

## WACC DECOMPOSED

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**Weighted Average Cost of Capital ("WACC") is the average blended cost of capital across all diverse sources, including common stock, preferred shares, and debt. The cost of each type of capital is weighted as a percentage of the total capital and they are added together. This article will provide a decomposition of WACC, highlight its uses, how to calculate it, and will provide examples.**

### Uses of WACC

WACC acts as the discount rate for calculating a business's Net Present Value (NPV). When appraising investment opportunities, one should use WACC as it reflects the company's opportunity cost. Thus, it serves as a hurdle rate for most companies i.e., the minimum acceptable rate of return.

Companies often use WACC as the hurdle rate for financial modeling of internal investments as well evaluating potential transactions such as mergers and acquisitions. If an appraised investment has a lower Internal Rate of Return (IRR) than the company's WACC the investment opportunity should be rejected. Pursuant to that the company would rather initiate a share repurchase or payout a dividend instead of undertaking the project.

### Computation of WACC

The below given formula computes WACC:

#### Where:

- E = market value of the company's equity (market cap)
- D = market value of the company's debt
- V = total value of capital (Debt + Equity)
- E/V = percentage of capital that is equity
- D/V = percentage of capital that is debt
- Re = cost of equity (required rate of
- Rd = cost of debt (yield to maturity on existing debt)
- T = corporate tax rate

To compute WACC we multiply the cost of each source of capital (debt and equity) by its relevant weight and then adding the products together.

If a company has Preferred stock, then the below extended version of the WACC formula becomes useful:

#### Where:

- P = company's preferred stock
- Rp = cost of the preferred stock

#### Example: Calculating the WACC

Suppose company ABC has the following capital structure:

35% equity, 10% preferred stock, and 55% debt. Its cost of equity is 12%, its cost of preferred stock is 9%, and the before-tax cost of debt is 7%.

If the corporate tax rate is 35%, what is the WACC of company ABC?

In this example, E/V = 35%, Re = 12%, T = 35%, D/V = 55%, Rd = 7%, P/V = 10%, and Rp = 9%.

And we know that,

$$WACC = (E/V)Re + ((D/V)Rd)(1-T)$$

Therefore,

$$WACC = (E/V)Re + ((D/V)Rd)(1-T)$$

$$ABC's WACC = 0.042 + 0.025025 + 0.009$$

$$ABC's WACC = 0.076025 = 7.6\%$$

### Limitations of WACC

- Lack of public information: It is hard to calculate WACC for private companies as the information is not publicly available.
- Change in Capital Structure: WACC assumes that the company's capital structure remains constant over time. However, the capital structure will vary as the company takes on new projects.
- Hard to compare: WACC computation is heavily dependent on the company's capital structure. As such, it becomes unique to each distinct company. As such, it is meaningless to compare the WACC of one company to the others.