



# The cost of capital

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## 1. Introduction

The **cost of capital** is the company's cost of using funds provided by creditors and shareholders. A company's cost of capital is the cost of its long-term sources of funds: debt, preferred equity, and common equity. And the cost of each source reflects the risk of the assets the company invests in. A company that invests in assets having little risk in producing income will be able to bear lower costs of capital than a company that invests in assets having a higher risk of producing income. For example, a discount retail store has much less risk than an oil drilling company. Moreover, the cost of each source of funds reflects the hierarchy of the risk associated with its seniority over the other sources. For a given company, the cost of funds raised through debt is less than the cost of funds from preferred stock that, in turn, is less than the cost of funds from common stock. Why? Because creditors have a senior claim over assets and income relative to preferred shareholders, who have seniority over common shareholders.

If there are difficulties in meeting obligations, the creditors receive their promised interest and principal before the preferred shareholders who, in turn, receive their promised dividends before the common shareholders. If the company is liquidated, the funds from the sale of its assets are distributed first to debt-holders, then to preferred shareholders, and then to common shareholders (if any funds are left). An example of the possibility of insufficient funds to pay claimants is the case of Eastern Airlines, which declared bankruptcy in 1991, is shown in Exhibit 1. Eastern Airlines' secured creditors had **collateral** (i.e., security) sufficient to pay their claims; all other claimants did not receive their full claim on the assets of the company because there simply were insufficient funds available at the time the company liquidated.

**Exhibit 1 Case in point: The satisfaction of claims in the Eastern Airlines' bankruptcy and liquidation**

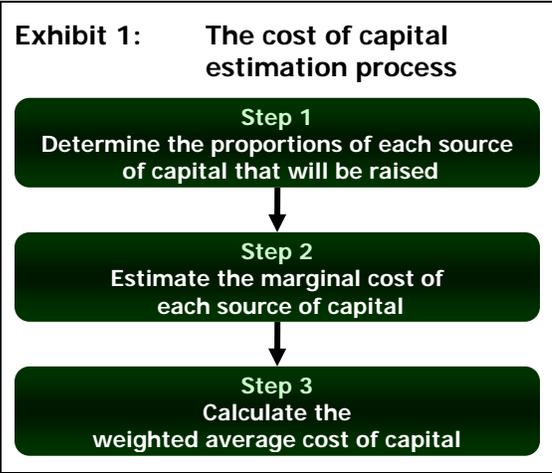
Claim type	In millions	
	Claim amount	Payout
Secured debt with sufficient collateral	\$747.1	\$747.1
Secured debt with insufficient collateral	\$453.7	\$234.2
Accrued interest on secured debt	\$308.2	\$174.4
Unsecured debt	\$1,575.0	\$175.8
Preferred stock	350.8	\$0.0
Common stock	\$820.0	\$0.0

Source: Lawrence A. Weiss and Karen H. Wruck, "Information problems, conflicts of interest, and asset stripping: Chapter 11's failure in the case of Eastern Airlines," *Journal of Financial Economics*, Vol. 48, 1998, p 86.

For a given company, debt is less risky than preferred stock, which is less risky than common stock. Therefore, preferred shareholders require a greater return than the creditors and common shareholders require a greater return than preferred shareholders.

Estimating the cost of capital requires us to first determine the cost of each source of capital we expect the company to use, along with the relative amounts of each source of capital we expect the company to raise. Then we can determine the marginal cost of raising additional capital. We can do this in three steps, as shown in Exhibit 1.

We look at each step in this reading. We first discuss how to determine the proportion of each source of capital to be used in our calculations. Then we calculate the cost of each source. The proportions of each source must be determined before calculating the cost of each source since the proportions may affect the costs of the sources of capital. We then put together the cost and proportions of each source to calculate the company's marginal cost of capital. We also demonstrate the calculations of the marginal cost of capital for an actual company, showing just how much judgment and how many assumptions go into calculating the cost of capital. That is, we show that it's an estimate.



The cost of capital for a company is the cost of raising an additional dollar of capital; therefore this cost is the company's **marginal cost capital**. Suppose that a company raises capital in the following proportions: debt 40 percent, preferred stock 10 percent, and common stock 50 percent. This means an additional dollar of capital is comprised of 40¢ of debt, 10¢ of preferred stock, and 50¢ of common stock.

## 2. Determining the proportions of each source of capital that will be raised

Our goal as financial managers is to estimate the optimum proportions for our company to issue new capital -- not just in the next period, but well beyond. If we assume that the company maintains the same capital structure -- the mix of debt, preferred stock, and common stock -- throughout time, our task is simple. We just figure out the proportions of capital the company has at present. If we look at the company's balance sheet, we can calculate the book value of its debt, its preferred stock, and its common stock. With these three book values, we can calculate the proportion of debt, preferred stock, and common stock that the company has presently. We could even look at these proportions over time to get a better idea of the typical mix of debt, preferred stock and common stock.

But are book values going to tell us what we want to know? Probably not. What we are trying to determine is the mix of capital that the company considers appropriate. It is reasonable to assume that the financial manager recognizes that the book values of capital are historical measures and looks instead at the market values of capital. Therefore, we must obtain the market value of debt, preferred stock, and common stock.

If the securities represented in a company's capital are publicly-traded -- that is, listed on exchanges or traded in the over-the-counter market -- we can obtain market values. If some capital is privately placed, such as an entire debt issue that was bought by an insurance company or not actively traded, our job is tougher but not impossible. For example, if we know the interest, maturity value, and maturity of a bond that is not traded and the yield on similar risk bonds, we can get a rough estimate of the market value of that bond even though it is not traded.

Once we determine the market value of debt, preferred stock, and common stock, we calculate the sum of the market values of each, and then figure out what proportion of this sum each source of capital represents. But the mix of debt, preferred stock, and common stock that a company has now may not be the mix it intends to use in the future. So while we may use the present capital structure as an approximation of the future, we really are interested in the company's analysis and resulting decision regarding its capital structure in the future.

## 3. Estimating the marginal cost of each source of capital

### A. The cost of debt

The **cost of debt** is the cost associated with raising one more dollar by issuing debt. Suppose you borrow one dollar and promise to repay it in one year, plus pay \$0.10 to compensate the lender for the use of her money. Since Congress allows you to deduct from your income the interest you paid, how much does this dollar of debt really cost you? It depends on your marginal tax rate -- the tax rate on your next dollar of taxable income. Why the marginal tax rate? Because we are interested in seeing how the interest deduction changes your tax bill. We compare taxes with and without the interest deduction to demonstrate this.

Suppose that before considering interest expense you have \$2 of taxable income subject to a tax rate of 40 percent. Your taxes are \$0.80. Now suppose your interest expense reduces your taxable income by \$0.10, reducing your taxes from \$2.00 x 40 percent = \$0.80 to \$1.90 x 40 percent = \$0.76. By deducting the \$0.10 interest expense, you have reduced your tax bill by \$0.04. You pay out the \$0.10 and get a benefit of \$0.04. In effect, the cost of your debt is not \$0.10, but \$0.06 -- \$0.04 is the government's subsidy of your debt financing. We can generalize this benefit from the tax deductibility of interest. Let  $r_d$  represent the cost of debt per year before considering the tax deductibility of interest,  $r_d^*$  represent the cost of debt after considering tax deductibility of interest, and  $t$  be the marginal tax rate. The effective cost of debt for a year is:

$$r_d^* = r_d (1 - t)$$

Using our example,  $r_d = \frac{\$0.10}{\$1.00} = 10$  percent and  $t = 40$  percent and the effective cost of debt is:

$$r_d^* = 0.10 (1 - 0.40) = 0.06 \text{ or } 6 \text{ percent per year.}$$

Creditors receive 10 percent, but it only costs the company 6 percent.

In our example, the required rate of return is easy to figure out: we borrow \$1, repay \$1.10, so your lender's required rate of return of 10 percent per year. But your cost of debt capital is 6 percent per year, less than the required rate of return, thanks to Congress. Most debt financing is not as straight-forward, requiring us to figure out the yield on the debt -- the lender's required rate of return -- given information about interest payments and maturity value.

#### Example 1: The cost of debt

##### Problem

Suppose the Plum Computer Company can issue debt with a yield of 6 percent. If Plum's marginal tax rate is 40 percent, what is its cost of debt?

##### Solution

$$r_d = 0.06 (1 - 0.40) = \mathbf{0.0360 \text{ or } 3.6 \text{ percent}}$$

#### Example 2: Cost of debt

##### Problem

Suppose the ABC Company can issue bonds with a face value of \$1,000, a coupon rate of 5 percent (paid semi-annually), and 10 years to maturity at \$980 per bond. If the ABC Company's marginal tax rate is 30 percent, what is its cost of debt?

##### Solution

Given: FV = \$1,000; PV = \$980; N = 20; PMT = \$25

$$r_d = 2.6299\% \times 2 = 5.2598\%$$

$$r_d^* = 5.2598\% (1 - 0.30) = \mathbf{3.6819\%}$$

## B. The cost of preferred equity

The **cost of preferred equity** is the cost associated with raising one more dollar of capital by issuing shares of preferred stock. Preferred stock is a perpetual security -- it never matures. Consider the typical preferred stock with a fixed dividend rate, where the dividend is expressed as a percentage of the par value of a share.

The value of preferred equity is the present value of all future dividends to be received by the investor. If a share of preferred stock has a 5 percent dividend (based on a \$100 par value) paid at the end of each year, the value of the stock today is the present value of the stream of \$5's forever:

$$\text{Value of preferred equity} = P = \$5 / \text{cost of preferred stock}$$

#### Example 3: The cost of preferred equity

##### Problem

Suppose the XYZ Company is advised that if it issues preferred stock with a fixed dividend of \$4 a share, it will be able to sell these shares at \$50 per share. What is the cost of preferred stock to XYZ?

##### Solution

$$r_p = \$4/\$50 = \mathbf{8\%}$$

If the cost of preferred equity is 10 percent, the price a share of stock is worth  $\$5/0.10 = \$50$ . Therefore,

$$\text{Cost of preferred equity} = r_p = \frac{\text{Dividend}}{\text{Price per share}} = \frac{D}{P_0}$$

Because dividends paid on preferred stock are not deductible as an expense for the issuer's tax purposes, the cost of preferred stock is not adjusted for taxes -- dividends paid on this stock are paid out of after-tax dollars.

## C. The cost of common equity

The **cost of common equity** is the cost of raising one more dollar of common equity capital, either internally -- from earnings retained in the company -- or externally -- by issuing new shares of common stock. There are costs associated with both internally and externally generated capital.

How does internally generated capital have a cost? As a company generates funds, some portion is used to pay off creditors and preferred shareholders. The remaining funds are owned by the common shareholders. The company may either retain these funds (investing in assets) or pay them out to the shareholders in the form of cash dividends. Shareholders will require their company to use retained earnings to generate a return that is at least as large as the return they could have generated for themselves if they had received as dividends the amount of funds represented in the retained earnings.

Retained funds are not a free source of capital. There is a cost. The cost of internal equity funds (i.e., retained earnings) is the opportunity cost of funds of the company's shareholders. This opportunity cost is what shareholders could earn on these funds for the same level of risk. The only difference between the costs of internally and externally generated funds is the cost of issuing new common stock. The cost of internally generated funds is the opportunity cost of those funds -- what shareholders could have earned on these funds. But the cost of externally generated funds (that is, funds from selling new shares of stock) includes both the sum of the opportunity cost and cost of issuing the new stock.

The cost of issuing common stock is difficult to estimate because of the nature of the cash flow streams to common shareholders. Common shareholders receive their return (on their investment in the stock) in the form of dividends and the change in the price of the shares they own. The dividend stream is not fixed, as in the case of preferred stock. How often and how much is paid as dividends is at the discretion of the board of directors. Therefore, this stream is unknown so it is difficult to determine its value.

The change in the price of shares is also difficult to estimate; the price of the stock at any future point in time is influenced by investors' expectations of cash flows farther into the future beyond that point. Nevertheless, there are two methods commonly used to estimate the cost of common stock: the **dividend valuation model** and the **capital asset pricing model**. Each method relies on different assumptions regarding the cost of equity; each produces different estimates of the cost of common equity.

### Cost of common equity using the dividend valuation model

The **dividend valuation model (DVM)** states that the price of a share of stock is the present value of all its future cash dividends, where the future dividends are discounted at the required rate of return on equity,  $r$ . If these dividends are constant forever (similar to the dividends of preferred stock, we just covered), the cost of common stock is derived from the value of a perpetuity. However, common stock dividends do not usually remain constant. It's typical for dividends to grow at a constant rate. Using the dividend valuation model,

$$P_0 = D_1 (r_e - g)$$

where  $D_1$  is next period's dividends,  $g$  is the growth rate of dividends per year, and  $P$  is the current stock price per share. Rearranging this equation to solve instead for  $r_e$ ,

$$r_e = \frac{D_1}{P_0} + g$$

we see that the cost of common equity is the sum of next period's dividend yield,  $D_1/P$ , plus the growth rate of dividends:

Cost of common equity = Dividend yield + Growth rate of dividends

Consider a company expected to pay a constant dividend of \$2 per share per year, forever. If the company issues stock at \$20 a share, the company's cost of common stock is:

$$r_e = \$2/\$20 = 0.10 \text{ or } 10 \text{ percent per year.}$$

But, if dividends are expected to be \$2 in the next period and grow at a rate of 3 percent per year, and the required rate of return is 10 percent per year, the expected price per share (with  $D_1 = \$2$  and  $g = 3$  percent) is:

$$P = \$2 / (0.10 - 0.03) = \$28.57.$$

The DVM makes some sense regarding the relation between the cost of equity and the dividend payments: The greater the current dividend yield, the greater the cost of equity and the greater the growth in dividends, the greater the cost of equity. However, the DVM has some drawbacks:

- How do you deal with dividends that do not grow at a constant rate? This model does not accommodate non-constant growth easily.
- What if the company does not pay dividends now? In that case,  $D_1$  would be zero and the expected price would be zero. But a zero price for stock does not make any sense! And if dividends are expected in the future, but there are no current dividends, what do you do?
- What if the growth rate of dividends is greater than the required rate of return? This implies a negative stock price, which isn't possible.
- What if the stock price is not readily available, say in the case of a privately-held company? This would require an estimate of the share price.

#### **Example 4: The cost of equity using the DVM**

##### *Problem*

Consider the Plum Computer Company that currently pays an annual dividend of \$2.00 per share. Plum's common stock has a current market value of \$25 per share. If Plum's annual dividends are expected to grow at 5 percent per year, what is its cost of common stock?

##### *Solution*

Given:  $P = \$25$ ;  $D_0 = \$2.00$ ;  $g = 5\%$

$$D_1 = D_0 (1 + g) = \$2.00 (1 + 0.05) = \$2.10$$

$$r_e = (D_1/P) + g = 0.084 + 0.05 = \mathbf{0.134 \text{ or } 13.4\%}$$

Therefore, the DVM may be appropriate to use to determine the cost of equity for companies with stable dividend policies, but it may not be applicable for all companies.

### Cost of common equity using the capital asset pricing model

The investor's required rate of return is compensation for both the time value of money and risk. To figure out how much compensation there should be for risk, we first have to understand what risk we are talking about. The **capital asset pricing model (CAPM)** assumes an investor holds a diversified portfolio -- a collection of investments whose returns are not in synch with one another. The returns on the assets in a diversified portfolio do not move in the same direction at the same time by the same amount. The result is that the only risk left in the portfolio is the risk related to movements in the market as a whole (i.e., market risk).

If investors hold diversified portfolios, the only risk they have is market risk. Investors are **risk averse**, meaning they don't like risk, so if they are going to take on risk they want to be compensated for it. Investors who only bear market risk need only be compensated for market risk. If we assume all shareholders' hold diversified portfolios, the risk that is relevant in the valuing a particular investment is the market risk of that investment. It is this market risk that determines the investment's price. The greater the market risk, the greater the compensation -- meaning a higher yield -- for bearing this risk. And the greater the yield, the lower the present value of the asset because expected future cash flows are discounted at a higher rate that reflects the higher risk.

The cost of common equity, estimated using the CAPM, is the sum of the investor's compensation for the time value of money and the investor's compensation for the market risk of the stock:

$$\text{Cost of common equity} = \begin{array}{c} \text{Compensation for the} \\ \text{time value of money} \end{array} + \begin{array}{c} \text{Compensation for} \\ \text{market risk} \end{array}$$

Let's represent the compensation for the time value of money as the expected risk-free rate of interest,  $r_f$ . If a particular common stock has market risk that is the same as the risk of the market as a whole, then the compensation for that stock's market risk is the market risk premium. The market's risk premium is the difference between the expected return on the market,  $r_m$ , and the expected risk-free rate,  $r_f$ :

$$r_e = r_f + \beta (r_m - r_f)$$

where  $r_f$  is the expected risk free rate of interest,  $\beta$  is a measure of the company's stock return to changes in the market's return (beta), and  $r_m$  is the expected return on the market.

The CAPM is based on two ideas that make sense: investors are risk averse and they hold diversified portfolios. But the CAPM is not without its drawbacks. First, the estimates rely heavily on historical values -- returns on the stock and returns on the market. These historical values may not be representative of the future, which is what we are trying to gauge. Also, the sensitivity of a company's stock returns may change over time; for example, when the company changes its capital structure.

Second, if the company's stock is not publicly-traded, there is no source for even historical values.

#### **Example 5: The cost of equity using the CAPM**

##### *Problem*

The Plum Computer Company's common stock has an estimated beta of 1.5. If the expected risk-free rate of interest is 3 percent and the expected return on the market is 9 percent, what is the cost of common stock for Plum Computer Company?

##### *Solution*

Given:  $r_f = 3\%$ ;  $r_m = 9\%$ ;  $\beta = 1.5$

$$r_e = r_f + \beta(r_m - r_f)$$

$$r_e = 3\% + 1.5(9\% - 3\%) = \mathbf{12\%}$$

## 4. Calculating the weighted average cost of capital

The cost of capital is the average of the cost of each source, weighted by its proportion of the total capital it represents. Hence, it is also referred to as the **weighted average cost of capital (WACC)** or the **weighted cost of capital (WCC)**. The weighted average cost of capital is:

$$WACC = w_d r_d + w_p r_p + w_e r_e$$

where

$w_d$  is the proportion of debt in the capital structure;  
 $w_p$  is the proportion of preferred stock in the capital structure; and  
 $w_e$  is the proportion of common stock in the capital structure.

As you raise more and more money, the cost of each additional dollar of new capital may increase. This may be due to a couple of factors: the flotation costs and the demand for the security representing the capital to be raised.

As you raise more and more money, the cost of each additional dollar of new capital may increase. This may be due to a couple of factors: the flotation costs and the demand for the security representing the capital to be raised. For example, the cost of internal funds from retained earnings will differ from the cost of funds from issuing common stock due to flotation costs. If a company expects to generate \$1,000,000 entirely from what's available in internal funds -- retained earnings -- there are no flotation costs. But if the company needs \$1,000,001, that \$1 above \$1,000,000 will have to be raised externally, requiring flotation costs.

Additional capital may be more costly since the company must offer higher yields to entice investors to purchase ever larger issues of securities. Considering the effects of flotation costs and the additional yield necessary to entice investors, we most likely face a schedule of marginal costs of debt capital and a schedule of marginal costs of equity capital. Hence, we need to determine at what level of raising funds the marginal cost of capital for the company changes.

### Example 6: Calculating the WACC

#### Problem

Consider the Plum Computer Company once again. Suppose Plum will raise capital in the following proportions: Debt: 40 percent; Preferred stock: 10 percent; Common stock: 50 percent. What is Plum's weighted average cost of capital if its cost of debt is 3.6 percent, its cost of preferred stock is 8 percent, and its cost of common stock is 12 percent?

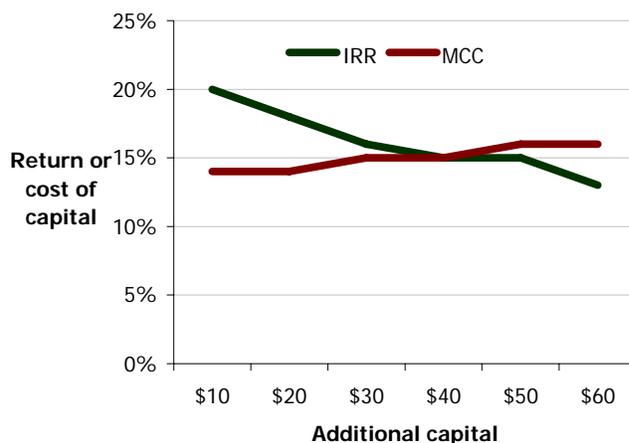
#### Solution

$$WACC = 0.40 (0.036) + 0.10 (0.08) + 0.50 (0.12)$$

$$WACC = 0.0144 + 0.008 + 0.06$$

$$WACC = \mathbf{0.0824 \text{ or } 8.24\%}$$

**Exhibit 2 Return on capital v. cost of capital**



Let's see what maximizing shareholder wealth means in terms of making investment and financing decisions. To maximize owners' wealth we must invest in a project until the marginal cost of capital is equal to its marginal benefit. What is the benefit from an investment? It is the internal rate of return -- also known as the marginal efficiency of capital. If we begin by investing in the best projects (those with highest returns), and then proceed by investing in the next best projects, and so on, the marginal benefit from investing in more and more projects declines.

Also, as we keep on raising funds and investing them, the marginal cost of funds

increases. To maximize shareholders' wealth, we should invest in projects to the point where the increasing marginal cost of funds is equal to the marginal benefit from our investment. Relation between the **marginal cost of capital (MCC)** and the **marginal return on investment (IRR)** is shown in Exhibit 2. The point at which the marginal cost and marginal benefit intersect is the optimal capital budget. This is the point at which the value of the company is maximized.

## 5. Reality check

Determining the cost of capital appears straight-forward: find the cost of each source of capital and weight it by the proportion it will represent in the company's new capital. But it is not so simple. There are many problems in determining the cost of capital for an individual company.

Consider, for example,

- How do you know what it will cost to raise an additional dollar of new debt? You may seek the advice of an investment banker. You may look at recent offerings of debt with similar risk as yours. But until you issue your debt, you will not know for sure.
- The cost of preferred equity looks easy. But how do you know, for a given dividend rate, what the price of the preferred stock will be? Again, you can seek advice or look at similar risk issues. But until you issue your preferred stock, you will not know for sure.
- The cost of common equity is more perplexing. There are problems associated with both the DVM and the CAPM.
- In the case of the DVM: what if dividends are not constant? What if there are no current dividends? And the expected growth rate of dividends is merely an estimate of the future.
- In the case of the CAPM, what is the expected risk-free rate of interest into the future? What is the expected return on the market into the future? What is the expected sensitivity of a particular's asset's returns to that of the market's return? To answer many of these questions, we may derive estimates from looking at historical data. But this can be hazardous.

Estimating the cost of capital requires a good deal of judgment. It requires an understanding of the current risk and return associated with the company and its securities, as well as of the company's and securities' risk and return in the future.

If you are able to derive estimates of the costs of each of the sources of capital, you then need to determine the proportions in which the company will raise capital. If your company is content with its

current capital structure and you expect to raise capital according to the proportions already in place, your job is simpler. In this case, the proportions can be determined by estimating the market value of existing capital and calculating the weights.

On the other hand, if your company raises capital in proportions other than its current capital structure, there is a problem of estimating how this change in capital structure affects the costs of the components. Consider a company that has a current capital structure, in market value terms, of 50 percent debt and 50 percent common stock. What happens to the market value of each component if the company undergoes a large expansion and raises new funds solely from debt? This increase in debt may increase the cost of debt and the cost of common stock. This will occur if this additional debt is viewed as significantly increasing the financial risk of the company -- the chance that the company may encounter financial problems -- thereby increasing the cost of capital. But this increase in the use of debt may also decrease the cost of capital. This could result because the company will be using more of the lower cost capital -- debt.

Whether the cost of financial risk outweighs the benefit from the tax deductibility of interest is not clear -- and cannot be reasonably forecasted.

**Exhibit 3: Costs of capital for different industries, 2005**

Industry	Cost of capital
Advertising	9.03%
Air Transport	8.40%
Beverage	5.83%
Biotechnology	10.28%
E-commerce	18.14%
Internet	16.65%
Petroleum	6.64%
Retail store	8.16%
Trucking	6.84%
Wireless networking	13.58%

Source: Aswath Damadoran,  
<http://pages.stern.nyu.edu/~adamodar/>

Estimates of the cost of capital require a great deal of information on individual companies, as well as forecasts of the return on a risk-free asset and on the market. Estimates of costs of capital for several different industries for 2005 are shown in Exhibit 3. As you can see, these costs of capital reflect the business and financial risk of companies; for example, the wireless networking industry has a great deal of business risk and companies in this industry experience higher costs of capital.

## 6. Summary

The cost of capital is the marginal cost of raising additional funds. This cost is important in our investment decision making because we ultimately want to compare the cost of funds with the benefits from investing these funds. The cost of capital is determined in three steps: (1) determine what proportions of each source of capital we intend to use; (2) calculate the cost of each source of capital, and (3) put the cost and the proportions together to determine the weighted average cost of capital.

The required rate of return on debt is the yield demanded by investors to compensate them for the time value of money and the risk they bear in lending their money. The cost of debt to the company differs from this required rate of return due to flotation costs and the tax benefit from the deductibility of interest expense. The required rate of return on preferred stock is the yield demanded by investors and differs from the company's cost of preferred equity because of the costs of issuing additional shares (the flotation costs).

The cost of common equity is more difficult to estimate than the cost of debt or preferred stock because of the nature of the return on stock: Dividends are not guaranteed nor fixed in amount, and part of the return is from the change in the value of the stock. The dividend valuation model and the capital asset pricing model are two methods commonly used to estimate the required rate of return on common equity. The DVM deals with the expected dividend yield and is based on an assumption that dividends grow at some constant rate into the future. The CAPM assumes that investors hold diversified portfolios, so they require compensation for the time value of money and the market risk they bear by owning the stock.

The proportion of each source of capital that we use in calculating the cost of capital is based on what proportions we expect the company to raise new capital. If the company already has a capital structure -- a mix of debt and equity it feels appropriate -- then that same proportion of each source of capital, in market value terms, is a good estimate of the proportions of new capital.

The cost of capital is the cost of raising new capital. The weighted average cost of capital is the cost of all new capital for a given level of financing. The cost of capital is a marginal cost -- the cost of an additional dollar of new capital at a given level of financing.

In determining the optimal amount to spend on investments, the relevant cost is the marginal cost, since we are interested in investing until the marginal cost of the funds is equal to the marginal benefit from our investment. The point where marginal cost = marginal benefit results in the optimal capital budget.

The actual estimation of the cost of capital for a company requires a bit of educated guesswork, and lots of reasonable assumptions. Using readily available financial data, we can, at least, arrive at a good enough estimate of the cost of capital.