THE ROLE OF TAIWAN REITs IN INVESTMENT PORTFOLIOS

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ABSTRACT

REITs in Taiwan (T-REITs) have been an important property investment vehicle in Taiwan since 2005. This paper assess the significance, risk-adjusted performance and portfolio diversification benefits of T-REITs in a mixed-asset portfolio in Taiwan over 2005-2011. Whilst T-REITs under-performed the construction shares sector in Taiwan, they provided portfolio diversification benefits, with enhanced risk-adjusted returns, enhanced diversification benefits and a significant role in the mixed-asset portfolio in the post-GFC period. The key strategic issues for the ongoing strategic development of the T-REIT market are identified; particularly relating to the size and growth opportunities for T-REITs.

Keywords: Taiwan, Asia REITs, T-REITs, risk-adjusted returns, portfolio diversification, post-GFC performance

INTRODUCTION

REITs in Asia have taken on increased significance in recent years, reflecting the strong economic growth and improved market transparency in many of the Asian property markets (JLL, 2010). Since being established in 2001, this has seen REITs established in seven Asian markets; namely Japan, Singapore, Hong Kong, Malaysia, Taiwan, Thailand and South Korea (CB Richard Ellis, 2011). At April 2011, this saw 99 REITs in Asia, with a total market capitalisation of over US$93 billion, accounting for 11.8% of the global REIT market cap (Macquarie Securities, 2011). Whilst the Asia REIT markets were significantly impacted by the GFC, the recovery in the Asian REIT markets has been more significant than that seen in the mature REIT markets (eg: US, Australia). This has seen several of the Asia REIT markets now exceed their pre-GFC market cap levels, saw new REIT IPOs launched in 2010-2011 (eg: Japan, Singapore, Hong Kong), as well as REITs in Asia undertaking successful capital raisings.

Within this Asia REIT context, Taiwan established a REIT market (T-REITs) in March 2005, with eight T-REITs established by May 2007. Given the significance of Taiwan as one of East Asia's economic "Tigers", it is important to assess the significance and performance of T-REITs in a Taiwan mixed-asset portfolio. This is further reinforced by the traditional local investor focus on listed construction companies on the Taiwan stockmarket; and hence T-REITs providing another important source of listed property exposure in Taiwan for both local and international institutional investors.

The purpose of this paper is to assess the significance, risk-adjusted performance, portfolio diversification benefits and role of T-REITs in a mixed-asset portfolio in Taiwan over the five-year period of February 2006 – January 2011. Sub-period analyses are also conducted to assess the impact of the global financial crisis (GFC) on the investment dynamics of T-REITs; particularly in the post-GFC period. Issues for the ongoing strategic development of T-REITs are also assessed.

SIGNIFICANCE OF COMMERCIAL PROPERTY IN TAIWAN

With a population of only 23 million, Taiwan has seen significant growth as one of the economic "Tigers" of Asia. Taiwan is one of the most globally competitive business environments, being ranked #13 globally and #4 in Asia, only exceeded by Singapore, Japan and Hong Kong (WEF, 2010), as well as being seen as the 4th least corrupt country in Asia (TI, 2010). With a strong focus on the services sector (69% of GDP) (CIA, 2011), Taiwan has seen strong GDP growth in 2010 (10.8%) and 2011 (4.9% forecast) (JLL, 2011). The Taiwan stockmarket ($770 billion at Feb. 2011) is #21 globally and the 8th largest stockmarket in Asia (WFE, 2011).

Taiwan's property market is the 23rd largest globally (0.7% of global market) and #7 in Asia (3.1% of Asia market), only exceed by Japan (#2 globally), China (#4), South Korea (#12), India (#15), Singapore (#20) and Hong Kong (#21) (Pramerica, 2011). The Taiwan property market is classified as "semi-transparent", being #33 globally and #5 in Asia;

only exceeded by the "transparent" property markets of Singapore (#16), Hong Kong (#18), Malaysia (#25) and Japan (#26) (JLL, 2010). Overall, this sees Taiwan being classified as an emerging property market in Asia.

Globally, Taiwan has seen considerable commercial property investment activity in recent years. With $7.2 billion in commercial property transactions in 2010, this saw Taiwan as #12 globally (1.2% of global transactions) and #5 in Asia (2.6% of Asia transactions), only exceeded by China, Japan, Hong Kong and Singapore in Asia. Taipei as the capital of Taiwan was the 7th most active city in Asia for property investment capital flows in Asia in 2010; only exceeded by Tokyo, Hong Kong, Singapore, Beijing, Shanghai and Seoul. Similar property capital flow trends have been evident in Q1 2011 (Real Capital Analytics. 2011).

The listed property sector in Taiwan is #17 globally and #8 in Asia, and accounts for 0.9% of the global market and 2.2% of the Asia market. This sees Taiwan as a small listed property market compared to the Asian global leaders of Hong Kong (#2 globally @ 18.6%), Singapore (#3 globally @ 6.9%) and Japan (#4 globally @ 6.4%); being comparable in market cap size to Malaysia and the Philippines amongst the emerging Asian markets (Macquarie Securities, 2011). The listed property sector, which accounts for 3.1% of the direct market in Taiwan, includes the REIT market in Taiwan. T-REITs also account for 12% of property exposure on the Taiwan stockmarket, with the construction sector providing 88% of this stockmarket listed property exposure (Macquarie Securities, 2011).

Most of the previous property research regarding Taiwan commercial property has been focused on Taiwan property/construction 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). This reflects the smaller size of the Taiwan listed property market and its more likely investor role in a pan-Asia listed portfolio or in an emerging markets listed portfolio.

DEVELOPMENT OF REITs IN TAIWAN

With REITs established in Asia in September 2001, T-REITs were first established in March 2005 (Fubon No.1). This saw T-REITs established as the 4th REIT market in Asia, after REITs in Japan (Sept. 2001), Singapore (July 2002) and Thailand (Oct. 2003) (CB Richard Ellis, 2011).

Table 1 lists full details regarding the current regulatory structure and characteristics of T-REITs. There were eight T-REITs listed on the Taiwan Stock Exchange at April 2011, with all of these T-REITs launched over March 2005 – May 2007; no new T-REITs have been launched in the subsequent four years. This sees T-REITs as having limited upside compared to most of the other six Asia REIT markets in the areas of overall potential (#6/7 markets), REIT opportunity (#6/7), regulatory support (#6/7) and property market growth (#4/7) (Trust, 2011).

Table 1: Regulatory structure and characteristics of T-REITs

- Internal or external manager allowed
- Property to comprise at least 75% of assets
- No geographic restrictions, but international property is subject to approval
- No property development, but up to 15% can be urban renewal, infrastructure or public amenities construction (since 2010)
- Maximum 50% gearing for REITs with AA credit rating or above; previously 35%
- At least 90% income distribution
- Tax transparent
- Legislation: Real Estate Securitisation Act (2003)
- Regulatory authority: Financial Supervisory Commission

Source: CB Richard Ellis (2011), EPRA (2010)

Table 2 highlights the significance of T-REITs in an Asian and global REIT context at April 2011. These eight T-REITs, with a total market capitalisation of $2.2 billion, saw T-REITs accounting for 0.3% of the global REIT market and 2.2% of the Asia REIT market. This saw T-REITs ranked as the #15 largest REIT market globally (out of 22 REIT markets) and the #5 REIT market in Asia (out of 7 REIT markets) (Macquarie Securities, 2011). Comparable size REIT markets globally include New Zealand (#14) and Germany (#16). To further highlight the smaller relative size of the T-REIT market, the largest T-REITs are Cathay No. 1 (#46 in Asia and #230 globally) and Shin Kong No. 1 (#61 in Asia and #272 globally) (APREA, 2011).

Table 2: Significance of T-REITs: April 2011

Country	# REITs	Market cap (US$)	% global REITs	% Asia REITs	Global REIT rank	Asia REIT rank
Japan	34	$42.2B	5.1%	43.8%	#5	#1
Singapore	24	$31.2B	3.8%	32.4%	#7	#2
Hong Kong	8	$16.3B	2.0%	17.0%	#9	#3
Malaysia	14	$3.8B	0.5%	4.0%	#12	#4
Taiwan	**8**	**$2.2B**	**0.3%**	**2.2%**	**#15**	**#5**
Thailand	6	$0.5B	0.1%	0.5%	#20	#6
South Korea	5	$0.2B	<0.1%	0.2%	#22	#7
Asia	99	$96.3B	11.8%	100.0%		
Global	507	$819.6B	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. T-REITs have performed strongly in the last year, only marginally below that seen for the recovery in the larger Asia REIT markets in Japan, Singapore and Hong Kong. The dynamics of this performance of T-REITs over 2006-2011 will be examined more fully in the empirical results and discussion section of this paper.

Table 3: Asia REIT performance: Q1 2011

	1Y	3Y	5Y
Taiwan	23.2%	6.7%	7.4%
Japan	31.1%	1.2%	2.7%
Singapore	30.0%	2.7%	10.8%
Hong Kong	32.3%	17.3%	11.1%
US	24.2%	2.0%	1.3%
UK	20.6%	-17.6%	NA
Australia	18.3%	-11.0%	-2.8%

Source: S&P (2011)

Table 4 provides the general profile of the various T-REITs at April 2011. This sees T-REITs investing in the office, retail, industrial, apartments and hotel sectors. However, each T-REIT only has a small number of properties (3-6), which sees a lack of adequate diversification in their property portfolios. This is further compounded by an inactive and uncertain T-REIT market in recent years, low T-REIT size rankings in Asia and globally, with a lack of new acquisitions and new IPO listings. With a strong property market in Taiwan and several of these T-REITs trading at a significant discount to NTA over long periods, this has seen a number of T-REITs seek liquidation opportunities to realise the increased value of their property portfolios. If these liquidations are successfully approved by the Financial Supervisory Commission, this would result in an even smaller T-REIT market; potentially only six T-REITs later in 2011 (CBRE, 2011).

Table 4: T-REIT property profile: Dec. 2010

T-REIT	Date established	Number of properties	Total assets (US$)	Asia REIT rank	Global REIT rank	Property sectors
Fubon No. 1	March 2005	4	$319M	#74	#318	Office, retail, apartments
Cathay No. 1	Oct. 2005	3	$573M	#46	#230	Office, retail, hotel
Shin Kong No. 1	Dec. 2005	6	$655M	#61	#272	Office, retail, apartments
Fubon No. 2	April 2006	3	$310M	#72	#307	Office, industrial
Trident	June 2006	3	$163M	#81	#360	Office, retail, industrial
Kee Tai Star	Aug. 2006	2	$93M	#94	#394	Office, hotel
Cathay No. 2	Oct. 2006	3	$359M	#71	#306	Office
Gallop No. 1	May 2007	3	$173M	#89	#364	Office, industrial

Sources: APREA (2011), CBRE (2011), Macquarie Securities (2011) and Taiwan Stock Exchange website

Given the recent establishment of REITs in Asia, only limited property research has been conducted in this increasingly important area. However, it has been a more active research area as sufficient Asia REIT information has become available across all of the Asia REIT markets (eg: IPO issues, performance analysis). This has seen Asia REIT research published concerning REITs in Japan (Chiang et al, 2008; Kim, 2009; Kutsuna et al, 2008; Ong et al, 2011; Su et al, 2010), Singapore (Chiang et al, 2008; Ong et al, 2011; Quek and Ong, 2008; Sing and Ling, 2003), Hong Kong (Newell et al, 2010; Quek and Ong, 2008), Malaysia (Newell and Osmadi, 2009, 2010; Sing et al, 2002; Ting and Choi, 2011), Thailand (Pham, 2011a), South Korea (Kim, 2009; Pham, 2011b) and Taiwan (Lee et al, 2011; Lin, 2007), as well as Asia REITs in a broader pan-Asia context (Cheok et al, 2011; Ooi et al, 2006). Previous T-REIT research has focused on T-REIT valuation issues (Lin, 2007) and T-REIT IPO issues (Lee et al, 2011). No property research has been published as yet on the rigorous empirical performance analysis of T-REITs and their role in a portfolio.

Overall, while T-REITs only account for 2.2% of the Asia REIT market and 12% of listed property exposure on the Taiwan stockmarket, they do provide local and international investor choice regarding their listed property exposure and accessing quality investment properties in the Taiwan property market. The subsequent sections of this paper will assess the risk-adjusted performance and portfolio diversification benefits of T-REITs in a portfolio over 2006-2011, as well as assessing the role of T-REITs in a mixed-asset portfolio and the impact of the GFC on T-REIT performance.

METHODOLOGY

Data sources

Monthly total returns were assessed over the five-year period of February 2006 – January 2011 for T-REITs, shares, construction shares and bonds. The T-REIT index used was the S&P T-REIT total return index, with all performance series accessed using Datastream. Construction company shares were also assessed as they have traditionally been the source of listed property exposure on the Taiwan stockmarket, accounting for 88% of listed property exposure in Taiwan. Direct property was not considered, due to the lack of an institutional-grade property performance benchmark (eg: IPD) for Taiwan.

Statistical analysis

For the various T-REIT, stock, construction company and bond series, risk-adjusted total returns were assessed over February 2006 – January 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 T-REITs in the Taiwan mixed-asset portfolio. The full time period of February 2006 – January 2011 was also broken down into the three sub-periods of Feb. 2006 – Aug. 2007 (pre-GFC), Sept. 2007 – June 2009 (during GFC) and July 2009 – Jan. 2011 (post-GFC) to assess the impact of the GFC on T-REIT investment dynamics; particularly concerning the post-GFC dynamics of T-REITs.

RESULTS AND DISCUSSION

Risk-adjusted returns

Table 5 presents the average annual returns for T-REITs versus the other asset classes in Taiwan on a 1Y, 3Y and 5Y basis at Jan. 2011. T-REITs were the best performed asset class over the last three years which includes the GFC, but T-REITs were out-performed by both shares and construction shares over the one year and five year timeframes.

Table 5: T-REIT performance: Jan. 2011

Asset class	Average annual total returns		
	1Y	3Y	5Y
T-REITs	17.38%	8.97%	5.40%
Construction shares	22.13%	7.47%	18.90%
Shares	19.70%	6.73%	6.96%
Bonds	2.26%	4.07%	2.54%

Source: Authors' compilation

The risk-adjusted performance analysis for T-REITs over Feb. 2006 – Jan. 2011 is presented in Table 6. T-REITs (5.40% p.a.) were marginally out-performed by shares (6.96% p.a.) and significantly out-performed by construction

shares (18.90% p.a.) over this period. However, T-REIT risk (13.94%) was significantly less than the risk for shares (24.96%) and construction shares (50.28%). This saw T-REITs only having 56% of the level of stockmarket risk and only having 28% of the level of construction share risk. On a risk-adjusted basis (via the Sharpe ratio), this saw T-REITs as the #3-ranked asset class, exceeded by bonds (#1) and construction shares (#2), but out-performing shares (#4). Whilst T-REITs were out-performed by construction shares on a risk-adjusted basis, the difference was marginal; as seen in the Sharpe ratios of 0.31 and 0.35 respectively.

Table 6: T-REIT risk-adjusted performance: Feb. 2006 – Jan. 2011

Asset class	Average annual return	Annual risk	Sharpe ratio	Performance rank
T-REITs	5.40%	13.94%	0.31	3
Construction shares	18.90%	50.28%	0.35	2
Shares	6.96%	24.96%	0.23	4
Bonds	2.54%	3.20%	0.43	1

Diversification benefits

Table 7 presents the inter-asset correlation matrix for T-REITs over this five-year period. T-REITs are seen to provide some degree of portfolio diversification benefits with stocks (r = 0.52), but also providing more diversification benefits than from construction stocks with shares (r = 0.75). T-REITs also provided portfolio diversification benefits with bonds (r = -0.06). A degree of differentiation in performance was also seen between T-REITs and construction shares (r = 0.55). Overall, T-REITs are seen to be providing portfolio diversification benefits, with these benefits being more significant than those provided by construction shares.

Table 7: Inter-asset correlations: Feb. 2006 – Jan. 2011

	T-REITs	Construction shares	Shares	Bonds
T-REITs	1.000			
Construction shares	0.548*	1.000		
Shares	0.518*	0.747*	1.000	
Bonds	-0.061	-0.299*	-0.449*	1.000

*: significant correlation (p<5%)

T-REITs in the portfolio

The efficient frontiers involving T-REITs are shown in Figure 1. A portfolio involving shares, bonds and T-REITs is seen to out-perform a portfolio of shares and bonds across the portfolio risk spectrum. However, the best performance is clearly evident from a portfolio of shares, bonds, T-REITs and construction shares across an expanded portfolio risk spectrum.

Figure 2 shows the respective asset allocations at various risk levels. In a portfolio with shares and bonds, T-REITs contribute to the portfolio across the risk spectrum at significant levels (see Figure 2: panel A). However, when construction shares are also included in the portfolio, T-REITs play a less significant role, with a more dominant role by construction shares (see Figure 2: panel B). This will sees T-REITs in the portfolio across the portfolio risk spectrum, but at levels of only up to 10%.

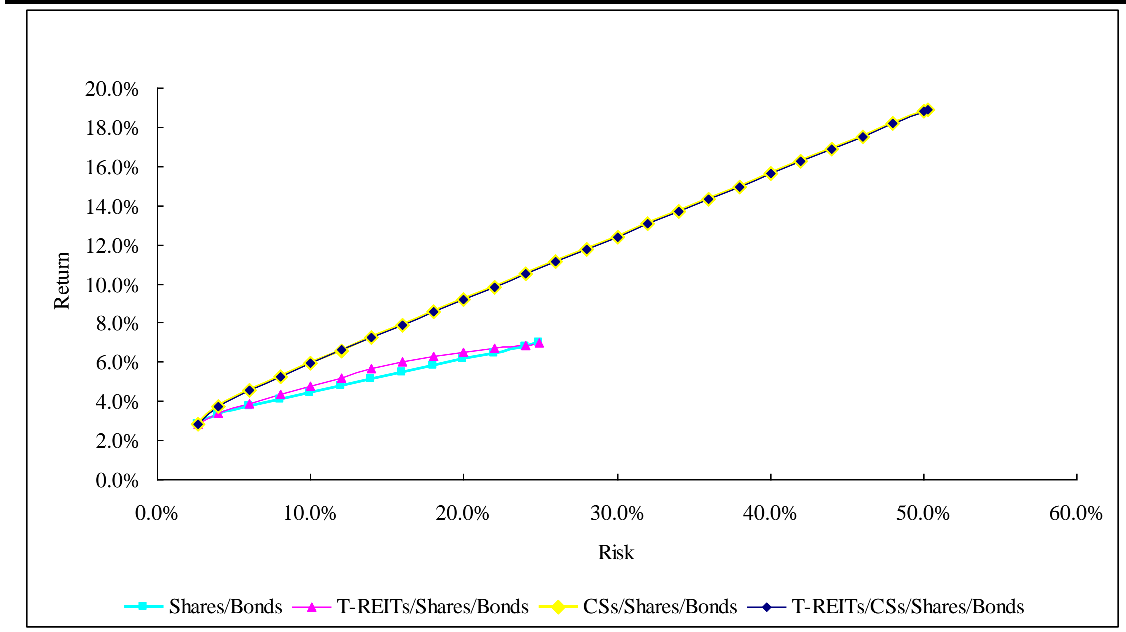
SUB-PERIOD PERFORMANCE ANALYSIS

The above analysis over the full five-year period of Feb. 2006 – Jan. 2011 has highlighted the role of T-REITs in a portfolio, but with construction shares seen to be playing a more 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 T-REITs under different market conditions. In this case, the three sub-periods of Feb. 2006 – Aug. 2007 (pre GFC), Sept. 2007 – June 2009 (GFC) and July 2009 – Jan. 2011 (post GFC) were assessed.

Risk-adjusted returns

Table 8 presents the risk-adjusted performance of T-REITs over these three sub-periods. T-REITs have progressively improved their average annual returns, showing more robustness in the GFC than either shares or construction shares which were significantly impacted during the GFC. Importantly, while T-REIT risk increased during the GFC (7.17% to 21.01%), T-REIT risk has reduced by 61% in the post-GFC period to 8.16%, whereas stockmarket risk has only

Figure 1: Efficient frontiers: Feb. 2006 – Jan. 2011



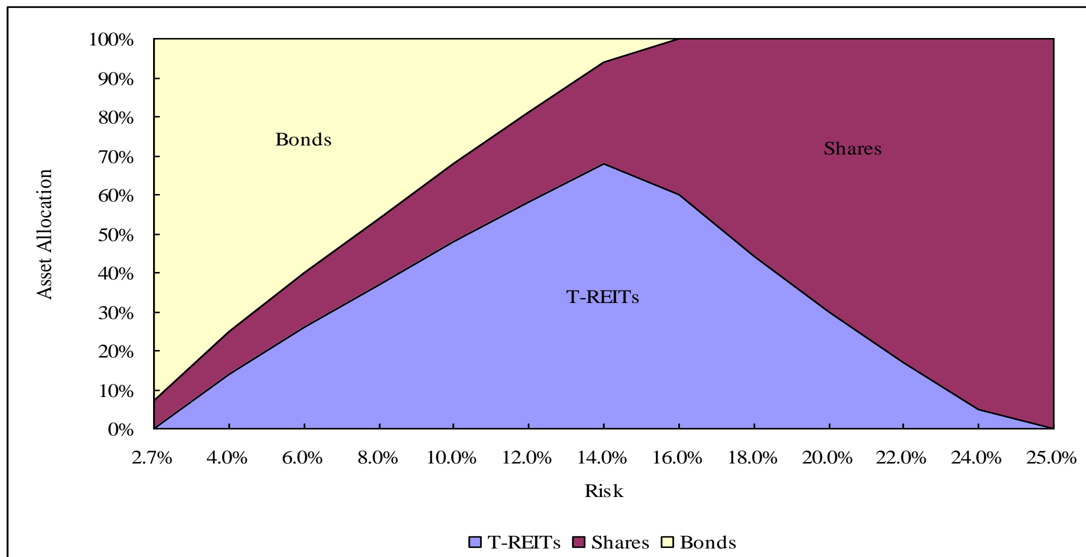
reduced by 46% in the post-GFC period (from 34.83% to 18.90%). Construction shares have also reduced their volatility post-GFC, but still operate at significantly higher risk levels; currently being 24.66%.

Table 8: Sub-period performance analysis

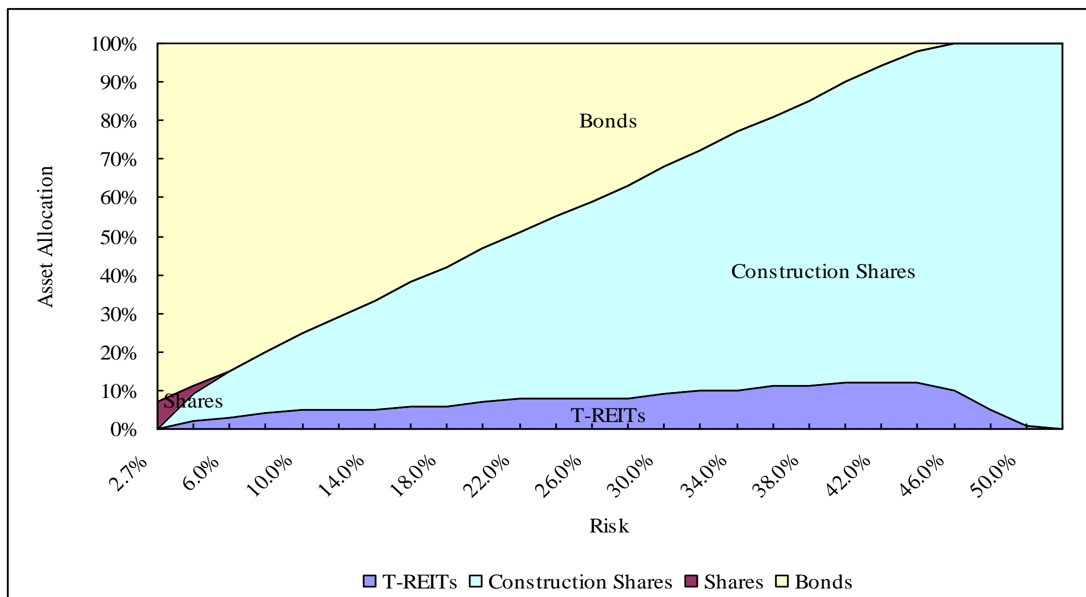
Asset class	Feb 06–Aug 07			Sept 07–Jun 09			Jul 09–Jan 11		
	Annual return	Annual risk	Sharpe ratio	Annual return	Annual risk	Sharpe ratio	Annual return	Annual risk	Sharpe ratio
T-REITs	1.57%	7.17%	-0.01 (3)	4.12%	21.01%	0.13 (2)	10.94%	8.16%	1.31 (1)
Construction Shares	56.52%	35.92%	1.53 (1)	-5.98%	73.63%	-0.10 (3)	18.54%	24.66%	0.74 (4)
Shares	22.28%	13.79%	1.50 (2)	-16.65%	34.83%	-0.52 (4)	24.89%	18.90%	1.30 (2)
Bonds	-1.15%	3.25%	-0.86 (4)	5.42%	3.66%	1.09 (1)	2.99%	2.34%	1.17 (3)

Figure 2: Asset allocations: Feb. 2006 – Jan. 2011

Panel A: T-REITs included



Panel B: T-REITs and construction shares included



As competing property asset classes, T-REITs have always had a risk level below that of shares in each of these sub-periods, whereas construction share risk was always significantly above that of shares in each time period. Post-GFC, this sees T-REITs as having only 43% of the level of stockmarket risk, whereas construction shares have 30% more risk than the level of stockmarket risk.

On a risk-adjusted returns basis, T-REITs have progressively improved their performance over these three sub-periods (#3 to #2 to #1), being the best-performed asset class post-GFC compared to shares (#2), bonds (#3) and construction stocks (#4). In contrast, the risk-adjusted performance of construction stocks has become progressively worse (#1 to #3 to #4), being the worst-performed asset class on a risk-adjusted basis post-GFC.

Portfolio diversification benefits

The portfolio diversification benefits of T-REITs over these three sub-periods is shown in Table 9. While T-REITs saw reduced diversification benefits with shares in the GFC (r = 0.32 increasing to r = 0.64), these diversification benefits have been recovered and enhanced post-GFC (r = 0.64 decreasing to r = 0.05). In contrast, construction shares also saw reduced diversification benefits with shares in the GFC (r = 0.52 increasing to r = 0.82), with these diversification benefits only marginally recovering post-GFC (r = 0.82 decreasing to r = 0.69). These current benefits for construction shares with shares being seen are less than the level of worst case scenario diversification benefit seen by T-REITs and

stocks during the GFC (r = 0.69 versus r = 0.64). T-REITs have also shown consistent diversification benefits with bonds over these sub-periods, as well as increased product differentiation compared with construction stocks post-GFC (r = 0.62 decreasing to r = 0.20).

Table 9: Sub-period inter-asset correlations

	Feb 06–Aug 07			Sept 07–Jun 09			Jul 09–Jan 11		
	T-REITs	Cons. shares	Stocks	T-REITs	Cons. shares	Stocks	T-REITs	Cons. shares	Stocks
Construction shares	0.452			0.617			0.204		
Stocks	0.324	0.515		0.643	0.823		0.050	0.689	
Bonds	-0.082	-0.566	-0.540	-0.074	-0.261	-0.512	-0.105	0.016	-0.177

Overall, this post-GFC period has seen T-REITs deliver improved performance, reduced risk, improved risk-adjusted returns and enhanced portfolio diversification benefits. All of these features are very positive outcomes for T-REITs in the post-GFC period; particularly compared with the much lesser performance for these investment features by construction shares post-GFC.

Risk and diversification dynamics

For a fuller perspective on the changing investment dynamics of T-REITs over 2006 – 2011, Figure 3 presents the rolling two-year risk analyses. The reduction in risk by T-REITs post-GFC (52% decrease) is clearly more evident than the risk reduction post-GFC seen for construction shares (24% decrease) and shares (32% decrease), as well as the absolute T-REIT risk levels being significantly less than for shares and construction shares. Similarly, Figure 4 presents the rolling two-year inter-asset correlation analysis. This analysis clearly highlights the recovery of diversification benefits by T-REITs with shares post-GFC, and only the marginal recovery of diversification benefits by construction shares with shares. The generally stable diversification benefits of T-REITs with bonds is in contrast to the loss of diversification benefits of construction shares with bonds, as well as the loss of diversification benefit for shares with bonds.

Post-GFC asset allocation

The significantly improved investment characteristics for T-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 T-REITs, construction shares, shares and bonds, with this asset allocation significantly different to the previous full 5-year timeframe asset allocation (see Figure 2: panel B). In particular, this post-GFC period now sees a far more significant role for T-REITs in the portfolio across the full risk spectrum; in all cases, above the maximum 10% level seen previously in Figure 2. Other key differences post-GFC include the significant role by shares across the risk spectrum and importantly, the non-inclusion of construction shares in the optimal portfolio at any stage in the portfolio risk spectrum. This non-inclusion of construction shares post-GFC reflects the superior returns by shares (24.89% versus 18.54%) at lower risk levels by shares (18.90% versus 24.66%). As such, this sees T-REITs as the only property asset class in the optimal asset allocations in the post-GFC period.

T-REIT IMPLICATIONS

T-REITs have shown significant improvements in their risk-adjusted performance and portfolio diversification benefits in the post-GFC period. This has seen T-REITs play a significant role in the optimal mixed-asset portfolio post-GFC, with the portfolio role of the more volatile construction shares having been significantly reduced.

However, this improved asset performance by T-REITs needs to be offset against some of the practical investment issues relating to T-REITs; particularly the small relative size of the T-REIT market and their property portfolios. Whilst being established in 2005, there are still only eight T-REITs; with the last T-REIT established in May 2007. This sees the T-REIT market as only the 15th largest REIT market globally of the current 22 global REIT markets, as well as only being the 5th largest of the seven REIT markets in Asia. Subsequently, T-REITs only account for 0.3% of the global REIT market and 2.2% of the Asia REIT market. In recent years, this has also seen a T-REIT environment of limited growth opportunities, inactive market, small property portfolios with limited diversification and a lack of recent property acquisitions. With an improved property market in Taiwan and several of these T-REITs trading at significant discounts, this has seen liquidation opportunities taken by several T-REITs that could potentially reduced the number of T-REITs to only six.

Figure 3: Rolling risk analysis

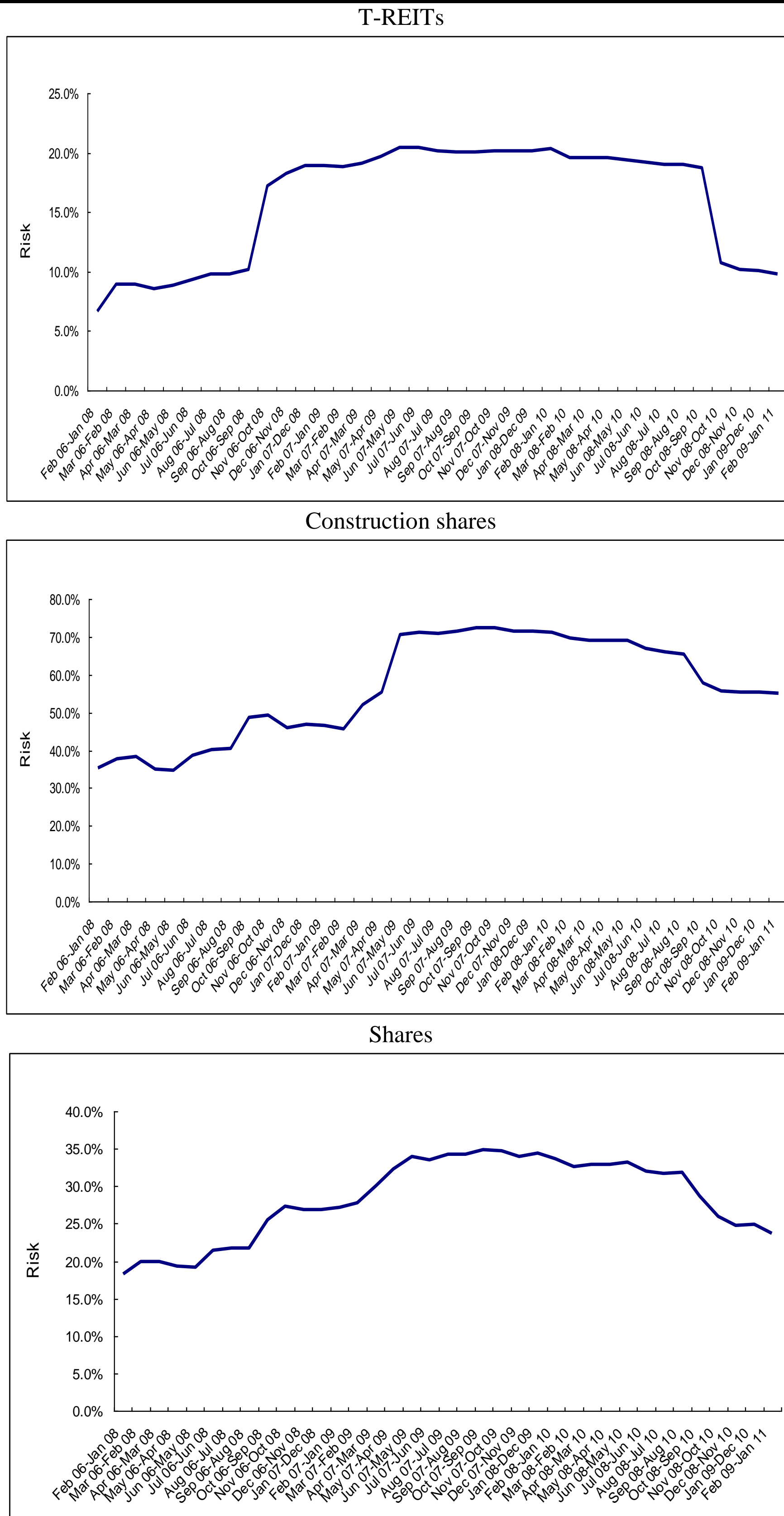
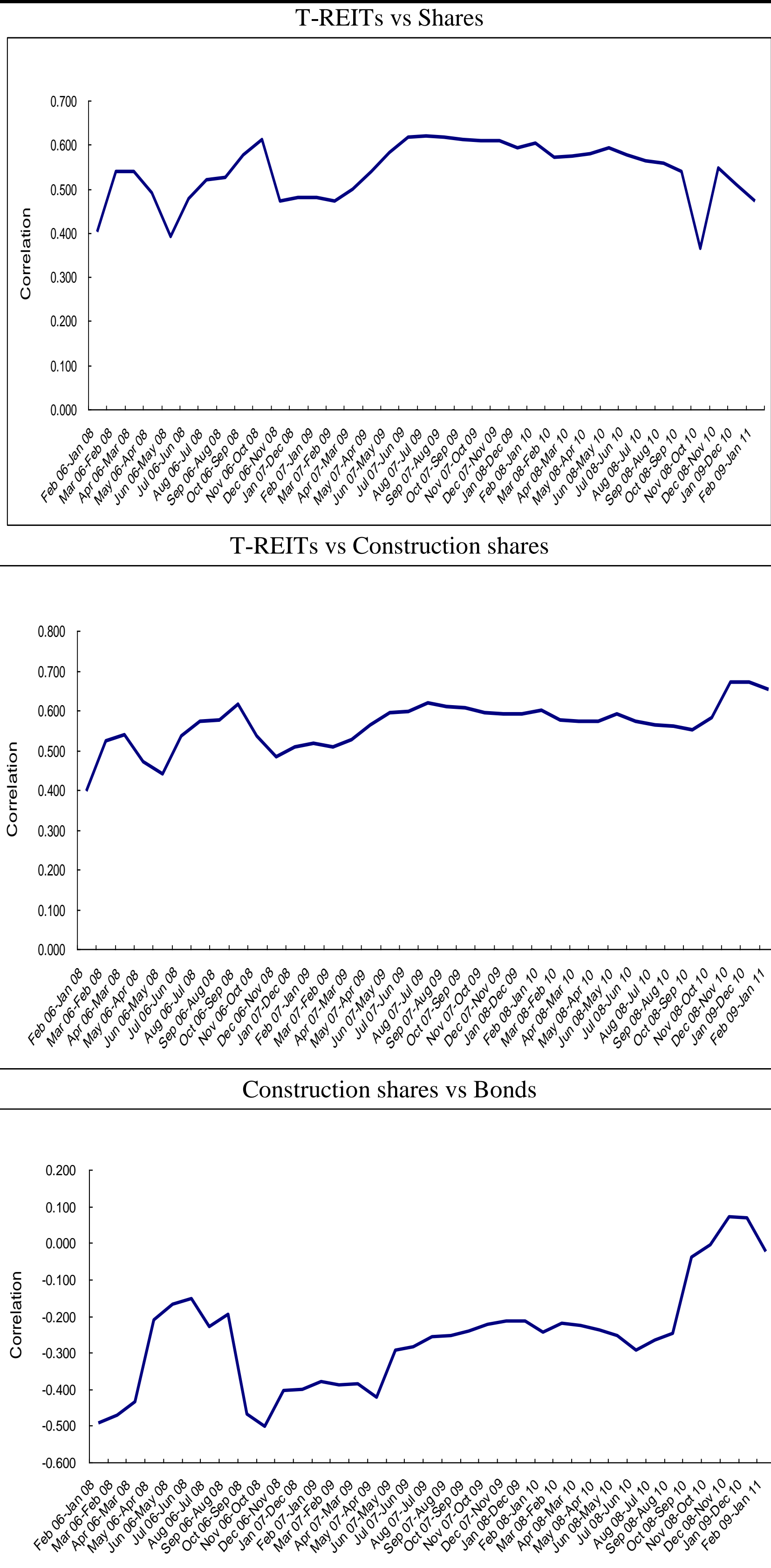
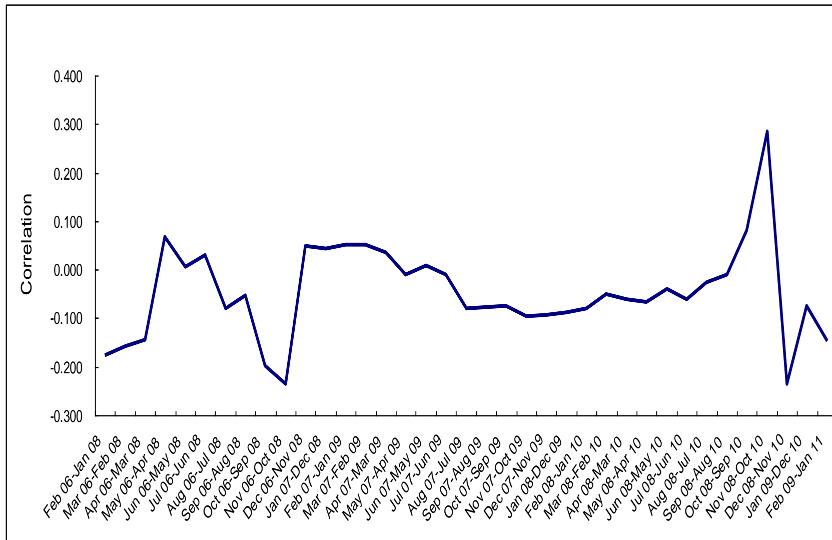


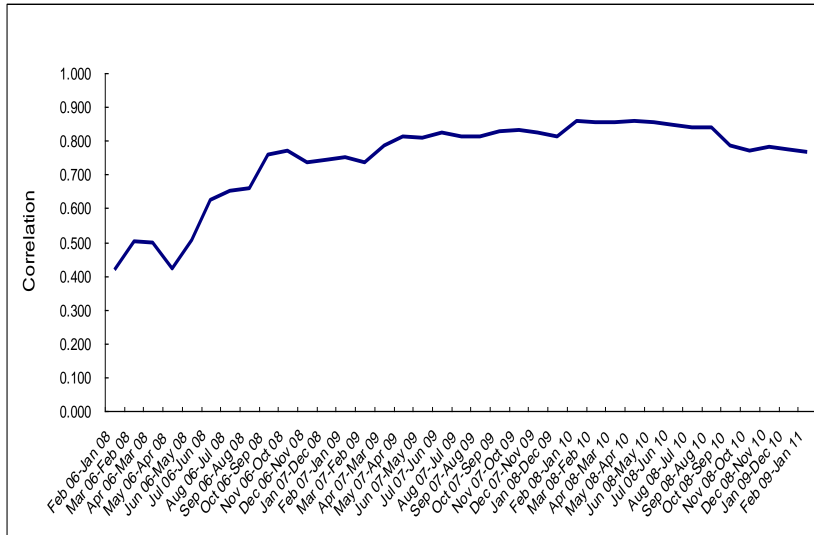
Figure 4: Rolling correlation analysis



T-REITs vs Bonds



Construction shares vs Shares



Shares vs Bonds

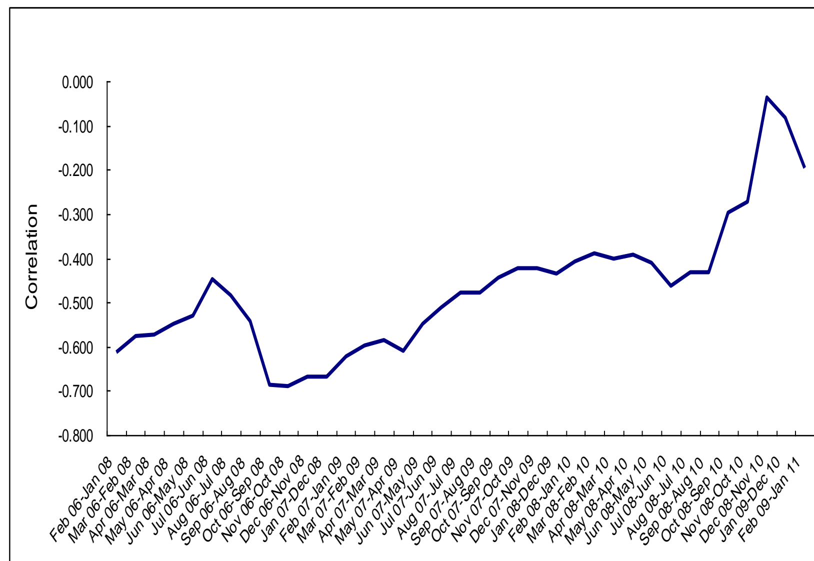
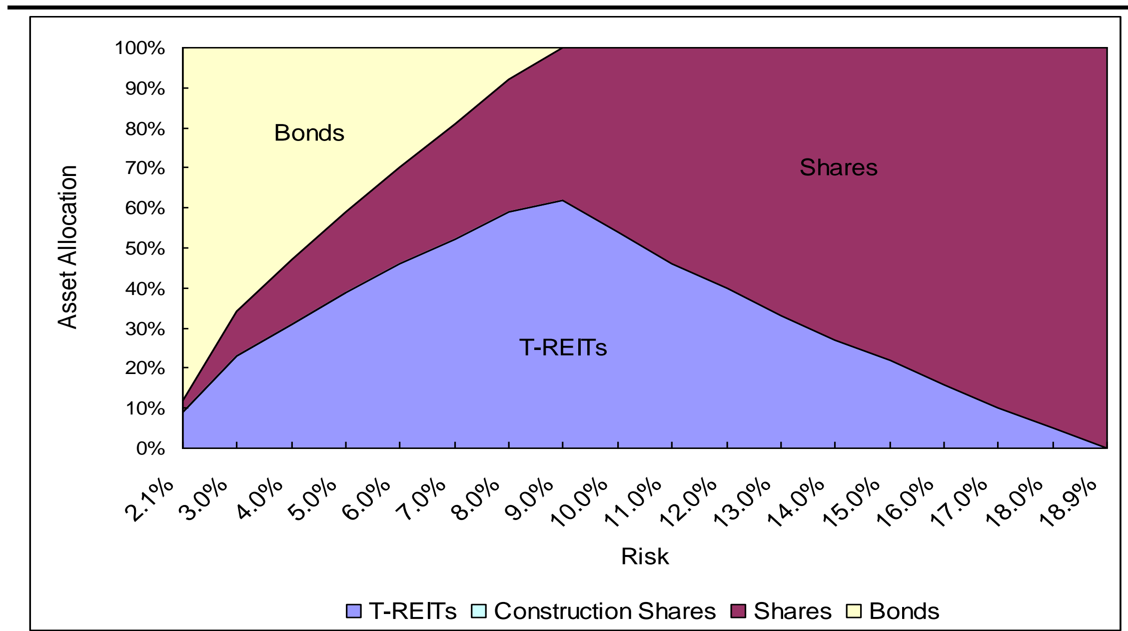


Figure 5: Post-GFC asset allocation



The limited size of the T-REIT market also raised concerns for both international and local institutional investors. For international investors with global or pan-Asia property securities funds, the small size of the T-REIT market makes it different to monitor and to have as a significant allocation in their portfolio. For example, in the Cohen & Steers Global Listed Property Fund, there is no allocation to Taiwan. Even in the Cohen & Steers Emerging Real Estate Fund, there is no allocation to Taiwan; with seven other Asian emerging markets receiving an allocation; ie: China (8%), India (7%), Thailand (7%), Philippines (6%), Malaysia (6%), Indonesia (4%) and Hong Kong (2%). Similarly, in the EPRA emerging markets index, Taiwan only accounts for 0.4%, with five other Asian emerging markets having allocations of 4% - 11%. With T-REITs tending to be thinly traded, this also limits the ability of large institutional investors to use T-REITs in constructing optimal portfolios.

This sees a focus more on local institutional investors seeking to use T-REITs to obtain exposure to the Taiwan property markets; particularly where they are seeking a pure property investment exposure (via T-REITs) that can not be achieved through the development-focused listed construction companies. With Taiwan having significant pension funds (eg: Postal Saving Fund ($154 billion; #8 globally) and Labor Pension Fund ($25 billion; #94 globally)), there are significant opportunities for local pension funds to increase their exposure to the Taiwan property market by the liquidity provided by T-REITs.

Clearly, these growth challenges for T-REITs need to be effective addressed for the continued growth and development of REITs in Taiwan, as well as enhancing their attractiveness to both local and international investors. The Asia Pacific Real Estate Association (APREA) has actively supported T-REITs as part of their mandate to provide strong leadership for the development of REITs in Asia. More also needs to be done concerning the government regulatory support for T-REITs, which currently sees Taiwan as lowly rated in this area (#6/7 Asia REIT markets) (Trust, 2011). Taiwan is also lagging some of the more progressive REIT regimes in Asia (eg: Malaysia, Singapore) who have recently implemented significant changes in their REIT regulatory protocols to make them more attractive to international investors.

Given the attractive investment performance results and mixed-asset portfolio contribution seen in this paper for T-REITs in the post-GFC period, addressing these growth challenges should be a high priority in the continued growth and enhanced investor attractiveness of T-REITs as an important REIT market in Asia.

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