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REAL ESTATE PERFOMANCE BY INVESTMENT IMPLEMENTATION STYLE

CEM Benchmarking

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Real estate investment performance by investment implementation style: the experience of large U.S. DB pension funds

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1 Introduction

The realized allocation to and performance and risk characteristics of twelve major asset classes over a long 19-year period (1998-2016) has been reported on by us for a set of up to 200 large U.S. defined benefit (DB) pension plans representing nearly $3.5 trillion USD in assets[2] [Ref. 1]. A defining characteristic of our referenced study is that we placed listed assets on the same footing[3] as unlisted assets, allowing direct comparison between small cap U.S. stock and private equity for one example, and listed equity real estate investment trusts (REITs) and unlisted real estate for another.

One conclusion of our study [Ref. 1] is that unlisted assets, often assumed to provide an unrealistic source of diversifying power to portfolios, are not that different from their listed counterparts. Indeed, the great diversifying power of unlisted assets over their listed counterparts is shown to occur because of accounting differences in the reported performance data between them. In an extreme case, *as-reported* unlisted real estate returns exhibit low volatility in comparison to other asset classes and low correlations to other major asset classes [see Ref. 2 for a comparison of as-reported and actual returns (page 15) and correlations (page 24)]. However, the low as-reported volatility and correlations of unlisted real estate are caused, quite simply, by funds reporting returns a year or more delayed from when they actually occurred, almost guaranteeing the (wrong) conclusions about the asset class.

While these works [Ref. 1 and Ref. 2] do not focus specifically on real estate, but rather the contribution of twelve major asset classes to portfolio returns, the results are intriguing enough to have been used as evidence that listed equity REITs display very similar characteristics as unlisted real estate once accounting differences are recognized for what they are. By similar characteristics we mean specifically that:

- correlation between listed equity REITs and unlisted real estate are high at 0.92,
- correlations for both listed equity REITs and unlisted real estate with public and private equity are relatively low, averaging around 0.55,

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[2] The data set represents approximately one half of all U.S. public sector DB assets and one third of all U.S. corporate sector DB assets.
[3] Performance data appearing hear and in reference one (i.e., "the study") are true-time weighted returns, both directly as reported to CEM Benchmarking as well as standardized for reporting lag. The standardization for reporting lag is critical as it makes listed and unlisted assets contemporaneous. This is in contrast to many studies that use, for example, as-reported and un-standardized internal rate of return (IRR), which as noted by others, is not even a measure of investment return [Ref. 3].

- correlations for both listed equity REITs and unlisted real estate with fixed income are low at 0.43 for broad U.S. fixed income, and essentially zero for long duration fixed income.

On the other hand, in terms of returns and risk some stark differences were observed:

- listed equity REITs provided a superior average arithmetic return net of investment costs at 11.0 percent compared to 8.3 percent for unlisted real estate, in part due to lower costs,
- listed equity REITs showed only a slightly higher volatility of 19.8 percent compared to 18.3 percent for unlisted real estate,
- on a risk adjusted basis, listed equity REITs had a materially higher Sharpe ratio of 0.43 compared to 0.33 for unlisted real estate.

While the pattern of results described above has remained stable with the inclusion of multiple new years of data since our original publication in 2014 which spanned 1998-2011 [Ref. 4], numerous interesting issues remain. One open question that we address here is: Unlisted real estate as an aggregate asset class encompasses several styles, some of which might provide different patterns of returns and thus different risks and correlations than others, does one style offer better risk / return characteristics than others, and how do the various styles of unlisted real estate compare to listed equity REITs?

Differences in real estate returns by implementation style has previously been studied by a handful of authors, but most notably Joseph Pagliari Jr. [Ref. 5]. Here, the differences in risk adjusted return for core, value added, and opportunistic real estate were studied for the 17-year period ending in 2012. The dataset is however fundamentally different than our own in that individual portfolio level data was not available, and because the NCREIF Property Index used suffers from both appraisal smoothing (that we explicitly correct for here on a fund-by-fund basis) and for survivorship bias (that does not occur in our data-set of real estate portfolio level returns because defunct investments are explicitly included). Even so, this work is an interesting point of comparison to our own results in that it was found that core funds outperformed on a risk adjusted basis, a conclusion our work tends to support. That listed equity REITs likely outperformed all unlisted real estate on an absolute and risk adjusted basis was not part of the scope of this work, however.

In what follows, we delve further into the differences between listed and unlisted real estate historical returns, risks and correlations. Importantly, the data we use is that actually experienced by the largest institutional investors in the U.S., defined benefit pension funds with average assets under management of over $22 billion USD each.

Before beginning, we remark that the time period studied, 1998-2016 (19-years) is sufficiently long to have covered more than one complete investment cycle, as well as having spanned both the dot-com bubble in the early 2000s, and importantly for discussions of real estate returns, the Global Financial Crisis where listed equity REITs dropped nearly 40 percent in calendar 2008. It is worth pointing out here that unlisted real estate as reported to CEM Benchmarking lost only 8 percent that same year, whereas in 2009 unlisted real estate lost nearly 30 percent in value. This simple observation alone serves to demonstrate the importance of recognizing the lag in unlisted asset class returns.

2 The CEM database

We at CEM Benchmarking, headquartered in Toronto, Canada, have been benchmarking global blue-chip pension funds and other large institutional investors since 1992. The core focus at CEM Benchmarking has always been benchmarking value – investment cost relative to investment performance. Currently, over $10 trillion (USD) worth of institutional money representing 350+ separate funds participate in CEM Benchmarking's annual Investment Benchmarking Service, and well over 1,000 unique funds have participated in the service at one time or another. A brief synopsis of CEM benchmarking is shown in Exhibit 1.

Exhibit 1. CEM Benchmarking Quick Facts

1000+ Unique funds
20+ Countries
25+ Years of data
$10 trillion+ assets in (USD)
250+ asset class/implementation styles

3 Real estate implementation styles

Real estate investments made by U.S. institutional investors differ in several ways. From our perspective at CEM Benchmarking - a perspective borne by the fact that our primary business is to benchmark investment cost - unlisted real estate investments can be classified, in order of increasing investment costs, either as:

1. internal – portfolios of real estate where the investments are chosen and managed in-house directly by funds own internal real estate investment teams[4],
2. external direct – portfolios of real estate where the investments are chosen and managed by external managers through funds and/or separate accounts,
3. external LP – portfolios of real estate managed externally via limited partnership agreements[5] (LPAs) by general partners (GPs) similar to private equity,
4. external fund of funds – portfolios of external LP real estate investments where the LPAs are chosen by fund of fund managers (i.e., funds of private equity real estate LPAs).

Alternatively, real estate can be invested in through listed stock exchanges with the advent of real estate investment trusts (i.e., listed equity REITs). However, large institutional investors in the U.S. most commonly invest in real estate through illiquid unlisted investments described in the list above, with a historical ratio of unlisted real estate to listed equity REITs of about 6:1 (1998-2016 [Ref. 1].

From the perspective of real estate investment managers, investments are distinguished instead by investment intention. Core (or perpetual) real estate is invested in with the intention of buying, selling and managing existing properties. In so doing, the manager generates income for the investor while the

[4] Wholly owned operating subsidiaries are omitted from this study. Wholly owned operating subsidiaries, quite common for the very large Canadian model funds, are rare in the U.S. and less than two percent of U.S. funds providing data report having them. They are excluded from this study because operating subsidiaries tend to blend core and opportunistic styles of real estate investing, and so do not fit neatly into the categorization between core / opportunistic / fund of funds we aim to study.

[5] Co-investments where-by an LP invest alongside a GP with whom an LPA exists are included here for the purpose of this paper. Co-investments are low cost one-off investments in large deal and make up a small portion of all external LP real estate. Sufficient data on co-investments does not yet exist to draw a performance distinction between relatively high-cost LP real estate and co-investment real estate.

manager is paid by the investor through base manager and performance fees in return. Opportunistic (including core plus and value add) real estate by contrast occurs where a real estate manager aims to develop or re-develop properties, returning capital (hopefully including a profit) to the investor towards the end of the (re-)development life cycle, and exiting the investment entirely, ending the LPA.

The intersection between CEM Benchmarking and real estate investment managers view of real estate is relatively simple. Internal real estate and external direct real estate are nearly always core / perpetual styles of real estate while external LP and external fund of funds are nearly always opportunistic / value add. The distinction is not perfect, and exceptions may occur. However, where an external manager for example creates and markets an opportunistic (re-)development investment, it can be expected that the investment will be financed through an LPA in order to harvest the so called two and twenty commonly associated with private equity[6], and so it is unlikely that external direct real estate includes much or any opportunistic real estate.

3.1 Allocations to unlisted real estate investments by style and a comparison to listed equity REIT allocations

Table 1 displays the fund-weighted average allocations to each unlisted real estate investment style by year over the entire sample period, 1998-2016. The average allocations to listed equity REITs by year are shown as well for comparison. Summary statistics shown in the table include the average over the sample period, the average annual change per year (i.e., 2016 average minus 1998 annual average divided by sample period), and the trend per year calculated from regression analysis. We note that the change per year and the trend are consistent with one another.

The data shown in Table 1 show (at least) three interesting features:

1. the ratio of unlisted real estate to listed equity REIT allocations were 6:1 (3.62 percent to 0.62 percent) over the entire sample period,
2. the most common style of real estate investment is external direct (core),
3. the growth in allocation to unlisted real estate is predominantly from the external LP (opportunistic) style.

At current rates, the dominant style of real estate investment for large U.S. DB plans will be external LP (opportunistic) by 2020, supplanting external direct (core).

4 Real estate performance

4.1 Returns

Table 2 shows standardized, fund-weighted average net returns by year for each unlisted real estate investment style over the entire sample period, 1998-2016. Standardization refers to the process of removing the lag inherent in unlisted market data fund-by-fund prior to averaging data by year [see Ref. 1 for a detailed description of the methodology]. The fund-weighted average net returns for listed equity REITs by year are shown as well for comparison. Summary return statistics displayed in the table include both the arithmetic (i.e., simple) average net return over the period and the geometric (i.e., compound)

[6] Two and twenty refers to the two percent of committed capital and twenty percent of profit called carried interest that is long associated with private equity. For a good discussion of private equity costs see Refs. 2 and 3.

average net return over the period. Arithmetic and geometric returns are shown because, within a rebalancing portfolio, the achieved return will lie somewhere between the two.

The most striking feature in the average return data over the sample period is the fact that listed equity REITs outperform all four styles of unlisted real estate. That listed equity REITs outperform on average unlisted real estate as a whole is a feature we have noted before [Ref. 1]; that listed equity REITs outperform on average unlisted real estate independent of investment style is new.
Also visible in the data is the effect of cost on net returns. For unlisted real estate, the pattern of highest to lowest net return by implementation style follows the pattern of lowest to highest cost by implementation style (discussed in Section 3). That is, low cost internal (core) outperforms mid cost external direct (core), which outperforms slightly higher cost external LP (opportunistic), which outperforms highest cost fund of fund (opportunistic).

In fact, the gap in net return of 272 basis points between internal (core) and fund of fund (opportunistic) is primarily attributable to cost, a difference of the order of 400 basis points. The fact that the cost differential between internal and fund-of-fund unlisted real estate is greater than the net performance differential implies that, gross of fees, fund of funds outperformed internal. Similarly, the outperformance of external direct (core) of 5 basis points over external LP (opportunistic) is also less than the cost

Table 1. Fund-weighted average allocations to real estate for U.S. public and corporate sector defined benefit plans in the CEM Benchmarking database 1998-2016 by style. For a description of styles see Section 3. Allocations are shown as a percent of total fund net asset value (NAV).

Average allocation to real estate by implementation style, U.S. DB pension funds

	Unlisted real estate styles					
Year	Internal (core)	External direct (core)	External LP (opportunistic)	External fund-of-fund (opportunistic)	Total (core & opportunistic)	Listed equity REITs (primarily core)
2016	0.12	2.71	2.30	0.16	5.29	0.60
2015	0.09	2.58	2.10	0.14	4.91	0.73
2014	0.07	2.37	1.85	0.18	4.46	0.62
2013	0.09	2.29	1.67	0.16	4.20	0.56
2012	0.11	2.29	1.52	0.14	4.06	0.55
2011	0.10	2.18	1.24	0.20	3.72	0.62
2010	0.09	2.12	1.00	0.15	3.36	0.50
2009	0.13	2.49	0.99	0.28	3.89	0.48
2008	0.14	3.04	0.81	0.29	4.29	0.66
2007	0.11	2.94	0.52	0.24	3.82	0.73
2006	0.16	2.88	0.39	0.11	3.54	0.86
2005	0.15	2.51	0.28	0.09	3.03	0.88
2004	0.12	2.28	0.24	0.08	2.73	0.84
2003	0.20	2.40	0.16	0.10	2.87	0.75
2002	0.27	2.78	0.15	0.12	3.32	0.55
2001	0.19	2.61	0.09	0.09	2.98	0.53
2000	0.19	2.56	0.03	0.08	2.87	0.52
1999	0.16	2.24	0.08	0.07	2.55	0.46
1998	0.23	2.57	0.05	0.05	2.90	0.36
Average	0.14	2.52	0.81	0.14	3.62	0.62
Change per year[1]	-0.01	0.01	0.12	0.01	0.13	0.01
Trend[2]	-0.01	-0.01	0.13	0.01	0.12	0.00

1. Change per year is the absolute change in average allocation from 1998 to 2016 divided by the number of years. It represents the average change occurring in each year.
2. Trend is the change per year inferred from regression analysis. It differs from the trend because it adjusts for noise caused by un-even sampling of funds over the sample period.

differential of approximately 150 basis points, implying once again that gross of fees opportunistic real estate outperformed core.

4.2 Risk

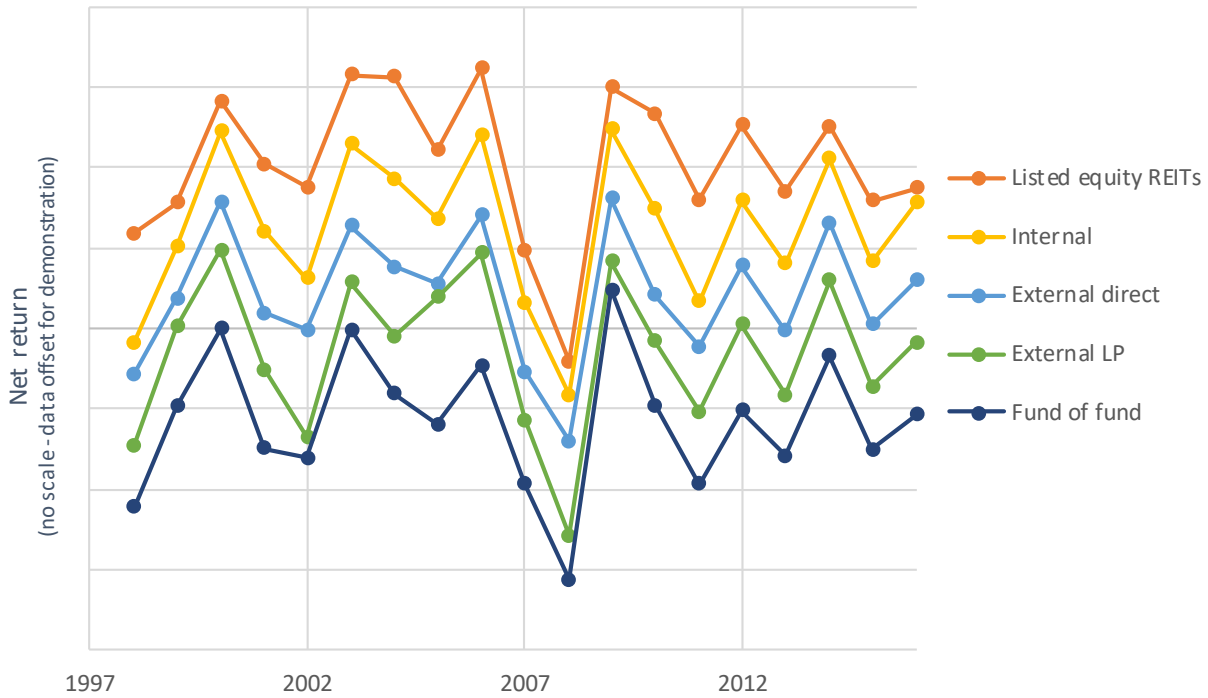
Three measures of risk are shown in Table 2. Standard deviation is the population standard deviation of the average returns by year appearing in the table. It represents the volatility a fund would experience in the absence of idiosyncratic (i.e., implementation risk). However, since all unlisted real estate implementation styles are by definition actively managed, a volatility equal to the standard deviation (i.e., zero idiosyncratic risk) is not achievable for a real fund. By contrast, with listed equity REITs a volatility equal to the standard deviation is possible because of the option of passively investing in listed real estate.

The second measure of risk shown is the volatility which includes the contribution of idiosyncratic (i.e., implementation) risk. Where a real estate implementation style has more idiosyncratic risk, the gap between standard deviation and volatility is larger. The volatility is the population standard deviation of annual net returns experienced by the average fund.

The third measure of risk shown is the Sharpe ratio, a measure of risk adjusted return. It represents the average excess return over the risk-free rate (taken here to be three-month treasury bills) divided by the excess volatility.

For the most part, differences in risk across implementation styles are small yet statistically significant and follow an easy-to-understand pattern. Internal (core) real estate had highest volatility, but only because

Figure 1. Pattern of real estate net returns by year and by implementation style.



† Net returns for each real estate implementation style have been offset vertically in order to emphasize the similar pattern of returns across years. Persistent vertical offset between styles does *not* represent persistent outperformance of any one style over another. The order of styles from top down – listed equity REITs though fund-of-fund unlisted real estate – does however represent the ordered ranking from highest to lowest of geometric (i.e., compound) average net returns.

of the contribution of idiosyncratic risk; external LP (opportunistic) real estate has the highest standard deviation but only the second highest volatility. The difference is due to the fact that internal portfolios are less diversified than external LP portfolios.

That external LP (opportunistic) real estate is found to be riskier than external direct (core) real estate in terms of both standard deviation and volatility is expected. That external fund-of-fund (opportunistic) real estate was less volatile than external LP (opportunistic) real estate is also as expected; fund of funds are comprised of portfolios of external LP real estate gaining diversification which shows up as a much lower standard deviation and volatility. While fund-of-fund real estate had lower risk than external LP real estate comes at the expense of return due to the increase in cost due to the extra layer of fees implicit in fund of funds.

Table 2. Real estate fund-weighted annual average net returns for U.S. public and corporate sector defined benefit plans in the CEM Benchmarking database 1998-2016 by style. For a description of styles see Section 3. Net return data for unlisted real estate have been standardized to remove reporting lag on a fund-by-fund basis (see [Ref. 2] for a detailed description of the methodology. Net returns for composite unlisted real estate "as-reported" to CEM benchmarking are available in [Ref. 1,2]).

Real estate net returns by implementation style, U.S. DB pension funds

	Unlisted real estate styles					
Year	Internal (core)	External direct (core)	External LP (opportunistic)	External fund-of-fund (opportunistic)	Total (core & opportunistic)	Listed equity REITs (primarily core)
2016	16.13	11.76	11.40	8.36	10.62	4.88
2015	1.46	0.82	0.42	-0.11	1.56	1.74
2014	27.05	26.29	26.89	23.09	26.28	20.19
2013	1.14	-0.55	-1.55	-1.75	-0.91	3.99
2012	16.73	15.53	15.99	9.38	15.18	20.55
2011	-8.38	-4.50	-5.68	-8.72	-4.08	2.05
2010	14.66	8.13	11.79	10.72	5.97	23.51
2009	34.48	32.13	31.59	39.53	32.71	29.89
2008	-31.61	-28.19	-36.62	-32.50	-29.51	-38.20
2007	-8.58	-10.78	-7.95	-8.83	-11.03	-10.75
2006	33.26	27.99	33.69	20.79	29.04	34.75
2005	12.16	10.96	22.60	6.06	10.74	14.16
2004	22.22	15.34	13.12	13.76	15.74	32.43
2003	30.93	25.55	26.29	29.50	26.55	33.09
2002	-2.74	-0.32	-11.93	-2.18	-1.30	5.17
2001	9.10	3.71	4.79	-0.01	3.47	10.94
2000	33.89	31.53	34.53	29.81	31.55	26.58
1999	5.29	7.38	15.44	10.44	8.73	1.23
1998	-18.42	-11.34	-14.23	-14.50	-12.81	-6.39
Net arit[1]. avg.	9.94	8.50	8.98	6.99	8.34	11.04
Net geo[2]. avg.	8.31	7.29	7.24	5.59	7.05	9.40
Stdev[3].	18.15	15.75	18.44	16.85	16.21	17.82
Volatility[4]	20.41	18.30	19.99	18.77	18.32	19.83
Sharpe ratio[5]	0.37	0.33	0.33	0.24	0.33	0.43

1. Net arithmetic average return is the simple average of fund-weighted annual averages appearing in the table. The returns are net of all direct investment management expenses.
2. Net geometric average return is the compound average of fund-weighted averages appearing in the table. The returns are net of all direct investment management expenses.
3. Standard deviation is the population standard deviation of fund-weighted averages appearing in the table.
4. Volatility is the standard deviation that an individual fund can expect to experience. It is larger than the standard deviation because it includes the effects of idiosyncratic risk (i.e., in-year fund-to-fund dispersion of annual returns due to differences in investments).
5. Sharpe ratio is the excess return over the risk-free rate (taken here to be 3-month U.S. treasury bills) divided by the volatility.

Internal real estate had the highest Sharpe ratio of all unlisted real estate styles. Much of the reason for the higher Sharpe ratio is the lower investment cost of internally managed real estate which manifests as a higher net return without a corresponding increase in volatility. Fund-of-fund (opportunistic) real estate by contrast had a much lower Sharpe ratios as the drag on returns from higher investment cost does not produce a similar decrease in volatility. External direct (core) and external LP (opportunistic) real estate had the same Sharpe ratios; where external LP (opportunistic) real estate was riskier than external direct (core) real estate, the extra risk came with it a corresponding increase in return. Listed equity REITs, however, had by far the highest Sharpe ratio of all real estate investment styles, as much as 80 percent higher than fund of funds, and 16 percent higher than even internal real estate.

4.3 Correlations

In a naïve analysis of unlisted real estate returns, correlations to listed equity REITs are found to be small (e.g., unlisted real estate returns as-reported to CEM Benchmarking show a correlation of about 0.1 to listed equity REITs [Ref. 1]). For the same reason correlations between as-reported unlisted real estate returns and listed equity REITs returns are small, correlation between unlisted real estate returns and the returns of other listed asset classes such as stocks and bonds appear small as well.

However, the reason for the low correlations are entirely due to the fact that as-reported unlisted real estate returns lag public markets, typically by a year or more. The sources of the lag are varied but are

Table 3. Correlations between annual average real estate net returns by implementation style (1998-2016). Unlisted asset class returns (i.e., internal, external direct, external LP, and fund of fund) have been standardized to remove lag in net returns [see Ref. 1 for details]. Also shown are correlations between real estate net returns by implementation style and the most common building blocks of U.S. DB pension fund portfolios, large cap. U.S. stocks and broad U.S. fixed income.

	Internal (core)	External direct (core)	External LP (opportunistic)	Fund of fund (opportunistic)	Listed equity REITs	Large cap. U.S. stocks	Broad U.S. fixed income
Internal (core)	n/a	0.99	0.96	0.97	0.93	0.48	0.36
External direct (core)	0.99	n/a	0.97	0.98	0.92	0.49	0.39
External LP (opportunistic)	0.96	0.97	n/a	0.94	0.89	0.54	0.30
Fund of fund (opportunistic)	0.97	0.98	0.94	n/a	0.89	0.55	0.40
Listed equity REITs	0.93	0.92	0.89	0.89	n/a	0.54	0.43
Average	0.96	0.96	0.94	0.95	0.91	0.52	0.37

usually explained by being a consequence of the timing and methodology of appraisals on which unlisted real estate returns are based.

On standardizing returns to remove reporting lag, the real correlations are revealed and are much higher than as-reported. A dramatic visual demonstration of the high correlation across real estate implementation styles is found by simply plotting the data provided in Table 2 (net returns that are standardized to remove lag) as done in Figure 1. Here, net returns have been offset vertically in order to illustrate the close relationship between real estate investment performance by implementation style as actually experienced by large U.S. DB pension funds.

The calculated correlations between real estate implementation styles are provided in Table 3. Where we previously concluded that the correlation between unlisted real estate and listed equity REITs was high at 0.91, we can now resolve that core real estate (represented by internal and external direct implementation styles of unlisted real estate) has a slightly higher correlation to listed equity REITs at 0.92 and 0.93 than opportunistic real estate (represented by external LP and fund-of-fund implementation styles of unlisted real estate) at 0.89.

Furthermore, it is interesting to note the extremely high correlation between internal (core) and external direct (core) unlisted real estate at 0.99. The high correlation serves provides concrete evidence that both implementation styles, internal and external direct, are investing in similar fashion, namely core real estate. On the other hand, the correlations between external LP and fund-of-fund unlisted real estate are lower at 0.94, but still higher than any correlation of unlisted real estate to listed equity REITs.

Also shown in the table for reference are the correlations between real estate implementation styles and two major asset classes, large cap U.S. stocks (e.g., stocks in the S&P 500 or Russell 1000) and broad U.S. fixed income (a mixture of short/medium duration U.S. treasuries and investment grade corporate bonds, tilted corporate relative to major bond indices such as the Barclays aggregate). The most interesting features in the correlations to stocks and bonds are the:

- low correlation of real estate to either asset class, on average 0.52 to stocks and 0.37 to bonds,
- similarity between correlations to stocks and bonds of listed and unlisted real estate.

Thus, while correlations of unlisted real estate to stocks and bonds is substantially larger than commonly accepted, real estate as a whole is among the least correlated asset classes to the basic building blocks of U.S. DB pension portfolios. (Long duration fixed income has by far the lowest, even negative, correlation to the most common asset classes – see Reference [5] for the most up-to-date statistics covering all asset classes.)

5 Concluding remarks

It is remarkable to see the similar pattern of net returns across different real estate implementation styles as experienced by large, U.S. DB pension funds over extended periods of time (1998-2016). Real estate, in terms of correlations to other asset classes, was relatively insensitive to implementation style, be it internal (core), external direct (core), external LP (opportunistic), fund of funds (opportunistic), or with simple listed equity REITs.

On the other hand, distinct patterns across real estate implementation styles is observed in terms of average net returns which are directly attributable to costs, as well as risk which are not attributable to

differences in cost. For unlisted implementation styles, lower cost internal outperforms external direct (core) and more expensive external LP (opportunistic), all of which outperform fund of funds, the most expensive implantation style. Listed equity REITs however outperformed all unlisted styles.

Volatility of internal (core) real estate was however the highest of all implementation styles, most likely due to there being less diversification within internally managed portfolios compared to portfolios of external real estate or listed equity REITs. The lowest volatility was achieved through fund of funds which is noteworthy as this is a primary reason given by small funds for investing in real estate through this channel.

On the other hand, the lower return in fund-of-fund unlisted real estate volatility was not compensated with enough of a reduction in volatility, as the Sharpe ratios of the implementation style (0.24) were far lower than for other styles (0.37 for internal, 0.33 for external), and almost twice as small as for listed equity REITs (0.43).

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7 About CEM Benchmarking

CEM Benchmarking is a Toronto based provider of investment cost and performance benchmarking for large institutional investors including pension funds (defined benefit and defined contribution), sovereign wealth funds, buffer funds, and others. For information on benchmarking with CEM or other data inquiries please contact:

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