

Will Rate Shocks End Goldilocks?

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HighVista Strategies

HighVista Strategies was founded in 2004 by an experienced team with diverse backgrounds in endowment management, hedge fund and principal investing, wealth management and academia.

We focus singularly on achieving attractive risk-adjusted portfolio returns through investing across public and private markets. We utilize the time-tested principles of endowment investing and a forward-thinking application of risk management to manage globally diversified investment strategies and solutions tailored for our clients' varying needs. The priority placed on capital preservation and avoiding major drawdowns fosters the patient and rigorous pursuit of excess returns, and is itself a critical driver of long-term performance.

Executive Summary

When and how the current environment may change for the worse is anyone's guess. High on the list of suspects would be disappointing corporate earnings and an unanticipated shock to inflation and interest rates. Our main protection against earnings risk is to utilize managers with a strong value bias whose expertise lies in bottom-up security selection. However, protecting against an inflation or rate shock is much more difficult.

- History shows that rising bond yields are more likely to coincide with strong rather than weak equity markets
- The market environment of the last five years is a good example. Beyond broad equities, the notable gainers amidst rising yields have been banks and financials. The main decliners have been utilities, REITs and of course bonds themselves
- History also shows that for rising bond yields to "wreak havoc" in the markets, they would most likely be accompanied by significant inflation shocks, similar perhaps to those experienced in the 1970s. In such scenarios, higher yields and inflation would in-and-of-themselves need to be the cause of worsening economic conditions
- Protecting against yield-and-inflation-induced market declines is difficult because most asset classes will be impaired
- The risk environment is dynamic and shocks to inflation and bond yields usually occur over months and years
- The stock-bond correlation is an indicator of the propensity for rising yields to impair equity markets and bears monitoring. It is a statistical measure that has been in negative territory for almost two decades and is not (yet) a warning sign.

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Market valuations are being underpinned by low bond yields coupled with economic fundamentals that are globally robust.

In particular, consensus forecasts of earnings growth for 2018 are fairly high—in the 10% to 15% range—and forecast earnings yields are well in excess of bond yields across broad categories including U.S. equities (**Figure 1**). As long as this state of affairs continues, equity markets will continue to look relatively attractive, especially non-U.S. equities.

Figure 1: Earnings Growth, Forward P/E Ratios, and Forward Earnings Yields¹
(As of January 31, 2018)

	U.S. Equities	Non-U.S. Developed Equities	Emerging Market Equities
(1) 2018 estimated EPS growth (FY 2018 versus FY 2017)	15%	10%	14%
(2) P/E on estimated 2018 earnings	18.6 x	15.3 x	13.5 x
(3) Earnings yield (based on estimated 2018 EPS)	5.4%	6.5%	7.4%
(4) U.S. bond yield (10 Year)	2.7%		

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Market havoc from rising interest rates and bond yields is the scenario perhaps most frequently put forth for how today's "just right" environment will come to an end. This thinking comprises at least two important effects:

- 1) Higher bond yields equate to higher discount rates. For typical equities, all else being equal, the discounted present value of future cash flows should decline by about 15% for a 1% rise in the discount rate.²
- 2) Higher bond yields will lead to increased financing costs which in turn will impede investment activity which in turn will slow future earnings growth.

The double whammy of a higher discount rate and slower growth would be devastating for most asset classes and for investor wealth.

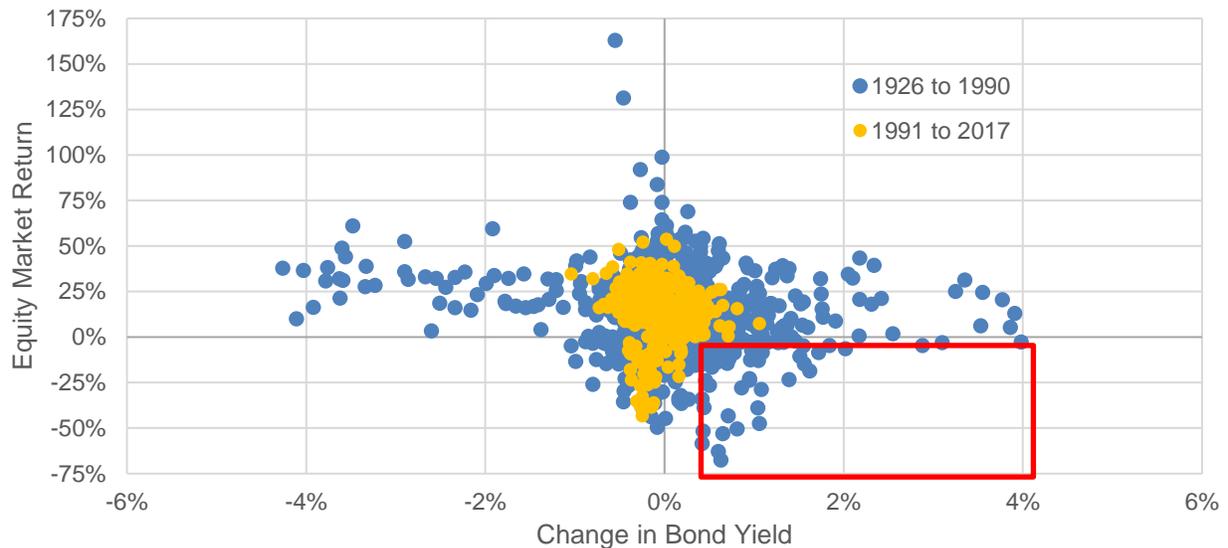
But it's not quite that simple. While unarguably a possibility, a student of history would not assign great odds to such an outcome. That is because rising bond yields have predominantly been accompanied by good news for equities—so much so that the improved business outlook has tended to overcome rather than exacerbate the higher cost of capital. In these instances, the causality is reversed—it is economic

¹ Source: HighVista Analysis.

² For example, with U.S. equities being valued at an approximately 5% earnings yield, a 1% increase in the earnings yield, all else equal, will result in a valuation decline of 16.7%.

conditions dragging along bond yields more so than bond yields in and of themselves being the driver of economic conditions. The chart below (**Figure 2**) provides evidence over the last 92 years for the U.S. stock and bond markets.

Figure 2: Stock Price Reactions to Changes in 10-Year Bond Yields, 1926-2017
(12-month windows based on monthly data)



The chart is worth looking at closely, so please bear with us. Each dot corresponds to a 12-month window since 1926. The x-axis represents the change in the 10-year bond yield over that window while the y-axis represents the U.S. equity market return in the same period. The blue dots are for 12-month periods between 1926 and 1990—an era in which there were more increases in bond yields than decreases—and the orange dots are for periods between 1990 and 2017—an era that experienced more decreases in yields than increases.

There is much in this chart that is noteworthy:

- 1) Over the last 92 years, the majority of yield increases over a 12-month period were less than 2% and they never increased by more than 4% in any 12-month window. When yields did increase by more than 2%, equities experienced at worst a small (nominal) decline but mostly performed very strongly.
- 2) In the era after 1990 (the orange dots), there were no 12-month windows where bond yields increased significantly and equities were down.
- 3) The bad instances all occurred before 1990 where “bad” here means bond yields increasing by more than 50 basis points and the stock market falling by more than 5% (nominally). These are the points in the red box. The bad occurrences reflected a combination of a market downturn and high inflation, with the exception of severe deflation in 1930.
- 4) The bad occurrences are relatively few in number and are detailed on the following page (**Figure 3**, overlapping 12-month windows consolidated). In these instances, the average increase in bond yields was 1.1% and the CPI increased by 6.4%. The average equity market decline was -16.7% (-22.3% after adjusting for inflation.) Except for the Great Depression, the bad instances were all much less severe than the market decline during the Great Financial Crisis in 2008/9.

Figure 3: Market Declines Coincident with Yield Shocks (Returns not annualized)

Beginning	Duration (Months)	Initial Bond Yield	Increase in Bond Yield	Prior 12-Month Inflation (CPI)	Concurrent Period Inflation (CPI)	Equity Market Return	Equity Market Real Return
Dec-1930	18	3.2%	0.5%	-6.0%	-15.5%	-67.9%	-62.0%
Dec-1940	12	2.5%	0.6%	9.7%	9.7%	-11.6%	-19.4%
Oct-1956	12	4.0%	0.6%	2.9%	2.9%	-6.3%	-9.0%
Aug-1965	13	4.3%	1.1%	1.7%	3.5%	-8.6%	-11.7%
Sep-1968	23	5.5%	2.0%	4.4%	11.2%	-15.1%	-23.7%
Mar-1973	24	6.7%	1.3%	4.7%	21.6%	-18.9%	-33.3%
Dec-1976	14	6.8%	1.2%	4.8%	8.1%	-14.1%	-20.6%
Feb-1981	16	13.4%	1.0%	11.3%	10.4%	-10.2%	-18.6%
Mar-1987	14	7.5%	1.7%	3.0%	4.8%	-6.5%	-10.7%
Aug-1989	14	7.8%	0.8%	5.0%	7.3%	-8.3%	-14.5%
Average	16	6.2%	1.1%	4.2%	6.4%	-16.7%	-22.3%

The data is illustrative of how rate shocks could play out and it highlights that yield increases need the assistance of inflation shocks to negatively impact equities. (Inflation shocks without meaningful increases in bond yields have not statistically been damaging for equities.) Relating these outcomes to the present is not straightforward, however, if only because the world today differs in important respects from that in the prior “bad” periods. Technological innovation, for example, is ameliorating energy, labor, and other shortages and acts as a powerful anti-inflationary force. Other factors such as monetary and currency debasement may be the more likely candidates for concerns about inflation.

Mark Twain reportedly said that history does not repeat itself but it often rhymes. In the next part, we see what “rhymes” with market behavior in the more recent past, and we do so by focusing on the last five years.

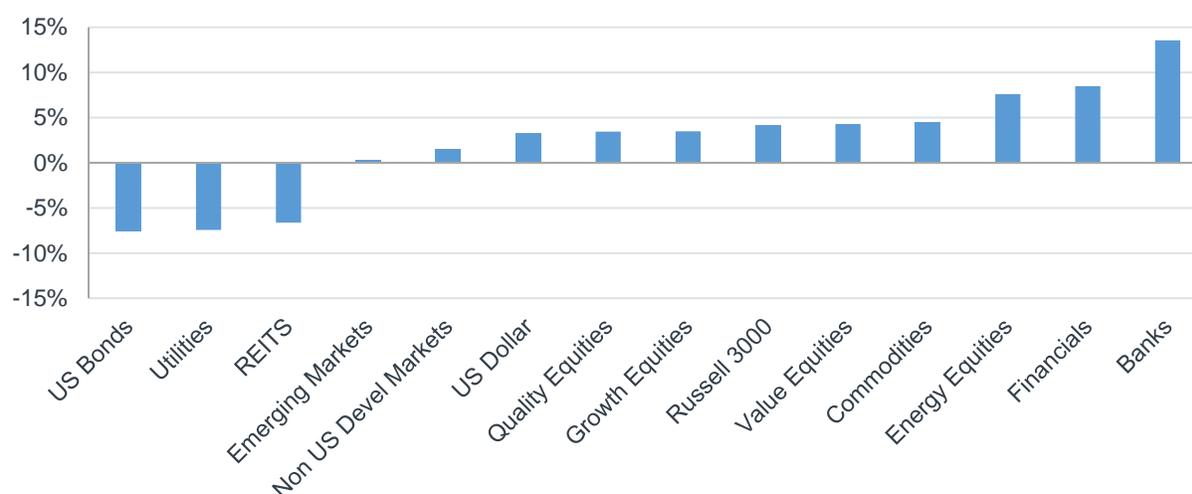
The period 2013 to 2017 is instructive not only for its recency, but because it includes a number of instances when bond yields changed considerably (**Figure 4**). The first big yield increase in this period was +130 basis points in 2013 during the so-called Taper Tantrum when the market feared a Fed tightening. Other sizable yield increases occurred in the first half of 2015 (+80 basis points), the latter half of 2016 (+120 basis points) and in the four months through this January (+60 basis points).

Figure 4: U.S. 10-Year Bond Yields, 2013-2017 (and January 2018)



To quantify the effects of yield changes over this period, we calculated the average sensitivity of market returns per 100 basis point rise in yields. These are shown in **Figure 5** for the broad asset classes, for the most yield-sensitive industry sectors, and for quality, growth and value equities.

Figure 5: Asset Class and Sector Sensitivity in 2013-2017

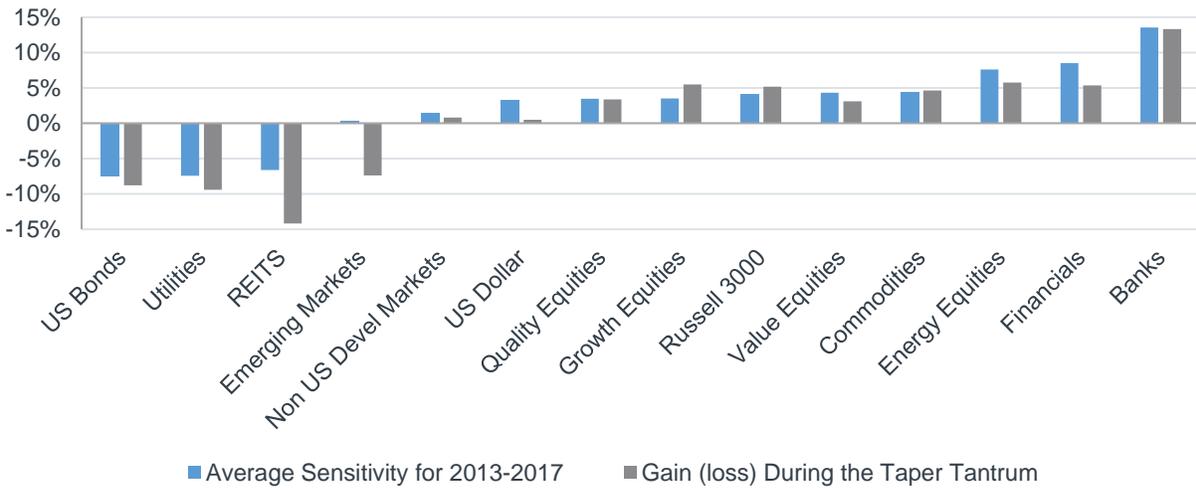


The calculations shown in the chart are consistent with the data presented earlier—rising bond yields are predominantly good news because they reflect improving rather than deteriorating economic conditions. More specifically, amidst rising bond yields:

- a) U.S. equities did well (gaining 4.1% on average per 100 basis points increase in yields); developed equities on average gained a little, and emerging equities on average showed no relationship to changing bond yields.
- b) The dollar and commodities also benefited; energy equities, as a levered commodities play, benefited significantly.
- c) Value equities did slightly better than growth and quality equities because of their lower multiples and less distant cash flows.
- d) Banks were the biggest winners, gaining 13.5% on average per 100 basis point increase in yields. The story here is that a good economy is good for credit businesses and higher bond yields result in wider net interest margins. Financials also benefited nicely amidst rising yields.
- e) Besides bonds, which are mathematically wired to lose when yields go up, the biggest losers were utilities and REITs which respectively declined 7.4% and 6.6% on average per 100 basis point increase in bond yields. Neither of these is a surprise given their relatively stable yields and bond-like character.

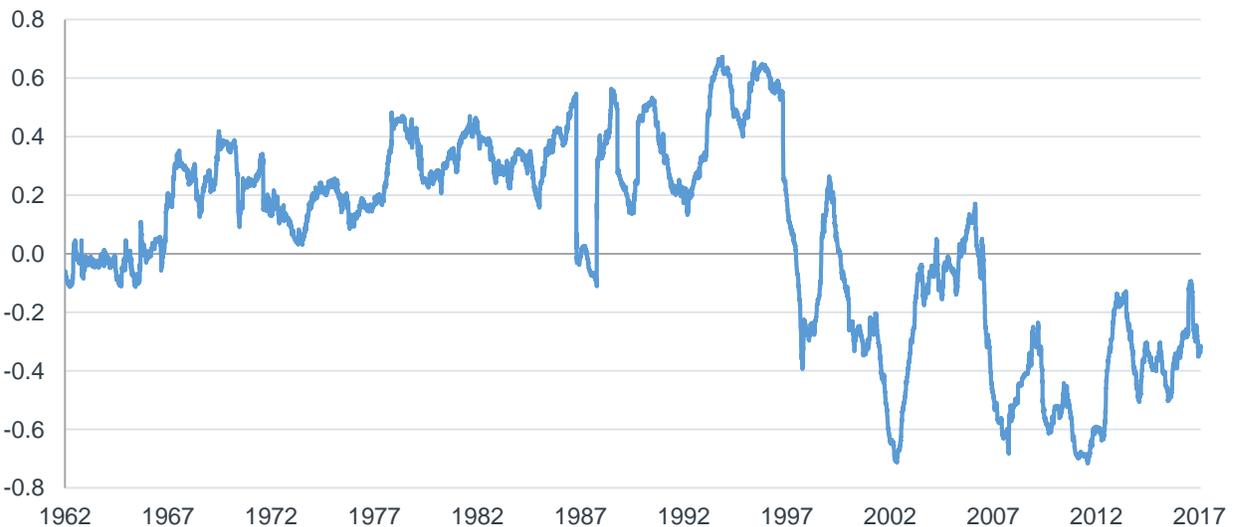
We also found that these average sensitivities in 2013-2017 held up very well in particular sub-periods. This includes the asset class and sector movements during the Taper Tantrum in 2013, as shown on the next page in **Figure 6**. The main outlier was in emerging equities which did poorly when yields rose in 2013—but very well as yields increased in the last quarter of 2017 (not shown in Exhibit 6).

Figure 6: Average Yield Sensitivity in 2013-2017 vs. the Taper Tantrum



We note finally that in environments where yield shocks are unlikely to be good news for equities, stocks and bonds will tend to move in the same direction and thus be positively correlated. The degree to which they are correlated is a measure of equity market vulnerability to a yield shock. It's a dynamic statistic that was positive when many of the severe rate shocks occurred (in the 1960s through 1980s); the correlation has been negative since the late 1990s (**Figure 7**). Very recently (in the week prior to this writing), stocks and bonds have been moving together strongly. This could have happened for any number of reasons and it is well too early to conclude that this behavior is representative of a new and adverse market environment.

Figure 7: Changing Stock-Bond Correlation (Trailing 1-Year Correlation of Daily Returns)



We conclude with the following key summary points and takeaways:

- History shows that rising bond yields are more likely to coincide with strong rather than weak equity markets. The market environment of the last five years is a good example. Beyond broad equities, the notable gainers amidst rising yields have been banks and financials. The main decliners have been utilities, REITs and of course bonds themselves.
- History also shows that for rising bond yields to “wreak havoc” in the markets, they would most likely be accompanied by significant inflation shocks, similar perhaps to those experienced in the 1970s. In such scenarios, higher yields and inflation would in-and-of-themselves need to be the cause of worsening economic conditions.
- Protecting against yield-and-inflation-induced market declines is difficult because most asset classes will be impaired. The most defensive categories will likely be cash and short-term inflation bonds. If inflation-adjusted yields do not rise significantly, longer-term inflation bonds and real assets such as commodities may perform better than other categories. Short of another Great Depression, if history repeats, equities will likely not decline as much in a yield and inflation shock scenario as they did in the Great Financial Crisis of 2008/9.
- The risk environment is dynamic and shocks to inflation and bond yields usually occur over months and years. The stock-bond correlation is an indicator of the propensity for rising yields to impair equity markets and bears monitoring. It is a statistical measure that has been in negative territory for almost two decades and is not (yet) a warning sign.

In our own investment process, we place great value on vigilance to changing conditions and on reevaluating how the impairment scenarios may play out. This includes continually seeking to understand and quantify what the primary exposures in the portfolio might be. For example, though we do not see it as such today, interest rate sensitivity may well become a pervasive risk factor in our portfolios. The benefit of systematic portfolio risk modeling has been very tangible in periods such as in 2008 when we were able to reduce the portfolio’s exposure to tail risks and protect against the most severe of outcomes.

We also engage in the relentless pursuit of attractive return streams that are not highly correlated with the broad markets. The ability to find such investments is a virtuous circle. It helps cushion the downside, and with capital protection comes the dry powder to invest in dislocated markets.

Legal Disclosures:

Legal Disclosures: The views expressed herein are those of Andre Perold in his individual capacity and are subject to change at any time based on market and other conditions. References to HighVista are to HighVista Strategies LLC, an investment manager where Mr. Perold is CIO and a Managing Partner. This paper is not investment advice or an offer or solicitation for the purchase or sale of any security and should not be construed as such. References to specific securities, issuers and indexes are for illustrative purposes only, does not represent any sponsorship, affiliation, or other relationship between Mr. Perold and any other company or entity, does not constitute an endorsement, and are not intended to be, and should not be interpreted as, recommendations to purchase or sell such securities. Information provided herein is believed to be accurate, but no representation or warranty is made herein. Past performance is not necessarily indicative of future results.

Definitions for Exhibits 1, 5, and 6 are as follows:

Asset Class	Index
U.S. Equities	Russell 3000 Index
Non U.S. Developed Equities/Markets	MSCI EAFE Index
Emerging Market Equities	MSCI Daily TR Net Emerging Markets USD Index
US Bonds	Merrill Lynch 7-10yr U.S. Treasury Index
Utilities	MSCI USA Utilities Index
REITS	NAREIT Real Estate Investment Trust Index
US Dollar	USD Spot Rate
Quality Equities	MSCI USA Quality Index
Growth Equities	MSCI USA Growth Index
Value Equities	MSCI USA Value Index
Commodities	S&P GSCI Reduced Energy Index
Energy Equities	MSCI USA Energy Index
Financials	MSCI USA Financials Index
Banks	S&P 500 Banks Index