

Avoiding The Fed Rate Hike: Which Equities Do Best Over Periods Of Rate Increases? *

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ABSTRACT

While defensive positions for bond holdings have done well over the past Federal Reserve rate hike periods, can the same be said for defensive equity positions? Examining the five periods of interest rate hikes over the past 30 years highlights that it may actually be best to avoid the safe, dividend paying, and large companies in one's equity portfolio. Small cap, cyclical, and non-dividend paying holdings outperform by an average of 4.5% per annum during these periods. Risk-adjusted measures also present a similar conclusion.

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I Introduction

One of the most feared things on Wall Street is a rising interest rate environment. Why exactly? Well, as interest rates move up the present value of any asset goes down. This simple relationship hits bond prices the hardest, and is the reason why bond managers across the U.S. have been having a rough time over the last two years delivering any sort of return to their investors as the Federal Reserve has slowly raised interest rates.

To insulate oneself from this phenomena, most wealth advisors recommend that investors shift their bond portfolio to more short-term bond holdings (i.e. six-month to five-year Treasuries). These safer and more defensive bond holdings tend to fall less in value as interest rates move up.

While this is a tried-and-true strategy on the fixed income side, many investors think the same logic of investing in safe and defensive companies should hold as the best strategy on the equity side of one's portfolio too. Yet, examine the five periods over the past 30 years where the Fed raised rates, shows a much different story - large, dividend paying, safe firms may be the ones you want to avoid. And, with the market participants betting that the Fed will continue to raise interest rates another 1% over the next year (see Figure 1 below), this could be important for one's equity portfolio.

Interest rates don't move in isolation. As the economy continues to do well, the Federal Reserve tends to raise interest rates when the economy shows signs of overheating (tightening credit and reducing the chance of rampant inflation). With this in mind, it is not surprising that over the last five rate hike cycles, equities have done pretty well, with the S&P 500 averaging 13.2% per annum, which is well above its historical average.

And this excess performance of equities extends to the just the type of firms you would expect to do well when the economy is booming smaller firms and firms in cyclical industries. In fact, looking at the performance of all mutual funds over the past 30 years partitioned by the

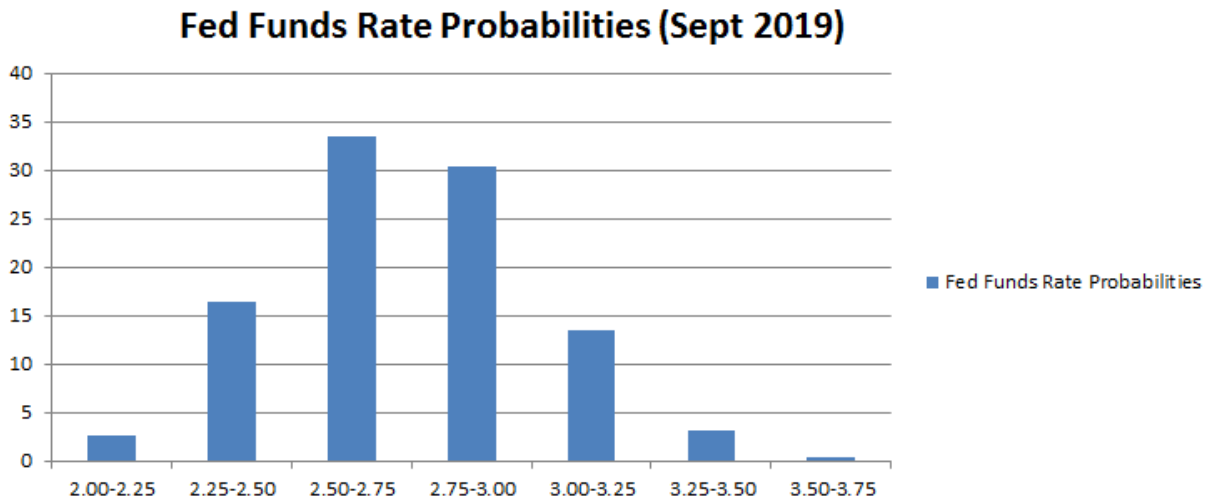


Figure 1: Fed Interest Rate Predictions via the CME Fed Funds Futures.

focus of the fund, shows that if you were to hold an average small cap mutual fund as opposed to a large cap mutual fund you would have gained an extra 3.62 percentage points per annum in returns over the five rate hike cycles (15.13% v 11.51%).

A very similar result holds with mutual funds focused on growth stocks and cyclical industries, as opposed to value and defensive stocks. In this situation, one could gain an extra 4.65 percentage points per annum by focusing their portfolio on the more aggressive holdings over the rate hike cycles. And, finally it may be best to avoid dividend paying firms during these time periods as well. Mutual funds that focus on dividend paying firms have underperformed mutual funds focusing on non-dividend payers by 5.38 percentage points over the past five rate hike cycles.

It should be noted that these three mutual type types (small cap, growth, and non-dividend payers) do come with slightly elevated levels of volatility over the past rate hike cycles as compared to their safer counterparts. Yet, comparing the average Sharpe ratio of the defensive group to the risk-seeking group, highlights again that on a risk-adjusted basis small cap, growth and non-dividend paying strategies still outperform (an average Sharpe ratio of 0.97 compared to 0.79).

This paper proceeds as follows. Section II highlights the data construction and empirical analysis. Section III concludes the paper.

II Data Construction and Empirical Analysis

In this section, I first detail the construction of the dataset used in this investigation and provide summary statistics. Following this, I summarize the empirical methodology and results.

A Construction of the Data

The dataset used in the proceeding analysis was produced via the Morningstar Direct database. From the Morningstar platform, information on all equity focused mutual funds trading in the U.S. (U.S. dollar based mutual funds) was pulled. This initial list of mutual funds included all open-end funds (currently active or defunct) with assets under management listed as non-zero at anytime from 1988 and forward.

From Morningstar information on each fund's objective was pulled, as well as, information on its AUM, monthly returns, and volatility. To categorize each fund by its style, funds were partitioned into groups that focused on small cap stocks (2154 mutual fund observations), large cap stocks (2861 observations), dividend-paying firms (432 observations), growth and cyclical firms (1473 observations), and value stocks (1237 observations).

B Empirical Analysis

To examine the performance of various fund styles over rate hike periods, the first step is to define these interest hike periods. Examining the past 30 years of Fed funds data shows that the Fed was raising the short term rate over the following periods: Mar 1988 - Mar 1989; Dec 1993 - Apr 1995; Jun 1999 - Jul 2000; Dec 2003 - July 2007; Dec 2015 - present.

Next, with these periods defined, I look at the average return to the various mutual fund types partitioned by fund focus over the Fed rate hike periods.¹ These results are presented below and all differences in means are statistically significant at the 1% level.

	Annualized Ret		Annualized Ret
Small Cap	15.13	Large Cap	11.51
Growth and Cyclical Industries	14.77	Value and Defensive	10.12
Non-Dividend	14.93	Dividend Focused	9.55

Figure 2: Average Annual Return by Mutual Fund Focus Over the 5 Rate Hike Periods since 1988

Following this, volatility results are presented below as well. All volatility calculations are implemented in a similar manner, looking purely at volatility of returns to mutual fund type over each respective rate hike period. Differences across styles are all significant at the 5% level.

	Annualized Vol		Annualized Vol
Small Cap	13.62	Large Cap	9.01
Growth and Cyclical Industries	11.55	Value and Defensive	9.48
Non-Dividend	11.61	Dividend Focused	8.97

Figure 3: Average Annual Volatility by Mutual Fund Focus Over the 5 Rate Hike Periods since 1988

To consider a risk-adjusted measure of performance, I examine the Sharpe ratio for all mutual funds over the rate hike periods. The 3-month T-Bill rate (via Ken French's website) is used as the risk free rate in all calculations and averages 3.1% during this period. Differences in Sharpe ratios across fund style are all significant at the 5% level, except for differences between the risk adjusted measures for small and large cap focused mutual funds.

¹All averages are taken by fund focus in the monthly cross-section and then averaged over each time period. This is done to avoid any bias that may be introduced by number of funds in operation at a given time, or survivorship bias.

	Annualized Sharpe		Annualized Sharpe
Small Cap	0.88	Large Cap	0.93
Growth and Cyclical Industries	1.01	Value and Defensive	0.74
Non-Dividend	1.02	Dividend Focused	0.71

Figure 4: Average Sharpe Ratio by Mutual Fund Focus Over the 5 Rate Hike Periods since 1988

In total, the results demonstrate that on average, in a risk-adjusted comparison, defensive positions do not appear to out perform non-defensive positions over rate hike periods. The single exception to this is the statistical insignificant difference between Sharpe ratios for small cap and large cap focused mutual funds.

III Conclusion

The conventional wisdom that safer positions are best during rate hike cycles may not be entirely true once considering equity holdings. Examining the five rate hike periods over the past 30 years highlights that it may actually be best to avoid the safe, dividend paying and large companies. Small cap, cyclical, and non-dividend paying holdings outperform these safer options by an average of 4.5% per annum during these periods.

Risk adjusted measures of performance also present a similar finding. Comparing the average Sharpe ratio of the defensive group to the risk-seeking group highlights again that on a risk-adjusted basis small cap, growth and non-dividend paying strategies still outperform - an average Sharpe of 0.97 for the cyclical focused mutual funds and 0.79 for the defensive focused mutual funds.

Together the results demonstrate how Fed policy and equity returns exhibit strong co-movement and how over-weighting defensive positions for equities in times of economic expansion may not be in one's best interest.

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