# Capital Structure & Dividend Theories

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## Capital Structure and Dividend Theories

The capital structure theories explore the relationship between the use of debt and equity financing and the value of the firm. If the use of debt is profitable then it increases the value of the firm and vice versa.

Capital structure theories belong to two categories:

a) Theories of Relevance and;
b) Theories of Irrelevance

The capital structure theories use the following assumptions for simplicity:

1) The firm uses only two sources of funds: debt and equity.
2) The effects of taxes are ignored.
3) There is no change in investment decisions or in the firm's total assets.
4) No income is retained.
5) Business risk is unaffected by the financing mix.

## Four Capital Structure Theories

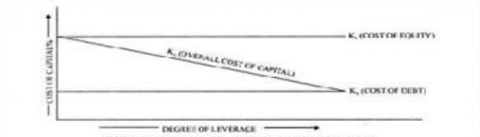
1. Net Income (NI) Approach
2. Net Operating Income (NOI) Approach
3. Traditional Approach
4. M-M Hypothesis

NI Approach and Traditional Approach suggest that capital structure are relevant and affect the value of the firm. On the other hand, NOI Approach and MM Hypothesis support the view of the irrelevance of capital structure.

## Net Income Approach: Relevance of Capital Structure

According to this approach, a firm can minimize the weighted average cost of capital and increase the value of the firm as well as market price of equity shares by using debt financing to the maximum possible extent. The theory propounds that a company can increase its value and decrease the overall cost of capital by increasing the proportion of debt in its capital structure. This approach is based upon the following assumptions:

1. The cost of debt is less than the cost of equity.
2. There are no taxes.
3. The risk perception of investors is not changed by the use of debt.




(Net Income Approach : Effect of Leverage on Cost of Capital)

## Net Operating Income Approach: Irrelevance of CS

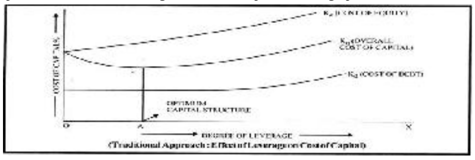
This theory as suggested by Durand is another extreme of the effect of leverage on the value of the firm. It is diametrically opposite to the net income approach. According to this approach, change in the capital structure of a company does not affect the market value of the firm and the overall cost of capital remains constant irrespective of the method of financing.

This theory presumes that:

1. The market capitalizes the value of the firm as a whole;
2. The business risk remains constant at every level of debt equity mix;
3. There are no corporate taxes.

## Traditional Approach: The Three Stages

The traditional approach, also known as Intermediate approach, has three stages. According to this theory, in the first stage, the value of the firm can be increased initially by using more debt as the debt is a cheaper source of funds than equity. In the stage two, optimum capital structure is attained by a proper debt-equity mix. At stage two overall cast is the lowest. Beyond stage two, the cost of equity increases because increased debt increases the financial risk of the equity shareholders. The advantage of cheaper debt at this point of capital structure is offset by increased cost of equity. After this there comes a stage, when the increased cost of equity cannot be offset by the advantage of low-cost debt. According to traditional theory, stage two is the best and preferable whereas, stages one and three are not preferable. All the three stages have been depicted in the graph below:




(Traditional Approach : Effect of Leverage on Cost of Capital)

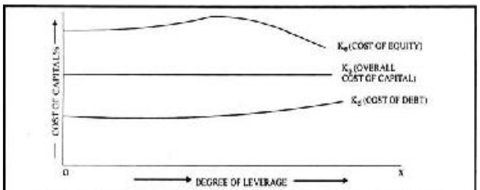
**Modigliani and Miller (MM) Approach: Irrelevance of CS**

M&M hypothesis is identical with the Net Operating Income approach if taxes are ignored. However, when corporate taxes are assumed to exist, their hypothesis is similar to the Net Income Approach. The M&M approach is based upon the following assumptions:

1. There are no corporate taxes.
2. There is a perfect market.
3. Investors act rationally.
4. The expected earnings of all the firms have identical risk characteristics.
5. The cut-off point of investment in a firm is capitalization rate.
6. Risk to investors does not change.
7. All earnings are distributed to the shareholders.

## MM Approach with No Taxes

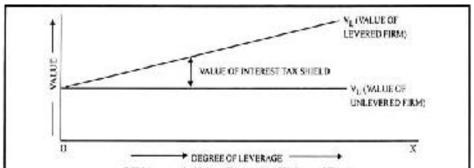
MM approach in the absence of corporate taxes, i.e., the theory of irrelevance of financing mix has been presented in the following figure:




(MM Theory of Irrelevance: Effect of Leverage on cost of debt, equity and overall cost of capital)

## MM Approach with Taxes (Theory of Relevance)

Modigliani and Miller, in their article of 1963 have recognized that the value of the firm will increase or the cost of capital will decrease with the use of debt on account of deductibility of interest charges for tax purpose. Thus, the optimum capital structure can be achieved by maximizing the debt mix in the equity of a firm.




(MM Approach: Value of Levered and Unlevered Firm)

## Arbitrage Process in MM Hypothesis

According to MM Hypothesis, the firm using higher debt may show a higher value temporarily. M & M theory suggests this situation cannot remain for a long period because of the arbitrage process.

As the investors in high-debt-company earn a higher rate of return on their investment with high financial risk, they will sell their holding of shares and invest the same in low-debt-company.

Further, as low debt company does not use significant debt in its capital structure, the financial risk to the investors will be less, thus, they buy the share in high-debt-company in order to earn more. The investors can even use borrowed funds to earn more.

This arbitrage process will continue till the prices of shares of both the companies are equalized.

# Dividend Theories

Dividend theories are based on the relationship between dividend and the value of the firm. Some theories advocate that payment of dividend affect the value of firm and hence dividend policy is relevant in order to have the benefits out of the dividend payout. Other theories on the other hand say that dividend payment decision does not affect the value of the firm hence, it payment of any dividend is relevant in a given organization. Important theories advanced in this regard as under:

1. Walter's Model
2. Gordon's Model
3. Modigliani and Miller's Hypothesis

## Walter's Model: Dividend Relevance

Professor James E. Walter argues that the choice of dividend policies almost always affects the value of the enterprise. His model shows clearly the importance of the relationship between the firm's internal rate of return (r) and its cost of capital (k) in determining the dividend policy that will maximize the wealth of shareholders.

**Walter's model is based on the following assumptions:**

1. The firm finances all investment through retained earnings; that is debt or new equity is not issued;
2. The firm's internal rate of return (r), and its cost of capital (k) are constant;
3. All earnings are either distributed as dividend or reinvested internally immediately.
4. Beginning earnings and dividends never change. The values of the earnings per share (E), and the divided per share (D) may be changed in the model to determine results, but any given values of E and D are assumed to remain constant forever in determining a given value.
5. The firm has a very long or infinite life.

## Criticism of Walter's Model:

Walter's model is quite useful to show the effects of dividend policy on an all equity firm under different assumptions, but the model is criticized on the following grounds:

1. Mixing up dividend and investment policies:
2. The model assumes that the investments of the firm are financed by retained earnings only. Under this situation, either the firm's investment or its dividend policy or both will be sub-optimum. The wealth of the owners will not be maximized.
3. Walter's model is based on the assumption that return (r) is constant. In fact, this assumption is not practical.
4. A firm's cost of capital or discount rate, K, does not remain constant; it changes directly with the firm's risk.

## Gordon's Model: Dividend Relevance

One very popular model explicitly relating the market value of the firm to dividend policy is developed by Myron Gordon.

***Assumptions:***

Gordon's model is based on the following assumptions.

1. The firm is an all Equity firm
2. No external financing is available
3. The internal rate of return (r) of the firm is constant.
4. The appropriate discount rate (K) of the firm remains constant.
5. The firm and its stream of earnings are perpetual
6. The corporate taxes do not exist.
7. The retention ratio (b), once decided upon, is constant. Thus, the growth rate, g = (b) (r), is constant forever.
8. Growth rate (g) and discount rate (k) together decide the value of the firm, higher or lower.

## Modigliani and Miller's hypothesis: Dividend Irrelevance

According to Modigliani and Miller (M-M), dividend policy of a firm is irrelevant to the value of the firm as it does not affect the wealth of the shareholders. They argue that the value of the firm depends on the firm's earnings which result from its investment policy.

Thus, when investment decision of the firm is given, dividend decision, the split of earnings between dividends and retained earnings is of no significance in determining the value of the firm.

*Assumptions*

M–M's hypothesis of irrelevance is based on the following assumptions:

1. The firm operates in perfect capital market
2. Taxes do not exist
3. The firm has a fixed investment policy
4. Risk of uncertainty does not exist.

## MM Hypothesis of Irrelevance of Dividend Policy: Criticism:

M-M's hypothesis lacks practical relevance in the real world situation. Thus, it is being criticized on the following grounds.

1. The assumption that *taxes* do not exist is far from reality.
2. M-M argue that the internal and external financing are equivalent. This cannot be true if the flotation *cost new exist.*
3. According to M-M's hypothesis the wealth of a shareholder will be same whether the firm pays dividends or not. But, because of the *transactions costs* and inconvenience associated with the sale of shares to realize capital gains, *shareholders prefer dividends to capital gains.*
4. *The discount rate (k)* for external and internal financing will be different.
5. M-M argues that, even if the assumption of perfect certainty is dropped and uncertainty is considered, dividend policy continues to be irrelevant. But according to number of writers, *dividends are relevant* under conditions of uncertainty.

## Concluding Remarks

1. Theories of Capital Structure argue about the use of debt in the capital mix and its resulting impact on the value of firm and dividend theories argue about policy of dividend payment and retention and its resulting impact on the value of the firm.
2. These theories have been divided into two categories: theories of relevance and theories of irrelevance.
3. All the theories are bound by certain assumptions which are subject to criticism.
4. Application of these theories would be possible if all the assumptions are realized.
5. The study of these theories develops academic and technical insights.
6. Practically, in the industry, at the time of formulation of investment and financing policies some guidance is available from these capital structure and dividend theories.
7. The study of these theories opens up more possibilities of further research on these topics.