Free case study on weighted average cost of capital of target corporation (tgt)

In our calculations we will use Annual Report for the fiscal year ended February 2, 2013 (Form 10-K). In order to evaluate WACC, we need to analyze the structure of Target's capital, mainly its debt, leases, common and preferred stock.

Capital Structure

The structure of Long-term debt is provided in Table 1:

The structure of Capital and Operating Leases is provided in Table 2:

According to the Annual Report, Target Corporation has 645, 294, 423 shares issued and outstanding at February 2, 2013. Company has issued no preferred stock.

Marginal Cost of Debt

According to finance. yahoo. com, yield for 10-year corporate bonds with AA rating is 3. 78%:

Thus, we may claim that marginal cost of debt (Kd) for Target Corporation is 0. 0378 or 3. 78%.

Marginal Cost of Equity

Firstly, we will calculate cost of equity using Risk Premium Method. Under this method, cost of equity is estimated as cost of debt + risk premium (Ke= Kd+p). Kd= 0. 0378. p is determined by company's recent earnings. Income Statement shows that Target has been receiving stable profit at around $3 billion for the past 3 years. Hence, we may assume that risk of Target's default is rather low, and p shall be lower than the midlle of the range 0. 02 – 0. 1. Let's assume that risk premium for Target is 0. 03.

Thus, Ke= 0. 0378 + 0. 03 = 0. 0678.

Secondly, let's apply Gordon Model to the estimation of Ke. According to this model, ke= dps(1+g)/p + g, where dps – dividend per share ($1. 38 for TGT), p – current common stock price ($63. 4), and g – estimated growth rate. Growth estimates are provided by yahoo. finance. com:

Thus, we may assume that average growth rate during next 5 years will be g = 0. 107. Then, Ke= 1. 38*(1+0. 107)/(63. 4+0. 107)= 0. 024;

Finally, let's apply CAPM model to the estimation of Cost of Equity:

Ke = rf + β(km – rf), where rf – rate of risk free bonds (US treasury bonds), β – the degree of volatility of company's stock, and km - rf – market risk premium, which equals 0. 057.

As long as we are using WACC to estimate long-term projects, let's check out the yield of 10-year US Treasury bonds for rf, which is 0. 0293.

Coefficient β for TGT equals 0. 6:

Now we can calculate Ke using Capital Asset Pricing Model:

Ke= 0. 0293 + 0. 6*0. 057 = 0. 0635

Since CAPM estimation and Risk Premium method produced the approximate cost of equity at around 0. 065, we will assume that it is the actual value of Ke for Target Corporation.

Marginal Cost of Leasing

Value of Kl is based Kd and is calculated using a formula kL = kd(1-t) + ρL, where t is a corporate tax rate (34. 9% for TGT) and p – is a risk premium

(historically at around 0. 015). Consequently, KL = 0. 0378(1-0. 349)+0. 015 = 0. 039

Value of Leases may be obtained from the Annual Report too:

Considering all the above mentioned information, we may now calculate the total corporate value of Target Corporation, which equals to the sum of Debt, Leases and Shareholders Equity. Thus, overall value (V) = 18, 143 + 1, 962 + 34, 846 = $54, 951 million.

Finally, we may calculate the WACC for Target Corporation using the formula:

WACC= Ke(E/V) + Kd(1 – t)(D/V) + KL(L/V),

Where Kd= 0. 0378; Ke= 0. 065; KL= 0. 039; V= 54, 951; D = 18, 143; E= 34, 846; L= 1, 962; t = 0. 349.

WACC= 0. 065*(34, 846/54, 951)+ 0. 0378*(1-0. 349)*(18, 143/54, 951)+0. 039(1, 962/54951) = 0. 05074.

References

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