

# FINANCIAL MANAGEMENT: COST OF CAPITAL

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## DEFINE COST OF CAPITAL

Cost of capital of an investor, in financial management, is equal to return, an investor can fetch from the next best alternative investment. In simple words, it is the opportunity cost of investing the same money in different investment having similar risk and other characteristics. From a financing angle, cost of capital is simply the cost which is paid for using the capital. Alternatively, a percentage return on investment that convinces an investor to invest in a particular project or company is the appropriate cost of capital for that investor.

## TYPES OF COST OF CAPITAL

The term cost of capital is vague in general. Does it not clarify which capital we are talking about? It could be equity or debt or any other source of capital. We can classify cost of capital into following broad classifications.

### COST OF EQUITY CAPITAL

Cost of equity capital is the cost of using the capital of equity shareholders in the operations. This cost is paid in the form of dividends and capital appreciation (increase in stock price). Most commonly, the cost of equity is calculated using following formula:

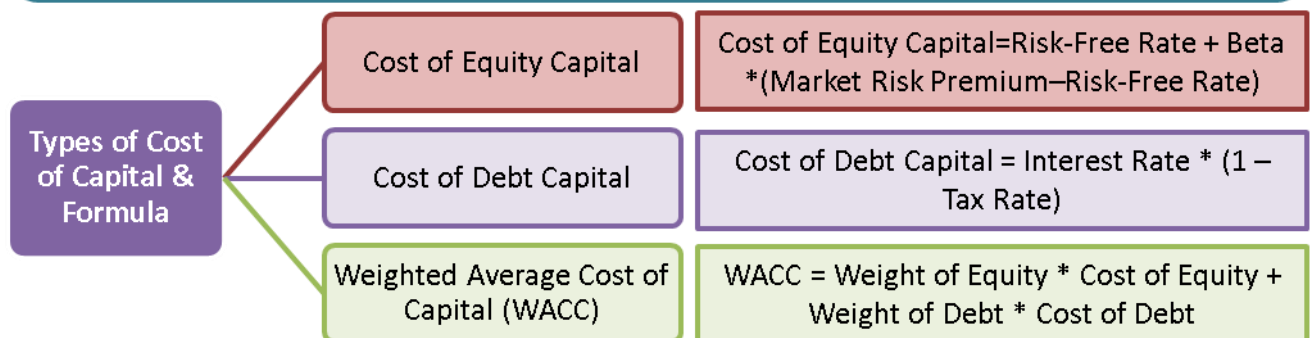
The formula for Cost of Equity Capital = Risk-Free Rate + Beta \* (Market Risk Premium – Risk-Free Rate)

### COST OF DEBT CAPITAL

Cost of debt capital is the cost of using bank's or financial institution's money in the business. The banks are compensated in the form of interest on their capital. The cost of debt capital is calculated using following formula.

Cost of Debt Capital = Interest Rate \* (1 – Tax Rate)

**Cost of capital** of an investor, in financial management, is equal to return, an investor can fetch from the next best alternative investment. In simple words, it is the opportunity cost of investing the same money in different investment having similar risk and other characteristics.



### WEIGHTED AVERAGE COST OF CAPITAL (WACC)

Most of the times, WACC is referred as a cost of capital because of its frequent and vast utilization especially when evaluating existing or new projects. Weighted average cost of capital, as the term itself suggests, is the weighted average of all types of capital present in

the capital structure of a company. Assuming these two types of capital in the capital structure i.e. equity and debt, the WACC can be calculated by following formula:

$WACC = \text{Weight of Equity} * \text{Cost of Equity} + \text{Weight of Debt} * \text{Cost of Debt}.$

## USE OF COST OF CAPITAL

There are practically 2 important participants relevant for using the Cost of Capital i.e. the Financial Managers of a Company or the Investor.

### HOW AND WHY FINANCIAL MANAGERS USE IT?

Typically, financial managers use the cost of capital (refer as WACC) as a benchmark or a qualifying criterion for selecting the new projects of a company or evaluating the existing projects also. If a company is accepting or implementing projecting with IRR less than WACC, it is construed as not getting the best use of the investor's capital and hence diminishing the wealth of the investors. Indirectly, it is a signal to the investors to switch their capital to better investments. If they remain invested in the company, there are chances that they may not earn their required rate of return.

### HOW AND WHY INVESTORS USE IT?

Investors can use it to judge the riskiness of the investment in the stock of a company. Note that the cost of capital is not a very authoritative metric to guide on risk especially when there are other good metrics to get a better view of risk.

## FACTORS AFFECTING COST OF CAPITAL

There are various factors that can affect the cost of capital. Some fundamental factors are as follows:

Primarily, the **market opportunity** available to entrepreneurs is the most contributing factor. If there are no new profitable businesses available in the market, a businessman would not need money and therefore the demand for money fall resulting in fall in the cost of capital as well.

**Preferences of capital providers** in terms of consumption or savings are other important factors which vary from person to person and country to country. If the capital providers are bent towards consumption, the supply of capital would reduce and thereby increase in cost.

We already discussed the importance of **risk**. Higher the risk, higher would be the required rate of return and vice versa.

In economics, it is said that inflation plays an important role in deciding the cost of capital. Higher the inflation, higher would be expectations of the capital providers else they may opt to consume or invest somewhere else.

## Market vs. Book Value WACC

Weighted Average Cost of Capital (WACC) is defined as the weighted average of cost of each component of capital (equity, debt, preference shares etc) where the weights used are target capital structure weights expressed in terms of market values. We will discuss the difference between book value WACC and market value weights and why market value weights are preferred over book value weights. It is assumed that the primary purpose of WACC is to evaluate new projects.

## DIFFERENT TYPES OF WEIGHTS

The weights can be historical or marginal and further historical weights can have either book values or market values of capital components. Therefore, three possible types of weights are discussed below with the help of following table of calculations:



## MARGINAL VS. HISTORICAL WEIGHTS

### MARGINAL WEIGHTS

These are the proportion of capital in which the fresh capital for the new project is raised. In the table below, we can notice that funds are raised for the new project in the ratio of 1:7:2 (Equity: Debt: Preference) and these proportion are used to calculate the WACC. We can observe that the WACC is the lowest compared to other two weighting approaches and it is also visible that the reason is the higher proportion of debt in the capital structure.

## MARKET VALUE V/S BOOK VALUE WACC

POINTS OF DIFFERENCE	Historical Weights	Marginal Weights
<b>Meaning</b>	These are the proportion of capital in which the fresh capital for the new project is raised.	These are the proportion of actual existing capital structure in terms of book value or market value.
<b>Advantages</b>	There is a direct link between the project & the financing arrangement.	It takes a longer term in view which supports the going concern concept & conservative approach.
<b>Disadvantages</b>	It is a very short term approach. It is not considering leverage effect of financing the current project.	Raising the finance at a predefined ratio is very difficult in the market & not in our control.

**BOOK VALUE WACC**  
Book Value WACC is calculated using book value weights

**MARKET VALUE WACC**  
Market Value WACC is calculated using the market value of the sources of capital.

**MARKET VALUE WACC IS PREFERRED OVER BOOK VALUE WEIGHTS**

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### ADVANTAGES

There is a direct link between the project and the financing arrangement. The actual or relevant money that is going to be used for implementing the project is the money marginally raised in the ratio.

### DISADVANTAGES

It is a very short term approach. It is not considering leverage effect of financing the current project. The WACC in marginal weights is low because of too high debt in the structure which compromises the debt-equity ratio of the company. When the same company will raise money next year for some other project, they will have to take more equity finance because of already higher debt-equity ratio. That time, the WACC will be much higher compared to this situation.

### CONCLUSION

Currently, WACC is 11.8% and a project having returns of 12.25% will be accepted. Next year WACC will be say 15% due to higher equity participation. A good project having a return of 14% will be rejected. This approach is not consistent and therefore, historical weights should be preferred over marginal weights.

### HISTORICAL WEIGHTS

Particulars	After Tax Cost of Capital	Marginal Weights			Historical Book Value Weights			Historical Market Value Weights		
		Marginal Capital	Proportion	WACC	Book Value	Proportion	WACC	Market Value	Proportion	WACC
Equity Shares	20%	10	0.10	2.00%	150	0.38	7.50%	300	0.50	10.00%
Debt	10%	70	0.70	7.00%	200	0.50	5.00%	200	0.33	3.33%
Preference Shares	14%	20	0.20	2.80%	50	0.13	1.75%	100	0.17	2.33%
<b>Total</b>		<b>100</b>	<b>1.00</b>	<b>11.80%</b>	<b>400</b>	<b>1.00</b>	<b>14.25%</b>	<b>600</b>	<b>1.00</b>	<b>15.67%</b>

These are the proportion of actual existing capital structure in terms of book value or market value. Historic weights assume that the firm will finance its future projects in the existing capital structure and it is the optimum structure.

#### **ADVANTAGE**

The advantage of historic weights over marginal weights is that it takes a longer term in view which supports the going concern concept and conservative approach. The WACC of 14.25% (Book Value) or 15.67% (Market Value) will remain more or less consistent.

#### **DISADVANTAGE**

Raising the finance at a predefined ratio is very difficult in the market and not in our control. There are a lot of economic and other factors affect availability and cost of finance.

#### **CONCLUSION**

The acceptance and rejection criterion in historical weights will not fluctuate like a pendulum but that is possible in case of marginal weights. Looking at the consistency and long-term view of the approach, we should use historical weights.

We have concluded historical weights between marginal vs. historical weights based on above discussion, the next step is to zero down between book value and market value.

## **MARKET VS. BOOK VALUE WEIGHTS**

Book Value WACC is calculated using book value weights whereas the Market Value WACC is calculated using the market value of the sources of capital. Why the market value weights are preferred over book values weights:

### **EXPLANATION**

The book value weights are readily available from balance sheet for all types of firms and are very simple to calculate. On the other hand, for Market Value weights, the market values have to be determined and it is a real difficult task to acquire accurate data for the same especially the value of equity when the entity is not listed. Still Market Value WACC is considered appropriate by analysts because an investor would demand market required rate of return on the market value of the capital and not the book value of the capital.

### **EXAMPLE**

Assume a firm issued capital at \$10 per equity share 5 years back. Current market value of the share is \$30 and book value is \$18 and market required rate of return is 20%. The investors (existing and new) of the company will expect a return on \$30 and not \$18. Let us see how a rational investor will behave.

### **NEW INVESTOR**

He can buy the share of the company at \$30 from the market. If the firm returns 20% on book value i.e. \$3.6. The new investor will calculate his percentage of gain 12% ( $3.6/30$ ) which is far less than 20%. Why 30 dollar because the investment by him is 30 and not 10 or 18.

### **EXISTING INVESTOR**

Since, market required rate of return is 20% and return on investment at current prices is only 12%, a better situation for existing investor would be to sell off the securities at \$30 and invest in other securities giving more than 12% return. The existing investor will exit from the investment considering it an overpriced stock and invest in securities which are underpriced or appropriately priced by the market.

### **CONCLUSION**

The market value weights are appropriate compared to book value weights. Hence, historical market value weights should be used for calculation of WACC out of the three options – marginal weights, historical book value weights, and historical market value weights.