

10.7: Estimating the Cost of Common Stock

Common stock gets a little trickier. There is not one correct formula for estimating the cost of common stock financing. Instead there are three. First, we can go back to the constant growth pricing model and solve for k_s . This will give us the following formula:

$$k_s = \frac{D_1}{P_0} + g = \frac{D_0(1+g)}{P_0} + g$$

Where

- k_s represents the cost of common stock financing
- D_1 represents the forecasted dividend next year
- D_0 represents the current dividend
- P_0 represents the current price of the common stock
- g represents the forecasted constant growth rate

Note that the two formulas are essentially the same. D_1 equals $D_0(1+g)$. We use the first version if we are given D_1 in the problem and we use the 2 nd version if we are given D_0 in the problem. Be careful to read the problem carefully and choose the right version for the specific dividend provided.

Because the above formula is derived from the constant growth model, it does not work as well in non-constant growth situations. It also only works for firms that pay dividends. Therefore, while it can be useful in some situations (dividend paying firms with stable growth rates), it would be worthwhile to think about other ways to estimate the required return our common stockholders are charging to provide capital.

One alternative approach is to refer to the Security Market Line. We introduced this in Chapter Seven as a way to estimate the required return associated with common stock. This allows us to estimate the cost of stock financing using the following formula:

$$k_s = k_{RF} + \beta (\bar{k}_m - k_{RF})$$

Where

- k_s represents the cost of common stock financing
- k_{RF} is the risk-free rate of interest (often approximated by the yield on 10 -year Treasury Bond)
- β is the beta for our firm's stock
- \bar{k}_m is the expected return on the market

However, while this does not require firms to pay dividends or have stable growth rates, there is some concern as to how well the security market line holds up in practice. Therefore, like the dividend growth model, the SML approach is not perfect. Is there another way we can estimate the cost of common stock financing?

A less theoretical, but still valid, model can also be used to estimate what investors are demanding as appropriate compensation for providing equity capital to the firm. This model simply assumes that stocks are riskier than bonds, so adds a risk premium to the Yield-to-Maturity on our bonds. The exact risk premium to be added is open for debate and will fluctuate based on many factors (economy, investor demographics, etc), however a range of 3% to 7% is probably most appropriate. Thus, we get the following formula

$$k_s = YTM + \text{Risk Premium}$$

Where

- k_s represents the cost of common stock financing
- YTM represents the Yield-To-Maturity on our firm's debt financing
- Risk Premium represents the risk premium on stocks over bonds

This model is also flawed. Specifically, it is not clear exactly what the risk premium for stocks should be. Second, firms that don't use long-term debt financing (and there are quite a few firms that do not use long-term debt financing) won't have bonds outstanding for us to estimate their YTM. Therefore, we have to guess at what their YTM would be (which would introduce more error) or skip this model.

The best approach when estimating the cost of equity financing is to estimate it under all three equations (assuming we can), then take an average of the three methods. However, we may run into a situation where one of the methods produces an answer way out of line with the other two. In this case, it is probably best to eliminate the outlier and only use the two "more reasonable" answers. Also, in some instances, we may not be able to use one of the three cost of equity approaches. In these cases, we just rely on an average of the one's we can estimate.

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