



High Dividend Stocks In Rising Interest Rate Environments

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2018





Disclosure: This research is provided for educational purposes only and is not intended to provide investment or tax advice. All numbers are approximate. Past performance does not guarantee future results.

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Executive Summary

- With interest rates in the US expected to trend upwards, many investors are eager to understand how high dividend yielding stocks may react
- The following analysis is based on the performance and behavior of **the highest decile¹ of dividend paying stocks** (“high dividend stocks”) 1960 to 2017.

	High Yield	High dividend stocks have generated an average annual dividend yield of 6.4%
	Long Term Outperformance	The total return for these stocks outperformed the S&P 500 by nearly 3.0% on an annualized basis
	Strong in Rising Rate Regimes	In 7 out of the 10 rising interest rate periods since 1960, high dividend stocks outperformed the S&P 500
	Speed Matters	The three instances of underperformance occurred in environments of unusually rapid rate increases

- Although interest rates are expected to continue to rise in the near future, many economists expect these increases to be gradual, creating a slow rate increase environment that has historically led to high dividend stocks outperforming the broad market.

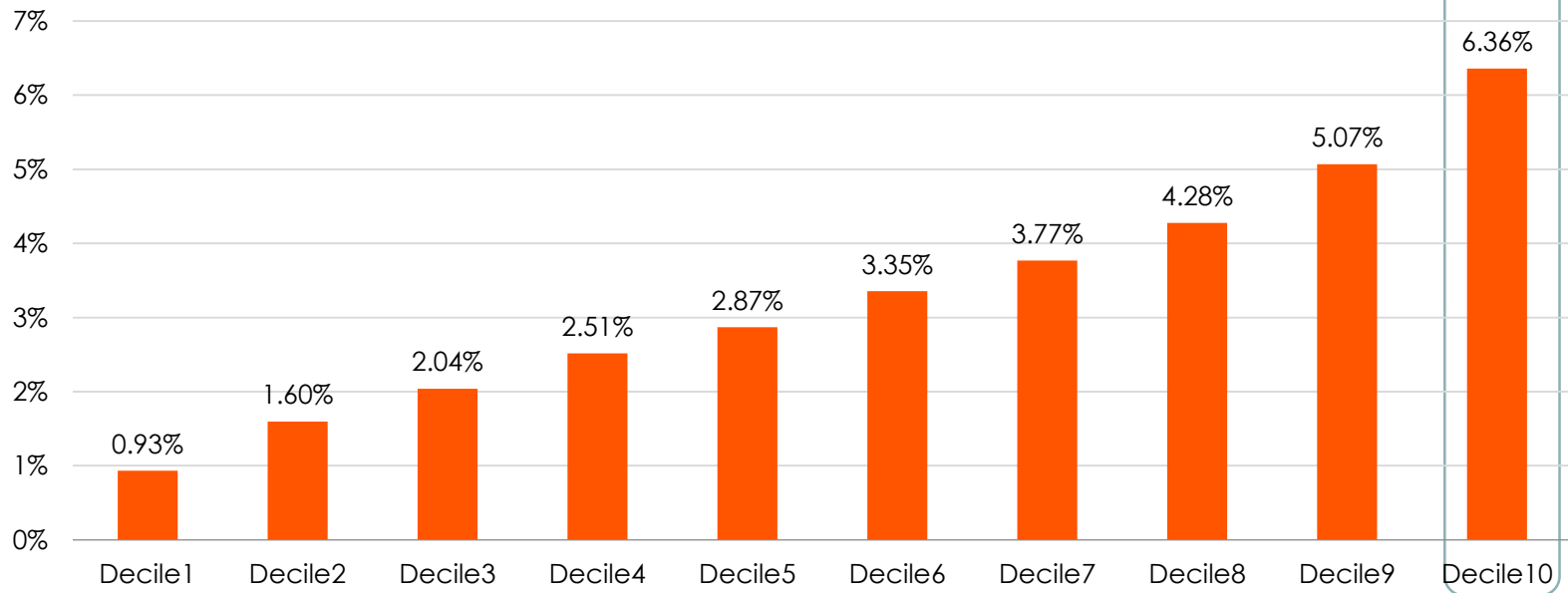
1. Deciles are ten tiers of stocks based on the ranking of a common characteristic. For this analysis, all stocks are ranked by dividend yield and those in the 90th percentile or higher are included in the highest, or 10th decile. Stocks in the 80th to 90th percentile range are included in the 9th decile, and so on. Stocks with the lowest dividend yields are in the 0th to 10th percentile range and are included in the lowest, or 1st decile.

Past performance is not a guarantee of future results.

Methodology

- 1) Time Frame: 58 years of monthly data Jan 1960 to Dec 2017
- 2) Stocks Considered: French & Fama portfolios of highest decile of US dividend yielding stocks (Decile 10)
- 3) Interest Rates: 10-year US Treasury bond rates used as rate benchmark
- 4) Benchmark for Market Returns: S&P 500 Total Return Index

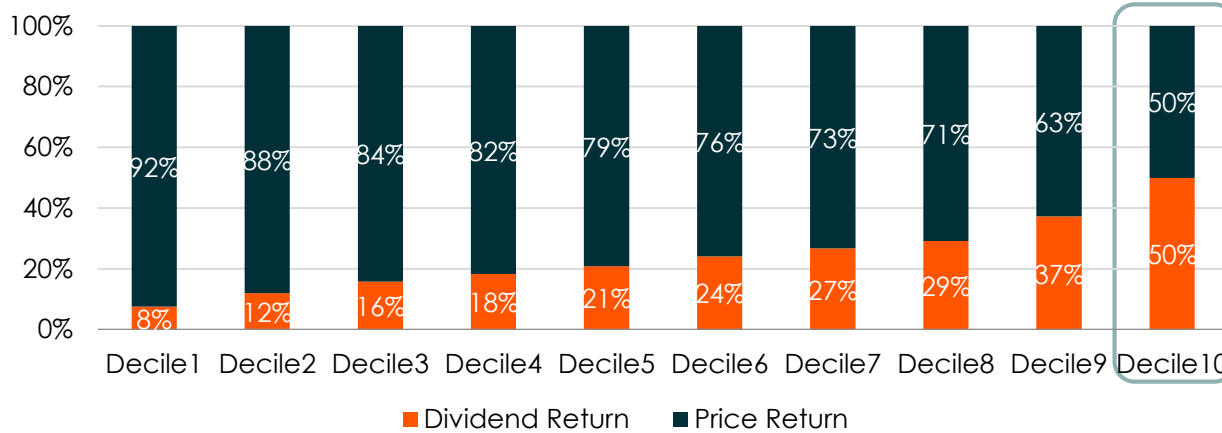
Average Dividend Yield of Decile Portfolios (1960-2017)



Portfolio returns sourced Fama and French Portfolios Formed on Dividend Yield (http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html) where all stocks listed on NYSE, AMEX, and NASDAQ have been considered. Stocks have been segregated into 10 portfolios (deciles) based on dividend yield (D/P).

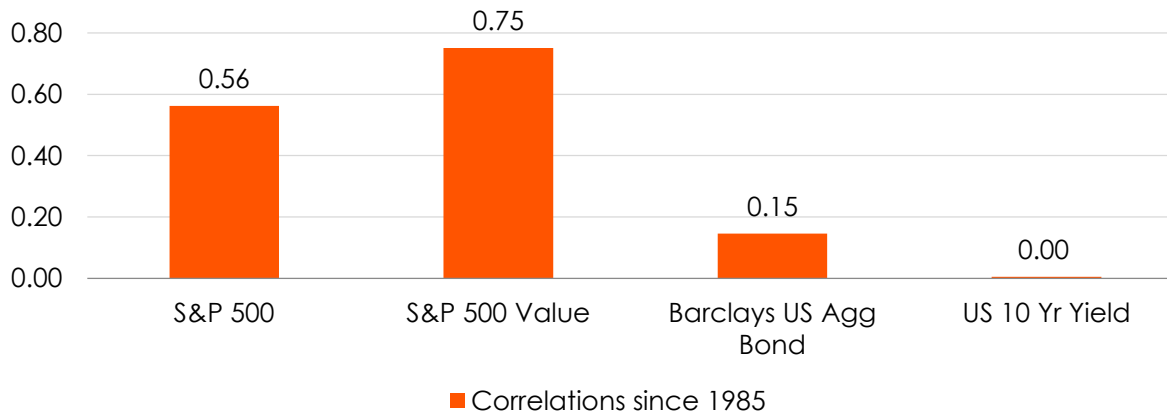
Characteristics Of High Dividend Stocks

Source of Returns: Dividends vs. Price Appreciation



- Half of high dividend stocks' returns came from dividend payments during the rising interest rate periods

High Dividend Stock Correlation Analysis¹



- High Dividend stocks have a low correlation to the S&P 500 and Barclays Agg
- They demonstrate value characteristics with significantly higher correlation to value stocks

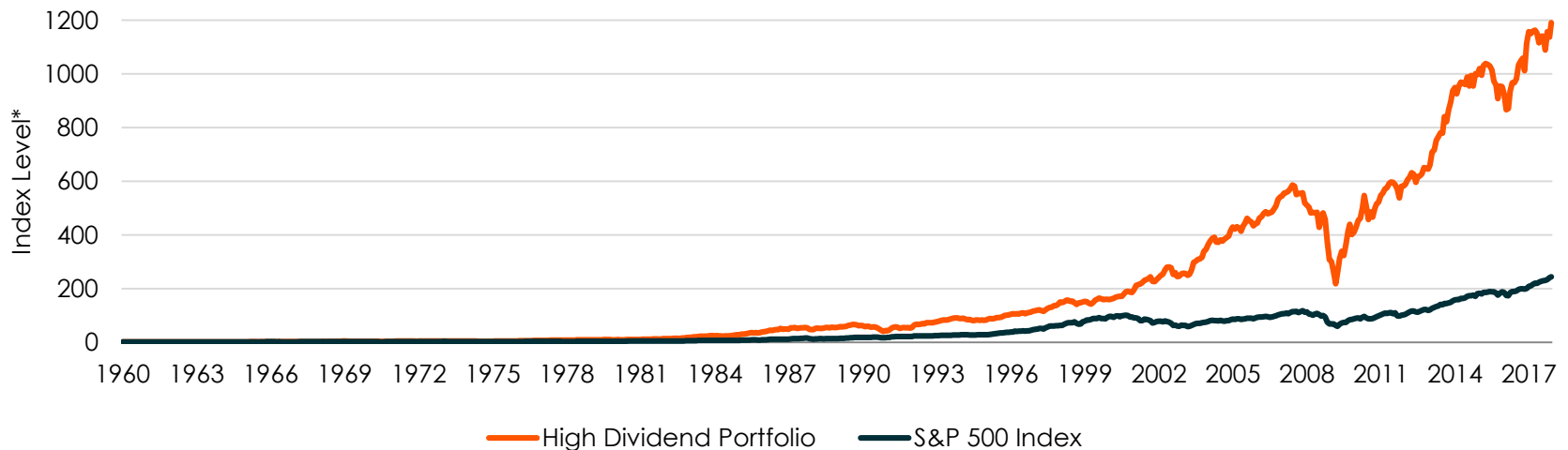
1. Data 1985 to 2017, constrained by the S&P 500 Value Index. Correlation is a statistical measure that represents how the price movements of two securities move in relation to each other. A correlation of 1 indicates that the historical price movements of two securities have been in perfect lockstep. A correlation 0 indicates that the historical price movements of two securities are entirely unrelated.

Long Term Outperformance

- 1960 to 2017, high dividend stocks demonstrated higher absolute and risk-adjusted returns than the S&P 500

	Annualized Returns	Volatility of Returns ¹	Sharpe Ratio ²	Correlation to S&P 500	Beta ³ to S&P 500
High Dividend Stock Portfolio ⁴	13.02%	15.19%	0.84	0.58	0.72
S&P 500 (market portfolio)	10.00%	12.16%	0.81	-	-

High Dividend Stock Portfolio vs. S&P 500 Index



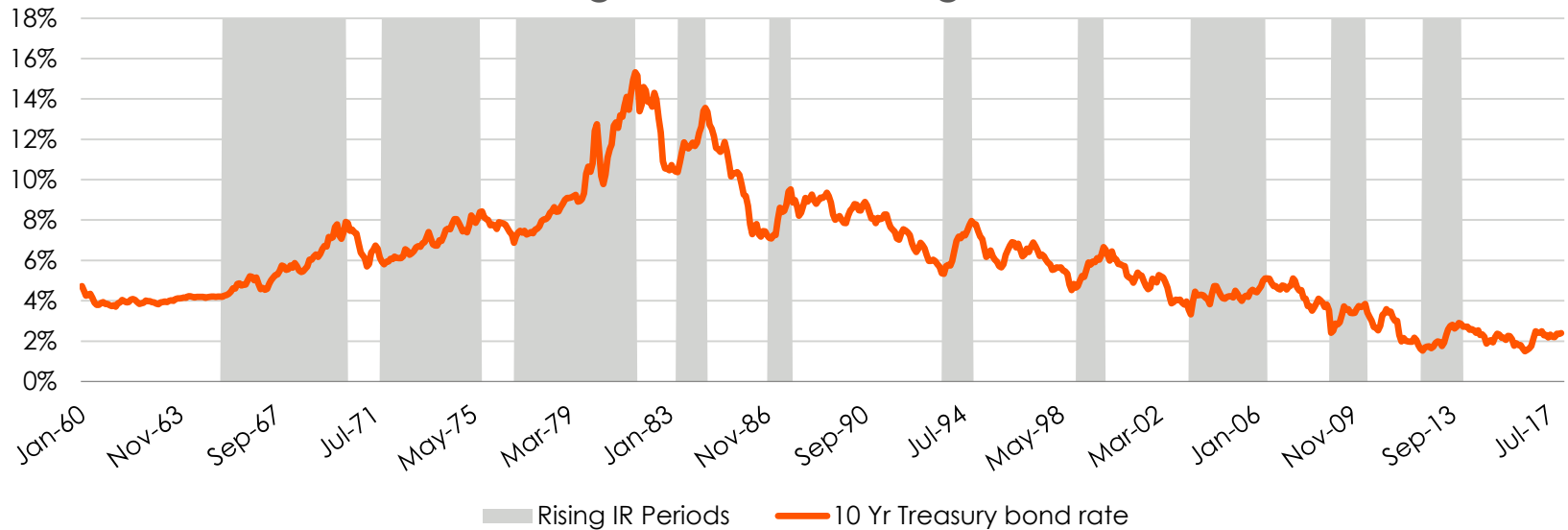
*Indexes are normalized to have a starting value of 1 in January 1960.

1. Volatility of returns is measured as the annualized standard deviation of daily price changes. Standard deviation is a measure of the dispersion of returns around the mean returns.
2. Sharpe Ratio is a measure of risk-adjusted returns and is calculated as the annualized returns, minus the risk free rate divided by the standard deviation of returns.
3. Beta measures the volatility of the portfolio returns relative to the volatility of the market index and can also be defined as the expected percent change in the value of the portfolio given a 1% change in the market index.
4. High Dividend Portfolio represents the highest decile (10th decile) of dividend yielding stocks, as per Fama and French.

Rising Interest Rate Periods

- Since 1960, there have been 10 periods of meaningful interest rate increases. These are defined as periods where the yield of 10 Year US Treasuries increased by more than 100 basis points over a period of 10 months or longer

US Rising Interest Rate Regimes



Rising Rate Period	1	2	3	4	5	6	7	8	9	10
From	Jul-65	Oct-71	Jan-77	May-83	Dec-86	Oct-93	Jan-99	Jun-03	Dec-08	Jul-12
To	May-70	Aug-75	Sep-81	Jun-84	Oct-87	Nov-94	Jan-00	May-06	Apr-10	Jan-14
Number of Months	59	47	57	14	11	14	13	36	17	19
Rise in basis points	371	247	811	318	241	263	194	178	143	133

Source: US Federal Reserve

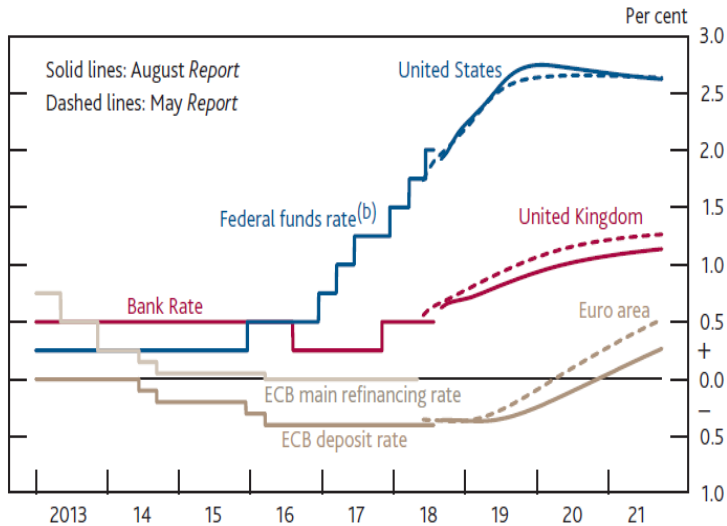
Performance In Rising Rate Environments

- Across rising interest rate regimes, high dividend stocks outperformed the market by an annualized average of 0.80%
- High dividend stocks outperformed the market in 7 out of the 10 observed rising interest rate regimes
- The three instances of underperformance occurred in periods with among the most rapidly increasing interest rates

Period	Number of Months	US 10-Year Treasury Increase (bps)	Average rate of increase per month (bps)	Annualized Period Returns		
				High Dividend Stock Portfolio	S&P 500 Index	Difference
Jul-65 to May-70	59	371	6.3	11.17%	0.94%	10.23%
Oct-71 to Aug-75	47	247	5.3	3.82%	-0.24%	4.06%
Jan-77 to Sep-81	57	811	14.2	11.05%	7.80%	3.25%
May-83 to Jun-84	14	318	22.7	8.53%	1.84%	6.69%
Dec-86 to Oct-87	11	241	21.9	-2.50%	19.15%	-21.65%
Oct-93 to Nov-94	14	263	18.8	-8.38%	3.14%	-11.52%
Jan-99 to Jan-00	13	194	14.9	5.35%	19.60%	-14.26%
Jun-03 to May-06	36	178	4.9	17.24%	13.19%	4.05%
Dec-08 to Apr-10	17	143	8.4	50.06%	27.20%	22.86%
Jul-12 to Jan-14	19	133	7.0	29.21%	24.93%	4.28%
Average	29	290	12	12.55%	11.76%	0.80%

Looking Ahead...

Increase in interest rates are expected to remain gradual³



Sources: Bank of England, Bloomberg, European Central Bank (ECB) and Federal Reserve, 2018

“With a strong job market, inflation close to our objective, and the risks to the outlook roughly balanced, the FOMC believes that—for now—the best way forward is to keep gradually raising the federal funds rate.

– Fed Chair Jerome H. Powell¹

“The United States Government Bond 10Y is expected to trade at 3.10 percent by the end of this quarter, according to Trading Economics global macro models and analysts expectations. Looking forward, we estimate it to trade at 3.26 in 12 months time.”

– Trading Economics²

United States Government Bond 10 Yr Forecasts*

Forecast	Actual	Q4/18	Q1/19	Q2/19	Q3/19	2020
Government Bond 10Y	3.15%	3.10%	3.15%	3.21%	3.26%	3.47%

1) US Federal Reserve, “Semiannual Monetary Policy Report to the Congress”, Jul 17, 2018.

2) Trading Economics, United States Government Bond 10Y – Forecast.

3) Bank of England, Inflation Report, August 2018.

*United States Government Bond 10Y Forecasts are projected by Trading Economics, using an autoregressive integrated moving average (ARIMA) model calibrated using their analysts expectations, as on Oct 14, 2018.

Conclusions

- With an average yield of 6.4%, high dividend stocks are often included in a portfolio to generate income for investors. However, they have also historically demonstrated outperformance versus the S&P 500, delivering an annualized alpha¹ of nearly 3.0%.
- In rising rate regimes, which are typically assumed to be adverse environments for income-generating securities, high dividend stocks continued to outperform the market 7 out of 10 times and by an average annualized 0.80%.
- In the three periods where high dividend stocks underperformed the market, interest rates increased unusually rapidly.
- Although interest rates are expected to continue to rise in the near future, many economists expect these increases to be gradual, creating a slow rate increase environment that has historically led to high dividend stocks outperforming the broad market.

1. Alpha: excess return relative to a benchmark.

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