits

The portfolio diversification benefits of J-REITs over these three sub-periods are shown in Table 9. While J-REITs saw significantly reduced diversification benefits with shares in the GFC (r = 0.19 increasing to r = 0.78), these diversification benefits have not recovered post-GFC (r = 0.78 marginally decreasing to r = 0.77). In contrast, J-REITs and bonds have seen enhanced diversification benefits across these sub-periods (r = 0.14, -0.14 and -0.24 respectively).

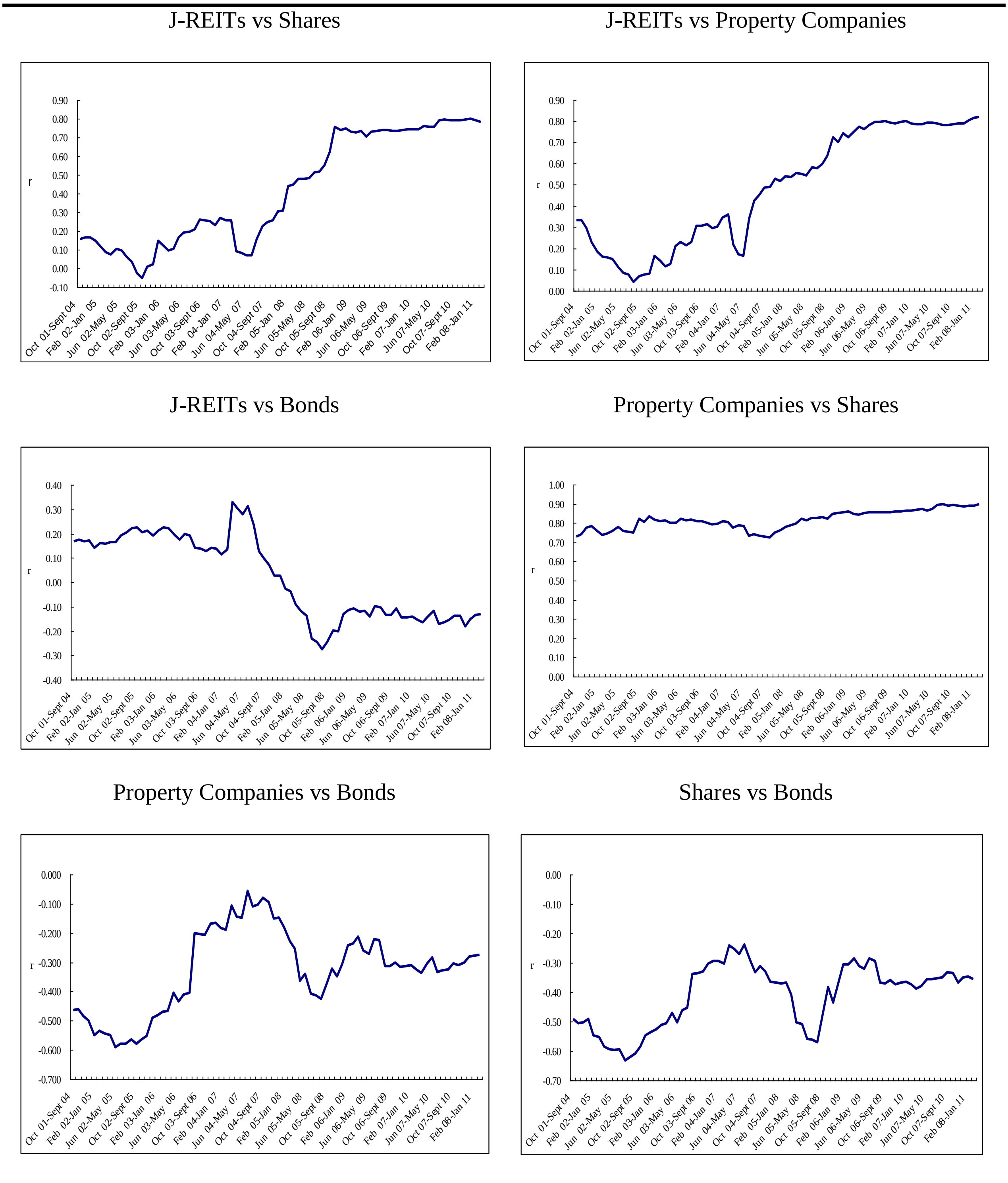
Table 9: Sub-period inter-asset correlations

	Oct 01–Aug 07			Sept 07–Jun 09			Jul 09–Feb 11		
	J-REITs	Property com.	Shares	J-REITs	Property com.	Shares	J-REITs	Property com.	Shares
Property companies	0.39*			0.76*			0.85*		
Shares	0.19	0.73*		0.78*	0.90*		0.77*	0.85*	
Bonds	0.14	-0.32*	-0.42*	-0.14	-0.36	-0.33	-0.24	-0.21	-0.45

*: significant correlation (P<5%)

Compared to J-REITs, property companies had less diversification benefit with shares in each sub-period, with no recovery of these diversification benefits post-GFC (r = 0.90 to r = 0.85). The diversification benefits between J-REITs and property companies have further deteriorated across these three sub-periods (r = 0.39, 0.76 and 0.85 respectively), reflecting reduced property product differentiation post-GFC.

Figure 4: Rolling correlation analysis



Overall, this post-GFC period has seen J-REITs deliver improved performance, reduced risk, improved risk-adjusted returns, enhanced diversification benefits with bonds, but without enhanced diversification benefits with shares. These features are generally positive outcomes for J-REITs in the post-GFC period; particularly compared with the much lesser performance for these investment features by property companies post-GFC. This further confirms the investment stature of J-REITs compared to listed property companies for those investors seeking listed property exposure in Japan.

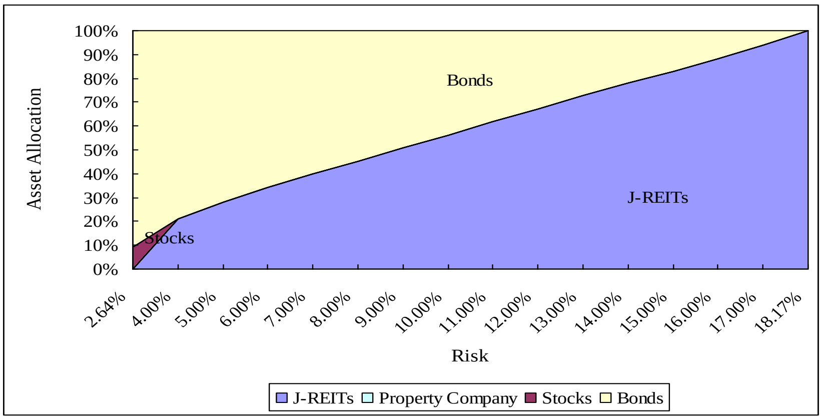
Diversification dynamics

For a fuller perspective on the changing investment dynamics of J-REITs over 2001 – 2011, Figure 4 presents the rolling three-year inter-asset correlation analysis. This analysis clearly highlights the lack of recovery of diversification benefits by J-REITs with shares in the post-GFC period, as well as the enhanced diversification benefits by J-REITs with bonds. The continued loss of diversification benefits of property companies with shares is also evident, as is the loss of property product differentiation between J-REITs and property companies in the post-GFC period.

Post-GFC asset allocation

The significantly improved investment characteristics for J-REITs compared to the other asset classes in the post-GFC period are expected to flow through into the optimal asset allocation in the post-GFC period. Figure 5 presents this post-GFC asset allocation including J-REITs, property companies, shares and bonds, with this asset allocation similar to the previous full ten-year timeframe asset allocation (see Figure 3: panel B). In particular, this post-GFC period continues to see a significant role for J-REITs in the portfolio across the full risk spectrum. It also sees a negligible role for shares and no role for property companies in the post-GFC asset allocation. This non-inclusion of property companies post-GFC reflects the superior returns by J-REITs (14.35% versus 7.51%) at lower risk levels by J-REITs (18.17% versus 22.11%). As such, this sees J-REITs as the only property asset class in the optimal asset allocations in the post-GFC period; further validating the key role of J-REITs for investors seeking listed property exposure in Japan.

Figure 5: Post-GFC asset allocation



CONCLUSION

Since being established in 2001, J-REITs now have size, maturity, liquidity and significance, being the 5th largest REIT market globally and the largest REIT market in Asia, accounting for 43% of the Asian REIT market. This sees J-REITs having significant and high-quality property portfolios in the 2nd largest property market globally. In particular, this paper has highlighted that J-REITs have shown significant improvements in their risk-adjusted performance in the post-GFC period. This has seen J-REITs play a significant role in the optimal mixed-asset portfolio post-GFC, with the portfolio role of the more volatile listed property companies sector having been significantly reduced. This environment for J-REITs has been further enhanced by strong local and international investor support, government and Bank of Japan support, proactive industry support, sector consolidation and a strengthening of the J-REIT market in 2010 – 2011 (CBRE, 2011a, 2011b).

Given the stature of the Japan property markets and the global significance of the Japanese economy, J-REITs are expected to continue as the dominant REIT market in Asia and to have an active role as an effective listed property investment vehicle for both Japanese and international property investors. The scale, depth and maturity in the J-REIT market sees sufficient trading and liquidity in J-REITs to enable large institutional investors to use J-REITs in constructing optimal portfolios. In particular, J-REITs have been shown in this paper to be a different and better-performed property investment vehicle than listed property companies for those local and international investors seeking exposure to the listed property markets in Japan.

REFERENCES

Asia Pacific Real Estate Association 2010, *The Significance of Real Estate in Asian Pension Funds*, APREA.

Asia Pacific Real Estate Association 2011, *Asia Pacific REIT Weekly Report:* June 2011, APREA.

Association For Real Estate Securitisation 2010, *The 10th Questionnaire Survey on Real Estate Investment By Institutional Investors*, ARES.

Association For Real Estate Securitisation 2011, *ARES J-REIT Report:* Sept. 2011 (and miscellaneous copies), ARES.

CB Richard Ellis 2011a, *REITs Across Asia: 2H 2010*, CBRE.

CB Richard Ellis 2011b, *MarketView: Asia REITs: 1H 2011*, CBRE.

Cheok, SM, Sing, TF and Tsai, IC 2011, 'Diversification as a value-adding strategy for Asian REITs: a myth or reality?', *International Real Estate Review*, 14, 184-207.

Chiang, YH, So, CK and Tang, BS 2008, 'Time-varying performance of four Asia-Pacific REITs'. *Journal of Property Investment and Finance*, 26, 210-231.

European Public Real Estate Association 2011, *Global REIT Survey*, EPRA.

IPD 2011, *IPD Japan Annual Property Index*, IPD.

Jones Lang LaSalle 2010, *Real Estate Transparency Index*, JLL.

Jones Lang LaSalle 2011, *Asia Pacific Property Digest*, Q2: 2011, JLL.

Kim, BS 2009, 'The impact of the global financial crisis on Asia-Pacific real estate markets: evidence from Korea, Japan, Australia and US REITs', *Pacific Rim Property Research Journal*, 15, 398-416.

Kudus, S and Sing, TF 2011, 'Interest alignment and insider shareholdings in the emerging Asian REIT markets', *Journal of Real Estate Portfolio Management*, 17, 127-137.

Kutsuna, K, Dimovski, W and Brooks, R 2008, 'The pricing and underwriting cost of Japanese REIT IPOs', *Journal of Property Research*, 25, 225-239.

Liow, KH and Adair, A 2009, 'Do Asian real estate companies add value to investment portfolios', *Journal of Property Investment and Finance*, 27, 42-64.

Liow, KH and Sim, MC 2006, 'The risk and return profile of Asian real estate stocks', *Pacific Rim Property Research Journal*, 12, 283-310.

Macquarie Securities 2011, *Global Property Securities Analytics*, June 2011, Macquarie Securities.

Newell, G, Chau, KW, Wong, SK and Liow KH 2009, 'The significance and performance of property securities markets in the Asian IFCs', *Journal of Property Research*, 26, 125-148.

Ong, SE, Ooi, JL and Kawaguichi, Y 2011, 'Seasoned equity issuance by Japan and Singapore REITs', *Journal of Real Estate Finance and Economics*, 43, 205-220.

Ooi, J, Newell, G and Sing, TF 2006, 'The development of Asian REITs', *Journal of Real Estate Literature*, 14, 203-224.

Pramerica 2011, *A Bird's Eye View of Global Real Estate Markets*: *2011 Update*, Pramerica.

Real Capital Analytics 2011, *Global Trends: August 2011*, RCA.

Standards & Poor's 2011, *Global Property and REIT Report: 2nd Quarter 2011*, S&P.

Su, HM, Huang, CM and Pai, TY 2010, 'The hybrid characteristics of REIT returns: evidence from Japan and US markets', *Journal of Real Estate Literature*, 18, 77-97.

Transparency International 2010, *Corruption Perception Index 2010*, TI.

Trust 2011, *Asia-Pacific REIT Survey*, Trust.

World Economic Forum 2010, *Global Competitiveness Report 2010-11*, WEF.

World Federation of Exchanges 2011, *Focus: February 2011*, WFE.

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