

The role of listed real estate in Pension Funds

A review following the Expert Report to the Norwegian Pension Fund

This document provides a commentary on, and further analysis of, issues arising from a paper published in December 2015 entitled “A review of real estate and infrastructure investments by the Norwegian Government Pension Fund Global (GPFPG)”. The Ministry of Finance paper was written to open the debate on the best way forward for GPFPG to invest in real estate and possibly infrastructure going forward. The paper included both an assessment of risk and return and a consideration of how Norges Bank's investments should be regulated and monitored by the Ministry of Finance.

The conclusions we have reached in our study are based on the specific data and analysis highlighted. Please note that we are able to expand on the information presented in this paper and have not included all the detail at this stage. Should there be areas of particular interest please also refer to the bibliography.

Introduction

The role that listed real estate can play in portfolio management continues to evolve. There are three factors in particular which have been instrumental in a significant reassessment of how this sector can contribute to portfolio risk-adjusted returns.

The first factor is the size of the sector. At the end of February 2009 the free float market capitalisation of the FTSE EPRA/NAREIT Global Index was US\$297bn and the sector represented 1.1% of the global equity market. Fast forward to December 2015 and the free float market capitalisation of the FTSE EPRA/NAREIT Global Developed Index is US\$1,284bn, (a fourfold increase) and represents 2.7% of the global equity market. As a result, two major index providers, S&P Dow Jones Indices and MSCI have announced that they plan to move listed REITs and real estate companies from Financials into a separate Real Estate sector, which will form the 11th industry classification. The move marks a major step in the growth and recognition of REIT-based real estate investment. Capital Innovations estimate that US\$100bn could flow into the sector as managers allocate funds to meet the (new) market weighting.

The sector is therefore now sufficiently large to warrant separate allocations and dedicated resources.

The second factor is the emerging prominence in the market of the real estate departments of the very large pension funds and Sovereign Wealth Funds (SWFs). In particular GIC, CPPIB, ADIA, PGGM, APG, and GPFPG. The significance of these operations is their ambivalence to whether a real estate investment is in a listed or unlisted form to access the underlying real estate return as they can invest throughout the capital stack. This means that they are able to formulate and execute real estate strategies incorporating listed real estate outside of a standard (c. 3%) equity market allocation.

As a result, more funds and institutions are re-assessing the role that listed real estate can play in their portfolio allocations. (Typically, global real estate allocations range from 5-15% of total assets under management).

The third factor is the unique structure of REITs, particularly in a market environment of low inflation and low bond yields. REITs now account for around 70% of the FTSE EPRA/NAREIT Global Developed Index. The company structure means they are comparable to holding the underlying real estate in the terms of the cash flows they produce and distribute. The REITs also have unique characteristics in relation to the obligatory (typically 90%) payout ratio of profits to shareholders.

The listed real estate sector has therefore found increasing favour with asset allocators as they seek to combine income and capital growth as the market adjusts to expected rate rises and more normalised bond yield levels.

Structure

This paper is divided into two parts.

In **Section 1** we provide a summary of the key findings from the GPFG report, with comments and implications for market practitioners. In particular we look at how the report addresses the following questions:

- 1) **Listed vs unlisted** – do they have the same characteristics and return drivers?
- 2) **Performance** - has listed real estate performed as expected and required to justify an allocation?
- 3) **How do current valuations look relative to other asset classes?**
- 4) **What is the appropriate benchmark for unlisted and blended portfolios?**
- 5) **The weighting for real estate allocations** – how should this be determined?

In **Section 2** we then look to answer a number of questions which follow on from the report's findings, using fresh empirical evidence and updating previous results, namely:

- 1) **Listed vs unlisted** - Assuming they both represent real estate returns, what have been the net cash returns to investors (both at the company and the index level) from pursuing a listed or unlisted strategy? Is there a benefit to adopting a blended approach?
- 2) **Performance** - Given that both unlisted and listed sectors have a real estate benchmark, what has been the performance of underlying NAVs (and unleveraged NAVs) relative to the IPD index at both an aggregate and a company level?
- 3) **Relationship with the equity market - Is the listed real estate sector different from other sectors? In particular:**
 - a) How time-variant is the correlation between listed real estate and the equity and bond markets?

- b) How does the listed real estate sector perform in an increasing interest rate environment?
- c) Is there evidence to differentiate the listed real estate sector from the rest of the equity market?

4) How beneficial is adding a global listed exposure to a multi-asset portfolio?

SECTION 1

Conclusions from the Ministry of Finance's expert group

The report's conclusions and recommendations on the topics identified have important implications for practitioners in the listed sector. We show below the key findings and recommendations, grouped by topic, together with further comment and analysis deemed relevant.

1) Listed vs Unlisted

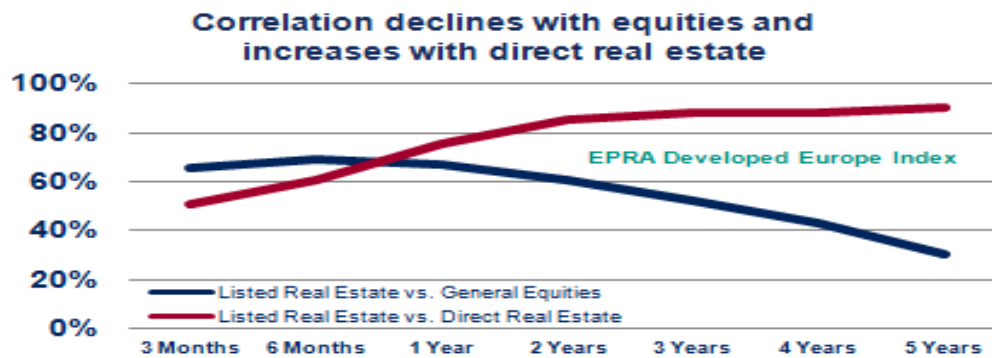
Findings:

- Academic evidence has established that listed and unlisted real estate investments have the same return characteristics over the long run.
- There is no evidence for superior performance or reduced risk of unlisted real estate investments, or of the diversification benefits of adding unlisted to listed real estate investments.
- Unlisted is considered a sector too large to ignore.
- The volatility of unlisted is similar to listed after adjusting for smoothing and extending the time horizon.
- The average investor has 75-85% of its real estate investments in unlisted investments and therefore 15-25% in listed.
- Expected returns: there is academic evidence demonstrating the expected returns are higher on listed (+ 3% pa (on a net basis????) benefit).
- Volatility – By using a time horizon of 40 months estimated volatilities are 19.2% for NCREIF vs 25.1% for REITs.
- Correlation: between listed and unlisted correlation increases as time horizon expands and they can therefore be treated as close substitutes over a medium to long-term investment period.
- Larger funds outperform smaller funds (p29) and this is largely due to greater use of internal management which has associated cost savings.

Recommendation: Continue to allow for both listed and unlisted as part of a blended approach to the real estate allocation.

Comment: We believe that this firmly establishes listed real estate as a separate asset class. While diversification benefits may not be significant we outline the performance benefits of combining listed and unlisted in Section 2.

We would, however, point out the evidence is clear that the correlation of listed real estate equities with real estate increases and conversely the correlation decreases when compared to general equities, as the investment holding period increases. See Chart below.



2) Performance of global listed real estate:

Findings:

- In the period 1994-2015 investors have been fairly compensated.
 - Correlations have increased (i.e. diversification reduced) with stocks and bonds, meaning that a greater return is required.
 - Listed real estate has on average outperformed private real estate by 3% per annum (on a net basis?) during this period.
 - Over all three periods studied, listed real estate outperformed private real estate, which outperformed stocks, which outperformed bonds.
 - The combined fluctuations in returns on stocks and bonds explain 62% of the variation in global real estate returns. This suggests there are diversification benefits from adding real estate as 1/3rd of the returns is uncorrelated.
 - For the US the uncorrelated element is 62%.
 - Expected returns: In the model they use, the authors provide an expected return of 11.3% p.a. for listed real estate which comprises the following six elements:
 - 1) 2.6% time value of money,
 - 2) stock market risk exposure 5.33%
 - 3) bond market risk exposure 1.55%
 - 4) small stock exposure 0.11%
 - 5) value stock exposure 2.34% and
 - 6) momentum stock exposure (-0.58%)
- What is deal versus direct real estate? Any additional info?

Recommendation: No need to increase exposure to real estate from current target level of 5% and maximum level of 10%.

Comment: The evidence is clear that listed real estate has generated sufficient levels of return across the short, medium and long term to be considered a separate asset class, and justifies a separate weighting as part of a real estate allocation. We deal with the issue of correlations in Section 2, and argue that as correlations are time-variant the diversification benefit is not significantly reduced.

3) Current valuations of real estate assets:

Findings:

- Valuations are currently elevated relative to historic pricing

Recommendation: Thorough review process is advised on new assets.

Comment: Although a number of developed direct real estate markets are trading at close to high historic levels, it is important to remember that relative to bond yields there is still a historically high premium. In Section 2 we deal with the impact of rising interest rates on the sector, and highlight that a number of commentators believe the direct market can absorb current expectations of rising bond yields without yield expansion in commercial real estate ('CRE') assets occurring.

4) Appropriate Benchmark:

Findings:

- The report introduces the Opportunity Cost Model ("OCM") as an appropriate benchmark.
- The belief is that the IPD index is unsuitable for benchmarking real estate performance as it is appraisal based, and there is no need for a separate real estate benchmark.
- Further real estate investments (outside of those included in stock and bond benchmarks) are only justified if their expected returns exceed those of the appropriate combinations of stocks and bonds.
- Rather than filling a target allocation to real estate, the OCM shifts the focus from asset-class labels to the underlying risk exposure.
- The report provides specific recommendations on how to address the challenge of applying this to real estate.

Recommendations: GPFG should use the Opportunity Cost Model for its real estate and infrastructure holdings. Rather than filling a target allocation the OCM shifts the focus from asset-class labels to underlying risk exposure. OCM should replace the IPD index. Tracking error should not be used to measure active risk in real estate and infrastructure. Rather, use the OCM with maximum weights.

Comment: OCM is considered to be a useful tool for larger multi-asset portfolios and it is likely that the model will be adopted by a number of institutions and funds. The recommendation is that a benchmark continues to be used for the listed element of the real estate portfolio.

5) Weighting

Findings

- Under mean-variance optimisation and because an equity allocation has a REIT exposure any separate allocation to real estate is treated as an over-allocation (but the GICs reclassification will help answer this 'double-up')
- In the period 1994-2015 an unconstrained mean-variance efficient portfolio comprised 79.5% bonds, 18% stocks and 2.5% real estate which would have produced annualised average return of 6.1% with volatility of 6% and a Sharpe ratio of 0.586.

- Using the constraint of a 35% bonds weighting (the same weighting as in the GPFG portfolio) the optimum portfolio is 35% bonds 37% global stocks and 28% real estate.
- Once maximum constraints on the bond position are imposed real estate takes a prominent place in the portfolio weighting.
- Real estate can be added to the portfolio without increasing volatility and sacrificing return.
- The GPFG portfolio currently has a fixed target of 5% to real estate of which 2.7% is allocated, and aiming to add 1% per year over the mid-2015 to mid-2017 period.

Recommendation: There should be a maximum weight set at 10% for real estate and 10% for infrastructure. This is not a recommended weight, particularly in the current environment, and the flexibility to increase should only be used if return expectations warrant it.

Comment: A weighting range of 5-15% is consistent with global real estate allocations (source Norges Bank “Diversification Potential of Real estate”). The authors estimate that real estate represents about 6% of the “world market portfolio” with listed real estate comprising 15% of the real estate universe. At present REITs make up at most a small fraction (12-13%) of total real estate investment by pension funds worldwide.

6) Tracking error

Recommendation: The authors believe that GPFG should not use tracking error to measure the active risk in its real estate investments and favour the use of the OCM with maximum weights.

Comment: Given the comments regarding the use of a specific (appraisal based) benchmark for real estate, and the preference for a market portfolio “OCM” model, it means that tracking error is no longer a preferred risk and performance metric.

7) Costs/Transparency

Recommendations: GPFG should report detailed costs for managing real estate portfolios (i.e. net cash flows).

Comment: This topic is a particular focus for many investors at present and a difficult one to unravel. All listed companies and funds should adopt Best Practices Recommendations and disclose fully the net “leakage” from the real estate level to the entity level. There are academic studies suggesting there is a cost advantage to owning real estate in a listed format.

HOV explained PGGM experience in the area:

- PGGM trying to squeeze their tailored 50/50 portfolio into a smaller number of vehicle structures, using:
 - Listed (more difficult to influence on an on-going basis)
 - Non-listed – JVs (with some listed companies too) and club deals (lower costs and maintain influence on strategy) – preferred managers like L&G to structure vehicles. (always negotiate conditions at the start)
- PGGM stopped using standard non-listed vehicles (mainly run by the large USA managers) as they are high in cost and managers say ‘take it or leave it, we don’t need you to influence strategy’
- Pressure from PGGM’s clients to ensure costs/fees are low. Does not look good to pay big fees to underperforming managers.

- PGGM cut TER at portfolio level (97bps) v FTSE EPRA Benchmark (112bps) by tailoring regional exposure:
 - Larger exposure to economies of scale with US REITs
 - Reduce exposure to Asian/Japan listed vehicles (Brokerage and development overheads) – investment skewed to private ‘core’ real estate ownership in these markets
 - Use both vehicles for European exposure
 - PGGM portfolio TER higher in private vehicles in all regions v listed with exception of Asia because of skew towards developers
 - Above all caused by the ‘implementation plan’ – focus on core real estate income and less on capital appreciation
- Sustainability plays increasingly into PGGMs investment mandate – PGGM portfolio beats GRESB average for listed real estate
- PGGM – private equity portfolio is 6% allocation but makes up 50% of the costs!
- PGGM do not use hedge funds any longer
- Bolster current blended research section
- Add reputational risk comments (scan and stop if unhappy, or passive index weight), such as
 - Handling the unions
 - Job cuts
 - Backing vulture funds – break-up companies
 - Handling domestic clients
 - PGGM must get permission to go into the public domain (GSW for example)

Next steps MOF:

- MOF will use 2/2 EPRA presentation data/information and discussion points in their white paper for Norwegian government – to be submitted in April 2016
- Mandate with strategic allocation targets/limits will be handed to Norges IM

SECTION 2

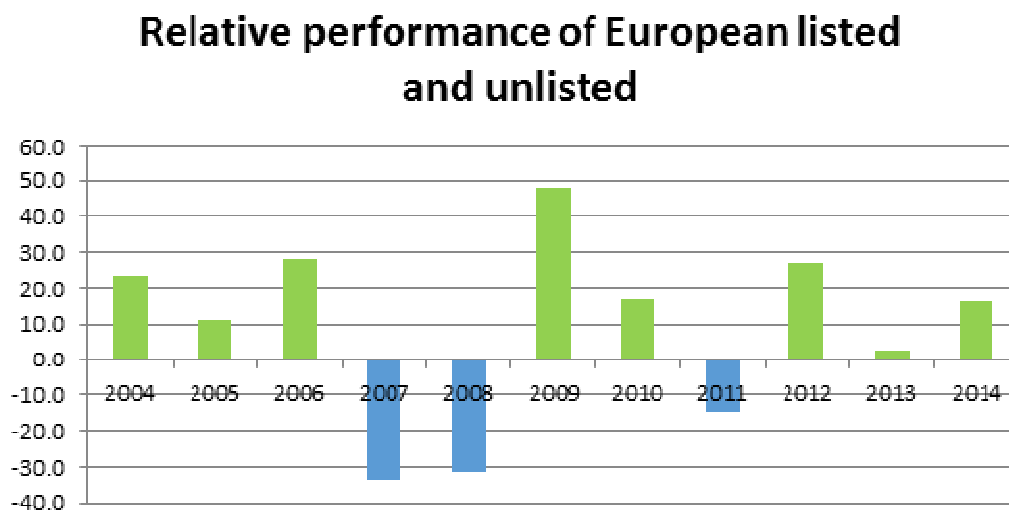
The conclusions we have reached in our study are based on the following information and analysis. Please note that we are able to expand on the information presented in this paper and have not therefore included all the detail. Should there be areas of particular interest please also refer to the bibliography:

- 1) **Listed vs unlisted** - On the assumption that they both represent real estate returns, what have been the net cash returns to investors (both at the company and the index level) from pursuing a listed or unlisted strategy in the UK and Europe? Is there a benefit to adopting a blended approach?

Findings:

- We have undertaken a study for the UK and Europe, including individual company and fund data (source: INREV), as well as Index data (source: EPRA) and found significant outperformance of listed net returns in the majority of years covered, as seen in Chart 1 below.
- This shows the return of the FTSE EPRA/NAREIT Developed Europe (ex UK) Index less the return of an Index of Funds investing in Europe (using the INREV database). A green (positive) bar indicates outperformance of the listed sector. A blue (negative) bar indicates outperformance of the unlisted sector.

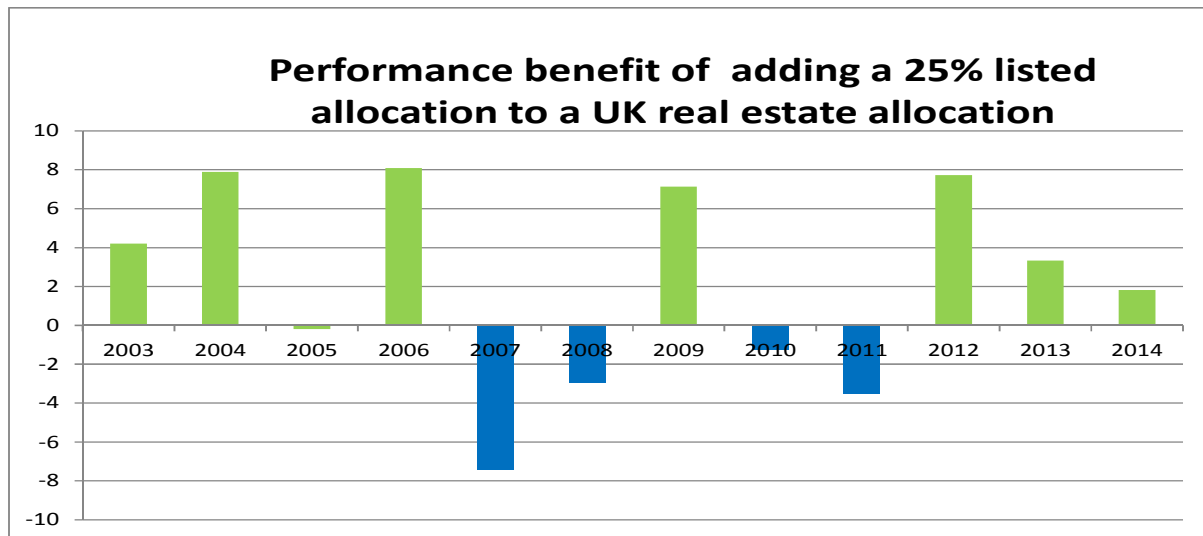
Chart 1



Source: Consilia Capital, EPRA, INREV

- In addition we conducted a study to see whether there was a benefit to “blending” listed and unlisted for the real estate allocation. In previous studies we had used a global listed element rather than a country listed element, and used indices and individual fund data.
- In this study we took the largest UK funds and companies, and found that there was a significant performance benefit of adding a 25% UK listed real estate component to a UK unlisted portfolio for a UK real estate allocation. (Chart 2).

Chart 2



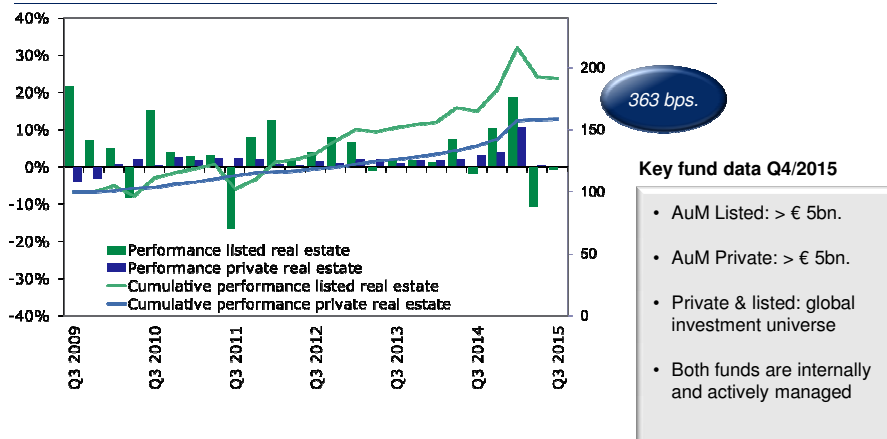
Source: Consilia Capital, EPRA, INREV

- 2) **Performance:** Given that both unlisted and listed use a real estate benchmark, what has been the relative performance of underlying NAVs relative to the IPD index at both an aggregate and a company level?
- 3)



Listed continues to be the most efficient vehicle for investment in real estate

Comparison of Pension Fund portfolio returns listed and private real estate 2009-2015
quarterly returns (LHS) and cumulative return index (RHS) in €, Q3 2009 = 100



Author:

Source: Pension Fund Real Estate, Pension Fund Listed Real Estate
Note: Performance is fund performance after fees and excludes segregated mandates

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or this study we took two approaches:

- Firstly taking aggregate listed real estate index data at the NAV level, it has been de-geared to be comparable to the unlevered IPD index, and we have compared the results of both unlevered indices. As can be seen from the chart below the UK listed sector - as a whole - has outperformed the property benchmark. It should be noted that the IPD returns are quoted on a gross basis. This being the case, the logical question that must be raised and we cannot answer is the annual cost of managing the IPD portfolio to understand the net return. This outperformance is obviously increased at the listed entity level.

Performance and Costs

In this section we explain the experiences of a large European pension fund with a significant allocation to real estate – using both the private and the listed market. The pension fund was interviewed on a no name basis.

The period Q4 2009 to Q3 2015, saw the pension funds' listed portfolio outperform private by 363bps per annum. Over the period, the pension fund calculated an annualised net total investor return for listed real estate allocation of 11.9% and for the private part 8.34% in comparison. The pension fund estimated that allocation differences resulted in 127 bps, which was broken down into net outperformance, allocation to emerging markets, exposure to markets in Asia-Pacific, regional rebalancing and fee differences. Working this back it resulted in the 'mimicked return' of 10.7%, therefore it was estimated that the remaining 236 bps was linked to genuine cost differences.

The impact of other factors is harder to explain, but leverage, legacy and valuation, plus the effects of smoothing and lagging are estimated to explain approximately 55bps per annum on the difference in performance.

Firstly, leverage. The percentage of debt does not differ significantly between listed and unlisted portfolios (the pension fund estimates around 30% in both cases). Items like interest on debt of course depend on size and duration, rating availability and whether the debt is recourse or non-recourse. Academic research estimates there is a one percent difference in the cost of debt between listed and private real estate – to the advantage of the listed market. Cost of finance – listed tends to benefit by approx. 100bps because of access to corporate bond markets

Secondly, legacy issues will normally decrease over time. By comparing fund performance and excluding legacy, segregated and transitory portfolios, legacy issues are mitigated. This is estimated at 25 bps. Finally, one full real estate cycle is necessary to truly establish the real difference. In the case of this pension fund the period 2009 to 2015 cannot be classified as a full cycle. In the long run, all research points to an immaterial difference between the two in this particular area.

The first point to make is the internal cost on running a listed and a private real estate allocation. The pension fund owned a material percentage of 90 listed companies which was run by a total of 8 staff. On the private side, the pension fund owned between 10-50% of approx. 100 JVs/club deals which was managed by 18 staff.

Portfolio Comparison in not apples to apples

Factors influencing comparison on portfolio level – it's not entirely apples to apples	
Allocation - Emerging Markets (included in private real estate, not in listed real estate) - Weighting differences	Idiosyncratic/portfolio
- Appraisal (smoothing /lagging) versus transaction based valuation - Costs - TER/SG&A	Market characteristics

• Leverage ○ LTV Differences ○ Cost of Debt	
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Other causes of underperformance:

Cost of finance – listed tends to benefit by approx. 100bps because of access to corporate bond markets

External management (listed included) leads to drag on performance – particularly if fees based on AUM

‘Over-leverage’ – try to remove the incentive to ‘over-leverage’ funds

Determinants in Performance Differences – Studies		
Source	Explanation	Literature
Cost of Debt	▪ Cost of debt is higher for funds without access to bond market: estimated 100 bps differences for BBB+	Linneman, Wharton Real Estate Center, 1997
External Management	▪ External management leads to 6% drag on performance ▪ Agency issues in external management model lead to sub-optimal investment decisions	Copozza & Seguin, JREFE 2000
Structural Differences	▪ Closed-end nature of funds will increase cost levels	Eichholtz, Kok, Journal of Portfolio Management, 2013

Difficulties with analyzing costs:

Listed TER is similar to private TER but does not discriminate between fund and overhead costs				
Type	Item	Private TER	Listed TER	Total Costs
Property Costs	Bad Debts	x	x	✓
	Repair & Maintenance	x	x	✓
	Leasing (fee)	x	x	✓
	Marketing	x	x	✓

	Property Taxes	x	x	✓
Overheads	Accounting & Audit Fees	x ✓	✓	✓
	Depreciation	x	x	✓
	Legal/Advisory Fees	✓	✓	✓
	Letting Fees	x	x	✓
	Marketing Expenses	x	x	✓
	Offices	x ✓	✓	✓
	Personnel Costs	x	x	✓
	Bonuses	x	x	✓
	Executive Remuneration	✓	✓	✓
	Statutory Costs	x ✓	✓	✓
	Outperformance Fees	x	✓	✓
	Dead deal costs	x	-NA-	-NA-
	Only a total cost approach provides full transparency & comparability			

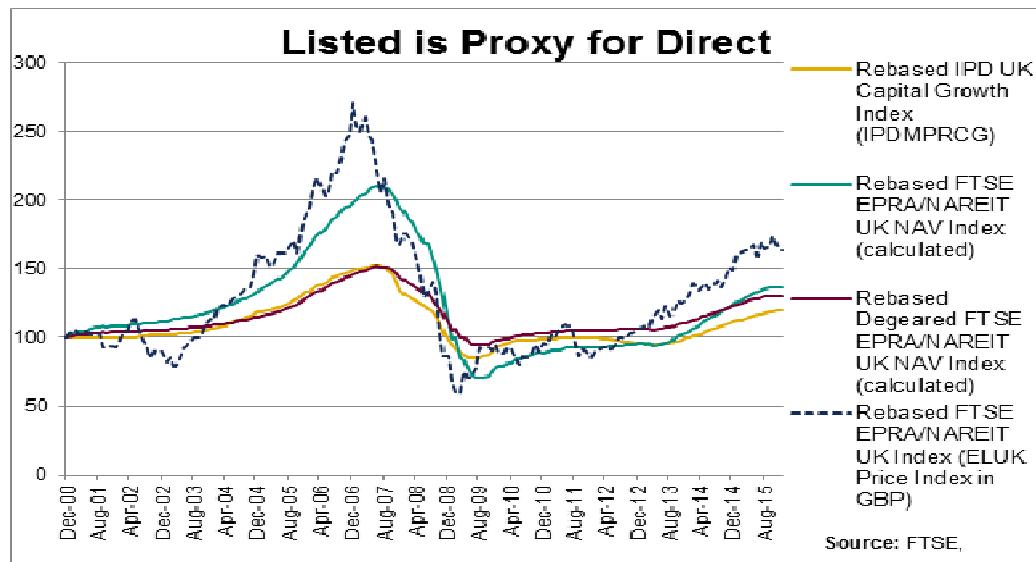
‘out of pockets costs’ (external management costs)

‘embedded costs’ (costs hidden in the fund)

Managers are very good at moving costs into the fund to lower their
‘management fee’ – they is no ‘standard’

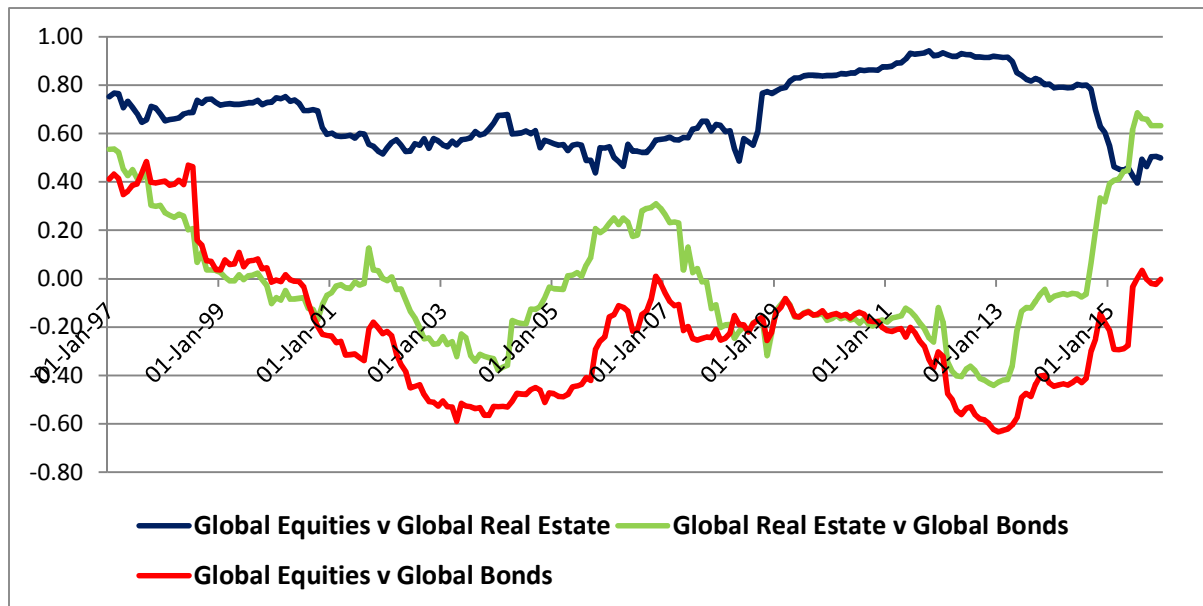
At a regional portfolio level, the pension fund experienced a broad range of costs for the private and listed portions of its real estate allocation. The first thing to mention is that the comparison at portfolio level does not include performance fees - once again it is clear it is not apples-to-apples. At a global portfolio level total expense ratio on the private side

Chart 3



- Secondly we examined the leading listed companies' reports to identify individual outperformance. As an example, British Land, the second largest company by market capitalisation over the last five years has outperformed the IPD index by 240 bps at the income level and 18 bps at the capital level.
 - While the data we noted showed clear evidence of outperformance at the underlying asset level, two caveats should be noted: Firstly, it is UK companies who focus on performance relative to IPD rather than European companies, and secondly, not all companies have a long term track record of using this metric (publically) as a performance metric.
- 4) Relationship with the equity market: Is the listed real estate sector different from other sectors?**
- a) How time-variant is the correlation between listed real estate and the equity and bond markets?**
- - We show clearly that the relationship is not fixed, as has been suggested, but is time-variant, emphasising that listed real estate is increasingly seen as a separate asset class. As can be seen below the correlation with the equity market has shown a structural decline since the GFC.

Chart 4



Source: Consilia Capital, EPRA

b) How does the listed sector perform when interest rates rise?

- We have looked at all the evidence of previous rate increases, and the conclusion is that the developed CRE markets are not as badly affected as might be assumed.
- There are a number of reasons for this. In summary, market evidence suggests that base rates rising is not the key longer term negative impact, rather it is rises of 100 bps or more in long term bond yields that would be a cause for concern, particularly if they were not accompanied by economic growth.
- Therefore the key points to determine the impact on real estate are:
 - i. The relationship between bank rate rises and bond yields;
 - ii. The impact on credit markets overall; and,
 - iii. The extent to which rental (and dividend) growth will provide support for the sector as more than a bond proxy. We note it is likely that purely income focused listed and direct real estate will be most negatively affected.

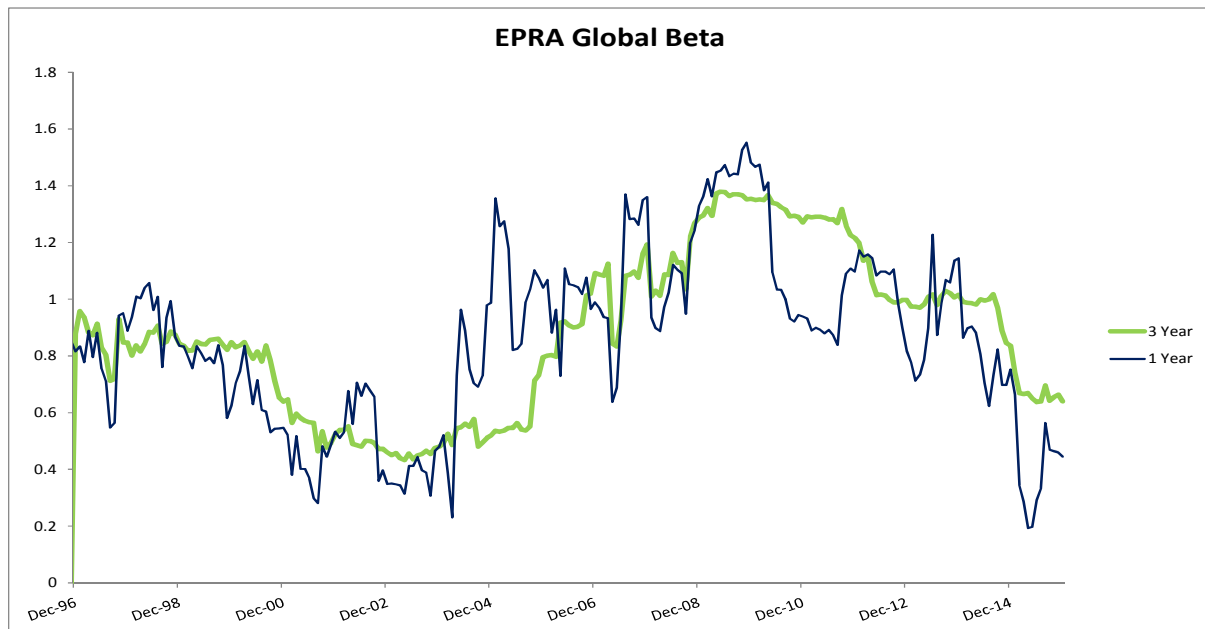
a. Is there evidence to differentiate the listed real estate sector from the rest of the equity market?

We look at a number of measures:

- i. The split between dividend and share price return;
 - ii. The relative weighting /performance of the sector; and
 - iii. The sector beta (which has ranged from a high of 1.4 and sits currently at 0.4 as at December 2015).
- We conclude that there is evidence of de-coupling occurring, with listed real estate (particularly REITs) beginning to differentiate itself in terms of risk and return from the general equity market. We believe that the reason for this lies in the specific characteristics of listed real estate (particularly REITs with their high payout ratios), and the changing nature of the major equity market indices, which currently have a large “tech” component comprising low dividend yields and high growth estimates.

- Anecdotal evidence suggests however, that incorporating listed real estate as part of a broader real estate allocation remains the province of the pension fund/SWFs.
- Chart 5 shows how the sector beta (particularly the 1 year rolling average) has declined significantly post-GFC.

Chart 5



Source: Consilia Capital

5) How beneficial is adding a global listed exposure to a multi-asset portfolio?

- The most recent study, by the team at Cass Business School investigated the impact of adding Global REITs to a multi-asset portfolio, using momentum and trend following strategies.
- They found that the main improvements to risk mitigation arose when the broad index is replaced with one of the four trend following (TF) strategies. The portfolios deliver similar returns but volatility is reduced by up to a quarter to the 8-9% range. The Sharpe ratios increase by 0.1 to 0.5, with the main benefit being the reduction in the maximum drawdown to under 30% compared to 43% when the broad index was used.
- The report concluded that a combined momentum and trend following Global REIT strategy can be beneficial for both a dedicated REIT portfolio and when adding REITs to a multi-asset portfolio.
- To clarify, this involves a simple, monthly rebased, *automated*, trading strategy with prescribed rules, and does not rely upon any form of active decision-making.

Chart 6

Adding REIT Strategies to Equal Weight Portfolios of Equities, Bonds and Commodities

	EW	RP	Mom3	Mom5	TF EW	TF RP	TF Mom3	TF Mom5
Annualized Return (%)	6.77	6.83	7.58	7.33	7.03	7.13	7.54	7.35
Annualized Volatility (%)	10.51	10.22	9.97	10.11	8.15	8.07	8.87	8.91
Sharpe Ratio	0.37	0.39	0.47	0.44	0.51	0.53	0.53	0.50
Maximum Drawdown (%)	42.48	41.71	38.79	39.74	28.75	28.84	28.85	29.48
Skew	-0.95	-1.03	-1.09	-0.97	-0.64	-0.63	-0.52	-0.43

Source: Moss et al, Cass Business School