Relative Strength, Sector Weighting, and Sector Returns: A Portfolio Analysis for the Period 2008-2012

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Study Objectives
Evaluate relative strength analysis as a viable method for sector portfolio weighting
Develop a weighting model that favors undervalued sectors

Study Design
We analyzed a data set from the period 2008-2012. In our data set we used the sector spiders of the 10 S&P 500 sectors. Each sector spider is equivalent to one stock in our portfolio. Using these 10 spiders, we took our investment of $1,000,000 and allocated the funds amongst these sectors using relative strength analysis. We implemented a buy and hold strategy over the 5 year period and compared our portfolio to our benchmark, the S&P 500 index. We split our results up into 5 periods based on the performance of the markets.

Portfolio Weighting Model
RS_{it} = P_{it}/P_{st}
I/RS_{it} = 1/(P_{it}/P_{st})
W_{it} = (I/RS_{it})/(Sum 1/RS)
DV_{it} = W_{it} * 1,000,000
Shares_{it} = DV_{it}/P_{it}
PV_{it} = Shares_{it} * P_{it}
Return_{it} = (PV_{it}/PV_{it-1})-1

Where:
RS_{it} = Relative Strength of Sector i(t)
P_{it} = Price of Sector i(t)
P_{st} = Price of S+P
I/RS_{it} = Inverse of S+P
W_{it} = Portfolio Weight Assigned to Sector i(t)
DV_{it} = Dollar Investment in Sector i(t)
PV_{it} = Actual Value of Portfolio
Shares_{it} = Number of shares held in sector i(t)
Return_{it} = Percent change in value of sector i(t)
T = Time

Conclusions
I/RS Model generated Alpha of 10.57% vs. S+P
Outperformance significant
I/RS model outperformed S +P in downswing period of 2008
Outperformed S+P in the rebound 09
Outperformed in the upswing period in 10
Underperformed in the trading range period 11
Outperformed in the trading range period 12