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## What Happens to Stocks When Bond Yields Go Up?

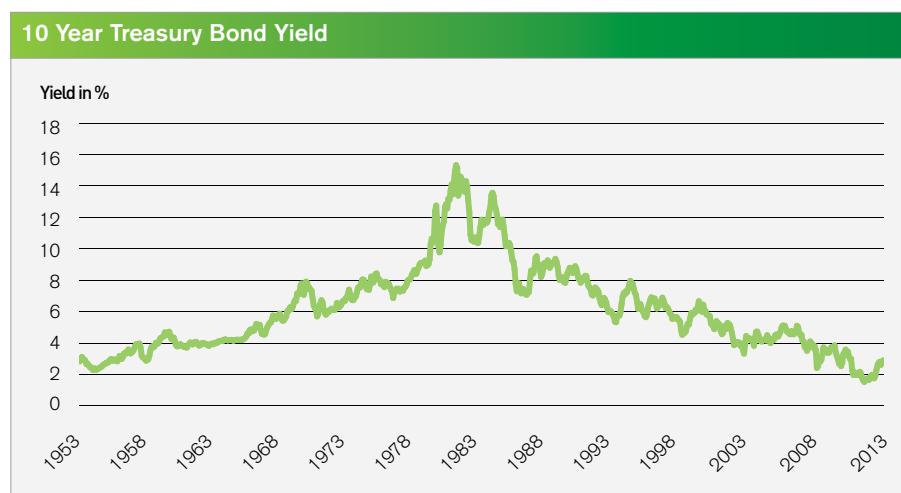
As the spring of 2014 winds down, we have just marked the fifth anniversary of the current bull market in equities off the lows of the financial crisis. Many investors are wondering how long this rally can continue. One cause of concern commonly expressed is that interest rates might increase, resulting in a stock market decline.

Certainly there is reason to believe that bond yields might go up. While yields are currently off their lows of mid-2012, they are still at historically depressed rates, as seen in the figure. However, there is no guarantee that rates will continue to rise. Other increases over the past few years have seen prognostications of an end to the bond bull market, only to see further drops in yield. Looking outside the U.S., Japan has spent over two decades with low interest rates, something few, if any, imagined at the start of the 1990s. Certainly there is nothing that precludes such a scenario here.

While forecasting interest rates can certainly be difficult, the historical data can help us address the issue of what happens if rates do rise. Before turning there, let's first briefly examine the theory. Investments are supposed to be equal to the discounted sum of future cash flows. As the discount rate rises, all else equal, stocks should be worth less. However, future cash flows are uncertain and are wrapped up in interactions with the health of the economy and interest rates. Rising interest rates should slow the economy. However, rising interest rates may reflect a robust economy and prospects for action from

the Federal Reserve. Given these various effects, there is no scientific law that unequivocally links bond yields and stock prices.

Hence, let's take an empirical approach and ask what the historical record shows. The chart gives results for annual returns of the S&P 500 Index from 1928 - 2013 depending on the direction of bond yields. The left two columns show the average return (mean), standard deviation, minimum return, and maximum return for the S&P



Source: Federal Reserve, Bridgeway

Return of the S&P 500 Index According to Direction of 10 Year Bond Yield (1928-2013)							
	Yield Up or Down		Quintile by Direction of Yield Change				
	Up	Down	Up Most	Up	Mid	Down	Down Most
<b>Mean Return</b>	12.47%	10.49%	9.03%	16.80%	11.49%	10.55%	9.79%
<b>Standard Deviation</b>	20.14%	20.08%	21.71%	17.58%	21.25%	19.90%	20.74%
<b>Count</b>	44	42	18	17	17	17	17
<b>Minimum Return</b>	-43.84%	-36.55%	-43.84%	-14.31%	-35.34%	-25.12%	-36.55%
<b>Maximum Return</b>	49.98%	52.56%	43.72%	43.81%	52.56%	46.74%	37.20%

Source: Damodaran, Federal Reserve, Bridgeway

500 Index according to whether bond yields rose or fell during those periods. For this 86 year period, the number of years in which yields rose or fell was almost identical. The average return was also quite similar for these two different yield environments. Stocks performed better when bond yields rose with an average annual return of 12.47%, but still did quite well with a 10.49% return when bond yields fell. Such returns are by no means guaranteed, as seen by the large deviations and extreme returns. So an investor on average realizes nice returns on equities whether interest rates rise or fall, but there is plenty of variation in either environment.

Breaking interest rate moves into the broad categories of rising or falling is a crude but effective way to see the effects of direction of change, but what about magnitude of change? This is addressed in the right five columns. Years are put in five categories by the size of their bond moves, with years in which yields drop most on the left and rise most on the far right. Returns for the S&P 500 Index are given. Results are qualitatively similar. In all cases stocks rise on average, but with plenty of variation. One could possibly argue that stocks do best when rates rise but not by too much. However in all cases stocks on average do just fine, including when rates rise modestly or by a lot.

Indeed one need only examine 2013. Some fretted at the end of 2012 that interest rates were poised to rise, and they were indeed correct. This of course caused bond returns to suffer; in contrast to stocks prices for bonds are guaranteed to move in the opposite direction of yields. And in 2013 stocks held up just fine, with the S&P 500 Index having its best gain since the 1990s. Investors who feared a rise in interest rates and bailed out of stocks were right on the first part but ended up dead wrong on the latter portion, missing out on some nice gains.

So what is in store for the future? Bond yields may go up, but they may not. And whichever way yields move, the historical evidence is that stocks could go up or down as well, irrespective of the direction yields move. But on average, stocks have gone up in all rising and declining interest rate environments. An investor who flees from equities risks missing out on those gains.

Data Sources:  
[stern.nyu.edu/~adamodar/pc/datasets/histretSP.xls](http://stern.nyu.edu/~adamodar/pc/datasets/histretSP.xls)  
[research.stlouisfed.org/fred2/series/GS10](http://research.stlouisfed.org/fred2/series/GS10)

## DISCLAIMER

The S&P 500 Index is a broad-based, unmanaged measurement of changes in stock market conditions based on the average of 500 widely held common stocks.

Standard deviation is the measure of historical volatility of the return of an investment or index calculated by measuring past fluctuation of returns around the average return of the investment or index.

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