Establishing Sector Weights for the UD Flyer Fund: A Quantitative Approach

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Macroeconomic Activity and Sector/Market Price Movements 2001-2012

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Background

In essence, the hypothesis that I am testing is that sector price movements vary directly with the expansion and contraction of economic activity. As a measure of economic activity I chose to use the Chicago Fed’s National Activity Index (CFNAI). CFNAI is a weighted average of 85 macro-economic indicators and is considered by business economists to be a reliable indicator of U.S economic expansions and contractions. I will use the S&P market/sector ETFs to obtain market/sector price movements.

Study Objective

Determine the Co-variation between S&P Sector Prices and Chicago Fed National Activity Index (CFNAI)

Model Specification

\[\text{SPY}_t = a + b \times (\text{CFNAI}_t)\]
\[\text{Si}_t = a + b \times (\text{CFNAI}_t)\]
\[\text{SPY}_t = a + b \times (\text{CFNAI}_{t-12})\]
\[\text{Si}_t = a + b \times (\text{CFNAI}_{t-12})\]

Where
- \(\text{SPY}\) = S&P 500 ETF
- \(\text{Si}\) = Sector
- CFNAI = Chicago Fed National Activity Index
- \(a\) = Intercept
- \(b\) = Slope Coefficient
- \(t\) = Time in Months
- \(t - 12\) = 12 month lag

Research Approach

- Univariate Regression Analysis
- Time Periods Analyzed
  1.) 2001-2012
  2.) 2009-2012
- Hypothesis: \(b > 0\)

Conclusions

- SPY’s slope coefficient had the right sign and was statistically significant for all three regressions.
- For the 2001-2012 period 6 out of the 10 sectors had positive slope coefficients that were statically significant.
- For the 2009-2012 period all sector slope coefficients were positive and statistically significant.
- For the 2001-2012 12 month lag model 6 out of 10 sector slope coefficients were positive and statistically significant.
- Regression results support my hypothesis of a positive correlation between CFNAI and market/sector price movements.