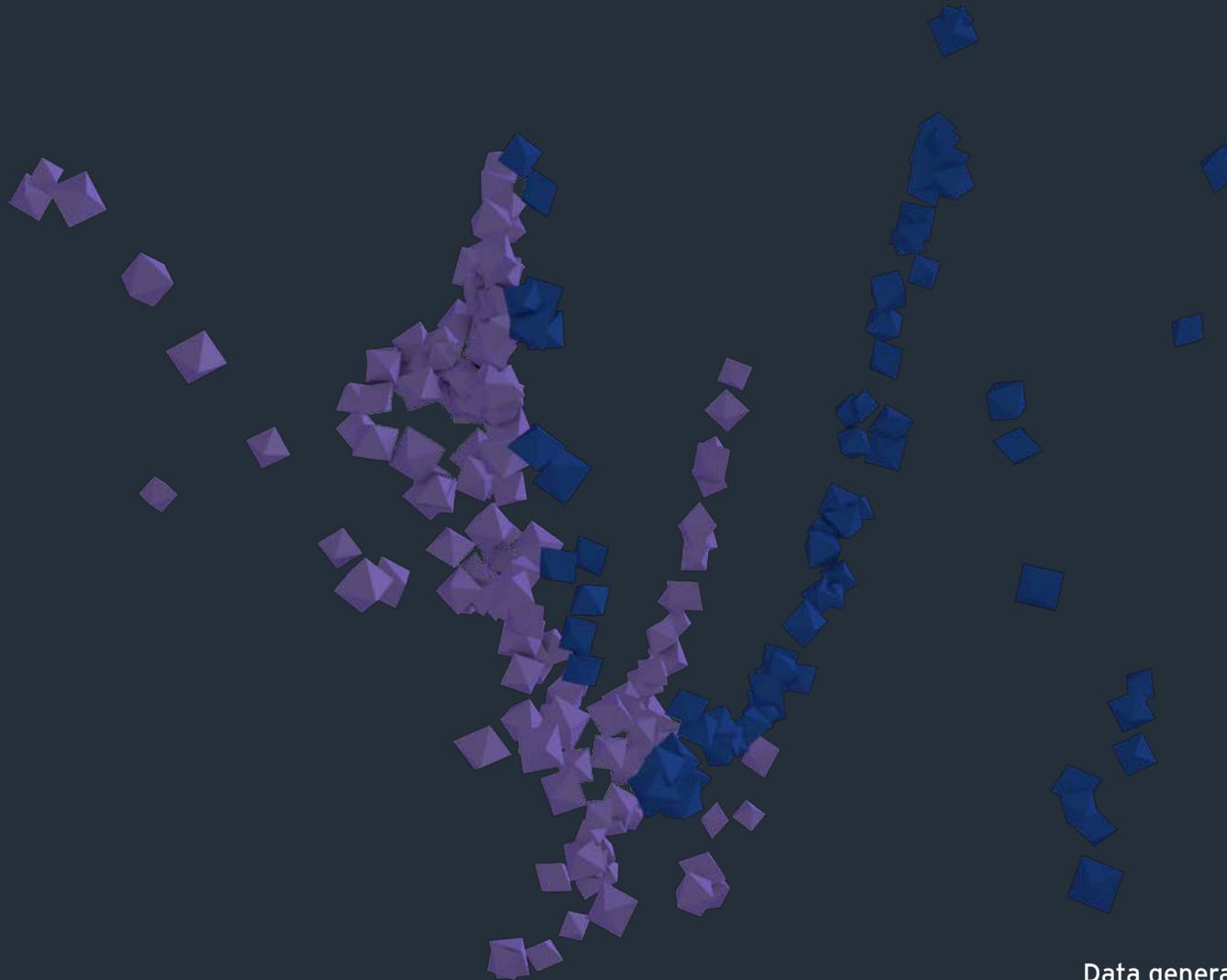


THINK US

The impact of rising interest rates on commercial real estate



March 2017

This document is solely for the use of professionals and is not for general public distribution.

Data generating art

The image is an abstract representation of Fig.1, illustrating quarterly returns and 10-year yields in periods of rising rates in the US.

Introduction

The rising interest rate environment raises concern about the potential impact on US commercial real estate property values and investment performance. This is causing real estate investors to fear that rising interest rates will cause capitalisation rates to rise and property values to fall, resulting in weaker total returns. Historical data shows that higher interest rates do not necessarily result in lower property values and total returns. In fact, property performance has often remained resilient in times of rising rates. A number of factors may help to protect overall real estate performance, including capitalisation rate spreads over the 10-year treasury yield, and the outlook for economic growth and real estate market fundamentals.



Interest rates and capitalisation rates are believed to move in lockstep, with higher interest rates quickly translating into higher capitalisation rates and lower property values. However, that is not necessarily the case. If interest rates are rising because of stronger economic growth, as is currently the case, real estate demand will also likely be growing. If interest rates are increasing gradually, and are likely to remain at, or below, long-term averages, as is currently expected, real estate would likely be well positioned to benefit in such an environment.



Tom Park
Senior Director, Strategy & Research, North America

Will higher interest rates spoil real estate returns?

The rising interest rate environment is generating concern about the potential impact on investment returns across asset classes. Real estate investors fear that higher rates could undermine property values and operating income by raising discount rates and slowing the economy. In particular, their concerns are rooted in the assumption that rising rates mean higher capitalisation rates, or cap rates¹, which in turn can weaken property values and commercial real estate (CRE) investment performance.

Driving investor anxiety is the shift in Federal Reserve monetary policy, representing a fundamental change in the nation's economic and interest rate outlook. The Fed raised rates by 0.25% for the second time in December 2016, signalling the potential for three additional rate hikes in 2017. Supporting higher rates is the potential for stronger economic growth and higher inflation under the Trump Administration's pro-business agenda. Expectations for lower taxes, higher spending and reduced regulation, caused the 10-year treasury yield to jump from about 1.80% prior to the election, to a high of 2.60% in January 2017, before settling in the 2.40%-2.45% range in mid-February 2017.

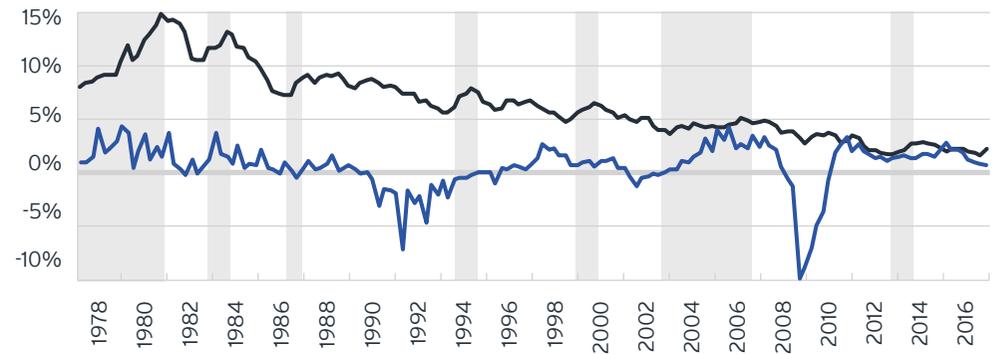
Rising rates do not necessarily mean lower CRE returns

For a variety of reasons, historical returns show that rising interest rates have not automatically resulted in lower real estate values or total returns. The relationship between rates and CRE returns is more complicated and depends on a range of factors, such as the economic environment. For example, Fig.1 shows a very low correlation of 0.08, indicating the absence of a relationship, between 10-year treasury yields and property value growth in periods of rising rates. The capital appreciation component of the NCREIF Property Index (a common benchmark for institutional-quality commercial real estate) is the return component most sensitive to interest rate changes.

In addition, the lack of a relationship is demonstrated by the two most recent periods of rising treasury yields. Between Q1 2003 and Q2 2006, when yields rose from just under 4% to just under 5%, total returns averaged 15.4%, including 7.8% capital appreciation. In a similar period between Q4 1998 and Q1 2001, when yields rose from 4.66% to 6.47%, total returns averaged 11.7%, including 3.1% capital appreciation.

¹The real estate capitalisation rate is the ratio of a property's net operating income (NOI) to its current market value. The ratio represents the expected rate of return on a real estate investment, based on NOI. Capitalisation rate = NOI / current market value.

Fig.1: NPI quarterly capital returns and 10-year yields in periods of rising rates



Key
— 10-year treasury — Capital return

Note: Shaded periods indicate periods of rising interest rates.
Source: US Federal Reserve, NCREIF, TH Real Estate, 31 December 2016

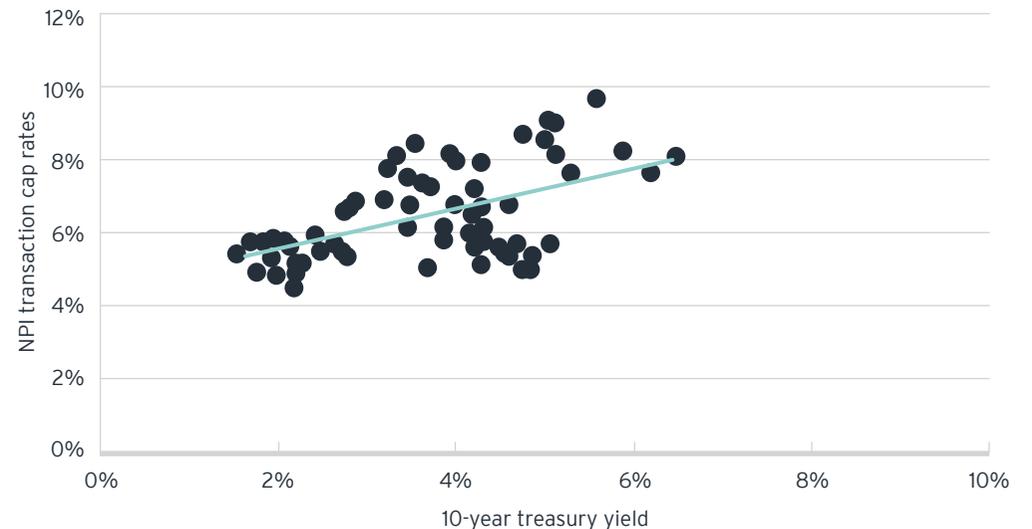
Do real estate cap rates move in lockstep with interest rates?

As treasury yields gradually dropped toward their historic low of 1.37% in 2016, investors worried that property values would ultimately weaken when interest rates normalised. Specifically, they were concerned that rising rates would mean higher capitalisation rates. The cap rate is the ratio of a property's NOI to market value, similar to an inverse price-earnings ratio, and is the most sensitive gauge of CRE pricing. This commonly-used formula assumes that rising interest rates result in rising cap rates and, all else equal, declining property values. The assumption is flawed because the relationship is more complex and, just as importantly, all else is typically not equal.

Fig.2 shows that although there is a positive relationship between interest rates and cap rates, they do not move in lockstep. The correlation between NPI transaction cap rates and 10-year treasury yields since 2000 is a moderate 0.55 (not a perfect 1.0). Instead, cap rates are influenced by a wider range of variables, including real estate fundamentals, capital flows, and investor risk appetites. As a result, the impact of rising rates on real estate performance is difficult to predict, depending largely on the outlook for economic and property market conditions.

Historically, changes in treasury yields do not necessarily result in immediate changes in cap rates.

Fig.2: NPI transaction cap rate and US 10-year treasury yields



Note: The correlation between NPI transaction cap rates and the 10-year treasury yield is 0.55, represented by the upwardly sloping teal line.

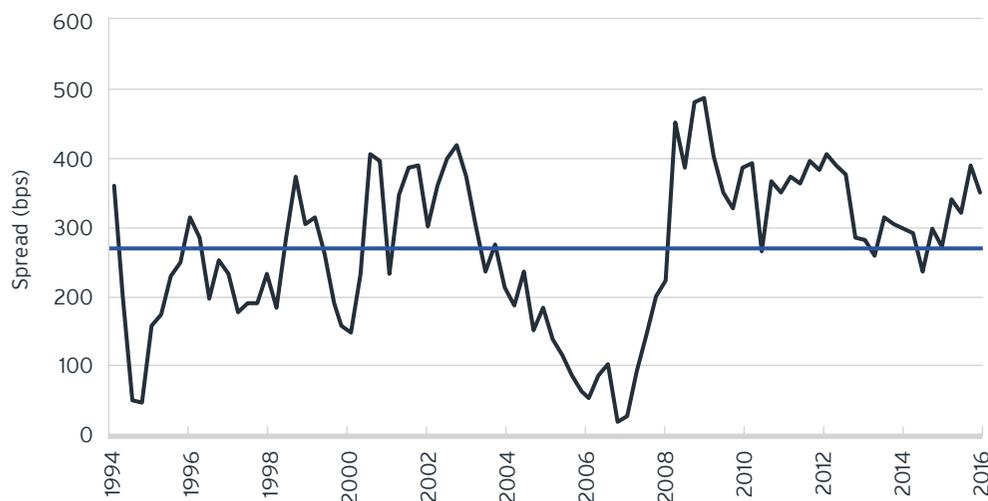
Source: US Federal Reserve NCREIF, 31 December 2016

Factors that may provide protection in a rising interest rate environment

Cap rate spreads

The cap rate formula is an oversimplification that does not account for factors with potential to offset value declines and even protect overall property performance in a rising interest rate environment. One important factor is cap rate spreads - the difference between cap rates and 10-year treasury yields. Cap rate spreads have the potential to act as a buffer that can absorb increases in the treasury yield, without generating expected cap rate increases. Fig.3 shows spreads between NPI transaction cap rates and 10-year treasury yields since 1993. The cap rate spread averaged 352 bps in Q4 2016, or 82 bps higher than the long-term average of 270 bps. The spread as of February 2017, was 326 bps, relative to the 10-year yield of 2.40%, which remains attractive on a current and historic basis.

Fig.3: NPI transaction capitalisation rate spreads



Sources: US Federal Reserve, NCREIF, TH Real Estate, 31 December 2016

Strengthening economic conditions

Forecasts of stronger economic growth implied by Fed rate hikes and Trump Administration policies, may also provide a measure of protection. In particular, expected improvements in real estate fundamentals, such as rising NOI growth, could help to buffer property values from rising interest rates. Despite policy uncertainty, long-term government bond yield premiums have increased with expectations for faster growth, rising budget deficits, and higher inflation due to tight labour markets. Fig.4 shows GDP growth forecasts of 2.3% in 2017 and 2.4% in 2018 - faster than the 2.1% average since the Great Recession. In addition, 47% of economists surveyed for the December 2016 Blue Chip Economic Indicators, raised their 2017 GDP forecast following the election.

At the same time, treasury yields remain low by historical standards and inflation is expected to rise only slightly above the Fed's 2% target. The potential combination of stronger growth and low inflation could provide a very favourable environment for commercial real estate.

Fig.4: Consensus expectations (%)

	2015	2016	2017F*	2018F*
Real GDP	2.4	1.6	2.3	2.4
Unemployment rate	5.3	4.9	4.5	4.4
10-year treasury yield	2.2	1.8	2.7	3.1
Consumer price index	0.1	1.3	2.4	2.3

F* indicates forecast.

Source: Blue Chip Economic Indicators and Blue Chip Financial Forecasts, December 2016

Factors that may provide protection in a rising interest rate environment (continued)

Underwriting practices

Common underwriting practices should also help to mitigate investor concerns. Property cash flow valuations commonly assume cap rate increases of 50 to 100 bps during the expected holding period. This practice reflects the ageing (finite life) of the property and uncertainty about future economic and real estate market conditions. As a result, cap rate increases are typically accounted for in return expectations, thereby eliminating some of the potential surprise associated with them.

The timing of cap rate changes also matters. In the near term, cap rate increases can have a measurable impact on property performance as appraisers incorporate new assumptions into their valuation models. However, real estate performance is less sensitive to cap rate changes as the investment horizon lengthens. Time has the potential to heal most, but not all wounds from rising cap rates through compounding annual NOI growth; the stronger the growth, the greater the protection.

NOI growth expected to drive competitive total returns in 2017

NOI growth prospects are solid for several reasons. Firstly, real estate market conditions are healthy and expected to generate moderate rental growth across most property types and metropolitan markets. Secondly, many of the leases maturing in 2017 and 2018 are priced below market and should provide opportunities to re-lease at higher rents. Even without rollover, leases contain annual contractual increases that generate rental income growth. Tenants are also required to pay a proportionate share of building operating expenses, therefore limiting landlords' exposure to rising costs.

NOI growth is a key consideration for investors seeking the potential for property appreciation. Fig.5 shows annual NOI growth for NPI properties averaged 5.24%, as of Q4 2016, compared to a 3% average annual rate for the past 20 years. Steady NOI growth over time can offset much of the potential impact of rising interest rates. Mathematically, 5% growth in NOI will offset a 25 bps increase in cap rates, all else equal.²

²For example, a property generating \$1.0m in NOI would have a value of \$18.2m based on a cap rate of 5.5%. If NOI were to grow 5%, the implied value would still be \$18.2m based on a cap rate of 5.75%.

Fig.5: NOI growth



Source: NCREIF, Q4 2016

2017 commercial real estate outlook

Leading real estate indicators suggest a positive foundation for real estate performance in 2017, based on stronger economic growth forecasts and balanced real estate fundamentals. Real estate remains attractive relative to other asset classes, although the cycle's late stage suggests that property appreciation and total return potential will be lower than in recent years.

Fig.6: Average NPI income, appreciation, and total return expectations



F* indicates forecast.

Property returns forecasts do not reflect investment management fees and expenses.

Source: Pension Real Estate Association (PREA), TH Real Estate, Q4 2016

Moderating returns

The string of double-digit CRE returns from 2010 through 2015 was broken by the 7.97% total return in 2016. Total returns are expected to decline further to 6.9% in 2017 and 5.7% in 2018, according to the Pension Real Estate Association (PREA) Consensus Forecast Survey of the NPI as of Q4 2016. With expectations for stable income returns of 4.9% in 2017, lower capital appreciation forecasts of 2.0% and 0.8% in 2017 and 2018 account for the declining total return forecast. The capital appreciation forecasts are well below the 20-year NPI average of 2.8%, although moderation is to be expected given strong appreciation returns since 2009. The stable income component of returns and prospects for NOI growth account for CRE's attractiveness to institutional investors struggling with low returns on traditional fixed-income investments.

Slowing sales activity

Transactional activity slowed over the past year as a result of strong sales in recent years, the cycle's maturity, and the rising rate environment. Nonetheless, demand remains strong for high-quality core property among institutional investors. Foreign investors, including sovereign wealth funds, have lower total return targets, a long-term horizon, and less sensitivity to US interest rates. Institutional investors are highly selective but bid aggressively for high-quality investments that can provide stable cash flow and potential for capital appreciation. Active domestic buyers include high net worth individuals, 1031 exchange buyers,³ and local real estate families.

Potential for market volatility

An important caveat is the potential for heightened market volatility, given uncertainty over the timing and extent of Trump Administration policy changes. Although a short-lived financial shock would likely be well tolerated, a period of severe or extended volatility could be problematic for real estate and other asset classes. Real estate cycles have typically turned due to accumulating negative supply and demand imbalances. While imbalances are not currently evident, global financial volatility could impact CRE prospects by slowing hiring and business spending.

³A 1031 exchange is an IRS-sanctioned transaction, allowing property owners to exchange one investment property for another, by deferring the tax consequence of a sale.

Conclusion

A variety of factors are likely to mitigate the potential impact of rising interest rates on commercial real estate values and total returns. The relationship between interest rates and property values is complex and likely to depend more on prospects for economic growth and real estate fundamentals, such as NOI growth. Real estate total returns are expected to decline in 2017 and 2018, with lower capital appreciation due to the valuation surge since 2009, and late stage of the real estate cycle. With forecasts for stronger economic growth and rising inflation, real estate should remain attractive as a source of portfolio diversification, stable cash flows, higher risk-adjusted returns relative to other asset classes, and inflation hedging.



Political change, rising interest rates, and elevated valuations are just some of the headwinds facing the real estate industry in 2017. Hopefully, interest rates will increase gradually, providing the market with time to adapt. Real estate's sensitivity to interest rate movements will be tempered by NOI growth from stronger tenant demand and favourable supply/demand fundamentals.



Chris McGibbon
Head of Americas

Contact us

Alice Breheny

Global Head of Research

T: +442037278122

E: alice.breheny@threalestate.com

Thomas Park

Senior Director, Strategy & Research, North America

T: +12129166501

E: thomas.park@threalestate.com

threalestate.com

contact@threalestate.com

@THRealEstate14

This document is intended solely for the use of professionals and is not for general public distribution. Any assumptions made or opinions expressed are as of the dates specified or if none at the document date and may change as subsequent conditions vary. In particular, the document has been prepared by reference to current tax and legal considerations that may alter in the future. The document may contain “forward-looking” information or estimates that are not purely historical in nature. Such information may include, among other things, illustrative projections and forecasts. There is no guarantee that any projections or forecasts made will come to pass. International investing involves risks, including risks related to foreign currency, limited liquidity particularly where the underlying asset comprises real estate, less government regulation in some jurisdictions, and the possibility of substantial volatility due to adverse political, economic or other developments. Past performance is no guarantee of future performance. The value of investments and the income from them may go down as well as up and are not guaranteed. Rates of exchange may cause the value of investments to go up or down. Any favourable tax treatment is subject to government legislation and as such may not be maintained. The valuation of property is generally a matter of valuer’s opinion rather than fact. The amount raised when a property is sold may be less than the valuation. Nothing in this document is intended or should be construed as advice. The document is not a recommendation to sell or purchase any investment. It does not form part of any contract for the sale or purchase of any investment. This document is not directed at or intended for any person (or entity) who is citizen or resident of (or located or established in) any jurisdiction where its use would be contrary to applicable law or regulation [or would subject the issuing companies or products to any registration or licencing requirements].

In EEA: TH Real Estate is a name under which Henderson Real Estate Asset Management Limited provides investment products and services. This document is issued in the EEA by Henderson Real Estate Asset Management Limited (reg. no. 2137726) is an affiliate of Nuveen, LLC and is incorporated and registered in England and Wales with registered office at 201 Bishopsgate, London EC2M 3BN. It is authorised and regulated by the Financial Conduct Authority to provide investment products and services. Telephone calls may be recorded and monitored. For the activities carried out in Germany, the German branch of Henderson Real Estate Asset Management Limited is also subject to the limited regulatory supervision of the German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht - BaFin). Henderson Real Estate Asset Management Limited is also permitted to provide cross-border investment services to certain EEA member states. In EEA, this material is directed exclusively at professional clients and eligible counterparties (as defined under the FCA Rules, or the German Securities Trading Act (Wertpapierhandelsgesetz) or other applicable law) who are knowledgeable and experienced in investment matters.

In Australia: This document is issued by TH Real Estate (Australia) Limited ABN 98106 690 444, AFSL 460770 This document is intended solely for the use of wholesale clients, as defined in section 761G of the Corporations Act 2001 (Cth) and is not for general public distribution. This document is being provided to you solely for your information. By accepting this document you represent that you are a wholesale client.

In Singapore: This document is issued by Henderson Real Estate Singapore Private (Company no. 201322659M), (incorporated and registered in Singapore with registered office at One George Street #14-05 Singapore 049145) which is authorised and regulated by the Monetary Authority of Singapore. TH Real Estate is a name under which Henderson Real Estate Singapore Private Limited provides investment products and fund management services.

In United States of America: This document is issued by Nuveen LLC. Henderson Real Estate Asset Management Limited and Henderson Property UK AIFM Limited are FCA regulated UK firms and affiliates of Nuveen, LLC, which is owned by Teachers Insurance and Annuity Association of America (TIAA).

This material is prepared by and represents the views of Thomas Park and does not necessarily represent the views of Nuveen LLC or its affiliates. These views are presented for informational purposes only and may change in response to changing economic and market conditions. This material is for informational or educational purposes only and does not constitute a recommendation or investment advice in connection with a distribution, transfer or rollover, a purchase or sale of securities or other investment property, or the management of securities or other investments, including the development of an investment strategy or retention of an investment manager or advisor. This material does not take into account any specific objectives or circumstances of any particular investor, or suggest any specific course of action. Investment decisions should be made in consultation with an investor’s personal advisor based on the investor’s own objectives and circumstances.

Past performance is not indicative of future results.

Please note real estate investments are subject to various risks, including fluctuations in property values, higher expenses or lower income than expected, and potential environmental problems and liability.

Nuveen, LLC, formerly known as TIAA Global Asset Management, delivers the expertise of TIAA Investments and its independent investment affiliates.

COMP201700170 C38436