

**GILLIAN TILTMAN**Portfolio Manager
Global Real Estate Securities**STEVE SHIGEKAWA**Senior Portfolio Manager
Global Real Estate Securities

SEPTEMBER 2017

REITS: THE REAL THING

Real Estate Investment Trusts (REITs), and other listed real estate securities, are equities. They are listed on stock exchanges and included in equity indices such as the S&P500, the Russell 1000 and the FTSE 250. Some investors are put off by this. They prefer to try to build their real estate portfolios by investing privately and directly in bricks and mortar. In this paper, we want to challenge and alleviate those concerns. We argue that listed real estate securities are fast becoming the only efficient way to build a truly global, diversified exposure to the asset class, and that returns have historically diverged quite quickly from those of the broad equity market, reflecting the performance of the underlying real estate assets. Moreover, we observe that listed securities offer a level of liquidity that is simply unavailable from direct real estate or even real estate open-ended funds. We believe the resulting short-term correlation with equity market volatility should be regarded as a source of opportunity to invest in genuine real estate returns at sometimes deep discounts.

AT A GLANCE

- Listed real estate is the most convenient way for most investors to build a truly global property portfolio; however, many remain skeptical that returns come from real estate risk and cash flows rather than equity market risk.
- The relationship between listed real estate returns and broad equity market returns has grown over the past 37 years (see page 3 of this document).
- However, what has not changed is that the closeness of that relationship breaks down substantially for holding periods of around three years (Fig.1, p.4).
- The relationship has tended to strengthen again for longer holding periods, as macro forces dominate (Fig.1, p.4).
- Other equity sectors do not exhibit this weakening relationship of their returns with broad equity market returns over medium-term holding periods (Fig.3, p.6).
- The correlation of short-term returns to listed real estate and the broad equity market is a function of the asset class's liquidity, which is much more reliable than that offered by alternative vehicles for real estate investment.
- This liquidity can be vital for those who need to adjust portfolios during market dislocations, and the correlation creates opportunities to buy genuine real estate returns at sometimes deep discounts.

A Globalizing Sector

Two years ago [we were writing](#) about how a rush of IPOs had transformed European listed real estate securities into a multibillion-euro sector.¹ A similar dynamic is at work worldwide. **REITs are no longer solely a U.S. phenomenon.**

This is such an important revolution because real estate cycles tend to be highly localized. The diversification benefits that come from a practical global approach to real estate investing are, therefore, considerable.

There are relatively few global or even pan-regional open-ended real estate funds, and even the world's largest institutional investors struggle to build a truly global portfolio from direct, private investments. We believe the far reach and diversified holdings of listed real estate companies makes them the perfect vehicle for creating this kind of exposure for any kind of investor.

Why, then, do so many remain skeptical?

The main concern seems to be that listed securities are equities. They worry that investing in REITs means buying the risk and return of the equity market rather than real estate. They prefer to try to build their real estate portfolios by investing privately and directly in bricks and mortar, or via open-ended property funds.

Intuitively, this is questionable. Listed real estate companies buy, develop, rent out and sell real estate around the world just as pharmaceutical companies develop, test and sell drugs and medicines. While one might expect a pharma stock to move somewhat in synch with the broader equity market over a short time horizon, no one would assume that a company that is good at developing medicines would deliver the same longer-term returns as one that is bad at it, or the same longer-term returns as a mining company or a bank. Why should the performance of real estate stocks be any different?

Let us go beyond intuition and look at the evidence.

¹Gillian Tiltman, "Europe's Listed Real Estate Revolution" (September 2015). http://www.nb.com/_layouts/www/transfer.aspx?URL=/insights/europes-listed-real-estate-revolution.aspx

Correlations Have Changed over Time

The first thing to acknowledge is that the relationship between the listed real estate sector and the broad equity market has changed over time.

Since 1980, we calculate that the monthly total returns to the FTSE NAREIT U.S. Real Estate Composite Index have exhibited a beta of 0.66 relative to those of the Russell 1000 Index. But before 2004 that beta was just 0.43, and since then it has been 1.20. That change is due to a gradual rise in correlation between 2004 and 2011, and the big spike in volatility experienced during the financial crisis of 2007–2009.

A similar picture emerges when we look at how closely the cumulative total returns to real estate securities, and to the broad equity market, map onto one another over a variety of holding periods. The R-squared value measures, on a scale of zero to 1.00, how predictive one set of returns is of the other: it ranges from 0.03 for a three-year holding period to 0.54 for a six-month holding period, when we look at the returns to real estate securities and broad equities from 1979 to 1989. Move forward to the 2007–2017 period, however, and the range goes up to 0.51–0.79.

In other words, this change in relationship is not confined to short-term volatility (beta). Longer-term cumulative returns have become more closely related, too.

There are a number of factors that may explain this. The FTSE NAREIT Index had far fewer securities with much less diversification during the 1980s than it does today, for instance. In addition, top-down returns drivers, such as the long period of near-zero interest rates and central bank activism, have been unusually important for many asset classes in the years since the financial crisis.

We believe the high-water mark for this higher correlation may have passed as central banks begin to reduce their balance sheets and withdraw liquidity, and as the market adapts to real estate securities getting their own, [dedicated categorization in the Global Industry Classification Standard \(GICS\)SM industry sectors.](#)²

More importantly, we note that the growing relationship between real estate securities and broad equity returns over time has not changed two crucial facts: first, that the relationship tends to weaken significantly as holding periods are extended; and second, that the relationship is significantly weaker for real estate securities than it is for other industry sectors.

Real Estate is Different from Other Equity Sectors

In Figure 1 we show the total returns to the S&P500 Index and the FTSE NAREIT US Real Estate Composite Index, over rolling one-, three- and five-year holding periods, during the 2007–2017 period. The more scattered the dots appear, and the lower the R-squared value is, the lesser the predictive value of S&P500 returns has been for FTSE NAREIT Index returns. The same pattern was evident when we used the returns of the S&P500 Real Estate Sector Subindex.

²Elizabeth Reagan, "Real Estate Gets Its GICS" (March 2016). http://www.nb.com/_layouts/www/transfer.aspx?URL=/insights/real-estate-gets-its-gics.aspx

FIGURE 1. LISTED REAL ESTATE RETURNS SHOW RELATIVELY LOW CORRELATION WITH THE BROAD EQUITY MARKET, ESPECIALLY FOR 3- TO 5-YEAR HOLDING PERIODS



Source: Bloomberg. Data from May 2007 to May 2017. Total returns to the S&P500 Index and the FTSE NAREIT US Real Estate Composite Index, over rolling one-, three- and five-year holding periods, showing the R-squared measure of fit to a linear regression line.

The plot points become more scattered as we move from the one-year to the three-year holding period. This is the story of equity-market price volatility dominating the total return over the short term, and fundamental real estate cash flows beginning to dominate over the medium term.

It is interesting to note, in figure 1, that the real estate and broad market returns re-converge as the holding period stretches out to five years. This is not surprising. The longer the holding period, the less likely it is that returns are dominated by the fundamental differences between real estate businesses and other businesses within a single business cycle, and the more likely it is that they begin to be driven by long-run macroeconomic factors such as GDP growth and inflation. Ultimately, a portfolio of shopping malls and offices, and a portfolio of widgets, are both collections of real assets that are similarly exposed to long-run macroeconomic factors.

What is perhaps surprising is that other industry sectors simply do not experience this ebb and flow.

The charts in figure 2 show the total returns to the S&P500 Index and the S&P500 Industrials Sector Subindex. The dots remain tightly packed around the linear regression line of best fit regardless of the holding period. This shows that the returns to the broad equity market have historically been highly predictive of the returns to the industrial sector.

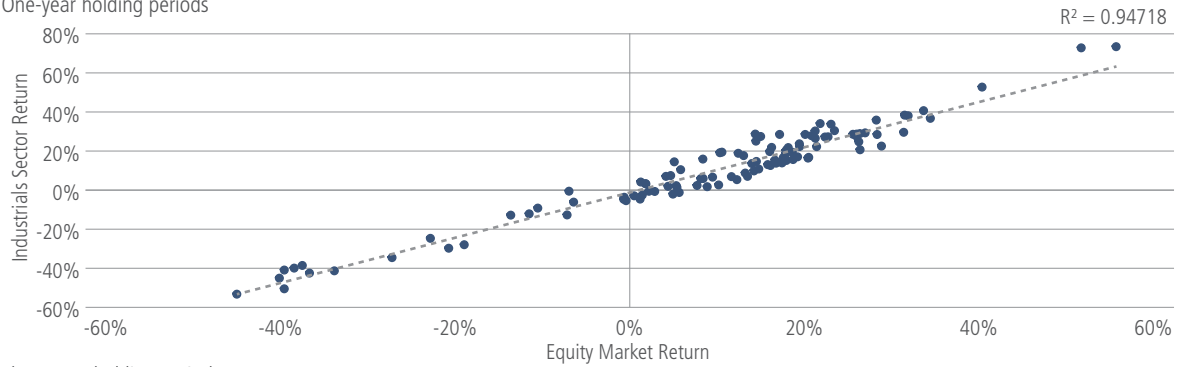
The table in figure 2 shows this is not anomalous. Four other industry sectors all exhibit a significantly closer relationship with the broad equity market than the real estate sector does, over all holding periods, with no clear evidence that holding for longer weakens the relationship. Moreover, this is not about the size of the sector in the broad index: real estate and materials both account for quite a small proportion of the S&P500, at 3–4%, but the materials-sector returns are much closer to those of the bigger sectors than they are to real estate.

In short, listed real estate securities, and real estate businesses, appear to be very particular and idiosyncratic stocks—and that idiosyncrasy is expressed through a divergence of cumulative returns over the medium term.

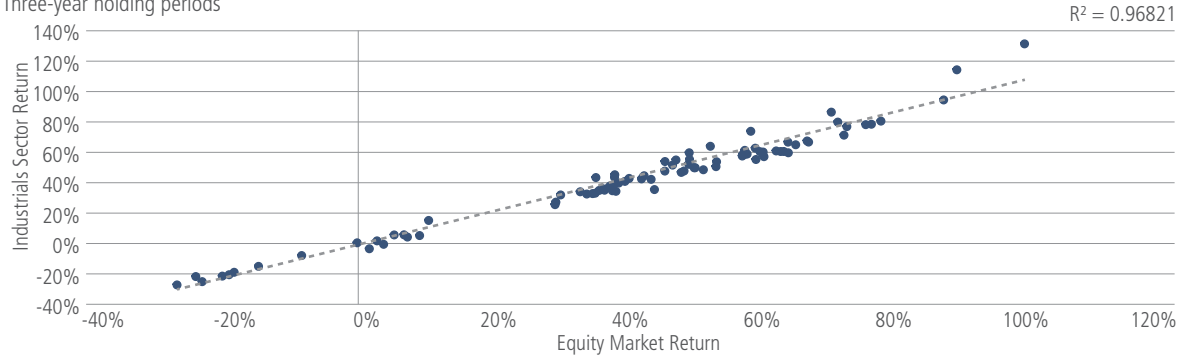
FIGURE 2. OTHER SECTORS SHOW HIGHER CORRELATION WITH THE BROAD EQUITY MARKET, WITH A SMALLER HOLDING-PERIOD EFFECT

Industrial Sector versus the Broad Equity Market

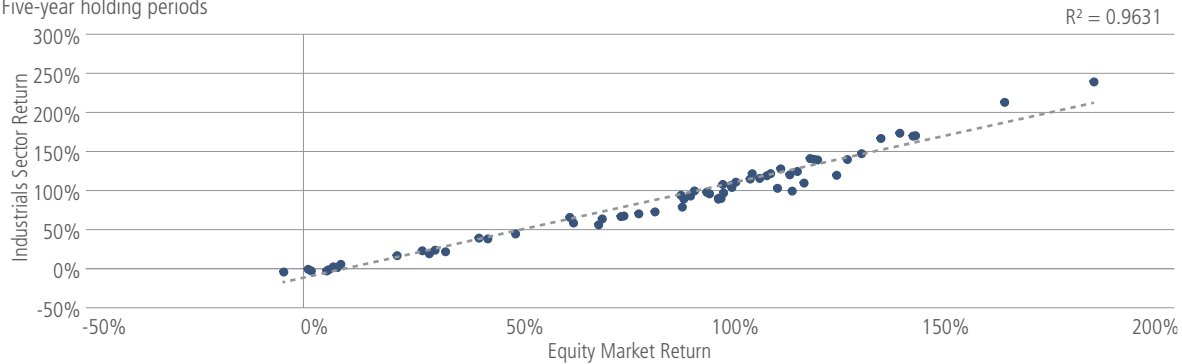
One-year holding periods



Three-year holding periods



Five-year holding periods



A Range of Sectors versus the Broad Equity Market

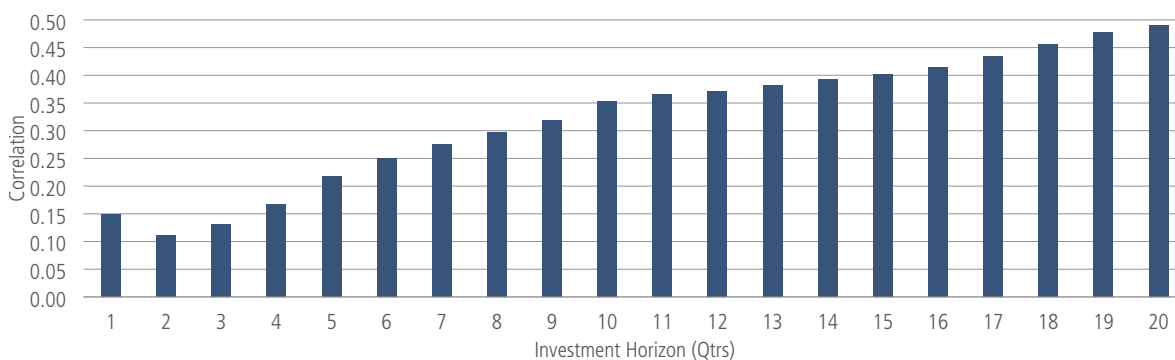
R-squared	Holding Period				
	6 MONTHS	1 YEAR	2 YEARS	3 YEARS	5 YEARS
S&P500 v FTSE NAREIT US Real Estate Composite	0.75	0.74	0.66	0.53	0.81
S&P500 v S&P500 Real Estate	0.73	0.70	0.64	0.51	0.79
S&P500 v S&P500 Industrials	0.94	0.95	0.96	0.97	0.96
S&P500 v S&P500 IT	0.86	0.83	0.83	0.78	0.95
S&P500 v S&P500 Financials	0.87	0.89	0.89	0.87	0.86
S&P500 v S&P500 Cons Disc	0.89	0.89	0.91	0.86	0.87
S&P500 v S&P500 Materials	0.85	0.87	0.85	0.83	0.87

Source: Bloomberg, S&P. Data from May 2007 to May 2017. The charts show the total returns to the S&P500 Index, the S&P500 Industrials (Sector) Subindex, and the FTSE NAREIT US Real Estate Composite Index, over rolling one-, three- and five-year holding periods, showing the R-squared measure of fit to a linear regression line. The table shows the R-squared measure of fit to a linear regression line of the total returns to each of the seven pairs of indices shown, over rolling six-month, and one-, three- and five-year holding periods.

Listed Real Estate Correlation to Private Real Estate

Research from the National Association of Real Estate Investment Trusts (NAREIT) and the European Public Real Estate Association (EPRA) shows the other side of this coin: increasing correlation between listed real estate securities and private, unleveraged core real estate, as holding periods extend (figure 3). NAREIT and EPRA explain that this convergence happens as short-term REIT mispricing and appraisal errors in the private markets are both gradually corrected.

FIGURE 3. PRIVATE REAL ESTATE RETURNS CORRELATE MORE STRONGLY WITH LISTED REAL ESTATE RETURNS AS HOLDING PERIOD EXTENDS



Source: NAREIT, EPRA. Data from January 1978 to March 2017. Quarterly total returns to the FTSE NAREIT All Equity REITs Index and the NCREIF Property Index.

Liquidity Brings Both Convenience and Opportunity

This evidence of genuine real estate returns over the medium term is encouraging given the fact that the broad equity market return has been around 75% predictive of REIT returns over shorter time horizons, and that beta has been high over recent years. It means that, for patient investors, short-term volatility on the downside, driven by equity market risk, is a potential source of opportunity to buy those real estate returns at sometimes considerable discounts.

Moreover, critics of listed real estate often fail to recognize that this short-term price volatility and higher correlation is a function of the fact that investors are all but guaranteed access to liquidity in this asset class, even during periods of acute market stress.

Outside the very largest institutional investors with very long investment horizons, most investors need to reconsider their portfolio positions during these periods; they may need to access liquidity to sell down volatile real estate sector exposures, or they may wish to exploit the opportunity to add to positions at a discount. While it has never been a problem to buy shares in property unit trusts (PUTs) or authorized investment funds (PAIFs) during periods of market stress, the suspended redemptions, gates, swing pricing and extremely wide bid-offer spreads experienced by investors in U.K. property funds in the aftermath of the 2016 Brexit vote reminded us that it can sometimes be difficult or impossible to sell shares.

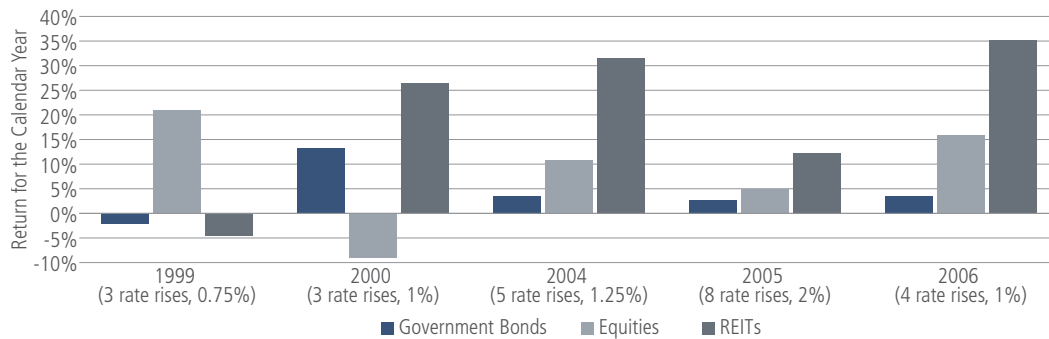
In short, illiquid assets do not become liquid just because they are held in open-ended vehicles ostensibly offering daily liquidity; but closed-ended real estate securities are, in themselves, liquid assets—the price for which is some short-term volatility disconnected from underlying real estate fundamentals. We think it makes sense to accept (and take advantage of) the volatility that comes with genuine liquidity rather than try to avoid it and rely on daily liquidity that may turn out to be unavailable.

Should REITS investors worry about rate hikes?

Although listed real estate can be shown to exhibit genuine real estate returns over a medium-term holding period, historically, the broad equity market return has been around 75% predictive of REIT returns over shorter time horizons, and beta has been high over recent years. With this in mind, some investors express concern that, should interest rates continue to rise from their very low current levels, the prices of risky assets in general, and income-generating assets such as real estate, in particular, are set to decline. By contrast, we note that, even over short, one-year periods, four of the past five rate-hiking cycles have in fact been rather positive for real estate securities. This was the case even in 2000 when rate hikes accompanied the major sell-off of the dotcom crash.

FIGURE 4. LISTED REAL ESTATE HAS PERFORMED WELL DURING MANY PAST PERIODS OF RATE HIKES

Returns during Calendar Years that Include More Than One Rise in the U.S. Federal Funds Rate



Source: Bloomberg. The x axis shows the number of rate rises, and the resulting change in the Fed Funds Rate, in percentage points. The chart shows total returns. Government Bonds are represented by the Barclays U.S. Government Index, Equities by the S&P500 Index and REITs by the FTSE NAREIT All Equity REITs Index.

Conclusion: A Solution for All Investor Types

Investors really are buying bricks and mortar when they buy REITs and other real estate securities—just as investors really are buying the revenues from developing and selling medicines when they buy pharmaceutical equities. In fact, we have shown that real estate is an especially idiosyncratic sector: listed real estate companies exhibit much lower correlation with the broad equity market than companies from other sectors, particularly over the medium term.

Some short-term correlation with the broad equity market is the price investors pay for the convenience of getting exposure this way. But that convenience is considerable: it makes global exposure possible for all types of investor; it virtually guarantees the ability to sell quickly and simply when required; and it even offers opportunities to buy assets at discounts during periods of market volatility.

Open-ended funds seem to us to be the least satisfactory way to invest: they offer less regional diversification and a less-than-reliable promise of liquidity during periods of market stress when it is most valuable.

Investors that really want to avoid short-term equity market correlation can buy, rent out and sell real estate assets directly. But this is akin to choosing to set up a pharmaceuticals business instead of simply buying a portfolio of pharmaceutical stocks just to avoid broad equity market correlation; it can be done, but it is very risky, not diversified, much more capital- and resource-intensive and much less liquid.

For all these reasons, we believe that listed real estate securities are an excellent solution for most types of investor.

Glossary

Beta: A measure of the systematic risk of a portfolio relative to the benchmark based on historical returns. The beta of the benchmark will always be 1. For example, a portfolio with a beta above the benchmark (as in, more than 1) indicates that the portfolio has greater volatility than the benchmark and would be expected to outperform in up markets and expected to underperform in down markets.

R-Squared: A statistical measure representing the percentage of an investment portfolio's movements that can be explained by movements in the benchmark. A high R-squared (between 85 and 100) indicates the portfolio's performance patterns have been historically in line with the benchmark.

The Global Industry Classification Standard ("GICS"): GICS was developed by and is the exclusive property of MSCI and Standard & Poor's. "Global Industry Classification Standard (GICS)," "GICS" and "GICS Direct" are service marks of MSCI and Standard & Poor's.

The NCREIF Property Index: Is a quarterly index tracking the performance of core institutional property markets in the U.S.

The FTSE NAREIT U.S. Real Estate Composite Index: Is a headline index that consists of all REITs included in the FTSE NAREIT All REITs Index that also meet minimum size and liquidity criteria.

The FTSE NAREIT All REITs Index: Is a market capitalization-weighted index that includes all tax-qualified real estate investment trusts (REITs) that are listed on the New York Stock Exchange, the American Stock Exchange or the NASDAQ National Market List.

The Russell 1000 Index: Is a market capitalization-weighted index of the 1,000 largest companies in the Russell 3000 Index. The Russell 3000 Index is a float-adjusted, market-capitalization weighted index of the 3,000 largest companies listed on U.S. stock exchanges.

The S&P500 Index: Is a float-adjusted, market capitalization-weighted index of the 500 largest companies listed on U.S. stock exchanges. The S&P 500 Sector Subindices comprise those companies in the S&P500 that are classified as members of the relevant GICS sector.

This material is provided for informational purposes only and nothing herein constitutes investment, legal, accounting or tax advice, or a recommendation to buy, sell or hold a security. Information is obtained from sources deemed reliable, but there is no representation or warranty as to its accuracy, completeness or reliability. All information is current as of the date of this material and is subject to change without notice. Any views or opinions expressed may not reflect those of the firm as a whole. Neuberger Berman products and services may not be available in all jurisdictions or to all client types.

This material is general in nature and is not directed to any category of investors and should not be regarded as individualized, a recommendation, investment advice or a suggestion to engage in or refrain from any investment-related course of action. Neuberger Berman is not providing this material in a fiduciary capacity and has a financial interest in the sale of its products and services. Investment decisions and the appropriateness of this material should be made based on an investor's individual objectives and circumstances and in consultation with his or her advisors. This material may not be used for any investment decision in respect of any U.S. private sector retirement account unless the recipient is a fiduciary that is a U.S. registered investment adviser, a U.S. registered broker-dealer, a bank regulated by the United States or any State, an insurance company licensed by more than one State to manage the assets of employee benefit plans subject to ERISA (and together with plans subject to Section 4975 of the Internal Revenue Code, "Plans"), or, if subject to Title I of ERISA, a fiduciary with at least \$50 million of client assets under management and control, and in all cases financially sophisticated, capable of evaluating investment risks independently, both in general and with regard to particular transactions and investment strategies. This means that "retail" retirement investors are expected to engage the services of an advisor in evaluating this material for any investment decision. If your understanding is different, we ask that you inform us immediately.

No recommendation or advice is being given as to whether any investment or strategy is suitable for a particular investor. Third-party media content may not be redistributed without the publisher's consent. This material may include estimates, outlooks, projections and other "forward-looking statements." Due to a variety of factors, actual events may differ significantly from those presented. Diversification does not guarantee profit or protect against loss in declining markets. Investing entails risks, including possible loss of principal. Investments in hedge funds and private equity are speculative and involve a higher degree of risk than more traditional investments. Investments in hedge funds and private equity are intended for sophisticated investors only. Indexes are unmanaged and are not available for direct investment. **Past performance is no guarantee of future results.**

This material is being issued on a limited basis through various global subsidiaries and affiliates of Neuberger Berman Group LLC. Please visit www.nb.com/disclosure-global-communications for the specific entities and jurisdictional limitations and restrictions.

The "Neuberger Berman" name and logo are registered service marks of Neuberger Berman Group LLC.

©2017 Neuberger Berman Group LLC.

NEUBERGER	BERMAN
-----------	--------

Neuberger Berman
1290 Avenue of the Americas
New York, NY 10104-0001

www.nb.com