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The effect of interest rates on listed real estate

One primary consideration of investors looking to make an allocation to listed real estate via real estate investment trusts (REITs) today is the impact that a rising-rate environment has on the relative performance of REITs vs. other broader asset classes.[1] The purpose of this paper is to discuss how REITs have historically performed in different interest-rate environments, where we are today, and what we can expect going forward. We will also discuss the role of REITs in a portfolio as part of a comprehensive investment strategy.

Outline

1 | Where we've been. Some investors may be surprised to learn that REITs have performed relatively well during periods of rising rates, and that REITs have meaningfully outperformed both traditional equities and bonds the year after a rise in interest rates.

2 | Where we are today. We have just completed another one-year period following a rise in rates, and history has repeated itself (or at least rhymed): REITs outperformed stocks and bonds in 2014.

3 | Where we're going. In our opinion, REITs should perform relatively well going forward as future increases in rates should be at least somewhat related to economic growth and inflation expectations while real-estate fundamentals remains strong across most markets and most property types.

4 | Strategic long-term allocation to REITs. There are a number of long-term reasons to invest in REITs, including access to real estate, low correlations to other asset classes, income potential, attractive total return potential, inflation protection and liquidity.

1. Where we've been.

Before we try to understand where we are today and what to expect going forward, let's look at how REITs have historically performed in rising-rate environments.

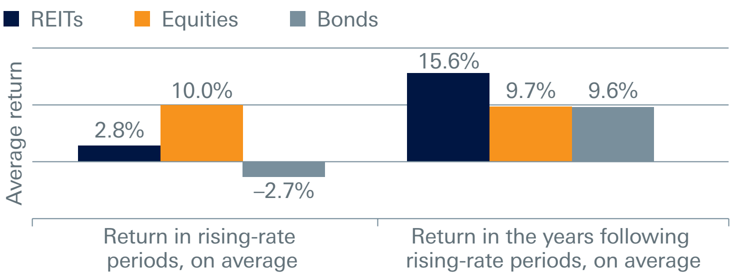
Our historical analysis of REITs in rising-rate environments provided mixed results with little evidence that a change in rates is always a direct indicator of how REITs will perform relative to equities and fixed income. We found that REITs have historically performed relatively well in a steady rising-rate environment, but struggled when rates increased rapidly in the short term, as we saw in the middle of 2013. Generally, however, as Figure 1 illustrates, REITs performed somewhere between equities and bonds during periods in which rates rose, then outperformed by a wide margin the following year. Figure 2 provides additional historical data.

Contributors
— Tyler Wilton, CFA, investment specialist, real estate and infrastructure securities, Deutsche Asset & Wealth Management (AWM)
— Chuck Fiedler, head of strategy and business development, liquid real assets, Deutsche AWM

[1] Throughout this white paper, asset-class representation is as follows: REITs, FTSE NAREIT All Equity REITs Index; equities, S&P 500 Index; bonds, Barclays U.S. Aggregate Index. The source of all data is Bloomberg Finance L.P. and Deutsche AWM. Index returns assume reinvestment of all distributions and do not reflect fees or expenses. It is not possible to invest directly in an index. See back page for index definitions.

From 1993 to 2014, there have been 13 periods in which interest rates (as measured by the 10-year U.S. Treasury) have been in a "rising" environment. The average time span was 196 days, and the average interest-rate rise was 150 basis points (bps). U.S. REITs returned an average of 2.8% during these rising-rate periods, while equities returned 10.0%, and bonds returned –2.7%, on average. This data supports the view of REITs as hybrid investment vehicles: bond-like in their potential to provide income, equity-like in their potential to provide capital appreciation.

Figure 1: Average performance in rising-rate periods and the following year return



Source: Bloomberg Finance L.P. and Deutsche AWM as of 12/31/14. **Performance is historical and does not guarantee future results.** Asset-class representation is as follows: REITs, FTSE NAREIT All Equity REITs Index; equities, S&P 500 Index; bonds, Barclays U.S. Aggregate Index. Index returns assume reinvestment of all distributions and do not reflect fees or expenses. Results would have been lower if fees had been deducted. It is not possible to invest directly in an index. See back page for index definitions. Rising-rate periods include 13 periods since 1993, as shown in Figure 2.

Note that although REIT prices are dictated by several unique fundamental and economic factors, the level of interest rates is one factor that has the potential to impact all REIT stocks in some manner due to REITs' reliance on capital markets to finance current and future growth opportunities. While REITs have tended to underperform equities when interest rates have risen (on average) there were five times during the 13 aforementioned periods in which REITs actually outperformed equities.

While REITs performed between equities and bonds in rising-rate environments, it may be surprising to some investors to see how clearly REITs generally outperformed both asset classes during the following year. Over the past 13 rising-rate periods, the following one-year return for REITs averaged roughly 16%. During this same time, both equities and bonds returned roughly 10%, on average, leading REITs to outperform both asset classes by roughly 600 basis points. As Figure 3 illustrates, the one-year period following a rising-interest-rate period can be characterized

Figure 2: Average performance in 13 rising-rate periods, 1993–2014

Rising-rate period	Days	10-year U.S. Treasury rise (in bps)	REITs	Equities	Difference	Bonds	Difference
10/15/93–11/7/94	388	287	–7.8%	1.6%	–9.4%	–5.3%	–2.5%
1/18/96–6/12/96	146	154	5.4%	11.1%	–5.6%	–3.5%	9.0%
11/29/96–4/14/97	136	93	11.2%	–1.1%	12.2%	–1.5%	12.6%
10/5/98–1/20/00	472	263	–4.6%	48.7%	–53.3%	–2.4%	–2.2%
11/7/01–4/1/02	145	125	15.2%	3.3%	11.9%	–2.4%	17.6%
6/11/03–9/2/03	83	139	5.3%	2.8%	2.4%	–4.2%	9.5%
3/16/04–6/14/04	90	119	–6.7%	1.7%	–8.4%	–4.3%	–2.3%
6/27/05–6/28/06	366	134	16.8%	6.6%	10.1%	–1.5%	18.3%
3/8/07–6/14/07	98	71	–5.1%	9.1%	–14.2%	–1.8%	–3.3%
3/17/08–6/16/08	91	96	11.2%	7.1%	4.1%	–2.2%	13.4%
12/30/08–6/10/09	162	189	–3.3%	6.8%	–10.0%	–0.5%	–2.8%
10/7/10–2/8/11	124	135	9.4%	15.1%	–5.7%	–3.0%	12.4%
5/2/13–12/31/13	243	140	–11.2%	17.4%	–28.6%	–3.0%	–8.1%
Average	196	150	2.8%	10.0%	–7.3%	–2.7%	5.5%
Average excluding 2013	192	150	3.9%	9.4%	–5.5%	–2.7%	6.6%

Source: Bloomberg Finance L.P. and Deutsche AWM as of 12/31/14. **Performance is historical and does not guarantee future results.** Asset-class representation is as follows: REITs, FTSE NAREIT All Equity REITs Index; equities, S&P 500 Index; bonds, Barclays U.S. Aggregate Index. Index returns assume reinvestment of all distributions and do not reflect fees or expenses. Results would have been lower if fees had been deducted. It is not possible to invest directly in an index. See back page for index definitions.

as a strong performance environment for REITs relative to equities and bonds. Looking at the data on a year-by-year basis, REITs outperformed equities in the year following a rising-rate period in seven out of the 13 periods, and outperformed bonds in nine out of the 13 periods.

2. Where are we today

As many market participants are keenly aware, REITs experienced two dramatically different periods of performance over the course of 2013 and 2014.

U.S. REITs started 2013 in strong fashion, but quickly changed course in late May after the U.S. Federal Reserve Board (Fed) discussed its plans regarding the future of quantitative easing (QE). From May 2013 to December 2013, U.S. REITs fell 11% while equities rose 17%. Over this same 243-day time period, the 10-year U.S. Treasury yield increased 140 bps. Of somewhat more importance, inflation expectations were benign during this time, and were actually lower. Thus, this rise in interest rates was solely an increase in real yields. In the short term, this type of environment is not favorable for REITs—that is, a rise in interest rates without increasing inflation presents a short-lived headwind for REITs. Not all real-estate sectors performed the same, however. Sectors that generally offer longer lease terms (such as health care) were hit harder than those offering shorter lease terms (such as hotels and self storage). Despite this, one thing worth noting is that REITs ended calendar-year 2013 up 2.5% overall.

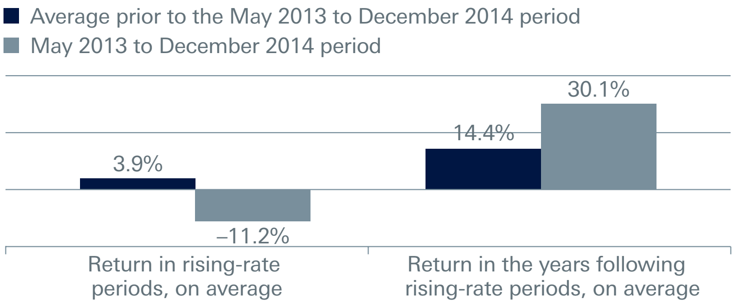
Moving on to 2014, many market participants had expected interest rates to remain somewhat elevated, or even steadily increase, throughout the course of the year. Instead, interest rates actually declined by 86 bps. Over this same period, inflation expectations also declined by 55 bps. This decrease in interest rates helped propel a rally across risk assets for the majority of the year, with equities up 13.7% in 2014. Meanwhile, REITs surged 30.1%, outperforming equities by nearly 17 percentage points and bonds by 24 percentage points, as shown in Figure 4. As previously discussed, this type of performance for REITs relative to equities and bonds is generally consistent with what has occurred historically.

Figure 3: Average performance in the year following rising-rate periods

Rising-rate period	Following one-year period	10-year U.S. Treasury change in following period (in bps)	REITs	Equities	Difference	Bonds	Difference
10/15/93–11/7/94	11/7/94–11/7/95	–205	12.2%	30.0%	–17.7%	17.1%	–4.9%
1/18/96–6/12/96	6/12/96–6/12/97	–58	29.3%	34.8%	–5.5%	10.0%	19.3%
11/29/96–4/14/97	4/14/97–4/14/98	–137	18.9%	52.6%	–33.7%	12.4%	6.5%
10/5/98–1/20/00	1/20/00–1/20/01	–162	22.1%	–6.1%	28.1%	13.6%	8.5%
11/7/01–4/1/02	4/1/02–4/1/03	–162	–1.8%	–23.8%	22.0%	11.7%	–13.5%
6/11/03–9/2/03	9/2/03–9/2/04	–49	27.8%	10.1%	17.6%	6.8%	20.9%
3/16/04–6/14/04	6/14/04–6/14/05	–76	38.8%	8.9%	29.8%	7.5%	31.3%
6/27/05–6/28/06	6/28/06–6/28/07	–14	16.4%	23.1%	–6.7%	6.4%	10.1%
3/8/07–6/14/07	6/14/07–6/14/08	–96	–9.4%	–8.9%	–0.5%	6.8%	–16.2%
3/17/08–6/16/08	6/16/08–6/16/09	–61	–48.7%	–31.1%	–17.6%	6.4%	–55.1%
12/30/08–6/10/09	6/10/09–6/10/10	–63	54.4%	18.1%	36.3%	10.1%	44.3%
10/7/10–2/8/11	2/8/11–2/8/12	–176	12.9%	4.1%	8.8%	9.7%	3.2%
5/2/13–12/31/13	12/31/13–12/31/14	–86	30.1%	13.7%	16.5%	6.0%	24.2%
Average		–103	15.6%	9.7%	6.0%	9.6%	6.0%
Average excluding 2014		–105	14.4%	9.3%	5.1%	9.9%	4.5%

Source: Bloomberg Finance L.P. and Deutsche AWM as of 12/31/14. **Performance is historical and does not guarantee future results**. Returns shown are for the one-year period since the end of the rising-rate period. So, for example, the one-year return following the rising-rate period of 5/2/13 to 12/31/13 is from 12/31/13 to 12/31/14. Asset-class representation is as follows: REITs, FTSE NAREIT All Equity REITs Index; equities, S&P 500 Index; bonds, Barclays U.S. Aggregate Index. Index returns assume reinvestment of all distributions and do not reflect fees or expenses. Results would have been lower if fees had been deducted. It is not possible to invest directly in an index. See back page for index definitions.

Figure 4: REITs performed dramatically differently than they have historically during the most recent interest-rate cycle



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To summarize the past two years, the validity regarding the magnitude of the selloff in REITs in the second half of 2013 can be debated. However, it did create some attractive buying opportunities as several high-quality REITs declined in this environment. The 2014 resurgence in REIT share prices resulted from a few things: a retracement in prices from the mid-2013 selloff, lower-than-expected interest rates and a positive, strengthening fundamental backdrop for real estate.

The 2014 reversal of relative performance from 2013 is similar to the 2004 period (3/16/04 to 6/14/04), when interest rates rose 119 basis points and REITs underperformed equities by 8 percentage points. Over the following one-year period, REITs outperformed the S&P 500 Index by almost 30 percentage points. Brief spikes in market volatility (that is, ups and downs) and broad-based selling are often overdone, which can potentially create opportunities for active managers to invest at favorable prices in the short term.

3. Where we're going

The Fed has insisted that it will remain accommodative in the near term by attempting to expand the overall money supply to boost the economy, and the unwinding of its massive balance sheet is likely years off. In our opinion, by the time interest rates do begin to naturally rise, continued economic growth should offset some of the negative effects of higher interest rates for REITs.

Certainly, short-term spikes in yields are a key risk for real estate, but the end of QE and potentially rising rates will primarily come from an improving economy, which we believe should benefit real estate. We would expect property types with shorter lease terms (such as apartments, hotels, self storage and some industrial properties) to benefit from the improving economy, countering any negative effect from rising interest rates. However, we believe more bond-like property types (such as health care and certain retail properties) will likely underperform in terms of income growth.

Fundamentals in real estate remain strong and should improve going forward and demand drivers are strengthening for most property types, while supply remains generally at bay. Strengthening fundamentals should result in growing rents for all property types in the near term. Interest rates and global central-bank policy may continue to drive the market and volatility in the short term; however, from a long-term asset allocation perspective, we believe the benefits of owning real estate in a portfolio far outweigh any near-term headwinds that rising interest rates may pose.

4. Strategic long-term allocation to REITs

Over the long term, we believe REITs offer investors a compelling investment allocation, providing access to real estate, low correlations to other asset classes, the potential for income, the potential for attractive total returns, inflation protection, and liquidity. REITs can also provide inflation protection in the form of higher dividends than equities, because historically, dividend yields have made up more than half of REIT total returns.

Figure 5 illustrates the historical long-term benefits of owning REITs. Adding a 15% allocation of REITs to a traditional portfolio of stocks and bonds generated an additional 109 basis points (annualized) of return in the one-year period after rates rose and an additional 26 basis points (annualized) during rising-rate periods.

More importantly, Figure 6 shows the potential benefit of owning real estate through multiple cycles. A long-term allocation to REITs (over 20 years) meaningfully improves the overall return of a portfolio.

Figure 5: Adding REITs to an equity and bonds portfolio increased returns

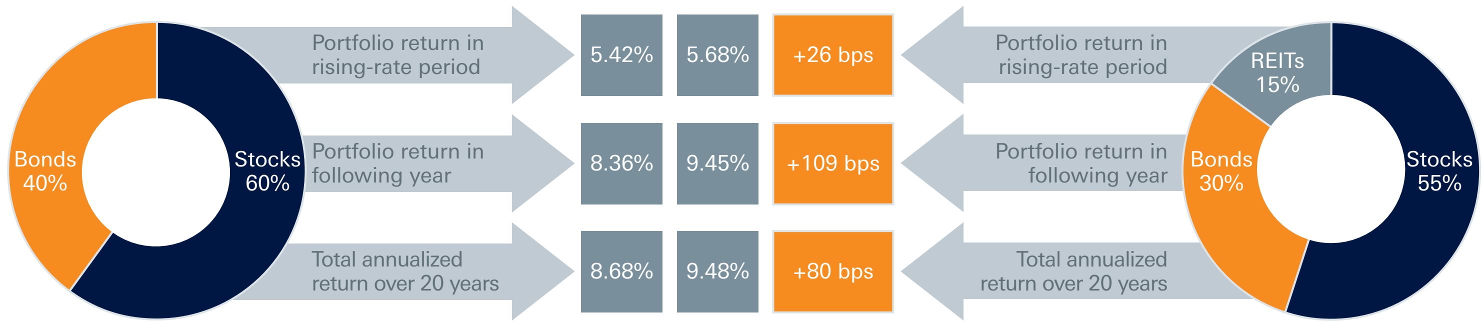

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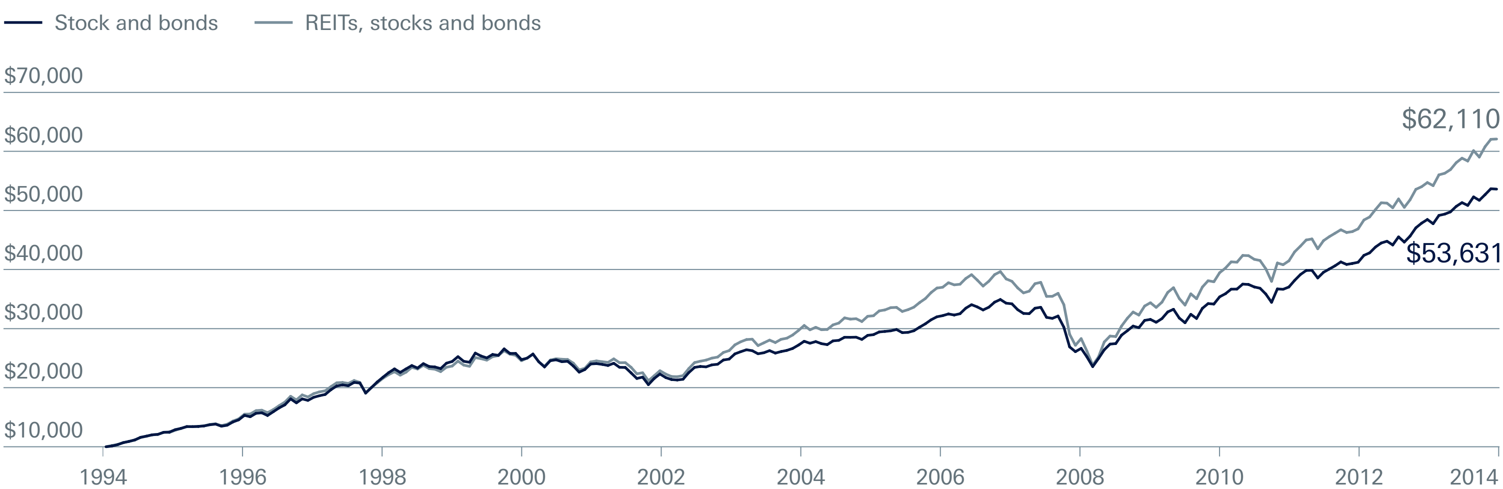
Figure 6: Growth of $10,000, 11/30/94–12/31/14



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Definitions

The Barclays U.S. Aggregate Index tracks the performance of the broad U.S. investment-grade, fixed-rate bond market, including both government and corporate bonds. One basis point equals 1/100 of a percentage point. A capital-intensive business is business that requires large amounts of money and other financial resources to produce a good or service. Capital markets are markets for buying and selling equity and debt instruments. Correlation is a measure of how closely two variables move together over time. A 1.0 equals perfect correlation. A –1.0 equals total negative correlation. The FTSE NAREIT All Equity REITs Index tracks the performance of all tax-qualified REITs with more than 50% of total assets in qualifying real estate assets other than mortgages secured by real property. A dividend is a distribution of a portion of a company’s earnings to its shareholders. Fundamentals are any data, excluding the trading patterns of an investment itself, that can be expected to impact the price of that investment. A lease is a legal document outlining the terms under which one party agrees to rent property from another part. A lease term is a fixed, non-cancelable period for which a lease is in force. Outperformance is performance is excess of something else, often an index. Quantitative easing is the introduction of new money into the money supply by a central bank. A real estate investment trust (REIT) is a security that sells like a stock on the major exchanges and invests in real estate directly, either through properties or mortgages. Relative performance is performance relative to a benchmark. Rising-rate environments are those in which interest rates (as measured by the 10-year U.S. Treasury) have been in a rising period. The S&P 500 Index tracks the performance of 500 leading U.S. stocks and is widely considered representative of the U.S. equity market. The U.S. Federal Reserve Board (Fed) is the board of governors of the Federal Reserve; it implements U.S. monetary policy. Yield is the income generated by an investment divided by its current price. Real yield refers to yield in which the effects of inflation have been accounted for (vs. nominal yield, in which the effects of inflation have not been accounted for).

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