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## **COST OF CAPITAL, RETURNS AND LEVERAGE: EMPIRICAL ANALYSIS OF S&P 500**

### **Abstract:**

#### Purpose

The theoretical construct of the weighted average cost of capital (WACC), which uses an expected equity return, suggests that lower WACC, often facilitated by use of debt, should result in commensurate returns to shareholders, and higher shareholder value, that is if management is adept at investing in projects yielding returns at or above the WACC. In other words, finding good projects ought to be made easier by a lower hurdle rate on investment, thus translating into returns comparable to or above the WACC, and higher valuations. Is this actually the case? Does the relation between WACC, actual returns, and financial leverage also hold, as predicted, where higher leverage should result in lower WACC, and higher actual returns?

#### Methodology

This brief study looks at performance and valuation (total equity market returns to shareholders, and market values, on an annual basis) of S&P 500 companies over a recent ten year period (2006-2015), versus valuations implied by price to book ratios and WACC based on firm leverage. We compare theoretical valuations with the actual, and note variations year on year, but greater similarity over a longer time frame. Regression analysis is performed on these shareholder returns and valuations versus equity cost of these companies as computed using the Capital Asset Pricing Model (CAPM) and Bloomberg data. Another regression is run on WACC versus financial leverage (net debt to market capitalisation) for the same sample.

#### Findings

The study finds mixed evidence that expected return on equity, regarded as a benchmark for shareholder returns, was commensurate with actual returns and valuations on average over the time frame. R squared is low, but the analysis has significance. While the S&P 500 earned an annual total shareholder return of 11.8% over the period. and average cost of equity was 10.8%, there is a negative relation between values predicted by WACC and the actual ones.

#### Implications

This result leads us to look for other explanations as to why this should be. These include management capabilities, target capital structure and time horizon. We make suggestions for further research, encompassing different and wider samples.

### **Keywords:**

cost of capital, leverage, corporate finance

**JEL Classification:** G30, G32, G39