

Cost of equity – target corp.



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The cost of equity is the return required by the shareholders. The cost of equity is usually high than most other stocks because they are high-risk investments. This means that it is a high return high-risk investment.

In a diversified portfolio, there is an element of risk that cannot be eliminated and is called systematic measured using the beta coefficient.

Securities with high betas tend to have high returns because the security return is affected by the level of beta. High beta means high risk and consequently high return and vice versa is true.

The beta of the market is 1.0. Securities with betas equal to 1.0 move at the same level as marketable securities. Securities with betas > 1.0 fluctuate at a lower rate than market securities while those with < 1.0 fluctuate at a lower rate than the market securities.

Target's beta of 1.1 from <http://finance.yahoo.com/q/ks?TGT> indicates that it is a relatively stable stock i. e. moves at a pace slightly above the market securities.

Yield to maturity is the total return of the bond if the bondholder opts not to sell the bond before its maturity. It is the IRR of the bond.

The formula of calculating YTM

YTM = $\frac{\text{interest} + \text{annual price change}}{(\text{Market price} + \text{coupon price})/2}$

Where: interest = coupon rate x coupon price

Annual price change = market price - coupon price

Year to maturity

The current yield of 1 year T. bond is 4.2 in October from <http://www.foorecasts.org/1yearT.htm>

The beta of target = 1.1

Risk free rate (1 year government bond) = 4.2

Return of market = risk free rate + risk premium.

$R_m = R_f + R_{\text{premium}}$

$= 7\% + 4.2\% = 11.2\%$

The return equity is calculated using CAMP

$\text{CAPM} = R_j = B_f (R_m - R_f)$

$B_j = 1.1$

$R_m - R_f = 7\%$

$R_f = 4.2\%$

$R_j = 4.2 + 1.1(7)$

$= 11.9\%$

From the above calculation the return of equity (cost) is 11.9%. This shows that the lower the beta the lower the returns of stock.

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The risk premium of Target Corp. is 7%. The risk premium is calculated as $(RM-RF)$

The risk premium is the extra return on the security demanded by the investors over and above the risk-free rate because of investing in risky securities.

Some of the determinants of the beta of a company include the nature of the business that whether the company is a single-sector or a multi-sector company. Single sector companies usually have high betas as compared to multi-sector companies. This is because, in a multi-sector company, losses in one sector are compensated by high profits in another sector that the company has invested in.

The type of business also affects the company's beta. In companies where customers affect the selling price of the company's products by for example delaying payments, the betas are usually high.

The level of fixed costs in the cost structure of the company also affects the beta. High percentages of fixed costs in the cost structure of the company lead to high beta. This is called operating leverage. It shows any fluctuation in EBIT due to changes in sales.

The level of debt (financial leverage) in the company's capital structure is another factor affecting the company's beta. The interest payments will affect the net income and earning per share if the profits are high or low.

Target Corporation has a debt of \$ 12. 31B from its most recent quarter. The debt to equity ratio is 0. 772 according to its most recent quarter from <http://finance.yahoo.com/q/kr?s=TGT>

The relationship of the equity beta (β_E) and the asset beta (β_A) is depicted in the following equation.

$$\beta_E = \beta_A (1 + (1-T) (D/E))$$

Where β_E = equity beta = 1. 1

β_A assets beta = systematic risk of the operating performance of the company

T = tax rate = 34%

D/E = 0. 772 from the most recent quarter

Therefore

$$\beta_A = \beta_E$$

$$(1 + (1-T) (D/E))$$

$$= 1. 1$$

$$(1 + (1-0. 34) (0. 772))$$

$$= 0. 7287$$

The assets beta is different from the equity beta. This is largely due to the fact that the company has a huge debt in its capital structure.

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As seen earlier, it is obvious that the amount of debt in the company's capital structure affects the beta.

The interest payments will most affect the company's profits if the profits are declining.

This instability in the profits of the company affects the risk of the company's stocks.

Reference:

1. Goetz Mann N W (2007) An introduction to investment theory Yale School of Management retrieved on 21/11/2007 from <http://viking.som.yale.edu>
2. <http://finance.yahoo.com/q/kr?s=TGT>
3. <http://www.foorecasts.org/1yearT.htm>