

Considerations for investing in global real estate

H1 2022

Global Strategic Analytics



Mike Bessell
Managing Director



Nick Buss
Managing Director



Katie Seamans
Associate

In this paper, we consider four elements:

- ✓ Ways to invest in real estate
- ✓ The depth and liquidity benefits of global real estate market opportunities
- ✓ The case for long-term investment horizons
- ✓ How the addition of non-domestic real estate exposure may serve to enhance returns and lower risk in a multi-asset class portfolio

Many investors are familiar with the appeal of holding real estate. With a generally low correlation to other asset classes¹, it can serve as an instant diversifier in a mixed-asset portfolio. Historically, real estate has delivered strong relative performance across multiple cycles compared to other asset classes, and its characteristic stable income, underpinned by long-term leases, makes it a compelling alternative to traditional fixed-income instruments. In the wake of 2020, investors are increasing their allocations to alternative investments: 90% of investors intend to maintain or increase their allocations to real estate over the long term.²

Real estate investors around the world have tended to be domestically focused, but many are now investing across global real estate markets. Large institutional investors and sovereign wealth funds have been at the forefront of the shift to global real estate investment, driven by the generally stable income component and the potential for diversification benefits, risk reduction, and return enhancement. Likewise, a lack of domestic investment opportunities has played a role in investors' increasing appetite for an international portfolio as a way to broaden their opportunity set (**Figure 1**).

Assessing the global real estate market and the different means of gaining exposure through listed, unlisted, equity, and debt vehicles can be a daunting task. Investors must assess various factors before making an allocation, including the impact of currency fluctuations and foreign tax laws. They must also assess their own internal capabilities for evaluating such an allocation.

Figure 1:

Why real estate?

Investors have different motivations for considering global real estate

Key considerations

- Size of the real estate asset class
 - Lack of domestic real estate opportunities
 - Markets comparable in transparency
 - Income orientation
 - Strong relative return performance
-
- Different growth drivers
 - Diversification with traditional asset classes
 - Diversification with domestic real estate market
 - Inflation hedging
 - Portfolio risk reduction and return enhancement

Sources: Invesco Real Estate as of April 2022.

Size and performance

Characteristics and portfolio contribution

This marketing material is intended only for Professional Clients and Qualified Clients/Sophisticated investors (as defined in the important information at the end); for Sophisticated or Professional Investors in Australia; for Professional Investors in Hong Kong; for Institutional Investors and/or Accredited Investors in Singapore; for wholesale investors (as defined in the Financial Markets Conduct Act) in New Zealand, for Qualified Institutional Investors in Japan, for Qualified Institutions/Sophisticated Investors in Taiwan, and for Institutional Investors in the USA. In Canada this document is for use by investors who are (i) Accredited Investors and (ii) Permitted Clients, as defined under National Instrument 45-106 and National Instrument 31-103, respectively. It is not intended for and should not be distributed to, or relied upon, by the public or retail investors.

Figure 2:
Comparison of listed and unlisted real estate

	Listed (Public) Real Estate	Unlisted (Private) Real Estate
Return	Broadly similar returns over the long term (see Figure 4)	
Risk (Volatility)	More volatile	Less volatile
Liquidity	Very liquid	Less liquid
Diversification benefit	Moderate but not as large as private real estate	Substantial over the long term
Investment horizon	Flexible	Generally longer term
Availability of information	Readily available, real-time transaction based	Improving but less readily available, mainly appraisal-based
Timeliness of information	Daily	Quarterly (or monthly in selected countries)

Sources: Invesco Real Estate, Bloomberg L.P. and FTSE International Limited (FTSE) © 2022.

Investment options in global real estate

Real estate as an asset class can be invested in through both equity and debt positions, and through listed or unlisted vehicles. In recent years, the potential paths to invest in real estate have become more varied; while global public real estate markets have long been accessible to investors, more recent industry fund launches now offer access to global unlisted real estate. Prior to that, unlisted real estate was accessible primarily through closed-end, higher-return strategies or through management-intensive direct ownership. This enhancement to the composition of available investment vehicles in the industry is providing investors greater opportunities for diversification by adding unlisted global real estate to their portfolios.

It is noteworthy that while listed and unlisted real estate tend to have similar characteristics in the long term, they have varying characteristics in the short term, driven in large part by the liquidity component of each. Listed real estate offers daily liquidity, but this comes with higher volatility, whereas unlisted real estate generally offers only periodic liquidity, which underscores generally greater stability under normal market conditions (**Figure 2**). This is beginning to change. Increasingly, a range of unlisted vehicles is evolving that provides greater liquidity than the traditional closed-end and open-ended funds, often through a blend of direct and listed real estate.

In addition to choosing an investment vehicle, various real estate strategies exist across the risk-return spectrum that may warrant consideration depending on an investor's goals and risk tolerance. The options include core, core plus, value-add and opportunistic approaches.

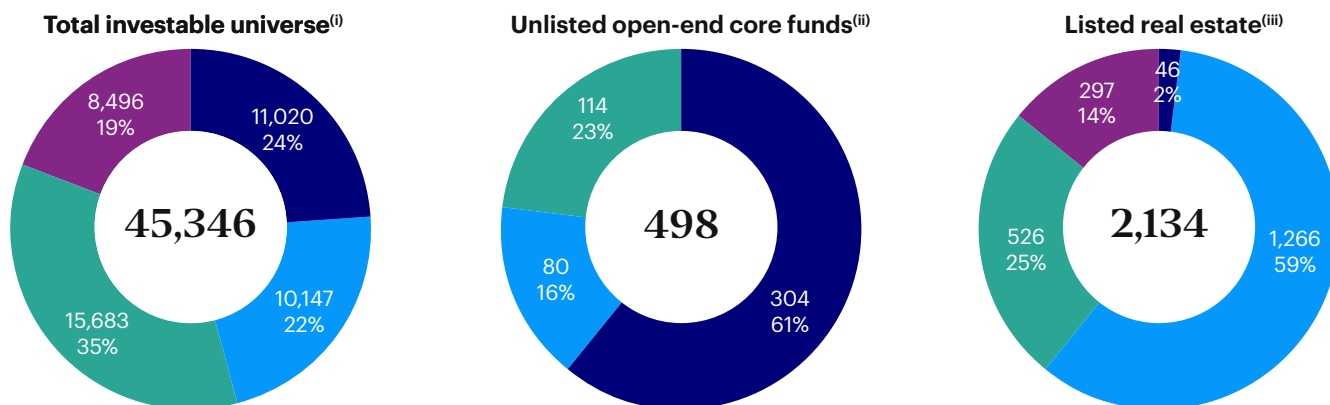
Core assets are generally stable, cash-flow producing assets with stable occupancy, while opportunistic assets represent the riskiest real estate approach, wherein investors look to achieve higher returns by tackling assets with structural or financial obstacles.

While it is likely that an institutional investor may pursue a combination of real estate approaches to achieve their performance objectives, in this paper our focus is on equity positions largely within private real estate, as unlisted real estate represents the largest share of the estimated global investable universe, while listed indices represent less than 5% of the universe based on their market capitalization (**Figure 3**).

Global interest in real estate has continued to increase in recent years as investors seek yield amidst the ultra-low interest rate environment. Even though government bond yields have started to show modest increases, it seems likely that interest rates will remain moderate over the long term.

Figure 3:
Different measures of the global real estate universe – estimated size (US\$ billions)

■ North America ■ Asia Pacific ■ Europe ■ Other



Sources: Invesco Real Estate based on data from PWC market size report, MSCI Global Quarterly Property Fund Index, and FTSE EPRA/NAREIT Global Real Estate Index as of March 2022.

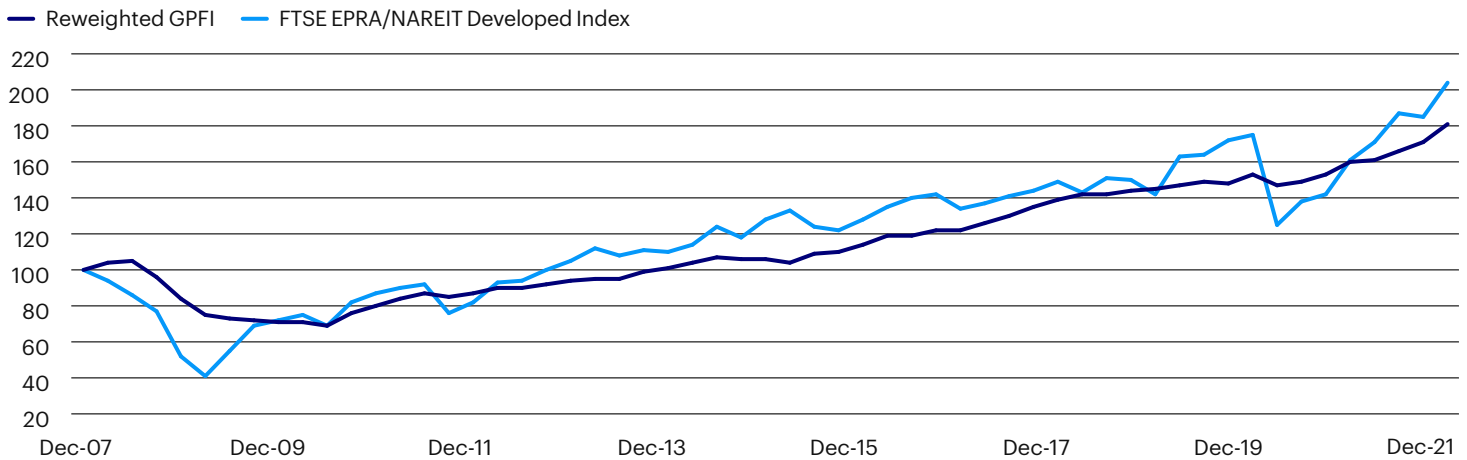
Depth and liquidity issues

While listed and unlisted real estate assets perform somewhat similarly, they bring different qualities to a portfolio (**Figure 4**). Unlisted assets are less volatile, while listed real estate offers greater liquidity. Going global can open additional investment opportunities to access quality real estate investments. The majority of all commercial property transactions, as reported by Real Capital Analytics, take place in 33 Transparent and Highly Transparent markets (**Figure 5**). As such, it is not surprising that many investors around the world are looking abroad to source real estate deal flow.

This elevated external focus has spurred growth in transaction volumes globally. According to Real Capital Analytics, global quarterly transaction volumes have ranged from US\$131 billion to US\$761 billion since 2010 (**Figure 6**). Through 2020, property transactions totaled US\$1.5 trillion, a decrease of 15.8% year over year. Property transactions subsequently rebounded in 2021 to US\$2.0 trillion, a 34.9% increase year over year.³

Figure 4:
Listed and unlisted real estate performance

Unlisted global real estate performance 2007-21, December 2007=100

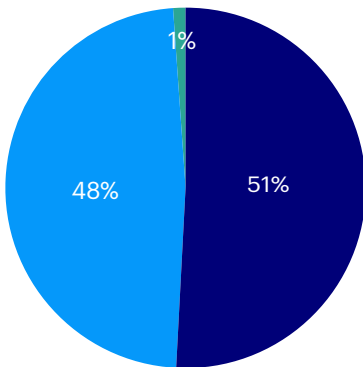


Note: All returns shown in USD.

Source: Invesco Real Estate based on data from MSCI Global Quarterly Property Fund Index and Macrobond as of December 31, 2021. "Reweighted GPF" refers to the MSCI Global Quarterly Property Fund Index (GPF) reweighted to 25% Asia Pacific, 25% Europe and 50% North America. Past performance is not a guide to future returns.

Figure 5:
Average transaction volume 2019-21 in transparent and highly transparent countries (%)^(iv)

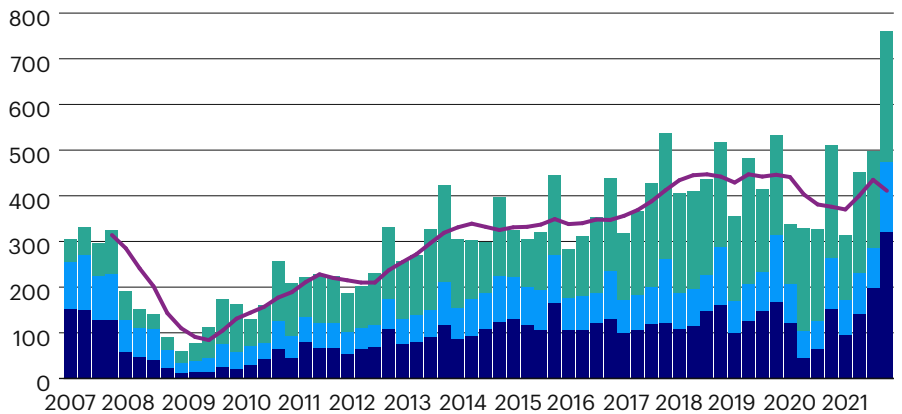
■ Highly transparent countries
■ Transparent countries ■ The rest of the world



Source: Invesco Real Estate using data from JLL Transparency Index 2020 and Real Capital Analytics as of January 2022.

Figure 6:
All property transaction volume 2007-21
US\$ billions, quarterly

■ Americas ■ Europe
■ Asia Pacific — 4-quarter global moving average



The figure relates to direct transactions involving all property types including land.

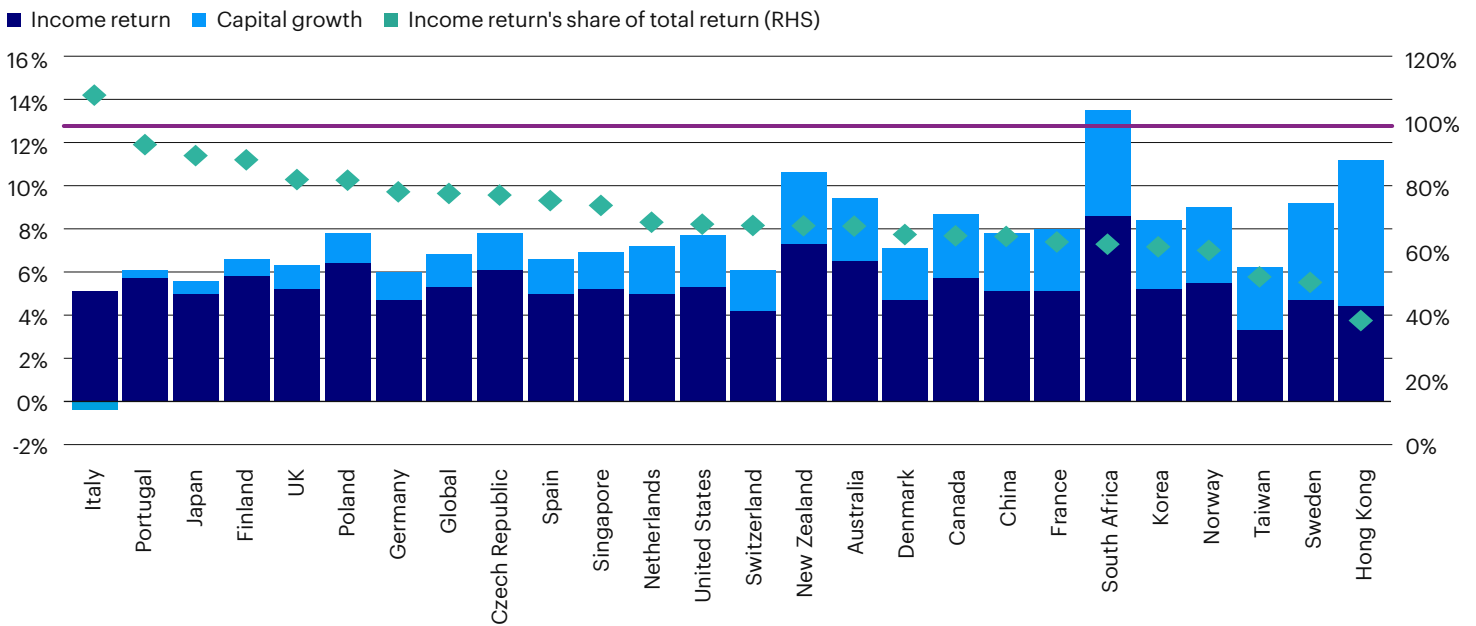
Source: Invesco Real Estate based on data from Real Capital Analytics as of March 2022.

Diversification

Investors' appetite for real estate is spurred in part by the asset class's generally stable income component. Across the globe, income returns as a share of private real estate total returns are generally quite high (**Figure 7**). Except for a few high-growth markets such as Hong Kong, annualized total returns are driven primarily by income.

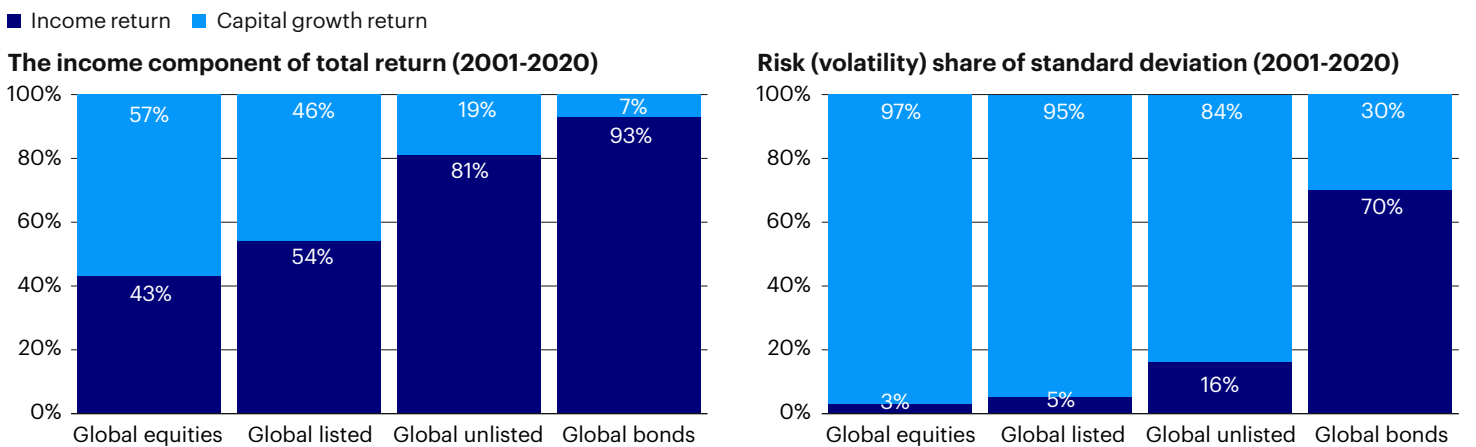
Furthermore, when considered as part of a mixed-asset portfolio, the income return from real estate, both public and private, becomes even more compelling. Over the period 2001-20, global equities derived 43% of their total return from income, with 57% from capital appreciation. That 57% from appreciation was responsible for 97% of equities' total return volatility (**Figure 8**). By comparison, for real estate globally, income contributed a greater share of total return (54% for listed and 81% for unlisted real estate) and was only modestly responsible for the volatility of returns (**Figure 8**). This suggests that a portfolio that adds global real estate may diminish risk through lower volatility.

Figure 7:
Annualized average income return and capital growth return (2005-21) ^(v)



Sources: Invesco Real Estate using data from NCREIF and MSCI as of April 2022. Past performance is not a guarantee of future results.

Figure 8:
Income and capital growth return ^(vi)



Source: Invesco Real Estate based on data from MSCI, Bloomberg L.P. and Macrobond as of May 2021.

At its core, real estate is a local asset class, driven by local demographic and economic trends. The lack of synchronization in economic cycles globally reduces the correlation in real estate returns; thus, moving beyond one's domestic market can offer significant diversification benefits and dampen volatility. As evidenced by correlation data from unlisted property returns across 16 sizable real estate markets, there is a clear diversification of property returns around the world. Of the 16 countries shown, each had correlations below 0.8 with at least 13 other countries. Since 2008, China, Hong Kong, Korea, and the United Kingdom had property return correlations below 0.8 for all of the other 15 markets and Canada, Japan, Italy and Poland for 14 of the other 15 markets (Figure 9).

Beyond country-to-country diversification benefits, expanding one's real estate portfolio outside one's home country to include a global mandate can also produce a smoothing effect on returns. Figure 10 reflects unleveraged real estate total returns for 32 countries around the globe, with the purple lines each reflecting different countries' historical returns.

Over the period from 2010 to 2020, the global unlisted real estate portfolio returned an annualized average of 7.6% with a standard deviation of 2.3%. In any given year there are markets that exhibit significant outperformance and those that reflect underperformance. However, given the difficulty in timing country peaks and troughs, particularly without local expertise, a diversified global portfolio suggests a smoother trend line.

Figure 9:

Correlations of annual country all property unleveraged total returns 2008-20 – MSCI Global Property Index^(vii)

■ Correlation (<.80) ■ Correlation (>.80)

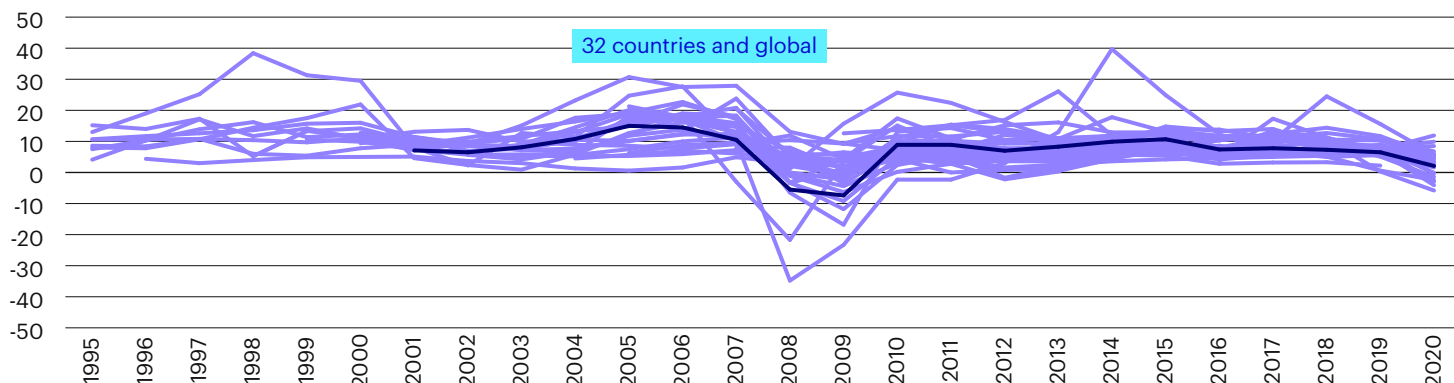
		Americas		Asia Pacific						Europe							
		Canada	US	Australia	China	Hong Kong	Japan	Korea	Singapore	United Kingdom	France	Germany	Italy	Spain	Sweden	Poland	Netherlands
Americas	Canada	1.00															
	United States	0.73	1.00														
Asia Pacific	Australia	0.70	0.87	1.00													
	China	0.34	0.33	0.09	1.00												
	Hong Kong	0.67	0.30	0.38	0.35	1.00											
	Japan	0.26	0.74	0.77	-0.15	-0.26	1.00										
	Korea	-0.02	0.33	0.21	-0.45	-0.19	0.51	1.00									
Europe	Singapore	0.88	0.86	0.71	0.51	0.40	0.48	0.09	1.00								
	UK	0.42	0.61	0.66	0.01	0.58	0.39	0.38	0.33	1.00							
	France	0.63	0.90	0.89	0.27	0.35	0.68	0.26	0.68	0.66	1.00						
	Germany	0.00	0.40	0.54	-0.26	-0.31	0.77	0.34	0.15	0.21	0.58	1.00					
	Italy	0.18	0.38	0.50	0.32	0.06	0.41	-0.03	0.32	0.22	0.65	0.71	1.00				
	Spain	0.15	0.62	0.78	0.02	-0.10	0.84	0.29	0.34	0.44	0.76	0.82	0.71	1.00			
	Sweden	0.40	0.75	0.86	0.00	0.23	0.73	0.34	0.40	0.70	0.91	0.68	0.63	0.84	1.00		
	Poland	0.68	0.74	0.59	0.49	0.16	0.48	0.05	0.89	0.06	0.65	0.35	0.54	0.44	0.39	1.00	
Netherlands	-0.07	0.25	0.46	-0.09	-0.26	0.59	0.09	0.08	0.06	0.49	0.92	0.83	0.79	0.61	0.34	1.00	

Source: Invesco Real Estate based on NCREIF and MSCI as of June 2021.

Figure 10:

MSCI direct real estate total return by country (% , local currency, all property types)

■ Global



Note: Each purple line represents the annual total return series over time for an individual country.^(viii)

*For the countries China, Indonesia, Taiwan, Thailand the total returns are till the year 2019 due to availability of data.

Source: Invesco Real Estate using data from MSCI as of May 2021. **Past performance is not a guarantee of future results.**

A case for long-term investing

As **Figure 10** demonstrates, local real estate market performance varies. Yet, despite a dip during the global financial crisis (GFC), the MSCI Global Quarterly Property Fund Index (an index of total returns for global open-ended core funds) has increased steadily, by more than 91% over the last decade (**Figure 11**). This would suggest that investors with a longer-term hold horizon for real estate may fare better than those who seek to time their investments.

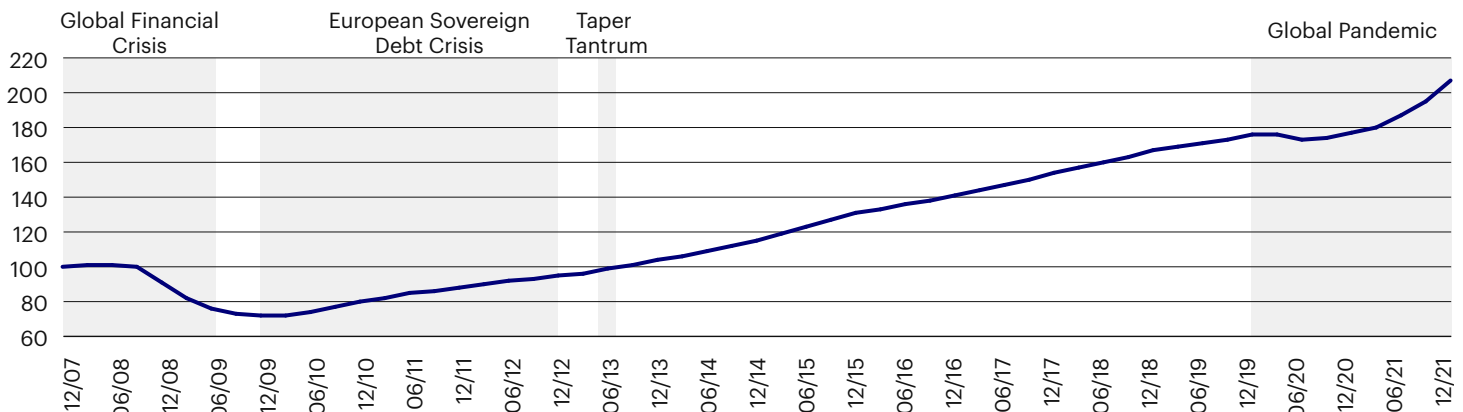
To illustrate the impact of trying to “time the market” versus taking a long-term, disciplined approach to investing in real estate, we have sought to demonstrate several hypothetical investment scenarios yielding different results.

An investor with the worst timing, i.e., one that invested once only at the exact peak of the last cycle (assumed to be March 2008 for these purposes) but who held on to the investment through the subsequent decade, would have achieved a 4.6% per annum total return (**Figure 12**). And this would have included a healthy annual dividend payment, likely in the range of 3-5% over the period.

Extending the thought experiment, if another investor had also invested at the exact same peak of the market in 2008, but then had invested equal amounts each subsequent year and held until 2021, the more active investor would have achieved a 7.3% total return, again with a likely 3-5% annual dividend payment.

Given the difficulty in successfully timing the market, this example suggests that an investor able to weather potential short-term volatility may yield greater returns by making a consistent allocation to real estate, regardless of the original cyclical starting point.

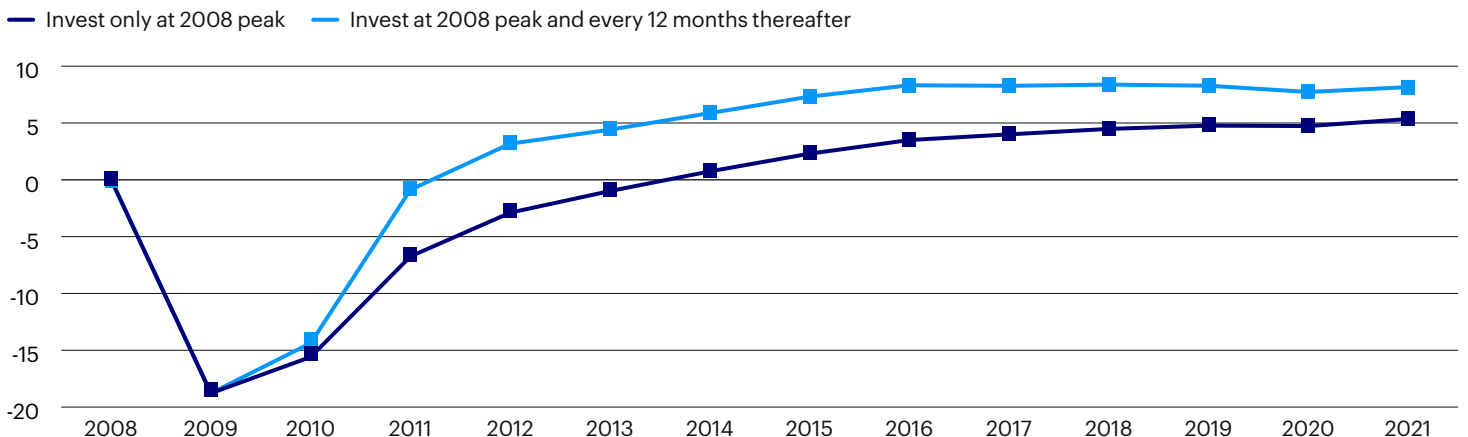
Figure 11: **Global real estate performance since 2008 MSCI Global Quarterly Property Fund Index (reweighted by region, local currencies)^(ix)**



Source: Invesco Real Estate using data from MSCI Global Quarterly Property Fund Index as of December 31, 2021. **Past performance is not a guarantee of future results.**

Figure 12: **The case for long-term investing: Investment performance if you had invested US\$100 million into the reweighted GPFI at the 2008 peak (Q1 2008 - Q4 2021, % per annum)**

IRR for \$100m investment at 2008 peak



Hypothetical US\$100 million investment into the reweighted GPFI not including the re-investment of dividends.

Reweighted GPFI refers to the MSCI Global Quarterly Property Fund Index (GPFI) in local currency being reweighted to 25% Asia Pacific, 25% Europe and 50% North America.

Source: Invesco Real Estate using data from MSCI Global Quarterly Property Fund Index as of December 31, 2021.

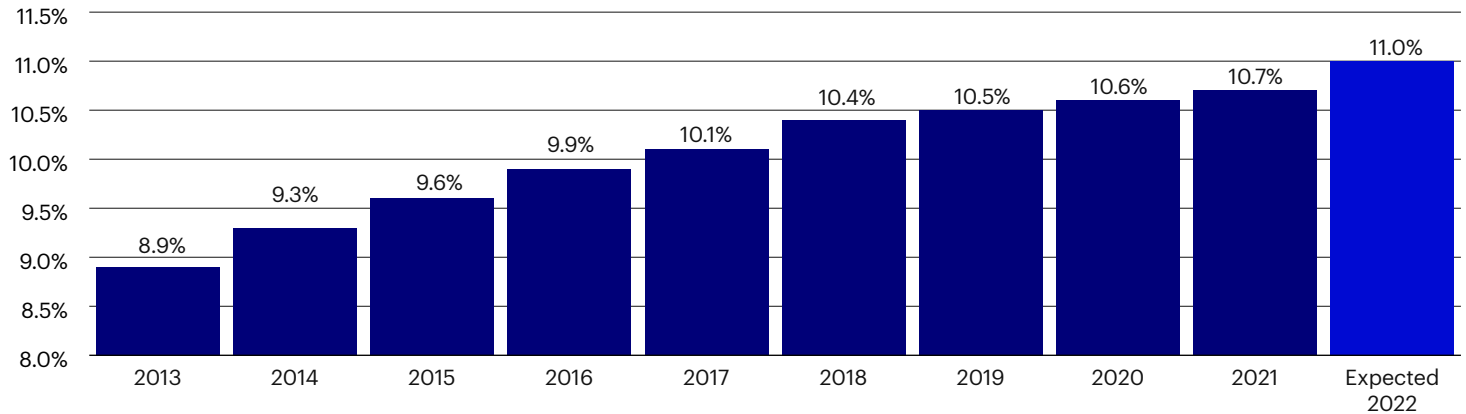
The role of global real estate within a mixed-asset portfolio

Real estate has played an increasing role in investor portfolios over the years. According to the 2021 Institutional Real Estate Allocations Monitor, which tracks 224 institutional investors representing over US\$13.4 trillion in total assets and real estate assets of approximately US\$1.2 trillion, investors' target allocations to real estate have increased from 8.9% to 11.0% over the last nine years (Figure 13).

Figure 14 illustrates the correlations between global real estate and various global traditional asset classes. A global private real estate portfolio (represented as the Custom MSCI Global Property Index) produces very low correlations with global bonds (0.28), and low correlation with global equities (0.57) and global public real estate (0.54) suggesting a blend of public and private real estate can also create diversification benefits.

Figure 13:

Target allocations to real estate: Weighted average target allocation to real estate, all institutions, 2013-22



Source: 2021 Institutional Real Estate Allocations Monitor published by Cornell University's Baker Program in Real Estate and Hodes Weill & Associates as of November 2021.

Figure 14:

Correlations of global real estate and other asset classes (local currency returns – Q1 2008-Q4 2021) (x)

Global direct real estate weights: 25% Asia Pacific, 25% Europe, 50% North America

Market sector index	Global Direct Real Estate Index	Global REIT Index	Global Infrastructure Index	Global Equity Index	Global Bond Index
Global Direct Real Estate Index Custom MSCI Global Property Index ⁴	1.00				
Global REIT Index FTSE EPRA/NAREIT Developed Index ⁵	0.54	1.00			
Global Infrastructure Index Dow Jones Brookfield Global Infrastructure Index ⁶	0.55	0.88	1.00		
Global Equity Index MSCI World Index GR ⁷	0.57	0.87	0.87	1.00	
Global Bond Index Barclays Global Aggregate Bond Index ⁸	0.28	0.32	0.33	0.22	1.00

Sources: MSCI, Bloomberg Barclays and FTSE EPRA/NAREIT Index as of April 2022 and in US dollars. **Past performance is not a guarantee of future results.**

Real estate as an inflation hedge

Figure 15 shows that direct and listed real estate assets have been mildly positively correlated to inflation since 2010, rather than the typically negative correlation seen in equities or bonds. While the table shows the relationship for the past decade, we are clear that this is a period when inflationary pressures were relatively benign, and inflation globally was largely trending lower. Taking a long-term view that the post-2020 global economic environment is expected to follow a similar pattern to the post-GFC recovery, with steady economic growth while countries seek to effect a gradual, controlled reversal of the recent balance sheet expansion, the period shown provides a useful guide to the expected performance of real estate going forward.

Global real estate as a diversifying investment

Adding real estate to a broader multi-asset portfolio offers the potential to achieve either a higher return or the same level of return at lower risk, depending on the weighting of real estate added to the portfolio, and the balance of this between listed and unlisted real estate.

Below we consider the effect of adding a given percentage of global real estate to a portfolio, using weightings of 10%, 20% or 30% (Figure 16), and show the impact on a traditional global stocks and global bonds portfolio in the post-GFC period. If the real estate allocation is exclusively in the unlisted form, it acts to significantly lower the portfolio volatility while marginally improving the overall portfolio returns, albeit at the expense of adding a degree of illiquidity to the portfolio.

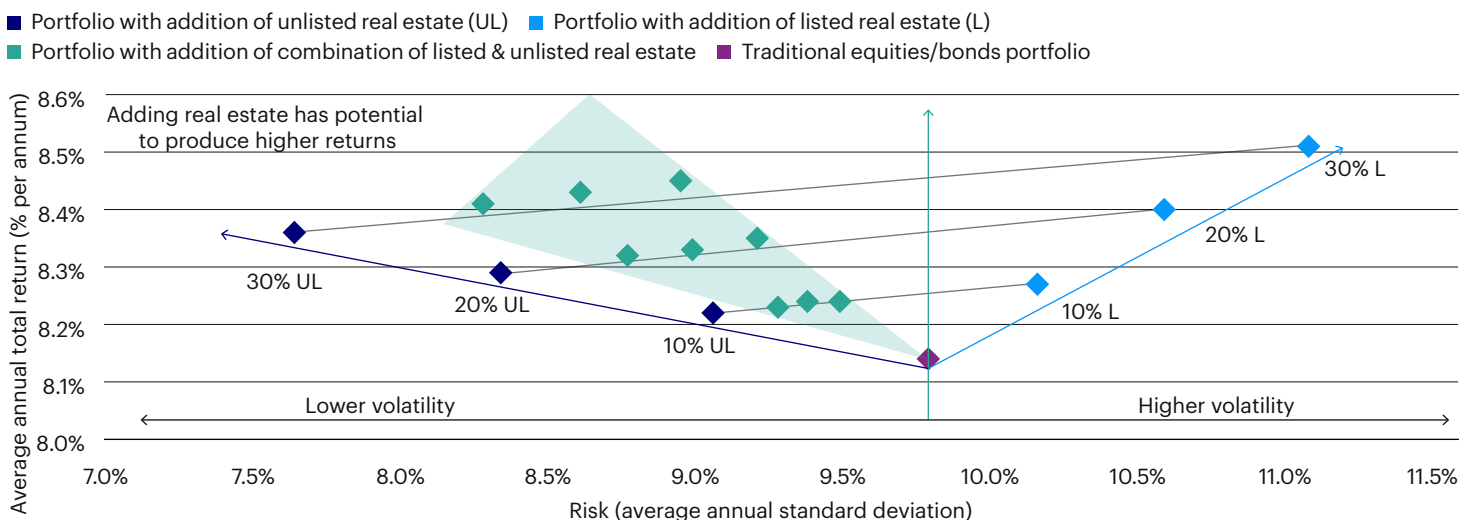
This exercise exhibits some of the benefits of real estate in a global portfolio, however it should be acknowledged that in practice most investors will begin with a portfolio that already has a component of domestic real estate and then consider the addition of global real estate.

Figure 15:
Correlations with inflation (Local currency, Q3 2009 - Q4 2021)

	Global-CPI	US-CPI	Europe-CPI	APAC-CPI
Global-Direct RE	0.27	0.28	0.45	0.21
Global REITS	-0.02	-0.06	0.17	-0.23
Global-Equities	-0.07	0.04	0.09	-0.14
Global Bonds	-0.12	-0.00	-0.21	-0.11

Source: Invesco Real Estate using data from MSCI, Macrobond and Barclays as of April 2022. Past performance is not a guarantee of future results.

Figure 16:
Diversification: risk/return profile
Risk and return profile of different portfolios since the GFC (Q1 2010 - Q4 2021, US\$) ^(xi)



Source: Invesco Real Estate using data from Macrobond, Bloomberg L.P. and MSCI as of April 2022. Past performance is not a guarantee of future results.

Conclusion

While there are several potential motivations for investing in global real estate, an investor will also need to assess various other factors before making an allocation such as the impact of currency, tax, liquidity and pricing, as well as an assessment of internal capabilities.

Analyzing global real estate markets and the different ways to invest can be a large task. An investor should assess what resources and capabilities they have to execute a global real estate allocation. Most investors may choose to participate via listed real estate, separate accounts, unlisted commingled funds or fund of funds in order to gain access to global real estate without the extensive time required to build out dedicated internal resources, much less the lead time to deploy capital at scale.

For investors considering expanding their exposure beyond their home country, listed and unlisted global real estate may potentially offer attractive returns derived from generally stable income streams, while simultaneously lowering portfolio volatility. The depth and transparency of many international markets makes cross-border investment increasingly accessible, while low correlations to other countries and alternative asset classes makes it a key tool for diversification. For many, time in the market, rather than market timing may be the simpler, better way to achieve portfolio benefits.

- 1 See Global real estate: true diversification amidst looming inflation; Risk and Reward Q4 2021 for further details.
- 2 2021 Preqin Global Real Estate report.
- 3 Real Capital Analytics, as of March 2022.
- 4 The custom index is based on the MSCI Global Quarterly Property Fund Index (GPII) reweighted to 50% North America, 25% Europe and 25% Asia Pacific. The GPII is a consultative index of 101 capitalization weighted, core, open ended, quarterly valued direct real estate funds from around the world.
- 5 The index is an equity market capitalization-weighted index composed of property company constituents that trade on several global exchanges. The returns are used here to represent global real estate investment trust returns (GREITs). (N.B. GREITs are a publicly liquid equity security whose underlying assets are real estate investments. GREITs are often viewed as the liquid proxy for real estate investing).
- 6 The index is designed to measure performance of pure-play infrastructure companies domiciled globally and covers all sectors of infrastructure, including MLPs and other equities.
- 7 This index is a market capitalization-weighted index designed to capture large and mid-cap publicly traded equity representation across 23 developed markets. The index covers approximately 85% of the free float-adjusted market capitalization of the public equity markets in each country. The returns are used here to represent global equity market returns.
- 8 The index is a market capitalization-weighted index that includes Treasury securities, Government agency bonds, mortgage-backed bonds, corporate bonds, US traded investment grade bonds, and some foreign bonds traded in the US.

Notes

(i) Total investable universe market size is estimated based on each region's investable stock as defined by latest PwC real estate report as of year-end 2020, Real Estate 2020: Building the future. (ii) Regional compositions of the MSCI Global Quarterly Property Fund Index are estimated based on fund-level Net Asset Value (NAV) as of Q4 2021. Sum of parts may not add to total due to rounding. (iii) Regional market capitalization of the FTSE EPRA/NAREIT Global Real Estate Index is estimated based on the free float method as of March 2022. (iv) "Transparent universe" is estimated based on the JLL Transparency Index 2021 Edition. The JLL index was derived based on factors such as investment performance, market fundamentals, listed vehicles, regulatory/legal environment, and transaction processes in 2020. For this analysis, the transparent universe includes 33 countries, which were categories as either "Highly transparent" or "Transparent" according to JLL. Highly transparent countries include Australia, Canada, France, Germany, Ireland, Netherlands, New Zealand, Sweden, United Kingdom and United States. Transparent countries include Austria, Belgium, China, Czech Republic, Denmark, Finland, Hong Kong, Hungary, Italy, Japan, Luxembourg, Malaysia, Norway, Poland, Portugal, Singapore, Slovakia, South Africa, South Korea, Spain, Switzerland, Taiwan, and Thailand. Transaction data is based on the average of 2019-2021 data reported to Real Capital Analytics as of January 2022. (v) Annualized averages are generally calculated based on the geometric averages of total returns in 2005-2021 or for the longest time period available. (vi) Shares of total returns are approximate values which exclude residual effects. Both returns and standard deviations were derived based on 20 years (2001-2020) of annual income return and capital growth histories or longest history available. Global equity performance is calculated based on the MSCI World Index. Global bond performance is calculated based on the Bloomberg L.P. Global Aggregate Index. Global public real estate performance is calculated based on the FTSE EPRA/NAREIT Global Developed Index. Global private real estate performance is calculated based on the MSCI Global Property Index. (vii) Correlations generally use the longest available common time period (2008-2020). Correlations involving China are calculated using the longest available period (2007-2019). The MSCI Global Property Fund Index (GPII) incorporates a consistent dataset of unlisted core open-ended funds across the globe and tracks core real estate performance in the primary investment regions – Asia Pacific, Europe and North America. (viii) Australia, Austria, Belgium, Canada, China, Czech Republic, Denmark, Finland, France, Germany, Hong Kong, Hungary, Indonesia, Ireland, Italy, Japan, Malaysia, Netherlands, New Zealand, Norway, Poland, Portugal, Singapore, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, UK, USA, Global. (ix) MSCI Global Quarterly Property Fund Index (GPII) was reweighted to 50% North America, 25% Europe and 25% Asia Pacific. (x) Correlations were calculated using the longest available common time period from 1Q 2008 through 4Q 2021. (xi) Global equity performance is calculated based on the MSCI World Index. Global bond performance is calculated based on the Bloomberg L.P. Global Aggregate Index. Global private real estate is calculated based on the MSCI Global Property Fund Index. Global public real estate is calculated based on the FTSE EPRA/NAREIT Developed Index.

Investment risks

The value of investments and any income will fluctuate (this may partly be the result of exchange rate fluctuations) and investors may not get back the full amount invested. Property and land can be difficult to sell, so investors may not be able to sell such investments when they want to. The value of property is generally a matter of an independent valuer's opinion and may not be realised.

These materials may contain statements that are not purely historical in nature but are "forward-looking statements." These include, among other things, projections, forecasts, estimates of income, yield or return or future performance targets. These forward-looking statements are based upon certain assumptions, some of which are described herein. Actual events are difficult to predict and may substantially differ from those assumed. All forward-looking statements included herein are based on information available on the date hereof and Invesco assumes no duty to update any forward-looking statement. Accordingly, there can be no assurance that estimated returns or projections can be realized, that forward-looking statements will materialize or that actual returns or results will not be materially lower than those presented. The opinions expressed are those of the author, are based on current market conditions and are subject to change without notice. These opinions may differ from those of other Invesco investment professionals.

Important information

The marketing material is intended only for Professional Clients in Continental Europe (as defined below), Dubai, Isle of Man, Ireland, Jersey, Guernsey and the UK; for Qualified Clients/Sophisticated investors in Israel; for Sophisticated or Professional Investors in Australia; for Professional Investors in Hong Kong; for Institutional Investors and/or Accredited Investors in Singapore; for wholesale investors (as defined in the Financial Markets Conduct Act) in New Zealand, for Qualified Institutional Investors in Japan, for Qualified Institutions/Sophisticated Investors in Taiwan, and for Institutional Investors in the USA. In Canada this document is for use by investors who are (i) Accredited Investors and (ii) Permitted Clients, as defined under National Instrument 45-106 and National Instrument 31-103, respectively. It is not intended for and should not be distributed to, or relied upon, by the public or retail investors.

For the distribution of this document, Continental Europe is defined as Austria, Belgium, Croatia, Czech Republic, Denmark, Finland, France, Germany, Italy, Luxembourg, Netherlands, Norway, Spain, Sweden and Switzerland..

By accepting this document, you consent to communicate with us in English, unless you inform us otherwise.

This document contains general information only and does not take into account individual objectives, taxation position or financial needs. Nor does this constitute a recommendation of the suitability of any investment strategy for a particular investor. Neither Invesco Ltd. nor any of its member companies guarantee the return of capital, distribution of income or the performance of any fund or strategy. This document is not an invitation to subscribe for shares in a fund nor is it to be construed as an offer to buy or sell any financial instruments. As with all investments, there are associated inherent risks. This document is by way of information only. This document has been prepared only for those persons to whom Invesco has provided it. It should not be relied upon by anyone else and you may only reproduce, circulate and use this document (or any part of it) with the consent of Invesco. Asset management services are provided by Invesco in accordance with appropriate local legislation and regulations. Certain products mentioned are available via other affiliated entities. Not all products are available in all jurisdictions.

Further information on our products is available using the contact details shown.

This does not constitute a recommendation of any investment strategy or product for a particular investor. Investors should consult a financial professional before making any investment decisions if they are uncertain whether an investment is suitable for them.

Data as at April 2022, unless otherwise stated.

Where individuals or the business have expressed opinions, they are based on current market conditions, they may differ from those of other investment professionals and are subject to change without notice.

Australia

This document has been prepared only for those persons to whom Invesco has provided it. It should not be relied upon by anyone else. Information contained in this document may not have been prepared or tailored for an Australian audience and does not constitute an offer of a financial product in Australia.

You may only reproduce, circulate and use this document (or any part of it) with the consent of Invesco.

The information in this document has been prepared without taking into account any investor's investment objectives, financial situation or particular needs. Before acting on the information the investor should consider its appropriateness having regard to their investment objectives, financial situation and needs.

You should note that this information:

- may contain references to dollar amounts which are not Australian dollars;
- may contain financial information which is not prepared in accordance with Australian law or practices;
- may not address risks associated with investment in foreign currency denominated investments; and + does not address Australian tax issues.

Issued in Australia by Invesco Australia Limited (ABN 48 001 693 232), Level 26, 333 Collins Street, Melbourne, Victoria, 3000, Australia which holds an Australian Financial Services Licence number 239916.

New Zealand

This document is issued only to wholesale investors (as defined in the Financial Markets Conduct Act) in New Zealand to whom disclosure is not required under Part 3 of the Financial Markets Conduct Act. This document has been prepared only for those persons to whom it has been provided by Invesco. It should not be relied upon by anyone else and must not be distributed to members of the public in New Zealand. Information contained in this document may not have been prepared or tailored for a New Zealand audience. You may only reproduce, circulate and use this document (or any part of it) with the consent of Invesco. This document does not constitute and should not be construed as an offer of, invitation or proposal to make an offer for, recommendation to apply for, an opinion or guidance on Interests to members of the public in New Zealand. Applications or any requests for information from persons who are members of the public in New Zealand will not be accepted.

Issued in New Zealand by Invesco Australia Limited (ABN 48 001 693 232), Level 26, 333 Collins Street, Melbourne, Victoria, 3000, Australia which holds an Australian Financial Services Licence number 239916.

Singapore

This document may not be circulated or distributed, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 304 of the Securities and Futures Act (the "SFA"), (ii) to a relevant person pursuant to Section 305(1), or any person pursuant to Section 305(2), and in accordance with the conditions specified in Section 305 of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

This document is for the sole use of the recipient on an institutional offer basis and/ or accredited investors and cannot be distributed within Singapore by way of a public offer, public advertisement or in any other means of public marketing.

Issued in Singapore by Invesco Asset Management Singapore Ltd, 9 Raffles Place, #18-01 Republic Plaza, Singapore 048619.

Hong Kong

This document is only intended for use with Professional Investors in Hong Kong.

Issued in Hong Kong by Invesco Hong Kong Limited 景順投資管理有限公司, 41/F, Champion Tower, 3 Garden Road, Central, Hong Kong.

Japan

This document is only intended for use with Qualified Institutional Investors in Japan. It is not intended for and should not be distributed to, or relied upon, by members of the public or retail investors.

Issued in Japan by Invesco Asset Management (Japan) Limited, Roppongi Hills Mori Tower 14F, 6-10-1 Roppongi, Minato-ku, Tokyo 106-6114; Registration Number: The Director-General of Kanto Local Finance Bureau (*Kin-sho*) 306; Member of the Investment Trusts Association, Japan and the Japan Investment Advisers Association, and/or 2) Invesco Global Real Estate Asia Pacific, Inc., Roppongi Hills Mori Tower 14F, 6-10-1 Roppongi, Minato-ku, Tokyo 106-6114. Registration Number: The Director-General of Kanto Local Finance Bureau (*Kin-sho*) 583; Member of the Investment Trusts Association, Japan and Type II Financial Instruments Firms Association.

Taiwan

This material is distributed to you in your capacity as Qualified Institutions/Sophisticated Investors. It is not intended for and should not be distributed to, or relied upon, by members of the public or retail investors.

Issued in Taiwan by Invesco Taiwan Limited, 22F, No.1, Songzhi Road, Taipei 11047, Taiwan (0800-045-066). Invesco Taiwan Limited is operated and managed independently.

United States

Issued in the US by Invesco Advisers, Inc., Two Peachtree Pointe, 1555 Peachtree Street, N.E., Suite 1800, Atlanta, GA 30309.

Canada

In Canada this document is for use by investors who are (i) Accredited Investors, (ii) Permitted Clients, as defined under National Instrument 45-106 and National Instrument 31-103, respectively and for Canadian Advisor and Head Office Gatekeepers and Analysts Use.

Issued in Canada by Invesco Canada Ltd., 120 Bloor Street East, Suite 700, Toronto, Ontario M4W 1B7.

Continental Europe, Dubai, Ireland and the UK

The document is intended only for Professional Clients in Continental Europe, Dubai, Ireland, Switzerland and the UK, and is not for consumer use. Marketing materials may only be distributed without public solicitation and in compliance with any private placement rules or equivalent set forth in the laws, rules and regulations of the jurisdiction concerned. This document is not intended to provide specific investment advice including, without limitation, investment, financial, legal, accounting or tax advice, or to make any recommendations about the suitability of any product for the circumstances of any particular investor. You should take appropriate advice as to any securities, taxation or other legislation affecting you personally prior to investment. No part of this material may be copied, photocopied or duplicated in any form by any means or redistributed without Invesco's prior written consent.

Israel

The document is for Qualified Clients/Sophisticated Investors only in Israel.

This document may not be reproduced or used for any other purpose, nor be furnished to any other person other than those to whom copies have been sent. Nothing in this document should be considered investment advice or investment marketing as defined in the Regulation of Investment Advice, Investment Marketing and Portfolio Management Law, 1995 ("the Investment Advice Law"). Investors are encouraged to seek competent investment advice from a locally licensed investment advisor prior to making any investment. Neither Invesco Ltd. Nor its subsidiaries are licensed under the Investment Advice Law, nor does it carry the insurance as required of a licensee thereunder.

Further information is available using the contact details shown. Issued in:

Austria, Belgium, Croatia, Czech Republic, Denmark, Dubai, Finland, France, Germany, Ireland, Israel, Luxembourg, Netherlands, Norway, Spain, Sweden, Switzerland and The United Kingdom by Invesco Asset Management Deutschland GmbH, An der Welle 5, 60322 Frankfurt am Main, Germany; Invesco Management S.A., President Building, 37A Avenue JF Kennedy, L-1855 Luxembourg, regulated by the Commission de Surveillance du Secteur Financier, Luxembourg; Invesco Asset Management Limited, Perpetual Park, Perpetual Park Drive, Henley-on-Thames, Oxfordshire RG9 1HH, UK. Authorised and regulated by the Financial Conduct Authority; Invesco Asset Management (Schweiz) AG, Talacker 34, 8001 Zurich, Switzerland.