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## As Interest Rates Rise, Check That Leverage

With indications from the Federal Reserve that interest rates will likely continue to rise, investors are increasingly focused on the impact that this trend will have on individual companies. Part of that impact will obviously relate to a company's balance sheet, where a firm's interest-bearing debt resides. We think a broader perspective would include not only the amount of debt a company carries, but, more important, the relationship between balance sheet debt and assets – the leverage of a company. We find that not only the degree of leverage, but also the changes or trend in leverage, provide a good distinction between strong and weak balance sheets. Our research uses empirical analysis to examine the resulting performance of using leverage as an investment indicator. As an added feature, we show how combining the two leverage factors with a company's free cash flow provides even better insight into investment results.

### Key Points

- With an increasing focus on the impact of rising interest rates on individual companies, the measure of strong balance sheets becomes even more important.
- Not only the degree of leverage but also the trend in leverage, provide a good distinction between strong and weak balance sheets.
- Combining free cash flow strength with balance sheets measures provided even better investment results.

## Methodology

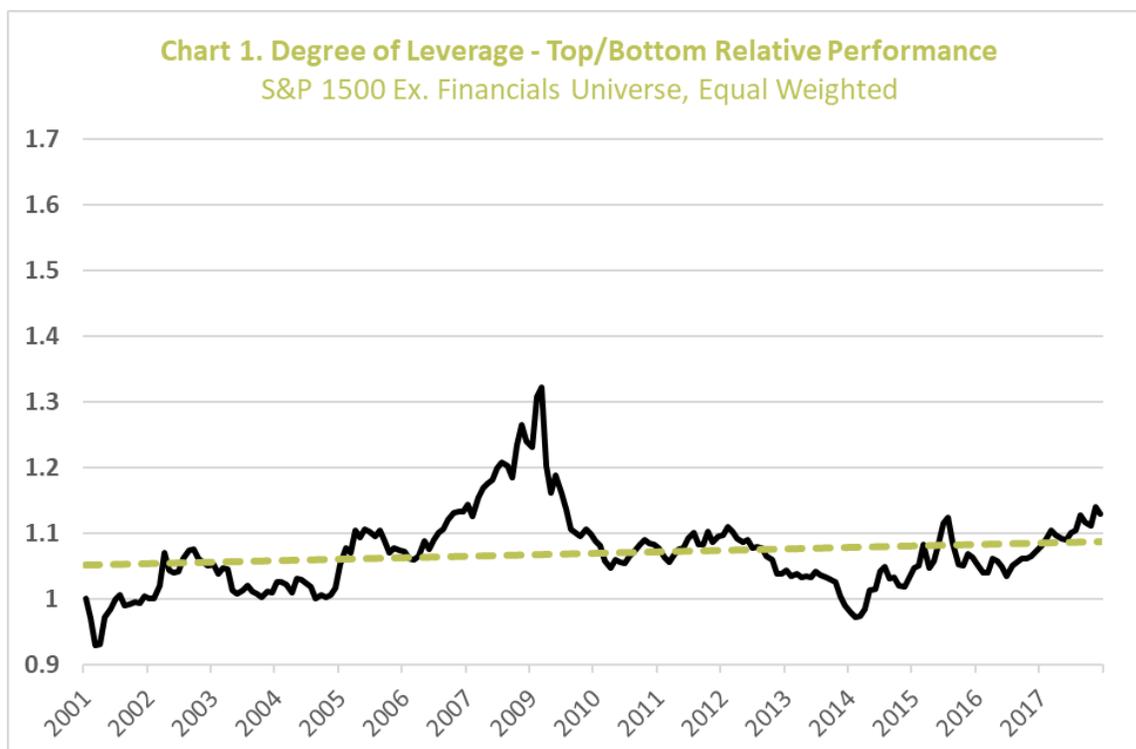
This study focuses on the US markets. For our universe, we select the S&P 1500 Index constituents. Financials companies are excluded throughout this report (this is common practice in these types of analyses). The empirical analysis is performed using trailing twelve months data. The data is provided by FactSet and covers the period from June 30th, 2001 to September 30th, 2018. To avoid look-ahead bias, the data is lagged by 45 days. Financial leverage is calculated as the ratio of total assets to total debts. At each month end, we sort the selected universe in descending order by the sector neutral score of three variations of financial leverage: 1) the magnitude or degree, 2) the trend and, finally, 3) the combination of degree & trend. The benchmark (excluding financials) is the equally weighted portfolio using all stocks in the universe and rebalanced monthly. We construct portfolios from ranked groups to examine performance.

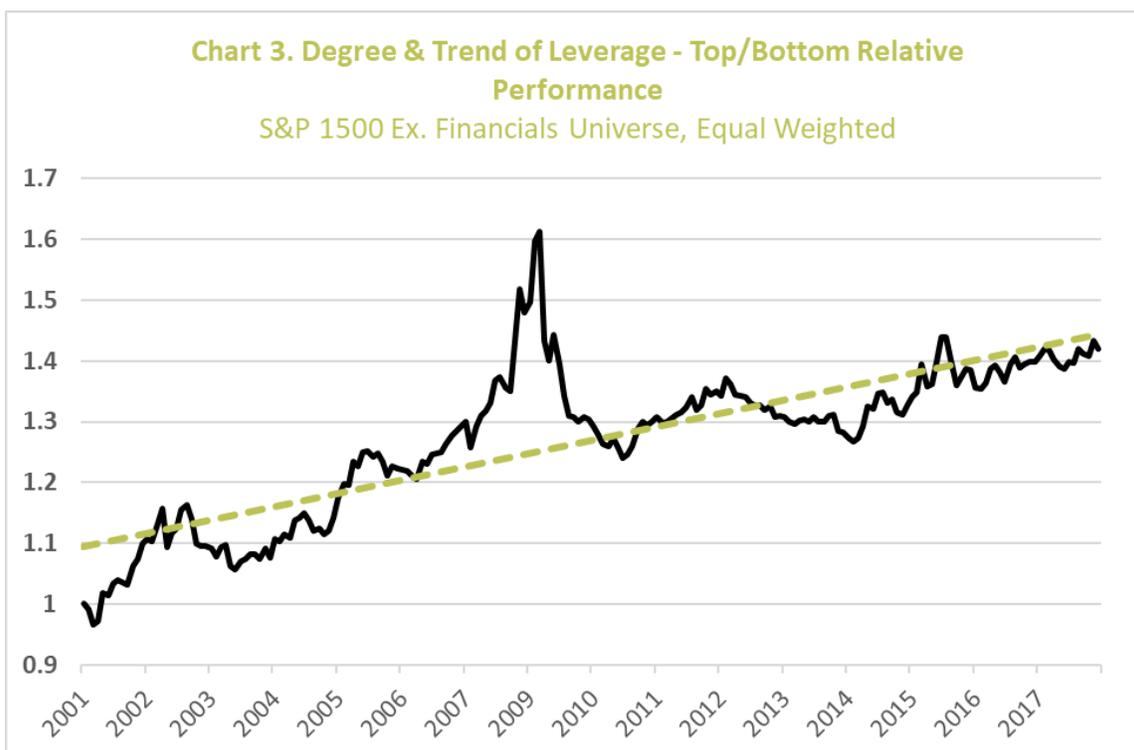
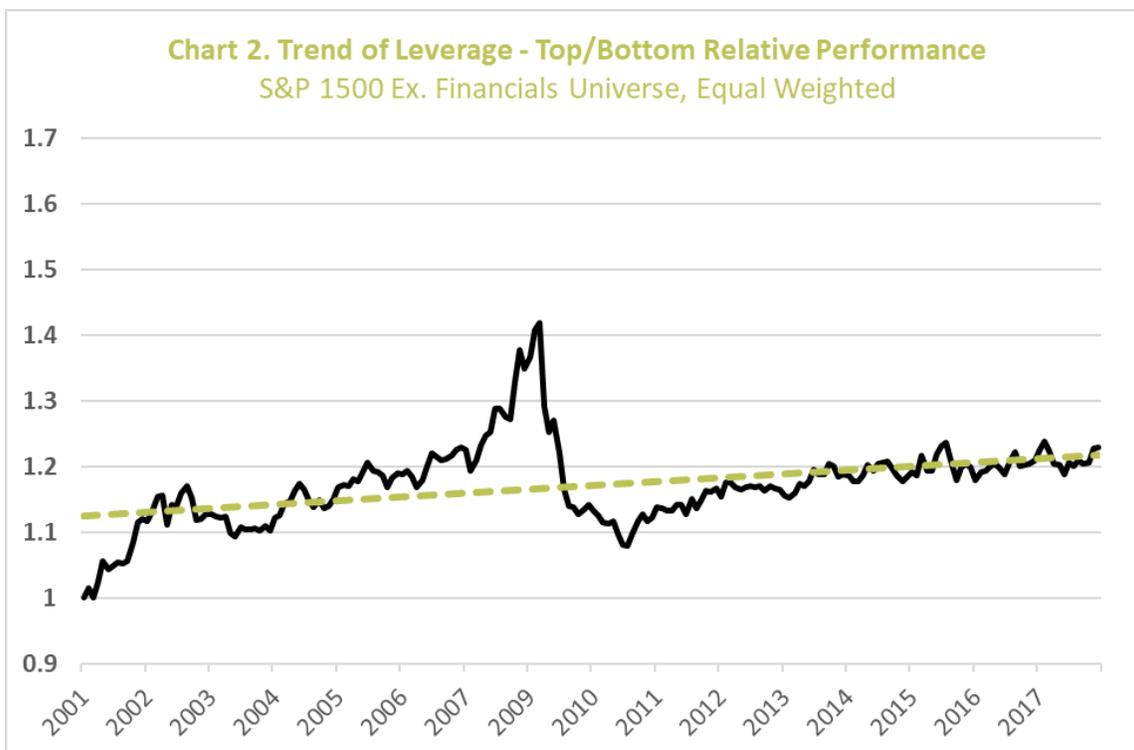
## Results

Table 1 summarizes our findings. The results, as shown in Charts 1 through 3 suggest that (1), measuring the degree of leverage helps to sort returns, (2), the trend of leverage improves on those results and (3), the combination of the two suggests even further improvement.

**Table 1. Quantile Portfolio Performance**

Risk Measures	Degree		Trend		Degree & Trend		Benchmark
	Top	Bottom	Top	Bottom	Top	Bottom	
Annualized Return	11.64%	10.65%	12.16%	10.91%	12.39%	10.06%	11.54%
Standard Deviation	18.14%	19.85%	17.78%	19.76%	17.75%	20.61%	18.43%
Downside Deviation	13.24%	14.89%	12.81%	14.45%	12.82%	15.29%	13.49%
Sharpe Ratio	0.642	0.537	0.684	0.552	0.698	0.488	0.626
Sortino Ratio	0.879	0.715	0.949	0.755	0.966	0.658	0.856
Excess Return	0.10%	-0.89%	0.61%	-0.63%	0.84%	-1.49%	-
Information Ratio	3.44%	-25.41%	21.32%	-20.69%	28.18%	-34.99%	-





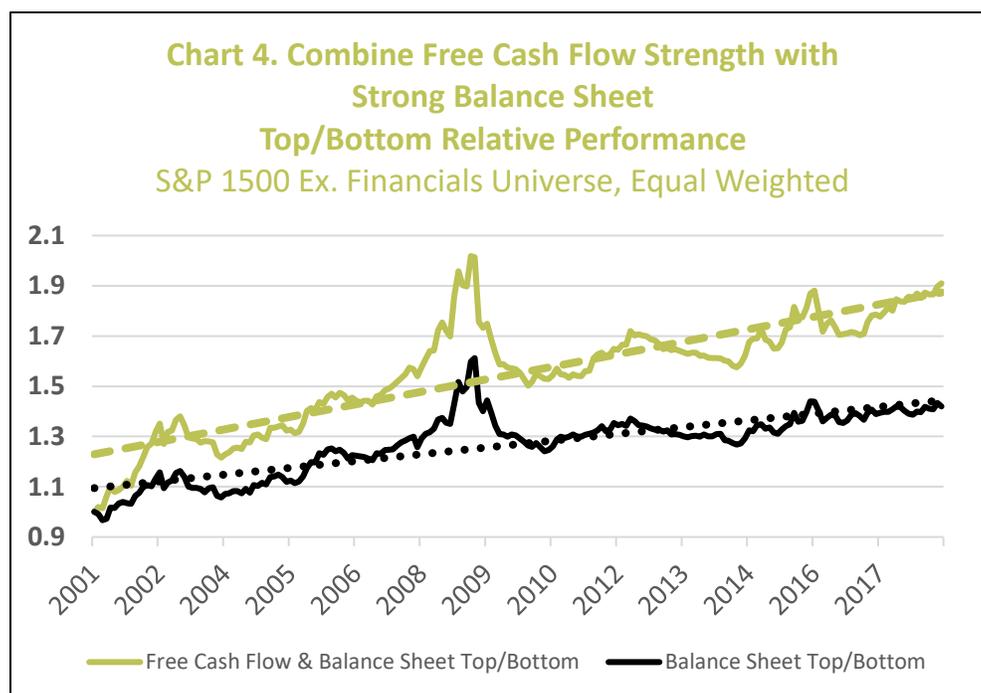
To see if the strong balance sheet evaluation approach we proposed works after taking sector considerations into account, we compare the performance of both the magnitude of change and the trend of leverage across FactSet’s Industry Classification sectors. Table 2 shows that we find the leverage approach is not dependent on membership in any one sector.

**Table 2. Sector Portfolio Performance – Degree & Trend of Leverage**

Sector	Annualized Return			Sharpe Ratio		
	Top	Bottom	Top - Bottom	Top	Bottom	Top - Bottom
Business Services	15.04%	8.39%	6.65%	0.65	0.45	0.20
Consumer Cyclical	9.80%	6.50%	3.30%	0.42	0.22	0.19
Consumer Non-Cyclicals	11.82%	9.21%	2.61%	0.79	0.53	0.26
Consumer Services	9.80%	10.66%	-0.86%	0.49	0.37	0.11
Energy	11.92%	0.48%	11.44%	0.44	0.01	0.42
Healthcare	16.57%	12.49%	4.08%	1.02	0.71	0.31
Industrials	12.46%	10.50%	1.96%	0.60	0.45	0.15
Non-Energy Materials	9.17%	12.38%	-3.21%	0.41	0.52	-0.11
Technology	9.21%	9.85%	-0.64%	0.37	0.34	0.02
Telecommunications	5.41%	-2.66%	8.07%	0.23	-0.09	0.33
Utilities	9.88%	9.80%	0.08%	0.74	0.57	0.17

## Even Better

Finally, we examine the performance of combining strong free cash flows with strong balance sheets to see how that might help sort investment returns. Chart 4 contrasts the result of using just the leverage factor to using a combination of leverage and free cash flow.



## Conclusion

As many market analysts predict a rising interest rate environment in the future, we believe investors should pay attention to the impact that leverage can have on a company’s prospective performance. Our research shows that over an extended period, companies with strong balance sheets have historically outperformed those peers that are saddled with relatively higher amounts of debt, especially during periods of financial stress. For even more compelling performance, investors should seek out companies that maintain both strong free cash flow and strong balance sheets.

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Free Cash Flow (FCF) represents the cash that a company is able to generate after accounting for capital expenditures.

The S&P Composite 1500 combines three leading indices, the S&P 500, the S&P Mid-Cap 400, and the S&P Small-Cap 600 to cover approximately 90% of the U.S. market capitalization.

Standard Deviation is a measure that is used to quantify the amount of variation or dispersion of a set of data values.

Downside deviation is a measure of downside risk that focuses on returns that fall below a minimum threshold or minimum acceptable return (MAR).

The Sortino ratio improves upon the Sharpe ratio by isolating downside volatility from total volatility by dividing excess return by the downside deviation.

The information ratio (IR) is a measure of portfolio returns above the returns of a benchmark, usually an index, to the volatility of those returns.

Sharpe Ratio is a measure that indicates the average return minus the risk-free return divided by the standard deviation of return on an investment.