Learning Module 6: Capital Structure

LOS 6a: calculate and interpret the weighted-average cost of capital for a company

Cost of Capital

The cost of capital is the rate of return the suppliers of capital (shareholders and debtholders) require as compensation for their capital contribution. In other words, the cost of capital can be seen as the opportunity cost of funds for the suppliers of the capital.

The cost of capital is composed of the cost of debt and the cost of equity. The cost of debt is riskier than the cost of equity and is sometimes secured with collateral. As such, debtholders have lower required rates of return than equity holders.

Weighted Average Cost of Capital

The weighted average cost of capital (WACC) is the company's capital cost which is the rate of return that investors demand. It is usually estimated by computing the marginal cost of each of the various sources of capital for a company and then taking a weighted average of these costs.

Given the cost that a company incurs to raise additional capital, the WACC may also be referred to as the marginal cost of capital (MCC).

The formula for the WACC is:

$$\mathrm{WACC} = [(1 - \text{Tax rate}) \times \text{Pre-tax cost of debt} \times \text{Weighting of debt}] \\ + (\text{Cost of equity} \times \text{Weighing of equity})$$

From the formula above:

- From the perspective of an issuer, the cost of debt is the required rate of return on debt financing. It is ussually an interest on the existing unsecured loans or bonds. However, a forward-looking measure of the cost of debt can be obtained by checking the rates on

companies that recently borrowed. Lastly, if the interest expense is deductible, we decrease the nominal tax rate by $(1 - \text{Tax rate})$.

- The weightings of debt and equity can be based on the market values proportions, or the target weights given by the management, which are based on book values proportions. Market values are commonly used because book value reflect the historical values while market values reflect current market prices.

- From the perspective of the issuer, the cost of equity is the required rate of return by the equity investors. Cost of equity is higher than the cost of debt and are not tax-deductible.

Example: Calculating the WACC

Assume that company XYZ has the following capital structure: 25% equity, 10% preferred stock, and 65% debt. Its marginal cost of equity is 12%, while its marginal cost of preferred stock is 9%. Lastly, its before-tax cost of debt is 7%. If the marginal tax rate is 35%, what is the WACC of company XYZ?

In this example, weighting of debt = 65%, cost of debt = 7%, tax rate = 35%, weighting of equity = 25%, and cost of debt = 12%.

And we know that,

$$
\begin{aligned}
WACC = {} & [(1 - \text{Tax rate}) \times \text{Pre-tax cost of debt} \times \text{Weighting of debt}] \\
& + (\text{Cost of equity} \times \text{Weighing of equity})
\end{aligned}
$$

Therefore

$$WACC = [(1 - 0.35) \times (0.07 \times 0.65)] + (0.12 \times 0.25) + (0.10 \times 0.09) = 0.02957 + 0.$$

Question

A company has the following capital structure: 35% equity, 15% preferred stock, and 50% debt. If its marginal cost of equity is 10%, the cost of preferred stock is 7%, and the before-tax cost of debt is 6%, with a marginal tax rate of 30%, the WACC of the company is *closest to*:

    A. 5.84%.

    B. 6.75%.

    C. 8.00%.

Solution

The correct answer is **B.**

$$WACC = [(1 - \text{Tax rate}) \times \text{Pre-tax cost of debt} \times \text{Weighting of debt}]$$
$$+ (\text{Cost of equity} \times \text{Weighing of equity})$$
$$WACC = [(1 - 0.4)(0.08 \times 0.5) + (0.11 \times 0.30) + (0.07 \times 0.15)$$
$$= 0.0675 \text{ or } 6.75\%$$

LOS 6b: explain factors affecting capital structure and the weighted-average cost of capital

Both internal and external forces influence a corporation's capital structure, varying among countries and sectors. These factors include:

Internal factors	External factors
Business model characteristics	Market conditions
Cash flows and Profitability	Regulatory constraints
Asset types and Ownership	Industry/peer factors

Determinants of the Amount and Type of Financing Needed

The type of financing and the total amount needed depend on the issuer's position in the corporate life cycle and its business model.

Capital-Intensive Business.

Capital-intensive businesses are businesses that require a lot of assets. Capital-intensive companies have high capital expenditure to sales, low asset turnover, and high working net-working-capital-to-sales ratios.

Many businesses often start as vertically integrated and more capital-intensive, but over time the capital-intensive business is separated from the service or customer-facing brand. The businesses then have contractual instead of ownership relations.

The capital structure of some businesses, such as banks, is regulated by the government to maintain a certain proportion of equity as assets, increasing the WACC due to higher equity financing.

Capital-Light Businesses.

Some service businesses, such as those in the technology sector, have low capital needs. These asset light-businesses have low capital -expenditures-to-sales-ratios and high fixed asset

turnover. Their assets mainly comprise excess cash and intangibles. This might be due to the following factors:

- They operate a network for other companies that own the assets. Hence, they do not need to look for financing from capital markets.

- Its customers are charged upfront, or the company has a negative/ short cash conversion cycle eliminating the need for working capital external financing.

- The firm may choose to compensate employees with stock which the staff is always willing to accept given the company's rising stock price, reducing the need for cash.

- If a company in its early stage is capital-light and profitable, it may not need external financing unless its management deems it necessary.

Corporate Life Cycle

The maturity, capital intensity, market position strength, and the stability and nature of a company's operation all influence its capital structure and ability to support debt.

As a general rule, companies begin as capital consumers; that is, they burn cash. Cash flows then go from negative to positive, and business risk declines as they develop, allowing for greater use of leverage. At this stage, debt becomes a more significant component of its capital structure. Capital markets connect companies with investors whose requirements vary. Capital that cannot be obtained through borrowing must be obtained through equity.

There is a link between a company's life-cycle stage, cash flow characteristics, and its ability to support debt. A company's life-cycle stages include start-up, growth, and maturity.

Capital Structure and Company Life Cycle

Start-ups

In the start-up stage, companies are cash consumers. Revenues are **zero to minimal**, and the

business risks are high. Companies in the start-up stage will use equity financing instead of debt because of the high uncertainty of cash flow generation. This equity is sourced privately (from founders, employees, and venture capitalists) rather than in public markets (such as IPO).

Debt financing that might be accessible are leases (such as office and retail real estate) and convertible debt. Convertible debt allows investors to convert debt to equity in the future at a predetermined price.

Growth

As a company exists a start-up stage, the revenues are rising due to high demand coupled with accelerated growth. However, free cash flow, though improving, is likely to be negative due to the high investments needed to achieve this growth and scale.

The business risk declines at this stage as a company establishes a customer and supplier base. The company also becomes more attractive to lenders since cash flows and asset base can be used as security. Companies will begin using debt, but equity remains the predominant source of capital.

Mature Businesses

At this stage, revenue may slow down or begin to decline but predictable. Free cash flows are positive and reliable, and the company can support low-cost debt, often unsecured. From the company's perspective, debt financing is likely more attractive than higher-cost equity financing.

In practice, large, mature public companies commonly employ significant leverage. Due to the tax-deductibility of interest expense, debt is a vital component of the "optimal" capital structure once an organization can support it.

Over time, mature organizations often deleverage, decreasing debt as a percentage of total capital. Deleveraging occurs due to ongoing cash flow generation, and equity values improve over time due to share price gain. Companies may choose to execute share buybacks to mitigate this deleveraging, reducing the equity in their capital structure.

Determinants of the Costs of Debt and Equity

Investors' assessments of issuer-specific and top-down factors determine the cost of equity and debt in financial markets. Despite the cost of equity being higher than the cost of debt, they are influenced by the same factors and thus move together because they claim the same cash flows.

These factors include:

Top-Down Factors

Top-down factors include financial market conditions and industry conditions.

Economic Conditions

The prevailing economic environment can heavily impact the anticipated returns for debt and equity investors in either private or public sectors. For instance, macroeconomic and specific country-related factors, like growth rate, inflation, monetary strategies, and currency value fluctuations, can increase interest rates on sovereign government debt and credit spreads for different issuers.

Moreover, with the looming threat of a recession, lenders may require much larger premiums from borrowers due to the rising chances of a loan default. This trend is especially noticeable in cyclical sectors.

Lastly, from the perspective of equity investors, companies aim to take loans when the interest rates are low and opt for equity releases when the stock prices are high.

Industry Conditions

The industry where a company operates may influence its cost of capital. Typically, a company's vulnerability to economic variables is based on the type of products or services it offers.

For instance, consider a case of fluctuating oil prices. When oil prices rise, oil producers might benefit from narrower credit spreads, and investors might be more inclined to up their financial

stakes in these firms. Conversely, for businesses like airlines, where fuel constitutes a significant cost, increased oil prices might widen their credit spreads and dampen investor enthusiasm due to anticipated higher operating costs.

Issuer-Specific Factors

Issuer-specific factors cover the risk and return profile of an issuer. By considering the risk-return of an issuer, debt and equity investors cab modify their expected returns based on fundamental rates or general averages by examining various risk elements, which include:

I. **Interest coverage and Financial leverage.**

Interest coverage and financial leverage are also considered because a company with substantial debt might struggle to take on additional borrowing. Furthermore, for shareholders, a high debt level indicates that many other claims take precedence over their interests.

Interest coverage is calculated as follows:

$$\text{Interest coverage} = \frac{\text{Profit before interest and taxes}}{\text{Interest expense}}$$

A higher interest coverage ratio shows a company's good financial health, as it can comfortably cover its interest payments. Conversely, a ratio below 1 signifies potential financial strain, as the company may struggle to meet interest expenses, raising concerns for lenders and investors.

On the other hand, financial leverage is calculated as follows:

$$\text{Financial Leverage} = \frac{\text{Total Debt}}{\text{Total Equity}}$$

A higher debt-to-equity ratio indicates that a company has a higher proportion of debt in its capital structure, implying more financial leverage. Conversely, a lower ratio suggests the company relies more on equity financing, indicating less financial leverage.

II. **Profitability Risks**

Profit margin stability is also a crucial factor determined by a firm's proportion of variable or fixed costs. The operating leverage of a company is used to measure the stability of profit margins:

$$\text{Operating leverage} = \frac{\text{Fixed costs}}{\text{Total costs}}$$

Firms with higher operating leverage see a greater fluctuation in cash flow and profits for a specific change in revenue compared to companies with lower operating leverage.

III. **Sales Risks**

Other factors held constant, investors are more confident in firms with stable, growing, and predictable revenues and thus will lend to such firms at a lower cost.

IV. **Collateral/Type of Assets Owned by the Firm.**

The assets central to a company's business model play a crucial role. Typically, assets like real estate, vehicles, aircraft, and reliable customer receivables, which can act as strong collateral or are liquid and cash-generating, allow for more debt usage.

Question

A lower credit rating of a company's debt *most likely* signifies:

   A. Lower risk for equity and debt investors.

   B. Higher risk for equity and debt investors.

   C. Lower returns are demanded by equity and debt investors.

Solution

The correct answer is B.

A lower credit rating signifies higher risk for a company's investors, who demand higher returns.

A and C are incorrect. A lower credit rating signifies higher risk and, as such, higher returns that equity and debt investors demand.

LOS 6c: explain the Modigliani-Miller propositions regarding capital structures

A firm's **capital structure** is the mix of debt and equity it uses to finance its investments. A capital structure decision aims to determine the financial leverage to maximize a company's value by minimizing the weighted average cost of capital (WACC).

Franco Modigliani and Merton Miller (1958) posit that, given certain assumptions, the choice of capital structure is irrelevant in determining the value of the firm. In this case, the firm's value is the present value of the firm's expected future cash flows discounted by WACC.

Assumptions of Modigliani-Miller Propositions

Franco Modigliani and Merton Miller suggested the following assumptions for Proposition I:

1. Investors have similar expectations regarding future cash flows.
2. Bonds and stocks are traded in a perfect capital market.
3. Investors can lend and borrow at a risk-free
4. rate.
5. There are no agency costs.
6. Financing and investing decisions are independent of each other.

Although these assumptions are unrealistic, Modigliani and Miller's school of thought is that investors can create capital structures they prefer. Management's capital structure does not matter because investors can change it at no cost.

Proposition I Without Taxes: Capital Structure Irrelevance

MM Proposition I, without taxes, posits that the market value of a company is unaffected by the capital structure of the company. As such, the value of a levered firm is equal to the value of an unlevered firm.

$$\text{Value of levered firm } (V_L) = \text{value of an unlevered firm } (V_U)$$

The above relationship implies that cash flows, not capital structure, determine the value of a company. Additionally, assuming no taxes, a company's capital structure does not affect its WACC.

Assume management has set a company's capital structure to consist of 50% debt and 50% equity. Further, assume that the investor prefers the company's capital structure to be 60% debt and 40% equity. The investors will use borrowed money to finance their share purchase so that the ownership of the company's assets reflects 60% debt financing. The importance of the Modigliani and Miller theory is that managers cannot use capital structure to change a firm's value.

Proposition II Without Taxes: Higher Financial Leverage Raises the Cost of Equity

Here, Franco Modigliani and Merton Miller remove a few assumptions from Proposition I and state that the cost of equity is a linear function of a company's debt/equity ratio.

According to this proposition, the cost of equity increases as a company uses debt financing to maintain a constant WACC. The risk of equity is contingent on business risk and financial risk. Business risk determines the cost of capital, while capital structure determines financial risk.

Mathematically, MM Proposition II without taxes implies that the cost of equity is a linear function of a company's D/E ratio:

$$r_e = r_0 + (r_0 - r_d)\frac{D}{E}$$

Where:

r_e= The cost of equity

r_0= The cost of capital for a company financed only by equity

r_d= The cost of debt

D= The market value of debt

D= The market value of equity

From the formula above, the following must be true:

- Higher leverage (D/E) increases the cost of equity (r_e) but does not alter the firm's value or WACC

- An increase in the cost of debt (r_e) must precisely offset the higher use of lower-cost debt

Example: MM Proposition II Without Taxes

Genghis Investment has an all-equity capital structure. Its characteristics are as follows:

- The expected operating income is $6,000.

- The cost of equity, which is also the WACC, is 12%.

- EBIT is perpetual.

- Genghis plans to issue $18,000 in debt at 6% to buy back $18,000 worth of its equity.

The value of Genghis and its cost of equity assuming MM Proposition II without taxes is *closest to*:

Solution

$$V = \frac{\text{EBIT}}{r_{\text{WACC}}} = \frac{\$6,000}{0.12} = \$50,000$$

When Genghis issues the debt, it pays interest of 6% on the debt.

$$\text{Interest Payment} = 0.06\,(\$18,000) = \$1,080$$

Using the MM proposition II, the cost of Genghis' equity is given by:

$$r_e = r_0 + (r_0 - r_d)\frac{D}{E}$$

Where:

$$E = V - D = \$50,000 - \$18,000 = \$32,000$$

So,

$$r_e = 0.12 + (0.12 - 0.06)\frac{\$18,000}{\$32,000} = 0.15375 = 15.38\%$$

Genghis makes $1,080 to debtholders and $6,000 - 1,080 = \$4,920$ to equity holders. The value of debt is calculated as follows.

$$V = D + E = \frac{\$1,080}{0.06} + \frac{\$4,920}{0.1538} = \$50,000$$

Proposition I With Taxes: The Tax Shield

A tax shield is the deliberate use of taxable expenses to offset taxable income. The interest expense on debt provides a tax shield that results in savings that enhance the value of a company. Ignoring the practical realities of bankruptcy and financial distress costs, the value of a company increases with increased debt levels. The level of tax benefit reduces the actual cost of debt.

Note that,

$$\text{After-tax cost of debt} = \text{Before-tax cost of debt} \times (1 - \text{marginal tax rate})$$

According to MM Proposition I, with taxes, the value of the levered company is greater than that of the all-equity company by an amount equal to the corporate tax rate multiplied by the value of the debt (tD).

The MM Proposition I with taxes is:

$$V_L = V_U + tD$$
$$\Rightarrow V_L > V_U$$

Where:

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V_L = value of the levered firm (debt in the capital structure).

V_U = value of the unlevered firm (no debt in the capital structure).

t = Marginal tax rate.

tD = present value of the debt tax shield.

In summary, under MM Proposition I with taxes:

- In the presence of corporate taxes (not personal taxes), a profitable firm can increase its value by using debt in its capital structure.

- The higher the corporate tax rate, the higher the benefits of including debt in a capital structure. According to Proposition I, value is maximized at 100% debt with taxes.

Proposition II with Taxes: The Impact on WACC and Return on Equity

By introducing taxes, the WACC is adjusted to reflect the impact of the tax benefit:

$$r_e = r_0 + (r_0 - r_d)(1-t)\frac{D}{E}$$

We can see that the WACC for a company with debt is lower than the WACC for companies without debt. Therefore, debt financing is highly beneficial when considering taxes and ignoring financial distress and bankruptcy costs. The firm's optimal capital structure is still 100% debt.

In summary, if MM Proposition II with taxes holds, then the following must be true:

- When corporate tax is present, the cost of equity (r_e) increases as the company employs more debt but at a slower rate compared with the no-tax proposition ($r_e = r_0 + (r_0 - r_d)\frac{D}{E}$)

- As a firm employs more debt, its WACC decreases, increasing its value.

- Ignoring financial distress and bankruptcy costs, in the presence of corporate tax, the use of tax enhances the value of a company with the optimal benefit at 100% debt.

Modigliani–Miller Propositions

Without Taxes	With Taxes
Proposition I	
$V_L = V_U$	$V_L = V_U + tD$
Proposition II	
$r_e = r_0 + (r_0 - r_d)\left(\dfrac{D}{E}\right)$	$r_e = r_0 + (r_0 - r_d)(1-t)\left(\dfrac{D}{E}\right)$

Example: MM Proposition I and II With Taxes

Let us use the example of Genghis Investments.

- The expected operating income is $6,000.

- The cost of equity, which is also the WACC, is 12%.

- EBIT is perpetual.

- Genghis plans to issue $18,000 in debt at 6% to buy back $18,000 worth of its equity.

- The corporate tax rate is 30%.

The value of Genghis is calculated as follows:

$$V_U = \frac{\text{EBIT}(1-t)}{\text{WACC}} = \frac{\$6,000(1-0.3)}{0.12} = \$35,000$$

The value of Genghis when it issues $18,00 in debt and buys back shares:

$$V_L = V_U + t_D = \$35,000 + 0.3(\$18,000) = \$40,400$$

The value of equity after buyback is $40,400–$18,000=$22,400$40,400–$18,000=$22,400, and

levered equity is:

$$r_e = 0.12 + (0.12 - 0.06)(1 - 0.3)\frac{\$18,000}{\$22,400} = 0.15375 = 15.38\%$$

So that,

$$
\begin{aligned}
V_L = D + E &= \frac{r^dD}{r^d} + \frac{(EBIT - r^dD)(1 - t)}{r_e} \\
&= \frac{\$1,080}{0.06} + \frac{(\$6,000 - \$1,080)(1 - 0.3)}{0.15375} \\
&= \$40,400
\end{aligned}
$$

The WACC of a levered Genghis is:

$$
\begin{aligned}
r_{WACC} &= (\frac{\$18,000}{\$40,400})06\,(1 - 0.3) + (\frac{\$22,400}{\$40,400})0.15375 \\
&= 0.1039 = 10.39\%
\end{aligned}
$$

Therefore,

$$V_L = \frac{EBIT(1 - t)}{WACC} = \frac{\$6,000(1 - 0.3)}{0.1039} \approx \$40,400$$

Costs of Financial Distress

Financial distress is the increased uncertainty about a company's capability to fulfill its commitments due to reduced profitability or current financial losses.

The disadvantage of operating and financial leverage is that the earnings are magnified downwards during an economic slowdown. Lower earnings put companies in financial distress, which adds costs.

The costs of financial distress can be classified as direct or indirect. Some direct costs include actual cash expenses (such as administrative costs) associated with bankruptcy. In contrast, indirect costs include agency costs associated with the debt, forgone investment opportunities, and impaired ability to conduct business.

Companies with assets that have a ready secondary market have lower costs associated with financial distress. On the other hand, companies with fewer tangible assets have less liquidity and higher costs associated with financial distress. The probability of bankruptcy increases as the degree of leverage increases.

Question

Which of the following is most likely true about the effect of asymmetric information on the cost of equity?

   A. Companies with lower asymmetry of information have a greater likelihood of agency cost.
   B. Some degree of asymmetric information exists because investors never have as much information as managers.
   C. Managers choose financing methods according to a hierarchy that prefers the method with the most potential information content.

Solution

The correct answer is B.

Managers have more information about the company's current performance and its future potential investments than investors.

A is incorrect. Companies with lower asymmetry of information have less likelihood of agency costs.

C is incorrect. Managers choose financing methods according to a hierarchy that prefers the method with negligible potential information content.

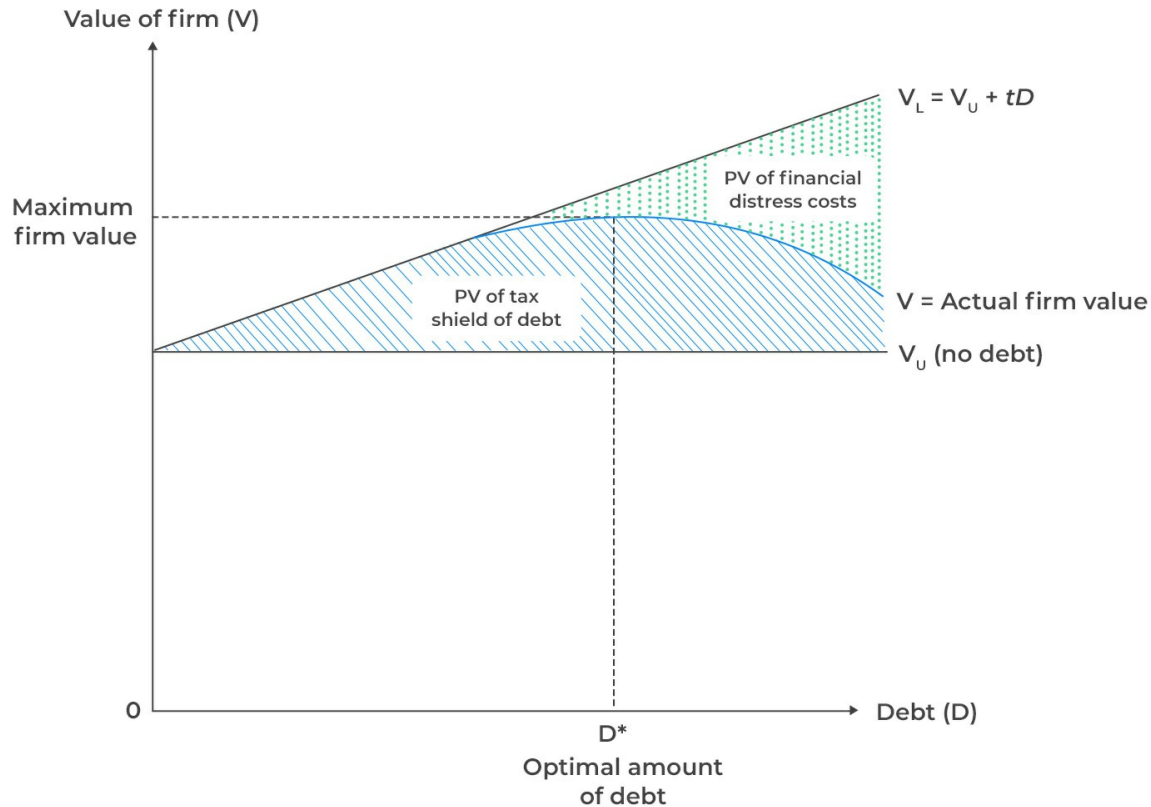## LOS 6d: describe optimal and target capital structures

The target capital structure of a company refers to the capital the company is striving to obtain. In other words, target capital structure describes the mix of debt, preferred stock, and common equity expected to optimize a company's stock price. As a company raises new capital, it will focus on maintaining this target or optimal capital structure. The value-reducing impact of the present value of expected bankruptcy costs offsets the tax shield's value-enhancing effect from debt. The trade-off can be illustrated by incorporating the potential cost of financial bankruptcy into the value of a levered firm:

$$V_L = V_U + tD - PV\,(\text{Costs of financial distress})$$

The above equation is called the static trade-off theory of capital structure.

Static Trade-Off Theory

At low levels, the firm value will be higher because the tax benefit of debt will outweigh potential financial distress costs. As debt levels increase, the financial distress costs also increase and equal the tax benefit of debt. If debt levels increase further, the firm's value will decrease as the financial distress costs exceed the tax benefit of debt. The optimal capital structure is the level at which the debt level maximizes the firm's value and the associated equity level.

Market Value and Book Value

Note that the prior discussions on WACC and debt and equity weights were calculated using the market value of equity. Regarding target capital structure, equity and debt book values are used

to calculate the weights.

When determining target capital structure, book values instead of market values because:

- Market values can change dramatically, but they rarely impact the optimum level of borrowing.

- The amount and types of capital a company invests, not the company itself, are of paramount significance to management.

- The capital structure policy ensures that management can borrow quickly and cheaply. Lenders and rating agencies use debt book values and equity in their calculation measures.

Target Weights and WACC

To determine the weights to be used in the computation of the WACC of a company, a manager should ideally use the proportion of each source of capital that will be used.

For example, if a company has two sources of capital: debt and common equity:

w_d, the proportion of debt:

$$w_d = \frac{\text{Market value of debt}}{\text{(Market value of debt} + \text{Market value of equity} + \text{Market value of preferred stock)}}$$

w_e, the proportion of debt:

$$w_e = \frac{\text{Market value of equity}}{\text{(Market value of debt} + \text{Market value of equity} + \text{Market value of preferred stock)}}$$

However, if the target capital structure is known and the company attempts to raise capital consistently with this target, then the target capital structure should be used.

Estimating Target Capital Structure Weights

An external analyst will most likely not know the target capital structure of a company and will, therefore, have to estimate it using one of the following methods:

- Assume that a company's current capital structure, at current market value weights for each capital component, is equivalent to the company's target capital structure.

- Examine a company's capital structure trends or its management's statements regarding capital structure policy. This will be useful in the inference of the target capital structure.

- Use the averages of comparable capital structures of companies as the target capital structure.

An example will help to explain this concept further.

Example: Calculating the Capital Structure

An analyst wishes to determine the proportion of debt and equity that Company ABC would use to estimate these proportions using (i) the current capital structure of Company ABC and (ii) the average of Company ABC's competitors' capital structure

The following information is given:

- Company ABC's market value of debt = $25 million.

- Company ABC's market value of equity = $35 million.

Company ABC's competitors and their capital structures are:

Competitor	Market Value of Debt	Market Value of Equity
X	$20 million	$40 million
Y	$32 million	$55 million

Solution to (i):

w_d, the proportion of company ABC's debt

$25 milli

$$w_d = \frac{\$25 \text{ million}}{\$25 \text{ million} + \$35 \text{ million}} = 0.41667$$

w_e, the proportion of company ABC's debt

$$w_e = \frac{\$35 \text{ million}}{\$25 \text{ million} + \$35 \text{ million}} = 0.5833$$

Solution to (ii)

w_d, the arithmetic average of company ABC's competitors' debt:

$$w_d = \frac{(\frac{\$20 \text{ million}}{\$20 \text{ million} + \$40 \text{ million}}) + (\frac{\$32 \text{ million}}{\$32 \text{ million} + \$55 \text{ million}})}{2}$$
$$= \frac{0.3333 + 0.36782}{2} = 0.35057$$

w_e, the arithmetic average of company ABC's competitors' debt:

$$w_e = \frac{(\frac{\$40 \text{ million}}{\$20 \text{ million} + \$40 \text{ million}}) + (\frac{\$55 \text{ million}}{\$32 \text{ million} + \$55 \text{ million}})}{2}$$
$$= \frac{0.66667 + 0.63218}{2} = 0.64943$$

Although the arithmetic average is calculated in the above example, it is possible to compute the weighted average, giving greater weight to larger companies.

Pecking Order Theory

Managers have more information about a company's performance and prospects—including future investment opportunities—than outsiders, resulting in asymmetric information— and unequal distribution of information.

Since there is a more significant potential for conflicts of interest, debt and equity capital providers demand higher returns from companies with increased asymmetry in information because they may speculate that the new securities are overpriced. In other words, a company typically issues equity when its shares are expensive or issue new debt when its creditworthiness

is on the verge of declining.

According to the pecking order theory (Myers & Majluf, 1984), managers prioritize financing options based on the potential for revealing information. They lean first towards options that disclose the least information, like using internal funds. On the other end, they are more hesitant about public equity offerings, as these can make investors wary; if a company's future looks bright, why would current owners dilute their ownership? Thus, when external funds are needed, managers tend to favor private debt over public ones and are most reluctant to issue equity.

Implications of Pecking Order Theory

- Managers prefer internal funds, and when external funds are required, they favor private debt over public debt and prefer equity financing as a last resort.

- Companies are inclined to issue equity when they perceive their stock to be overpriced. Conversely, if they think their stock is undervalued, they might hesitate to issue equity and may opt to buy back shares. Alternatively, the issuance of debt by a company may indicate management's confidence in the future ability to repay the debt.

- If the cost of capital increases after a company increases the issuance of equity, it is a negative signal regarding the company's prospects.

Agency Costs

Agency costs are incremental costs incurred due to the competing interests of shareholders, debtholders, and management. Items such as subsidized dinners, a corporate jet fleet, and chauffeured limousines are examples of "perquisite consumption" that executives might lawfully authorize for themselves at a cost to shareholders.

The costs arising from this conflict of interest have been called the agency costs of equity. Specific actions are taken to mitigate this risk. Such actions include requiring audited financial statements, holding an annual meeting, and using non-compete employment contracts and insurance to guarantee performance.

The free cash flow hypothesis (Jensen's, 1986) predicts that a reduction in agency costs of equity results from an increase in the use of debt. The more financially leveraged a company is, the less room management has to take on more debt or spend money foolishly.

Question

Assume that the current market value of company XYZ's debt and common equity are $55 million and $45 million, respectively, representing the company's target capital structure. What are company XYZ's target capital structure weights?

    A. 55% debt; 45% equity.

    B. 45% debt; 55% equity.

    C. 50% debt; 50% equity.

Solution:

The correct answer is A.

$$w_d = \frac{\$55 \text{ million}}{\$55 \text{ million} + \$45 \text{ million}} = 0.55$$

$$w_e = \frac{\$45 \text{ million}}{\$55 \text{ million} + \$45 \text{ million}} = 0.45$$