Large Cap Stock Price Movements: A Study in Long Term Momentum

By: Sam Girouard and Ben Rudman
Advisors: Dr. Robert Dean and Dr. Trevor Collier

Study Objective: Develop a long term momentum model for stock price movement based on revenue and net income. We took large cap stocks from five different SIC codes including 1311, 1381, 1389, 2080, and 2082 and compared a ten year annualized compound growth rate to compound growth rates for revenue and net income.

Research Approach:

Cross sectional univariate regression analysis

Time Period:

2004-2013

Industry Groups Analyzed:

1311 – Crude Petroleum & Natural Gas
1381 – Drilling Oil & Gas Wells
1389 – Oil & Gas Field Services, NEC
2080 – Beverages
2082 – Malt Beverages

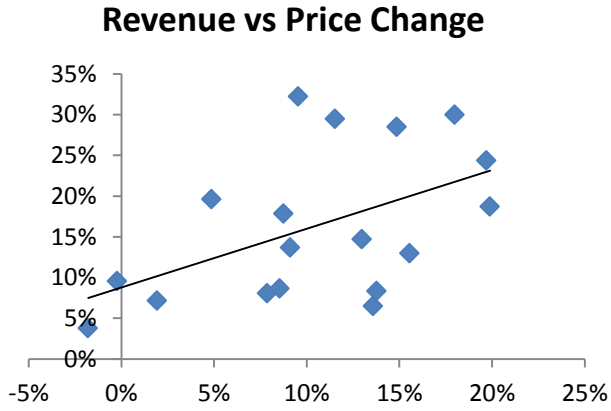
Model Specification:

$CAGP_{it} = a + b(CAGR_{it})$
$CAGP_{it} = a + b(CAGI_{it})$

where:
a, b = intercept, slope coefficient
CAGP = Compound Annual Growth Rate in Price
CAGR = Compound Annual Growth Rate in Revenue
CAGI = Compound Annual Growth Rate in Income
i = i^{th} stock
t = time in years
Hypothesis: Growth rates in price co-varies directly with revenue and income: b > 0

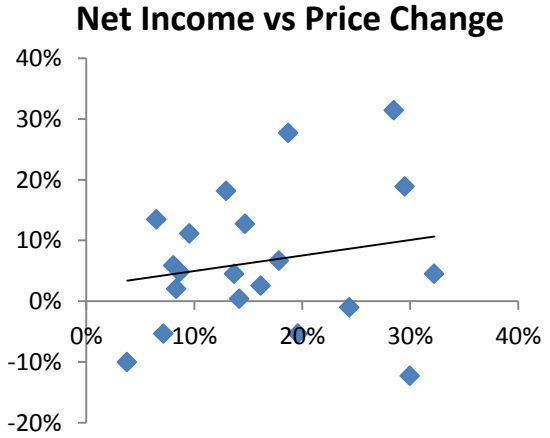
Revenue Regression

Intercept(a):	0.0878
Slope(b):	0.7219
T-Stat:	2.3063
R^2:	0.2495



Net Income Regression

Intercept(a):	0.0239
Slope(b):	0.2567
T-Stat:	0.8409
R^2:	0.0378



Conclusion:

- Revenue and price covary directly.
- Hypothesis not proved for price and income.
- Although r-square is low for the revenue regression model, the slope coefficient is robust with .7 of 1% increase in the CAGP on an annual basis.
- More sectors and stocks needed to remove small sample bias.