



Investing Insight

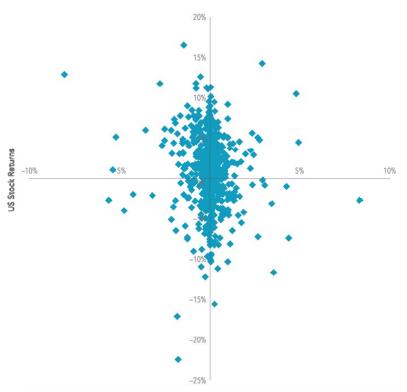
When Rates Go Up, Do Stocks Go Down?

Should stock investors worry about changes in interest rates? Research shows that, like stock prices, changes in interest rates and bond prices are largely unpredictable. It follows that an investment strategy based upon attempting to exploit these sorts of changes isn't likely to be a fruitful endeavor. Despite the unpredictable nature of interest rate changes, investors may still be curious about what might happen to stocks if interest rates go up.

Unlike bond prices, which tend to go down when yields go up, stock prices might rise or fall with changes in interest rates. For stocks, it can go either way because a stock's price depends on both future cash flows to investors and the discount rate they apply to those expected cash flows. When interest rates rise, the discount rate may increase, which in turn could cause the price of the stock to fall. However, it is also possible that when interest rates change, expectations about future cash flows expected from holding a stock also change. So, if theory doesn't tell us what the overall effect should be, the next question is what does the data say?

Recent research performed by Dimensional Fund Advisors helps provide insight into this question. The research examines the correlation between monthly U.S. stock returns and changes in interest rates. Exhibit 1 shows that while there is a lot of noise in stock returns and no clear pattern, not much of that valuation appears to be related to changes in the effective federal funds rate.

Exhibit 1: Monthly U.S. Stock Returns against Monthly Changes in Effective Federal Funds Rate, August 1954-December 2016.



Monthly Changes in Effective Federal Funds Rate

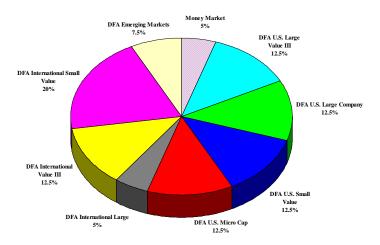
For example, in months when the federal funds rate rose, stock returns were as low as -15.56% and as high as 14.27%. In months when rates fell, returns ranged from -22.41% to 16.52%. Given that there are many other interest rates besides just the federal funds rate, Dai also examined longer-term interest rates and found similar results. (continued on page 3)

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AGGRESSIVE GROWTH

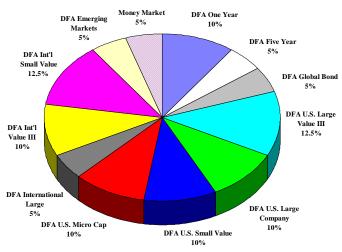
95% Equities/5% Fixed



Rate of Return 6.82%

LONG TERM GROWTH

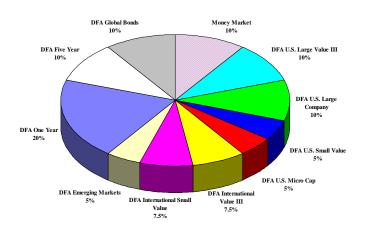
75% Equities/25% Fixed



Rate of Return 5.04%

BALANCED GROWTH

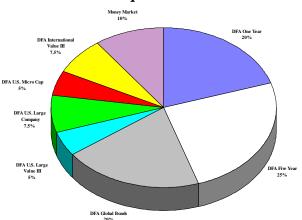
50% Equities/50% Fixed



Rate of Return 3.02%

INCOME & GROWTH

25% Equities/75% Fixed



Rate of Return 1.26%

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^{*}Individual returns may vary slightly based upon assets, size and fees charged, performance shown is net of fees. Performance shown reflects the reinvestment of dividends and other earnings. The returns shown represent past performance and are not indicators of future results.

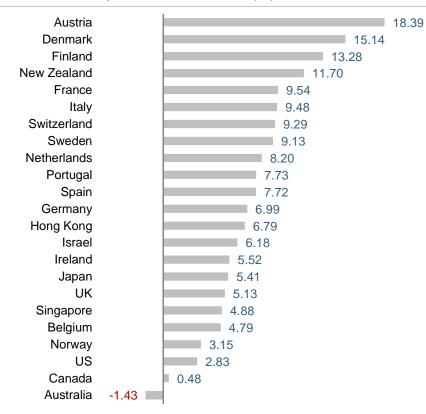
So, to address our initial question: when rates go up, do stock prices go down? The answer is yes, but only about 40% of the time. In the remaining 60% of months, stock returns were positive. This split between positive and negative returns was about the same when examining all months, not just those in which rates went up. In other words, there is not a clear link between stock returns and interest rate changes.

There's no evidence that investors can reliably predict changes in interest rates. Even with perfect knowledge of what will happen with future interest rate changes, this information provides little guidance about subsequent stock returns. Instead, staying invested and avoiding the temptation to make changes based on short-term predictions may increase the likelihood of consistently capturing what the stock market has to offer. *Source: Dimensional Fund Advisors LP.*

Select Country Performance

In U.S. dollar terms, Austria and Denmark recorded the highest country performance in developed markets, while Australia and Canada posted the lowest returns for the quarter.

Ranked Developed Markets Returns (%)



Meeting Expectations

All DFA portfolios are designed to deliver "market rates of return." DFA is not trying to "beat" the market by employing crystal ball type strategies, only working to achieve market returns, historically outpacing 90% of the active managers who attempt to beat the market

To evaluate your portfolio, it is helpful to look at the various DFA funds and **compare them** to the specific markets in which they are invested:

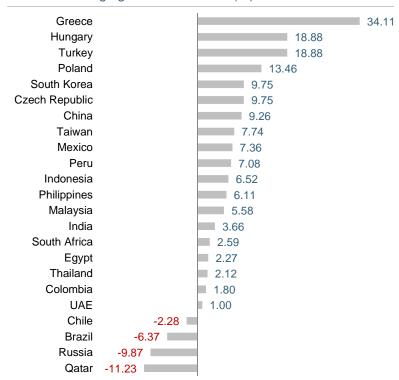
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| | through 06/30/17 |
|-----------------------------|------------------|
| | <u>Return*</u> |
| DFA U.S. Large Co. | 9.31% |
| S&P 500 Index | 9.34% |
| DFA U.S. Large Value | 5.86% |
| S&P 500 Value | 4.85% |
| DFA U.S. Micro Cap | 1.60% |
| Russell 2000 | 4.99% |
| DFA U.S. Small Value | -1.90% |
| Russell 2000 Value | 0.54% |
| DFA Emerging Markets | 19.71% |
| MSCI Emerging Market Idx | 18.43% |
| DFA Int'l Large Company | 13.98% |
| MSCI EAFE Large Co Idx | 13.81% |
| DFA Int'l Large Value | 10.48% |
| MSCI EAFE Value | 11.12% |
| DFA Int'l Small Value | 14.55% |
| MSCI EAFE Sm Cap Index | 15.21% |
| DFA One Yr. Gov't Bond | 0.60% |
| BarCap 1-3 Yr. Gov't | 0.48% |
| DFA Short-Term Gov't Bond | 0.75% |
| BarCap 1-5 Yr. Gov't | 0.80% |
| DFA 5 Yr. Global Bond | 1.56% |
| Citi WGBI AA 1-5 Yr. USD | 2.05% |

^{*}Morningstar 06/30/17

In emerging markets, Greece, Hungary and Turkey posted the highest country returns while Qatar and Russia had the lowest performance.

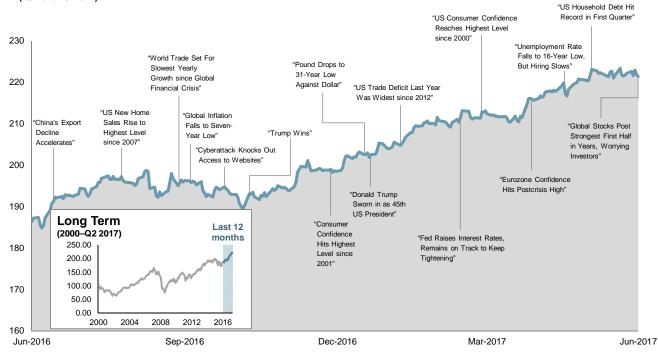
Ranked Emerging Markets Returns (%)



World Stock Market Performance

MSCI All Country World Index with selected headlines from past 12 months

Short Term (Q3 2016–Q2 2017)



These headlines are not offered to explain market returns. Instead, they serve as a reminder that investors should view daily events from a long-term perspective and avoid making investment decisions based solely on the news Graph Source: MSCI ACWI Index [net div.]. MSCI data ® MSCI 2017, all rights reserved.

til is not posible to invest directly in an index. Performance does not reflect the expenses associated with management of an actual portfolio. Past performance is not a guarantee of future results.