

# Risk and return, portfolio diversification and the capital asset pricing model; t...

[Finance](#)



Introduction Cost of equity is considered as one of the most important indicators of the return earned by any investor on his or her shareholding. Estimation of cost of equity therefore provides an estimate for the expected rate of return by incorporating all the risks which may be associated with a particular stock.

Capital asset pricing model is one of the leading models for calculating cost of equity by taking into consideration the concept of risk and return. It takes into account the risk free rate of return as well as market risk premium along with beta to measure the cost of equity. (Valuebasedmanagement. net, 2011)

This paper will therefore provide computation and will also discuss the cost of equity of Starbucks besides computing the cost of equity for Nestle and McDonalds to make a comparison. Further, cost of equity will also be calculated by using dividend discount model as well as arbitrage pricing theory.

#### 1) Calculations

Name of the Company

STARBUCKS

Nestle

McDonald

Beta Value

1. 261

0. 582

0. 363

US Treasury (RF)

3%

3%

3%

RM-RF

7%

7%

7%

Cost of Equity

11. 82%

7. 06%

5. 52%

Cost of equity for Starbucks is calculated in following manner:

$$R_e = r_f + b (r_m - r_f)$$

$$= 3\% + 1.26 (7\%)$$

$$= 11.82\%$$

Is this cost of equity higher or lower than you expected?

The above calculations show that the overall cost of equity for Starbucks is 11.82% based on the data provided. This value is higher than the cost of equity of an average firm on the S&P 500 index thus indicating that the overall risk profile of Starbucks may be higher than an average firm. It may be due to the fact that the investors, considering the dynamics of the industry and particular performance of the firm in the industry, may not be willing to put their bets on Starbucks. The cost of equity should have been lower than an average firm on the S&P considering the overall market strength of Starbucks and brand power.

## Betas of McDonald and Nestle

Name of the Company

STARBUCKS

Nestle

McDonald

Beta Value

1. 264

0. 585

0. 366

US Treasury (RF)

3%

3%

3%

RM-RF

7%

7%

7%

Cost of Equity

11. 82%

7. 06%

5. 52%

Cost of equity- Nestle

 $Re = rf + b (rm-rf)$  $= 3\% + 0. 58(7\%)$  $= 7. 06\%$

Cost of equity- McDonalds

$$R_e = r_f + b (r_m - r_f)$$

$$= 3\% + 0.36 (7\%)$$

$$= 5.52\%$$

The above comparison between McDonalds, Nestle as well as Starbucks shows that the return on equity for other two firms is lower as compared to Starbucks. The lower cost of equity of these firms suggests that these firms have relatively stable risk profile due to their stronger financial performance as well as fundamentals. What is also important to note that these firms are diversified in nature whereas Starbucks is only relatively focused on the sale of coffee only? It is therefore of no surprise that the cost of equity of such firms is relatively lower than Starbucks

4)

Dividend discount model is another important model to find out the fair values of the stock based on the dividends. (Investopedia. com, 2011 ). This model considers dividends as the future cash flows to be received and accordingly the price of the stock is calculated by using following formula:

$$P_0 = D_1 / (R - G)$$

$D_1$  is the future dividend whereas  $R$  is the required rate of return and  $G$  is the growth rate. By manipulating this formula, the required rate of return can be obtained in following manner:

$$R = D_1/P_0 + G$$

Thus the required rate of return is calculated by dividing future dividends by the current price and adding the resulting figure to the historical growth rates of the dividends.

Arbitrage pricing model uses the factor structure and therefore the expected rate of return and factor sensitiveness show following relationship

$$E(r) = r_f + b_1RP_1 + b_2RP_2 + \dots$$

Thus the expected rate of return is obtained by considering a linear combination of different macroeconomic factors combined with the factor sensitivities of each factor specific beta coefficient. (Goetzmann, 1996)

### Conclusion

Cost of equity of the firms in the same industry can be different based on the particular risk factors associated with each stock. There are three important models which can be used to calculate the cost of equity i. e. capital asset pricing model, dividend discount model as well as the arbitrage pricing model.

### Bibliography

Goetzmann, W. (1996). The arbitrage pricing theory. Retrieved August 8, 2011, from Yale School of Management: <http://viking.som.yale.edu/will/finman540/classnotes/class6.html>

Investopedia.com . (n. d.). The Gordon growth model. Retrieved August 8, 2011, from 2011: <http://www.investopedia.com/terms/g/gordongrowthmodel.asp>

Valuebasedmanagement.net. (2011). Capital asset pricing model (CAPM). Retrieved August 8, 2011, from [http://www.valuebasedmanagement.net/methods\\_capm.html](http://www.valuebasedmanagement.net/methods_capm.html)