

# Public and Private Real Estate

## THE SUM IS GREATER THAN THE PARTS

August 2017

*There are multiple reasons to include publicly traded global real estate securities (GRES) in an institutional real estate portfolio. Some, but not all, of these reasons are also true of private real estate. The main advantages of publicly traded GRES are large and diverse part of the real estate universe, attractive long-term returns, improved risk-adjusted returns, enhanced diversification within real estate allocation, and additional advantages including better access to certain property types / strategies as well as potential investment strategies for institutional investors that combine public and private approaches.*

# Summary

- Publicly traded global real estate securities<sup>1</sup> (GRES) and global private real estate (both direct investments and indirect vehicles such as funds) are very large wealth sectors, with estimated institutional market sizes of \$4.5 trillion and \$5.1 trillion, respectively.
- Both approaches offer a large universe of potential investments, strong historical and potential future performance, diversification benefits vis-a-vis equities and fixed income, and a range of risk / return strategies. Long-term returns are similar, but enough differences exist so that each can add value to an institutional real estate portfolio.
- Institutional investors, particularly large ones, tend to favor private / direct real estate over publicly traded GRES due to concerns about public market volatility. While publicly traded GRES are more volatile than private real estate over short time frames, over longer measurement periods (e.g. five years), public and private real estate returns and volatility are similar, with medium to high correlations.
- Although more volatile in the short term compared to appraisal based private real estate indices, GRES offer superior liquidity and lower transaction costs.
- By overweighting private real estate, institutional investors may be missing out on advantages that publicly traded GRES can provide. GRES offer access to many established and specialty sectors with high-quality assets and best in class operators, such as regional malls, residential, self-storage, data centers and cell towers that are difficult to own privately in various parts of the world. GRES generally generate higher dividends than cash distributions from private real estate vehicles with similar risk and leverage.
- Publicly traded GRES and private real estate are complementary in that a combination of the two approaches is likely to generate higher risk adjusted returns than either approach on its own.
- There are numerous ways for institutional investors to take advantage of the complementary relationship between public and private real estate. GRES can account for a meaningful portion of a core real estate allocation – both domestic and non-domestic, particularly for small and medium size institutions. For larger institutions, GRES provides an efficient way to access non-domestic real estate as well as flexibility in managing exposure and risk across cycles.

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<sup>1</sup> Includes both Real Estate Investment Trusts (REITs) and Real Estate Operating Companies (REOCs).

# Organization of Paper

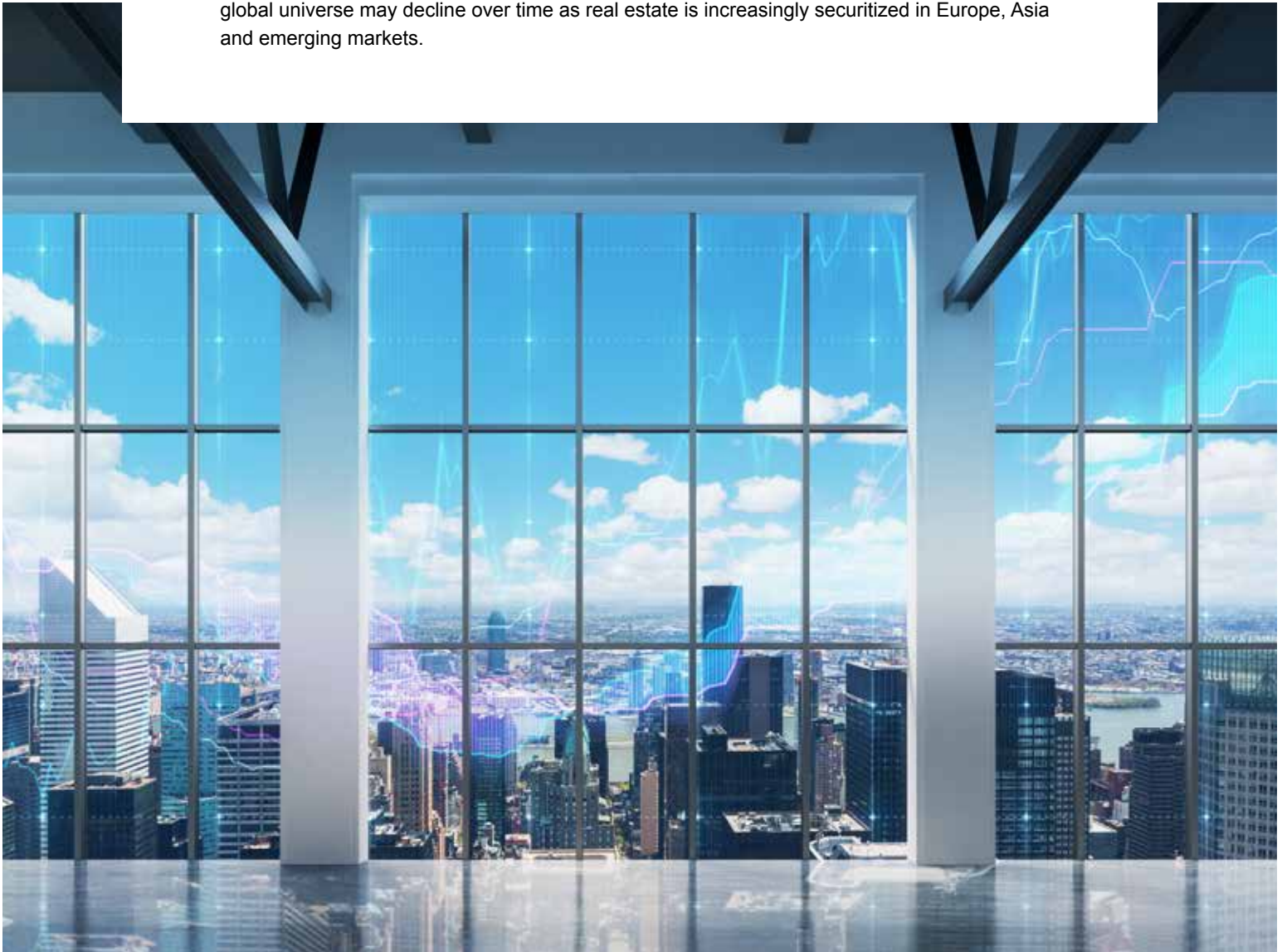
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# Large and Diverse Part of the Real Estate Universe

*Globally, real estate is one of the largest asset classes available to investors, after fixed income and equities. LaSalle estimates that the global institutional real estate investable universe totals \$9.6 trillion as of 2016, comprised of \$5.1 trillion in privately held institutional properties and \$4.5 trillion of properties owned by publicly traded real estate companies<sup>2</sup>.*

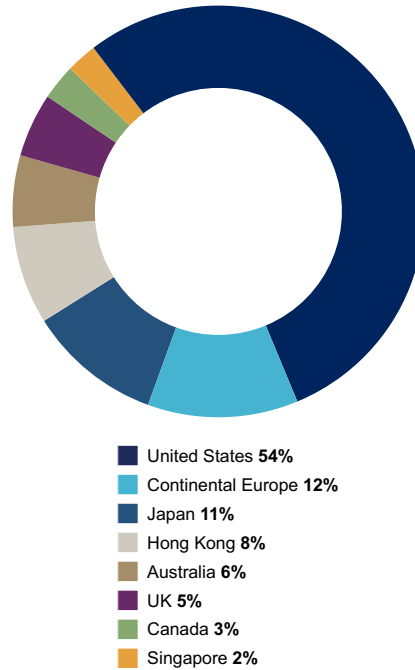
Global real estate securities are available on publicly traded exchanges in 41 countries worldwide, a number that has been growing steadily. The United States is the largest individual real estate securities market, as shown in Figure 1, but its relative share of the global universe may decline over time as real estate is increasingly securitized in Europe, Asia and emerging markets.



The prevalence of listed securities as a share of the institutional market varies significantly by country, as shown in Figure 2. China, the US and Australia have the largest listed real estate markets relative to total, with more than half of all institutional properties held by publicly listed companies. On the other hand, the United Kingdom and Germany, two large property markets, have a very low share of publicly held real estate, indicating an opportunity for greater growth in the future.

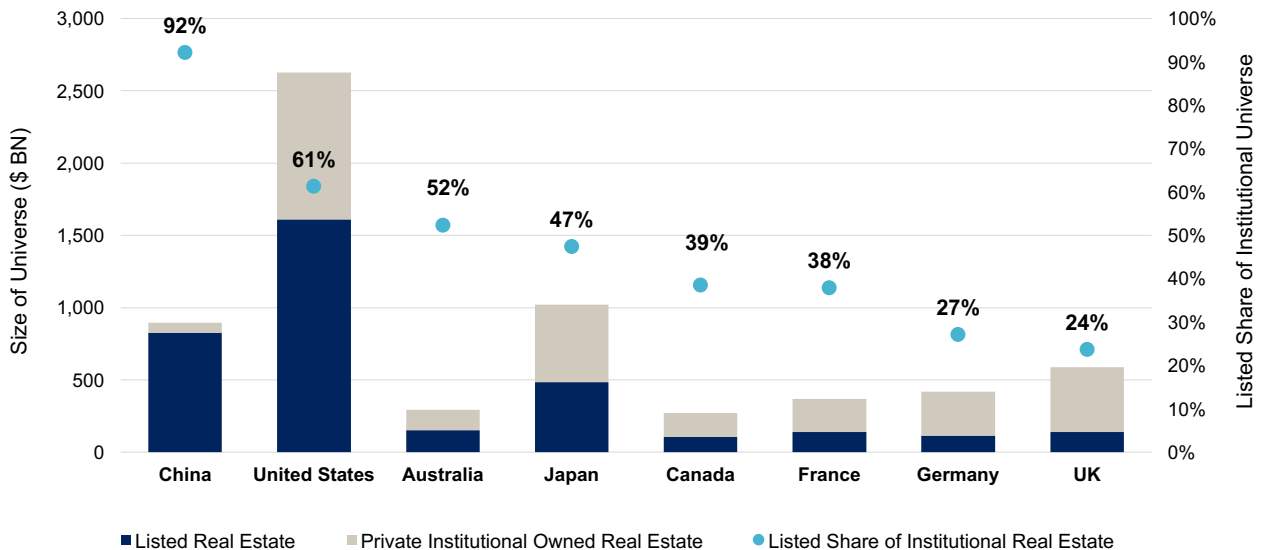
While public GRES account for approximately 47%<sup>2</sup> of the global institutional investment universe, actual institutional investments in public GRES are significantly lower. Institutional Real Estate Inc.<sup>3</sup> reported that the average 2016 actual allocation to public GRES was approximately 7% (of the overall real estate allocation) for U.S. institutions. Others have estimated a higher share of REITs, but all estimates are well below their actual share of the investable universe.

Figure 1. **GRES Universe by Country, June 2017**



Source: FTSE EPRA/NAREIT Developed Index as of June 30, 2017. Weights may not add up to 100% due to rounding.

Figure 2. **Institutional Real Estate Universe and Listed Real Estate Market Share by Country**



Source: LaSalle Investment Management, "Global Real Estate Universe 2017"

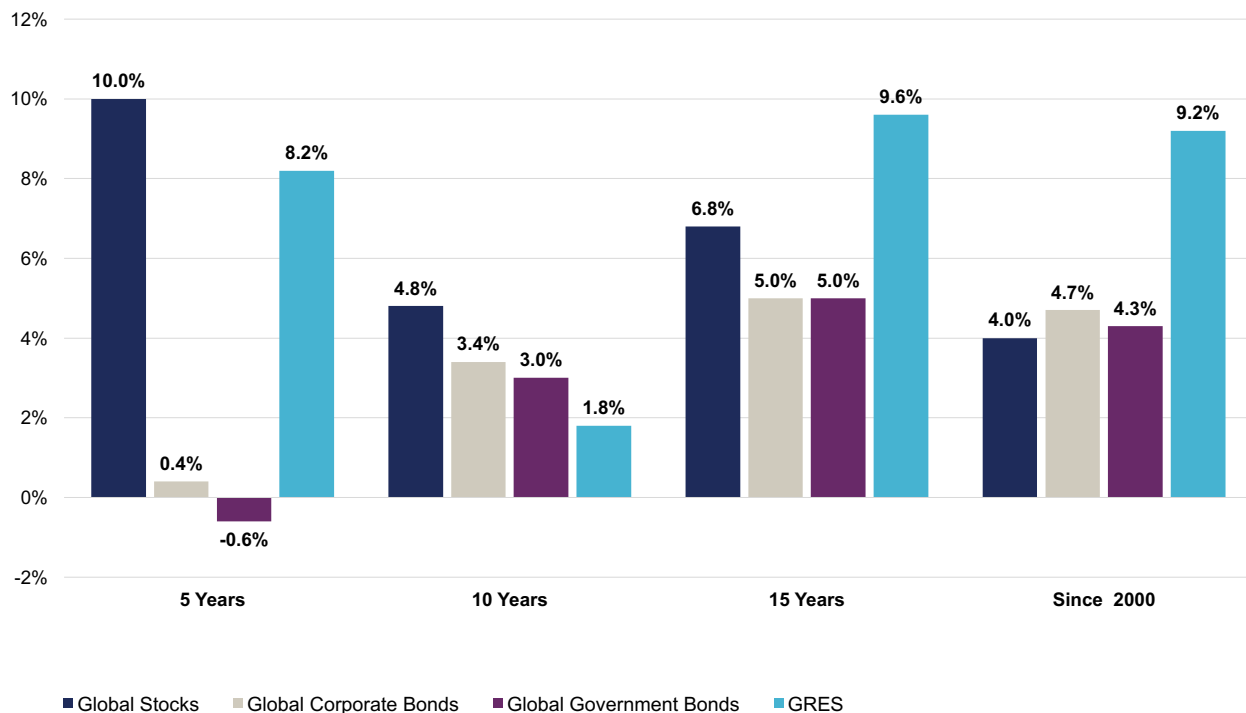
<sup>2</sup> LaSalle Investment Management, "Global Real Estate Universe 2017". Data as of the end of 2016.

<sup>3</sup> Institutional Real Estate, Inc, "2017 Institutional Real Estate Trends"

# Attractive Long-Term Returns

Publicly traded GRES have generated attractive returns relative to major global asset classes over most long-term measurement periods. As shown in Figure 3, GRES returns exceed global stocks and bonds over the past fifteen years and since 2000<sup>4</sup>. GRES returns have exceeded bond returns over all periods shown except the past ten years. GRES did underperform equities during the Global Financial Crisis (GFC), causing the sector to underperform over the last 10-year period. The GFC was particularly difficult for real estate as some companies faced short term liquidity issues due to high leverage. A small number of companies were compelled to issue dilutive equity when stock prices were low, something that most private owners avoided as appraisal-based values fell much less. Since the GFC, GRES leverage levels have fallen, balance sheets have gotten stronger and asset quality has generally improved<sup>5</sup>.

Figure 3. **GRES Returns Versus Global Stocks and Bonds, Through March 2017**



Sources: MSCI World Total Return Index in US Dollars (Ticker: GDDUWI).  
 FTSE EPRA/NAREIT Developed Index Total Return in US Dollars (Ticker: RUGL).  
 Citigroup World Corporate Bond Index Total Return in US Dollars (Ticker: SBWAU).  
 Citigroup World Government Bond Index All Maturities Total Return in US Dollar (SBWGU).  
 Data as of 1Q2017. Past performance is not necessarily indicative of future results.

<sup>4</sup> Global corporate bond data only available since 2000.

<sup>5</sup> Average leverage levels of GRES have fallen to 34% from 42% over the past 10 years.



*Risk adjusted returns<sup>6</sup> follow a similar pattern, with GRES generating attractive Sharpe ratios over the past 5 years, 15 years and since 2000, compared to global stocks and global corporate and government bonds. GRES do have higher standard deviations than global stocks, something to be expected for a relatively small subsector.*

<sup>6</sup> Using monthly standard deviations of returns and calculating Sharpe ratios.

## PUBLIC VS. PRIVATE REAL ESTATE PERFORMANCE

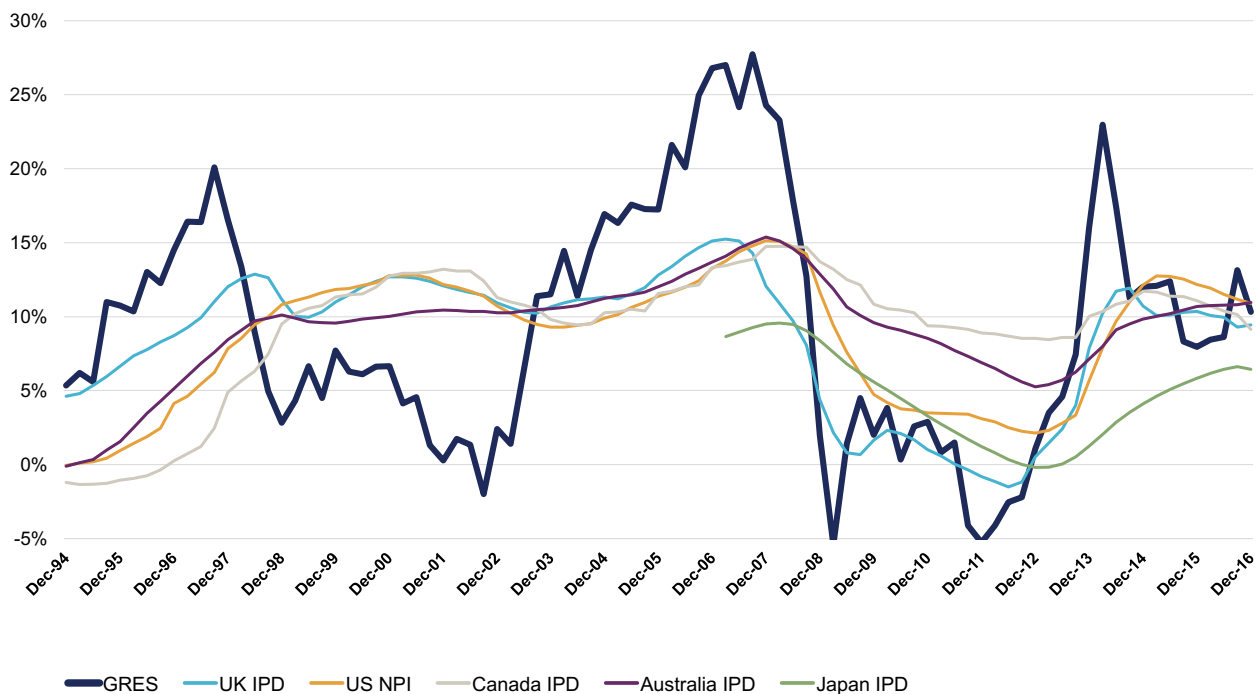
Real estate properties are long-lived assets that tend to produce stable returns for thirty or more years (assuming proper maintenance), whether owned in a public or private format. However, over the short-term (quarterly or annually), public and private real estate returns can vary widely. Publicly traded real estate securities react quickly to changing market conditions and can sometimes overreact. Public markets also anticipate shifts in economic and real estate market conditions sooner than appraisal-based indices, the norm for private return series.

However, over the long-term, analysis shown below as well as numerous academic studies have found that GRES returns are very similar to core private real estate returns, after adjusting for differences in property type and leverage. For example, Hoesli and Oikarinen<sup>7</sup> examined securitized and direct real estate returns using data from the US, the UK, and Australia. They found

“that the long-run REIT market performance is much more closely related to the direct real estate market than to the general stock market. Consequently, REITs and direct real estate should be relatively good substitutes in a long-horizon investment portfolio.” In addition, “the linkages between the direct and securitized markets appear to be tight. REITs are expected to generally offer similar diversification properties as direct real estate.”

Figure 4 compares rolling 5-year returns of GRES (measured in USD) with individual country private core returns, measured in local currencies. As shown, rolling returns generally move in similar directions, there are differences between GRES and local indices, as well as between countries. Although GRES are more volatile than country-level private indices, this is due in large part to the use of leverage by GRES, while the private indices used below are unleveraged.

Figure 4. **Trailing 5-Year GRES Returns vs. Core Private Returns**



Sources: FTSE EPRA/NAREIT Developed Index; NCREIF, in USD; MSCI/IPD in local currencies. Past performance is not necessarily indicative of future results.

<sup>7</sup> Hoesli, Martin and Oikarinen, Elias, “Are Public and Private Asset Returns and Risks the Same? Evidence from Real Estate Data” (November 30, 2013). Swiss Finance Institute Research Paper No. 13-56.



Although it would be useful to compare GRES returns with an aggregate measure of global private real estate returns, measures of private global real estate returns generally have shortcomings that make comparisons with GRES difficult. MSCI (formerly IPD) has been reporting a global private property level composite since 2000, but the countries included change from year-to-year and returns are reported only on annual basis. MSCI/IPD also publishes a global core fund index, but historical data is only available back to 2007 and the mix of countries has changed over time.

Several countries (particularly Australia, Canada, UK, Japan and the US) have long-established private indices that can be compared to local publicly traded RES returns calibrated in the same currency. Below we show a comparison between this private and public market data in those countries over the past 17 years. Long term returns are comparable, with some public indices out-performing in some countries and trailing in others. It should be noted that private returns are unleveraged, while GRES typically utilize moderate levels of leverage.

Figure 5. **Average Annual Public and Private Real Estate Returns, Selected Countries, 2000-2016**

		Total Returns	
		Private (Unleveraged)	Public
US	NPI	9.1%	11.6%
UK	IPD	7.9%	6.7%
Canada	IPD	10.4%	11.7%
Australia	IPD	10.5%	6.5%
Japan	IPD	5.4%	7.8%

*Note: all data since 2000, except Japan since 2002 Sources: EPRA/NAREIT, NCREIF, MSCI/IPD. Past performance is not necessarily indicative of future results.*

As discussed above, correlations of public and private returns within countries are generally low in the short term, but increase significantly when analyzing longer comparison periods. As shown in Figure 6 below, quarterly correlations range from 0.07 in Canada to 0.52 in the UK over the 2000-2016 time frame. It should be noted that the UK private market is one of the most liquid and transparent markets in the world, and returns there move more rapidly than in other countries, thus explaining the higher correlation.

While correlations of quarterly return data are low, extending the measurement period increases correlations significantly. As shown below, correlations of all countries except Canada rise above 0.5 using rolling 5-year correlations. Furthermore, when adjusting for a lag in private market returns (four quarters in our example), correlations increase further, reaching above 0.9 in the US, Australia and Japan. These high correlations provide strong evidence that public and private real estate returns are closely linked, despite differences in geographic and property type composition and leverage levels<sup>8</sup>.

Figure 6. **Average Annual Public and Private Real Estate Correlations, Selected Countries, 2000-2016**

		Correlations		
		Quarterly	Rolling 5-Year	Rolling 5-Year Lagged 4 Quarters
US	NPI	0.26	0.70	0.91
UK	IPD	0.52	0.97	0.76*
Canada	IPD	0.07	0.27	0.78
Australia	IPD	0.39	0.66	0.92
Japan	IPD	0.19	0.63	0.94

*\*Correlations are higher in the UK without a lag. Note: all data since 2000, except Japan since 2002*

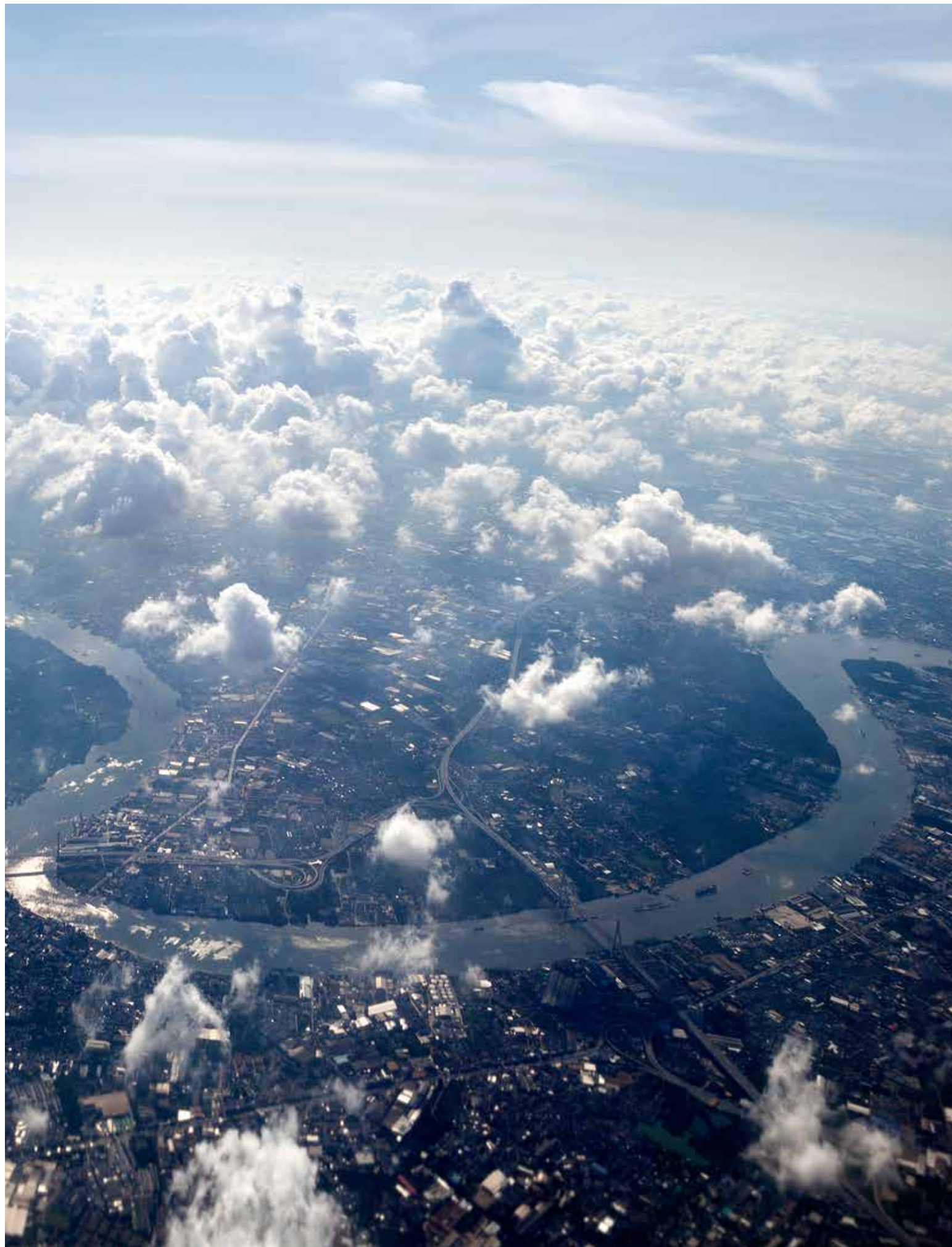
*Sources: EPRA/NAREIT, NCREIF, MSCI/IPD.*

*Past performance is not necessarily indicative of future results.*

This analysis is consistent with other recent research. A 2016 study by CEM Benchmarking Inc. estimates that the long-term correlation between US equity REITs and unlisted U.S. real estate (all strategies) was 0.91 for the period between 1998 and 2014, after adjusting for reporting lags<sup>9</sup>. This suggests that long-term institutional investors should focus on longer measurement periods when comparing public and private real estate investment options.

<sup>8</sup> IPD and NPI Indices are unleveraged, while GRES employ moderate leverage.

<sup>9</sup> "Asset allocation and fund performance of defined benefit pension funds in the United States, 1998-2014," Alexander D. Beath, PhD & Chris Flynn, CFA, CEM Benchmarking Inc., 2016.



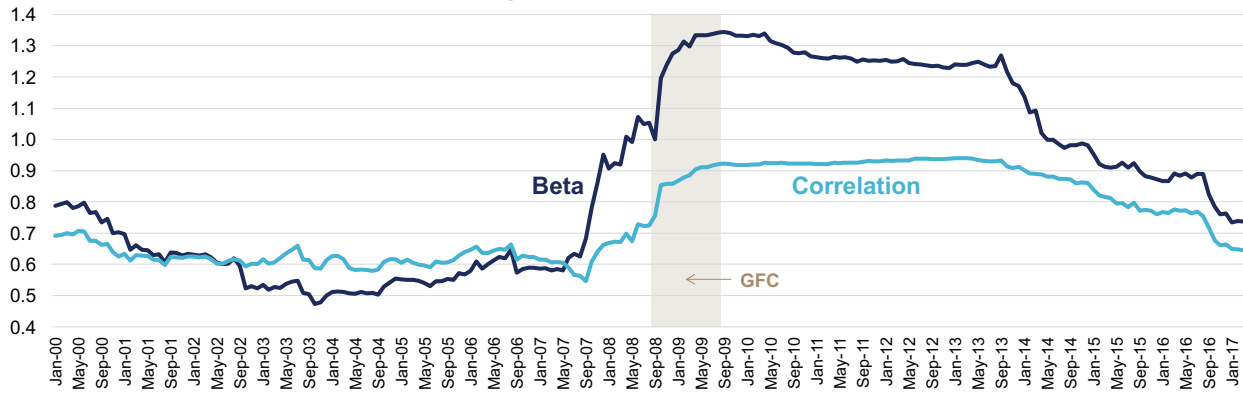


## Improved Risk-Adjusted Returns

Most academic studies (and investors) conclude that public and private real estate should generate returns that are between those of stock and bonds. However, real estate has low to moderate correlations with those asset classes, and therefore improves risk-adjusted returns when added to a mixed asset portfolio.

Over the past five years, the beta of GRES to global securities has been 0.71, based on monthly returns. The correlation between the GRES and the MSCI Global Equities Index was 0.61 over the same timeframe. As shown in Figure 7, both GRES beta and correlation are close to levels observed prior to the GFC. GRES correlation and beta spiked during the GFC, as all asset classes and sector fell together. As shown below, the trailing 5-year beta of GRES rose sharply throughout the GFC, but has been gradually declining as GRES have reclaimed their risk-return profile between stocks and bonds.

Figure 7. **GRES Beta and Correlation to Global Equities Falling Post-GFC**  
**Trailing 5-Year Beta and Correlation**

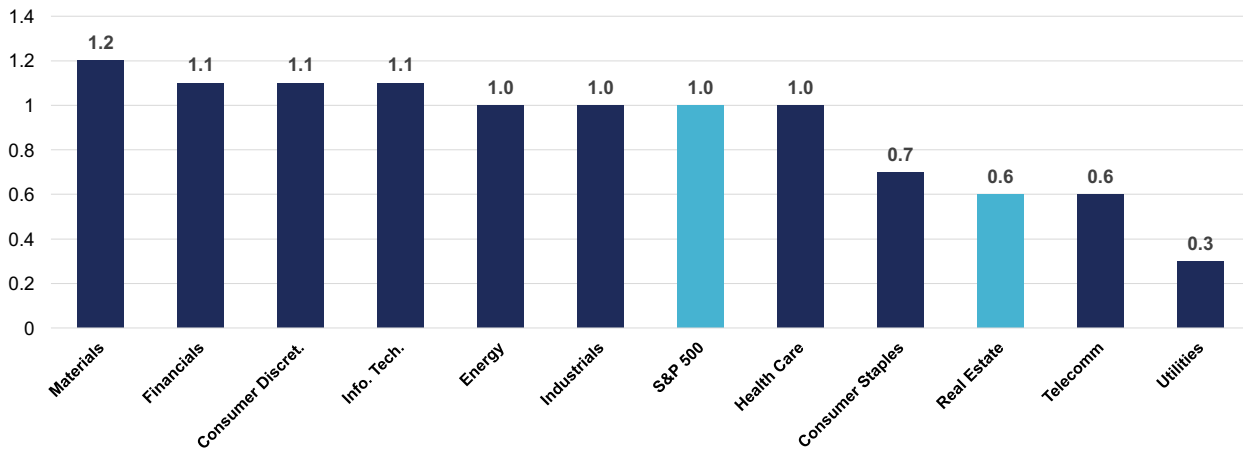


\*Correlations are higher in the UK without a lag.  
 Note: all data since 2000, except Japan since 2002  
 Sources: EPRA/NAREIT, NCREIF, MSCI/IPD.  
 Past Performance is not necessarily indicative of future results.

GRES are also materially different from other industry sectors. This point was validated in 2016 when real estate was added to the Global Industry Classification Standards (GICS) as an eleventh industry sector for economic and financial reporting purposes. This is the first addition to the GICS system since it was initiated in 1999. Real estate now comprises ~3% of the MSCI World Equity Index and ~4% of the S&P Total Market Index<sup>10</sup>.

Prior to being classified as a standalone sector, REITs were part of the Financials sector. As shown in Figure 8, real estate has a below average beta relative to the S&P 500 index. This is consistent with real estate having different return drivers than other industry sectors, providing diversification benefits as discussed below. Financials, where real estate formerly was classified, have the second highest beta of all industry sectors over the past five years. Being a part of Financials may have distorted investors' assessment of GRES risk.

Figure 8. **Trailing 5-Year Beta by S&P 500 GICS Sectors – US Equities**



Source: S&P Global Marketplace Intelligence. As of July 31, 2017.

The classification of real estate as an independent sector in the GICS may increase net fund flows to GRES over time. If securities investors have been underweighting real estate, they may reevaluate their positions and move closer to market weight. The separate classification may lead to lower correlations as real estate fundamentals drive valuation and lower volatility due to the steady earnings of GRES. Based on past performance, both GRES and private real estate improve risk-adjusted returns when added to a mixed asset portfolio<sup>11</sup>.

<sup>10</sup> Data as of May 31, 2017.

<sup>11</sup> Past performance is not necessarily indicative of future results.

# Enhanced Diversification Within Real Estate Allocation

A typical portfolio of publicly traded GRES is comprised of dozens of companies that own thousands of properties occupied by many thousands of tenants in multiple industries. Most companies have a property focus and scale enabling them to allocate capital efficiently. GRES investors benefit from these advantages, yet still have the ability to diversify across sectors as GRES provide diversification by property type, country and currency. As shown in Figure 9, GRES have low correlations with the major private real estate markets/indices, based on the past seventeen years. These correlations argue for the benefit of global diversification versus a single country focus. As discussed previously and shown in Figure 6, public and private real estate generally have high correlations within a country after adjusting for reporting and valuation lags.

Figure 9. **Quarterly Total Return Correlations, 2000-2016**

No Lag	GRES	US NPI	UK IPD	Canada IPD	Australia IPD	Japan IPD
GRES	1.00	0.23	0.48	0.17	0.17	0.13
US NPI		1.00	0.57	0.64	0.87	0.81
UK IPD			1.00	0.25	0.56	0.45
Canada IPD				1.00	0.58	0.53
Australia IPD					1.00	0.90
Japan IPD						1.00

Lagged 4 Q	GRES	US NPI	UK IPD*	Canada IPD	Australia IPD	Japan IPD
GRES	1.00	0.47	0.51	0.42	0.36	0.35
US NPI		1.00	0.74	0.64	0.87	0.81
UK IPD			1.00	0.38	0.69	0.70
Canada IPD				1.00	0.58	0.53
Australia IPD					1.00	0.90
Japan IPD						1.00

\*UK IPD lagged one quarter.

Sources: EPRA/NAREIT, NCREIF, MSCI/IPD. As one of the most liquid and transparent markets in the world, it should be noted that the UK private market moves more rapidly than other countries (as discussed on page 9).

All data since 2000, except Japan since 2002.

Past performance is not necessarily indicative of future results.

The property type composition of GRES is also significantly different from typical private core real estate portfolios (as indicated by the MSCI IPD Global Fund Index). As shown below (Figure 10), private core real estate has a very large exposure to office and industrial, while the GRES indices have a much greater weighting in “other” property types, including health care and self-storage. Publicly traded companies that focus exclusively on individual specialty sectors likely have an advantage over companies that invest in multiple property types.

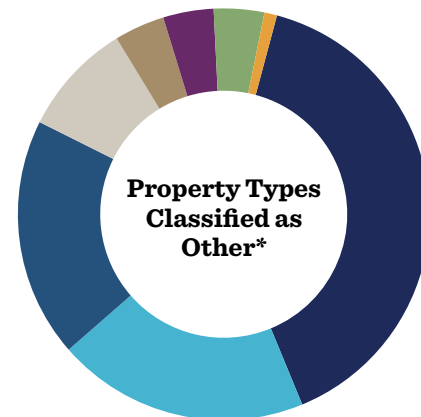
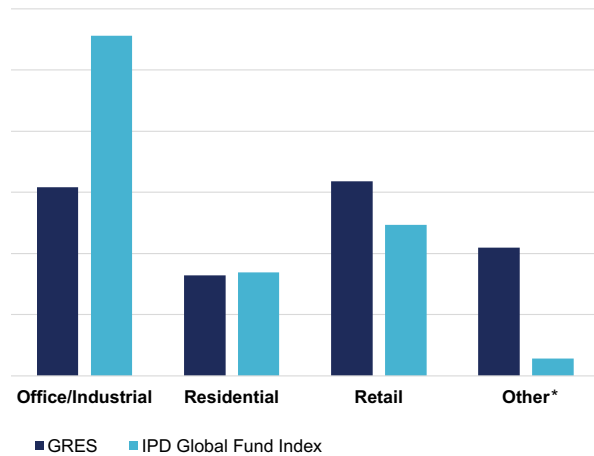
While publicly traded GRES companies collectively own or control 47% of the institutional investable universe, their market share is much higher in certain property types. These include prime regional malls globally, single-family homes and self-storage in the US, multifamily residential in Germany, student accommodation in the UK, cell towers and data centers. As the size of many specialty property types expands, publicly traded REITs are often the best way to gain exposure to those investments.

Another advantage of combining public and private real estate is to expand the range of potential investment strategies. With private real estate, the main strategies are core, value-add and opportunistic, all of which are available on a global basis, but more often by country or region. Most private funds invest in multiple property types although some invest in one property type. Publicly traded GRES offer options to invest in multiple strategies, including:

- Companies focused on developed, developing and emerging economies/countries (although the market cap of emerging economy real estate companies is relatively small)
- Companies that mainly own existing assets and ones with significant development businesses
- Lower risk strategies that exclude higher risk properties and companies with high leverage.

As the scale and scope of GRES grows, additional investment strategies are likely to be offered.

Figure 10. **Distribution by Property Types, GRES and Private Global Real Estate**



Sources: GRES: FTSE EPRA/NAREIT Developed Index data as of March 31, 2017. Classifications are based on LaSalle Investment Management’s sector classifications. For companies classified as “other” property types, their weight is distributed to sectors based upon the percentage of net operating income derived from that sector. IPD as of December 2016.



## Additional Advantages

Some additional attributes that tilt in favor of GRES are:

### *Alignment of Interest Between GRES Management Teams and Shareholders:*

Most publicly traded GRES<sup>12</sup> are self-managed with significant ownership or other aligned incentive structures by management. In addition, publicly traded GRES typically have very strong management teams. While some private funds utilize incentive or performance fees and co-investment that promote alignment of interests, these are less common for core investment structures.

### *Liquidity/Flexibility:*

While direct private real estate vehicles have limited or close to no liquidity, publicly traded GRES generally have very good liquidity, allowing for sizable trades on a daily basis. While this feature creates downside volatility in market downturns, liquidity also provides the ability to increase or alter allocations very rapidly.

### *Market Insight and Transparency:*

Investors in GRES receive valuable market information from quarterly reports and earnings calls, as well as valuation metrics that tend to precede private market measures of valuation. GRES provide audited financial statements, while their actions are monitored by broader market participants. Publicly traded exchanges provide real time data and pricing information, while private market data is more difficult to obtain and often several weeks or months old when released.

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<sup>12</sup> This varies by country. While most publicly traded real estate companies in the US are internally managed, internal management is not allowed in Japan, for example.



As discussed above, publicly traded GRES are generally similar to private real estate in terms of long-term returns, with both offering unique advantages. Other studies have shown combining GRES and private real estate strategies is likely to generate better risk-adjusted returns than either one alone<sup>13</sup>. Some of the key considerations for combining the two approaches include:

- GRES are primarily a core strategy, with long-term return expectations similar to private core real estate with low/moderate leverage. Although some companies engage in development and riskier property types, the vast majority of the sector is comprised of existing stabilized properties. In addition, investment strategies are available to invest exclusively in lower risk companies/approaches.
- GRES are ideal for core real estate investing outside of one's home country. A non-domestic GRES portfolio provides excellent diversification by country, property type and currency, particularly when compared to private funds. Tax complexity is typically lower for GRES vs. private funds.
- GRES are an excellent source of dividends. The global dividend yield was 3.8% as of the end of 2016, with some countries offering much higher yields (e.g. Canada at 5.7%).<sup>14</sup> GRES dividends are generally higher than core private real estate cash distributions.
- GRES add valuable liquidity to a private real estate strategy. Short term liquidity is limited for directly owned individual assets and very limited for commingled funds. GRES positions can be altered very quickly, allowing investors to respond to new information and changing relative valuations.
- GRES are often the best way to access some established and specialty sectors, where public companies have large market shares. Examples include such property sectors as regional malls in the US, residential in Germany and self-storage in many parts of the world.
- Combining GRES with private real estate enhances the ability to adjust weightings in response to market performance. Historically, GRES have tended to outperform private real estate from points of significant discounts to net asset values. Of course, the opposite tends to occur when GRES trade at significant premiums.

## Summary

Public and private real estate generate attractive returns and diversification benefits when compared to other asset classes. Due to concerns about volatility and historical tendencies, publicly traded GRES are typically materially underrepresented in institutional real estate portfolios. This is not justified by long-term returns, which have been generally comparable with private real estate.

Private real estate offers numerous advantages for institutional investors, including a very wide range of return/risk strategies, low measured volatility and, for larger investors, greater control. However, the advantages of GRES present a strong case for investing in both publicly traded GRES and private real estate and for a larger allocation to publicly traded GRES in a real estate portfolio seeking to optimize investment performance.

<sup>13</sup> References:

- 1) Kieran Farrelly and Alex Moss. Blending Public and Private Real Estate Allocations for Defined Contribution Pension Funds: a U.K. Case Study, *Journal of Real Estate Portfolio Management*, Vol. 20, Issue 3, 2014.
- 2) *Optimizing Risk and Return in Pension Fund Real Estate: REITs, Private Equity Real Estate and the Blended Portfolio Advantage*, NAREIT, 2011.
- 3) Greg MacKinnon. *REITs and Real Estate: Is There Room for Both in a Portfolio?* Pension Real Estate Association Research Report, 2010.

<sup>14</sup> Source: FTSE EPRA/NAREIT Developed Index. Past performance is not necessarily indicative of future results.

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The FTSE EPRA/NAREIT Developed Index is designed to track the performance of listed real estate companies and RE ITS worldwide. By making the index constituents free-float adjusted, liquidity, size and revenue screened, the series is suitable for use as the basis for investment products, such as derivatives and Exchange Traded Funds (ETFs). For more information, please visit <http://www.ftserussell.com/>.

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### Citigroup World Corporate Bond Index

The Citi WorldBIG Corporate Bond Index is a subset of the Citi World Broad Investment-Grade Bond Index (WorldBIG), along with world government bonds and collateralized debt. The WorldBIG is a multi-asset, multi-currency benchmark which provides a broad-based measure of the global fixed income markets. The WorldBIG Corporate Bond Index includes corporate bonds from the Industrial, Utility, and Finance sub-classes. In order to be included in the Index, corporate bonds must achieve a minimum credit quality of BBB- from S&P or Baa3 from Moody's, with a minimum issue size of \$250 million. For more information, please visit <https://www.yieldbook.com/m/indices/>.

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### IPD Global Annual Property Index

The IPD Global Annual Property Index measures the combined performance of real estate markets in 25 countries. The index is based on the property indexes for Australia, Austria, Belgium, Canada, Czech Republic, Denmark, France, Germany, Hungary, Ireland, Italy, Japan, Korea, Netherlands, New Zealand, Norway, Poland, Portugal, South Africa, Spain, Sweden, Switzerland, UK, U.S. and the KTI index for Finland. For more information, please visit <https://www.msci.com/>.

### NCREIF

The NCREIF Property Index (NPI) is a quarterly, unleveraged composite total return for private commercial real estate properties held for investment purposes only. All properties in the NPI have been acquired, at least in part, on behalf of tax-exempt institutional investors and held in a fiduciary environment. Property types include apartment, hotel, industrial, office and retail. The composition of the NPI can change over time. The numbers of properties changes as Data Contributing Members buy and sell properties and new Data Contributing Members are added. Properties exit the NPI when assets are sold or otherwise leave the database. All historical data remains in the database and in the Index. The Index represents investment returns from a single class of investor. As such, the NPI may not be representative of the market as a whole. For more information, please visit <https://www.ncreif.org/>.

The securities of issuers that are principally engaged in the real estate sector may be subject to risks similar to those associated with the direct ownership of real estate. These include: declines in real estate values, defaults by mortgagors or other borrowers and tenants, increases in property taxes and operating expenses, overbuilding, fluctuations in rental income, changes in interest rates, possible lack of availability of mortgage funds or financing, extended vacancies of properties, changes in tax and regulatory requirements (including zoning laws and environmental restrictions), losses due to costs resulting from the clean-up of environmental problems, liability to third parties for damages resulting from environmental problems, and casualty or condemnation losses. In addition, the performance of the local economy in each of the regions in which the real estate owned by a portfolio company is located affects occupancy, market rental rates and expenses and, consequently, has an impact on the income from such properties and their underlying values.

The forecasts contained in this publication are generated from a range of statistical techniques, including econometric models. They are subject to errors stemming from three main sources: measurement and statistical error which relate to raw data and the econometric model, as well as error arising from assumptions regarding the future behavior of explanatory variables. As a result, we place greater emphasis on trends and turning points than on precise values. Please note that the forecasts do not include the impact of any commissions, fees or other charges that may be payable.

Past performance is not necessarily indicative of future results. In addition the price and/or value of and income derived from any particular investment may vary because of changes in interest rates, foreign exchange rates, operational or financial conditions. Investors may therefore get back less than originally invested. Furthermore, these investments may not be eligible for sale in all jurisdictions or to certain categories of investors.

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