

## Measuring a Moving Target: Understanding Correlation

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Many investors rely on correlations to measure the diversification potential of an asset allocation strategy. But correlations are simply a snapshot in time. They indicate how similarly, or how differently, two investments have performed in the past. It's important to know how and why correlations can change, otherwise the results of your asset allocation may be quite different from your initial expectations.

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### Key points

- 1 Correlations are dynamic.** Simply looking at the long-term average correlation is an oversimplified way of estimating future correlation benefits.
- 2 Correlations can change for many reasons.** Asset classes perform differently within varying economic environments. Understanding economic and market conditions is necessary to place an asset class's correlation into context.
- 3 Volatility can override correlation.** Many investors believe that as long as asset classes have historically low correlations, they'll provide diversification benefits in the future. But during times of extreme volatility, correlations have historically converged, and that benefit potential disappears. Diversifying by risk factors, not just return sources, may be one way to protect portfolios from the uncertainties of shifting correlations.
- 4 Intentional Investing<sup>SM</sup>.** To use correlations more effectively, be aware of the long-term average, near-term trends, and how economic and market conditions might affect the correlation going forward. When you understand the bigger picture of correlation, you and your financial advisor can take deliberate, intentional steps to build an enduring asset allocation strategy that's right for you.

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## The story of real estate

These three key points can be illustrated by examining the historical correlation of the real estate sector and the S&P 500 Index. This illustration is neither meant to advocate nor discourage an investment in the real estate sector. It's intended to illustrate some key points about the nature of correlations, keeping in mind past performance is no guarantee of future results.

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# 1 Correlations are dynamic

Chart 1 clearly shows that correlations are dynamic. From 1982 through 2010, the average correlation of real estate and the S&P 500 Index was 0.51, but correlations have rarely been at that point. They have often been either far above or far below. The highlighted area indicates the years we will focus on in the next two charts, from 2001 to 2010.

### Chart 1: 1982-2010 – Correlations are dynamic

This chart represents the historical correlation of the FTSE NAREIT Equity REITs Index and the S&P 500 Index from 1982 to 2010. The red line shows the long-term average of 0.51.



Source: StyleADVISOR. Data show 36-month windows, computed monthly. Data as of Dec. 31, 2010.

Historical correlations are no guarantee of future correlations.

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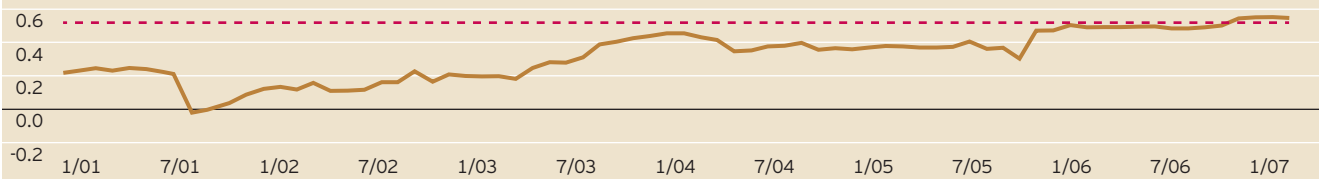
Correlation indicates the degree to which two investments have historically moved in the same direction and magnitude. A greater positive correlation (+1.00 maximum) means the two investments have behaved more similarly; a greater negative correlation (-1.00 maximum) means the two have performed less similarly.

## 2 Correlations can change for many reasons

During the late 1990s and early 2000s, investors were attracted to technology and telecommunications stocks, rather than slower growth, income-oriented securities such as real estate investment trusts (REITs). This demand began to drive up the price of equities, while lack of demand for REITs led to depressed prices for these securities. The result: reduced correlation between the two assets, as seen in Chart 2.

### Chart 2: 2001-2006 – Real estate has a low correlation with the market

From August 2001 to December 2006, the correlation between the FTSE NAREIT Equity REITs Index and the S&P 500 Index ranged from a historical low of -0.02 to around 0.55, right around the long-term average.



Source: StyleADVISOR. Data show 36-month windows, computed monthly.

But in 2003, at the same time that equity prices were rising, interest rates hit record low levels. Investors began seeking yield opportunities and increased their allocations to REITs, which offered higher relative yields. Because real estate and equities had a recent history of low correlations, investors felt that in addition to performance, they were gaining diversification benefits. But, as the prices of both REITs and equities rose in tandem, that led to heightened correlation and reduced diversification benefits.

Understanding economic and market conditions is necessary to place an asset class's correlation into context and develop more appropriate expectations.

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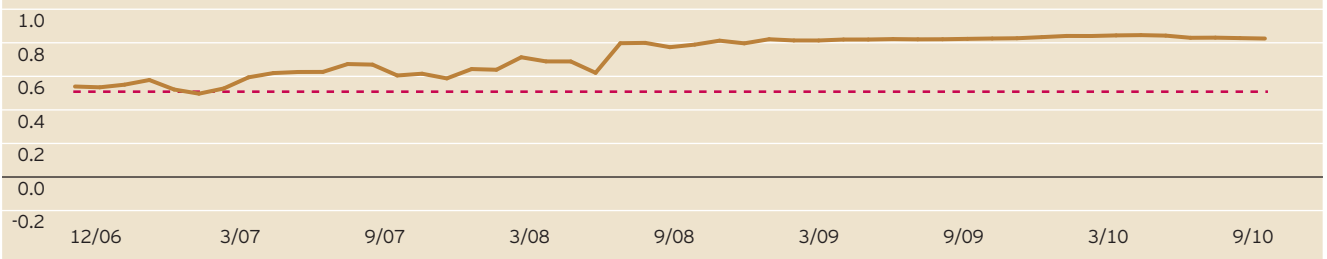
# 3

## Volatility can override correlation

Later in the 2000s, the real estate market became overheated, driven by leverage and easy credit. During times of extreme volatility correlations of all types of asset classes have historically surged toward 1.0. Chart 3 shows this was true for real estate and equities.

### Chart 3: 2007-2010 – Real estate has a high correlation with the market

From 2007 to 2010, the FTSE NAREIT Equity REITs Index became closely correlated with the S&P 500 Index – correlations soared to above 0.8. This meant that as the market was plunging, so too was real estate. The result was that investors got less diversification benefit from their real estate allocation.



Source: StyleADVISOR. Data show 36-month windows, computed monthly. Data as of Dec. 31, 2010.

When the U.S. entered a deflationary recession in late 2007, many investors' portfolios were filled with asset classes that tended to perform well during the type of low-inflationary growth cycle we had been experiencing since 2003. What many investors didn't realize is that real estate and equities are both subject to downward price movement during some forms of economic turmoil. Investors thought they were gaining protection by increasing their real estate allocation, but in reality, they were still vulnerable to the effects of a recession.

Correlations tend to move during times of extreme volatility – diversifying by risk factor may be one way to protect portfolios.

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# 4 Intentional Investing

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Intentional Investing is the science and art of investing with purpose, prudence and diligence. It's about thinking carefully, planning thoughtfully and acting deliberately. It is important to think carefully about the potential effects of changing correlations – and to understand that those changes can be quick and dramatic during times of market volatility.

To use correlations more intentionally, be aware of the following:

- The long-term average
- Where the figure has recently been
- How economic and market conditions might affect the correlation going forward

If you rely too much on a historical number as an input into your asset allocation model, without drilling down into underlying economic and market factors you may miss out on the diversification benefits you're expecting – putting your assets at greater risk than you intended.

While past performance cannot guarantee future results, we believe investors should consider diversifying among asset classes that have historically performed well in each of the three major economic environments – low-inflationary growth, inflation and recession. During recessions, currency-hedged government bonds and cash have typically been a good defense against market downturns. During inflationary periods, commodities have historically provided meaningful returns.

Exposure to asset classes with varying risk factors will not eliminate losses, but it may reduce volatility and overall drawdowns. Talk to your advisor about your portfolio's diversification and whether you are fully prepared for shifting economic environments.

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**Before investing, investors should carefully read the prospectus and/or summary prospectus and carefully consider the investment objectives, risks, charges and expenses. For this and more complete information about the fund(s), investors should ask their advisors for a prospectus/summary prospectus or visit [invesco.com/fundprospectus](http://invesco.com/fundprospectus).**

Note: Not all products, materials or services available at all firms. Advisors, please contact your home office.

All data provided by Invesco unless otherwise noted.

Diversification does not guarantee a profit or eliminate the risk of loss.

Investments in real-estate-related instruments may be affected by economic, legal, cultural, environmental or technological factors that affect property values, rents or occupancies of real estate related to a fund's holdings. Real estate companies, including REITs or similar structures, tend to be small- and mid-cap companies, and their shares may be more volatile and less liquid. The value of investments in real-estate-related companies may be affected by the quality of management, the ability to repay loans, the utilization of leverage and financial covenants related thereto, whether the company carries adequate insurance, and environmental factors. If a real-estate-related company defaults, a fund may own real estate directly, which involves the following additional risks: environmental liabilities, difficulty in valuing and selling the real estate, and economic or regulatory changes.

The S&P 500® Index is an unmanaged index considered representative of the U.S. stock market. The FTSE NAREIT Equity REITs Index is an unmanaged index considered representative of U.S. REITs.