EBIT-EPS ANALYSIS

Earnings Before Interest and Taxes (EBIT)

EBIT or the operating income is the profitability measurement which determines the company's operating profit.

1. It shows the amount of profit that the company generates from its operating activities only.

2. Here the expenses pertaining to the interest and taxes are not considered for calculating the EBIT as they do not arise due to the operating activities and that's why it means operating profit or operating earnings.

METHODS

It can be calculated by using the direct and indirect method.

#1 – Direct Method

EBIT = Revenue – COGS – Operating Expenses

- **Revenue**
- **Cost of Goods Sold (COGS)**

COGS = Opening inventory + purchases of raw material + direct labor + overheads – closing inventory

- **Operating Expenses**

#2 – Indirect Method

EBIT = Net income + Interest expenses + Tax expense

Example

The income statement of Harry Corporation reported the following activities.

• Sales Revenue from operations: ` 25,00,000

•COGS: `14,00,000

•Operating Expenses: `4,00,000

•Interest Expense: ` 2,00,000

•Income Tax : ` 30,000

Calculate EBIT

Solution:

Now from the figures we can calculate gross profit (Revenue – COGS)

GP = ` 25,00,000 – `14,00,000

Gross Profit = ` 11,00,000

And **Net Income** = Gross profit – Operating Expense – Interest expense – tax expense

= `(11,00,000 – 4,00,000 – 2,00,000 – 30,000)

Net Income = ` 4,70,000

Now we need to calculate EBIT from the two methods:

•Sales Revenue from operations: ` 25,00,000

By Direct Method

EBIT = `(25,00,000 – 14,00,000- 4,00,000) = ` 7,00,000

By Indirect Method

EBIT = `(4,70,000 + 2,00,000 + 30,000) = ` 7,00,000

Particulars	`
Sales Revenue	25,00,000
Less: COGS	14,00,000
Gross Profit	11,00,000
Less: Operating Expenses	4,00,000
Earnings Before Interest and Taxes(EBIT)	**7,00,000**
Less: Interest Expenses	2,00,000
Earnings Before Taxes(EBT)	5,00,000
Less: Income Tax	30,000
Net Income	4,70,000

In this example, EBIT is `7,00,000 while net income is ` 4,70,000.

Why Does Earnings Before Interest and Taxes (EBIT) Matter?

EBIT provides investment analysts with useful information for evaluating a company's operating performance without regard to interest expenses or tax rates.

EBIT helps minimize these two variables that may be unique from company to company, and enables one to analyze operating profitability as a singular measure of performance.

EARNINGS PER SHARE

The term **earnings per share (EPS)** represents the portion of a company's earnings, net of taxes and preference dividends, that is allocated to each share of common stock.

The figure can be calculated simply by dividing net income earned in a given reporting period (usually quarterly or annually) by the total number of shares outstanding during the same term.

How Does Earnings Per Share (EPS) Work?

Let's assume that during the fourth quarter, Company XYZ reported net income of `4,00,000. During the same time frame, the company had a total of 10,000 shares outstanding. In this particular case, the company's quarterly earnings per share (or EPS) would be `40, calculated as follows:

EPS = `4,00,000 / 10,000 shares = `40

Why Does Earnings Per Share (EPS) Matter?

EPS is the portion of a company's profit that is allocated to every individual share of the stock. It is a term that is of much importance to investors and people who trade in the stock market. The higher the earnings per share of a company, the better is its profitability.

A Ltd., has an EBIT of Rs 3, 20,000. Its capital structure is given as under:

	Rs
Equity Share Capital of Rs 10 each	4,00,000
13% Preference Share Capital	1,00,000
9% Debentures	2,00,000

The company is in the tax bracket of 50%.

You are required to calculate the Earning Per Share.

Solution: Computation for EPS

	Rs
EBIT	3,20,000
Less: Interest $\left(2,00,000 \times \frac{9}{100}\right)$	18,000
EBT	3,02,000
Less: Tax @ 50%	1,51,000
EAT	1,51,000
Less: Preference Dividend $\left(1,00,000 \times \frac{13}{100}\right)$	13,000
Earnings available to equity shareholders	1,38,000

Number of equity shares = 40,000

$$\therefore \quad \text{Earnings per share} = \frac{\text{Earnings available to equity shareholders}}{\text{Number of equity shares}}$$

$$= \frac{\text{Rs } 1,38,000}{40,000} = \text{Rs } 3.45$$

EBIT-EPS Analysis

a) A scientific basis for comparison among various financial plans and shows ways to maximize EPS.

b) A tool of financial planning that evaluates various alternatives of financing a project under varying levels of EBIT and

c) suggests the best alternative having highest EPS and determines the most profitable level of EBIT'.

A firm has various options regarding the combinations of various sources to finance its investment activities.

The firms may opt to be an

i) all-equity firm (and having no borrowed funds) or

ii) equity-preference firm (having no borrowed funds) or

iii) any of the numerous possibility of combinations of equity, preference shares and borrowed funds.

Given a level of EBIT, a particular combination of different sources of finance will result in a particular EPS and therefore, for different financing patterns, there would be different levels of EPS.

Constant EBIT and Changes in the Financing Patterns

Suppose, ABC Ltd. which is expecting the EBIT of Rs.1,50,000 per annum on an investment Rs.5,00,000, is considering the finalization of the capital structure or the financial plan. The company has access to raise funds of varying amounts by issuing equity share capital, 12% preference share and 10% debenture or any combination thereof. Suppose, it analyzes the following four options to raise the required funds of Rs.5,00,000.

1. By issuing equity share capital at par.
2. 50% funds by equity share capital and 50% funds by preference shares.
3. 5% funds by equity share capital, 25% by preference shares and 25% by issue of 10% debentures.
4. 25% funds by equity share capital, 25% as preference share and 50% by the issue of 10% debentures.

Assuming that ABC Ltd. belongs to 50% tax bracket, the EPS under the above four options can be calculated as follows:

	Option 1	Option 2	Option 3	Option 4
Equity share capital	Rs.5,00,0000	Rs.2,50,000	Rs.2,50,000	Rs.1,25,000
Preference share capital	---	2,50,000	1,25,000	1,25,000
10% Debentures	---	---	1,25,000	2,50,000
Total Funds	5,00,000	5,00,000	5,00,000	5,00,000
EBIT	1,50,000	1,50,000	1,50,000	1,50,000
- Interest	---	---	12,500	25,000
Profit before Tax	1,50,000	1,50,000	1,37,500	1,25,000
- Tax @ 50%	75,000	75,000	68,750	62,500
Profit after Tax	75,000	75,000	68,750	62,500
- Preference Dividend	---	30,000	15,000	15,000
Profit for Equity shares	75,000	45,000	53,750	47,500
No. of Equity shares (of Rs.100 each)	5000	2500	2500	1250
EPS (Rs.)	15	18	21.5	38

In this case, the financial plan under option 4 seems to be the best as it is giving the highest EPS of Rs.38. The firm is expecting to earn 30% return. After-tax, this return comes to 15% *i.e.*, 30% x (1-.5).

However, the after tax cost of 10% debentures is 5% [10% (1- .5)] i.e. the co. saved 10% on `250000 i.e. ` 25000.

the after tax cost of preference shares is 12% only. The co. saved 3% on ` 125000 i.e. ` 3750.

In the option 4, the firm has employed 50% debt, 25% preference shares and 25% equity share capital, and the benefits of employing 50% debt (which has after tax cost of 5% only) and 25% preference shares (having cost of 12% only) are extended to the equity shareholders. Total savings ` (25000+ 3750) = ` 28750, which will be shared by the existing shareholders. So per share increase will be ` 28750/1250= ` 23. Therefore the firm is expecting an EPS of ` 15+23= ` 38.

However, in option 2, where 50% funds are obtained by the issue of 12% preference shares, the 3% extra is available to the equity shareholders resulting in increase in of EPS from ` 15 to ` 18.

In plan 3, where 10% debt is also introduced, the extra benefit accruing to the equity shareholders increases further (from preference shares as well a from debt) and the EPS further increases to Rs.21.50. The company is expecting this increase in EPS when more and more preference share and debt financing is availed because the after tax cost of preference shares and debentures are less than the after tax return on total investment.

Hence, the financial leverage has a favourable impact on the EPS-only if the ROI is more than the cost of debt. It will rather have an unfavourable effect if the ROI is less than the cost of debt.

Varying EBIT with Different Patterns

Suppose, there are three firm X&Co., Y&Co. and Z& Co. These firms are alike in all respect except the leverage. The financial position of the three firms is presented as follows:

Capital Structure	*X & Co.*	*Y & Co.*	*Z & Co.*
Share Capital (of Rs.100 each)	Rs.2,00,000	Rs.1,00,000	Rs.50,000
6% Debenture	---	1,00,000	1,50,000
Total	2,00,000	2,00,000	2,00,000

These firms are expected to earn a ROI at different levels depending upon the economic conditions. In normal conditions, the ROI is expected to be 8% which may fluctuate by 3% on either side on the occurrence of bad economic conditions or good economic conditions. How is return available to the shareholders of the three firms is going to be affected by the variations in the level of EBIT due to differing economic conditions?

The relevant presentations have been shown as follows:

	Poor Eco. Cond.	*Normal Eco. cond.*	*Good Eco. Cond.*
Total Assets	Rs.2,00,000	Rs.2,00,000	Rs.2,00,000
ROI	5%	8%	11%
EBIT	Rs.10,000	Rs.16,000	Rs.22,000

X & Co. (No Financial Leverage) *(Figures in Rs.)*

EBIT	10,000	16,000	22,000
- Interest	---	---	---
Profit before Tax	10,000	16,000	22,000
- Tax @ 50%	5,000	8,000	11,000
Profit After Tax	5,000	8,000	11,000
Number of Shares	2,000	2,000	2,000
EPS (Rs.)	2.5	4	5.5

Y & Co. (50% Leverage) *(Figures in Rs.)*

EBIT	10,000	16,000	22,000
- Interest	6,000	6,000	6,000
Profit before Tax	4,000	10,000	16,000
- Tax @ 50%	2,000	5,000	8,000
Profit After Tax	2,000	5,000	8,000
Number of Shares	1,000	1,000	1,000
EPS (Rs.)	2	5	8

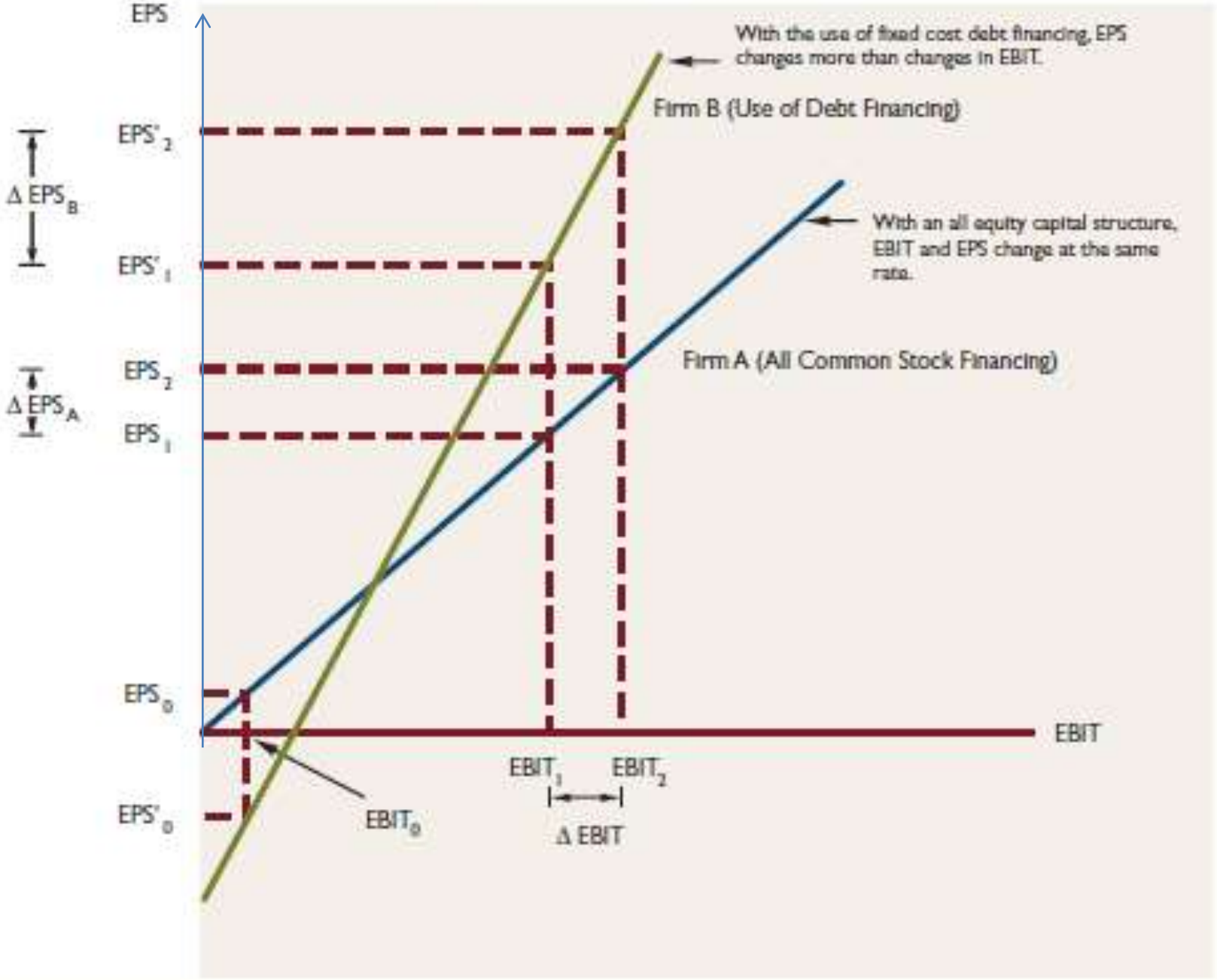
Z & Co. (75% Leverage) *(Figures in Rs.)*

EBIT	10,000	16,000	22,000
- Interest	9,000	9,000	9,000
Profit before Tax	1,000	7,000	13,000
- Tax @ 50%	500	3,500	6,500
Profit After Tax	500	3,500	6,500
Number of Shares	500	500	500
EPS (Rs.)	1	7	13

On the basis of the figures given above, it may be analyzed as to how the EPS affects the returns available to the shareholders under varying EBIT level. For this purpose, the normal rate of return i.e. 8% and EPS of different firms in normal economic conditions, both may be taken at 100 and position of other figures of EBIT and EPS may be shown on relative basis as follows:

	Poor Eco. Cond.	Normal Eco. cond.	Good Eco. cond.
EBIT	62.5	100	137.5
X & Co.			
EPS	62.5	100	137.5
% change from normal	- 37.5%	----	+ 37.5%
Y & Co.			
EPS	40	100	160
% change from normal	-60%	-----	+60%
Z & Co.			
EPS	14.3	100	185.7
% change from normal	- 85.7%	-----	+85.7%

Illustration of Financial Leverage



Advantages of EBIT-EPS Analysis

- **Financial Planning**
- **Comparative Analysis**
- **Performance Evaluation**
- **Determining Optimum Mix**

Limitations of EBIT-EPS Analysis:

1. No Consideration for Risk
2. Contradictory Results:
3. Over-capitalization:

Financial Breakeven Point

Financial breakeven point is the level of EBIT at which after paying interest, tax and preference dividend, nothing remains for the equity shareholders.

In other words, financial breakeven point refers to that level of EBIT at which the firm can satisfy all fixed financial charges. EBIT less than this level will result in negative EPS. Therefore EPS is zero at this level of EBIT. Thus financial breakeven point refers to the level of EBIT at which financial profit is nil.

Financial Break Even Point (FBEP) is expressed as ratio with the following equation:

$$\text{FBEP} = \frac{(\text{EBIT} - I)(1 - t) - P_d}{N} = 0$$

Or $$(\text{EBIT} - I)(1 - t) - P_d = 0$$

Or $$(\text{EBIT} - I) = \frac{P_d}{(1 - t)}$$

Or, $$\text{EBIT} = I + \frac{P_d}{(1 - t)}$$

where, EBIT = Earnings before Interest and Tax,

I = Interest,

t = Rate of Tax,

P_d = Preference Dividend, and

N = Number of Equity Shares.

It is to be noted here that beyond the financial breakeven point increase in EBIT will result in proportional increase in EPS.

Example :

A company has formulated the following financing plans to finance Rs 15, 00,000 which is required for

	Plan I (Rs)	Plan II (Rs)	Plan III (Rs)
Equity Share Capital (Rs 10 each)	15,00,000	10,00,000	7,50,000
8% Debentures	–	5,00,000	2,50,000
10% Preference Share Capital	–	–	5,00,000
	15,00,000	15,00,000	15,00,000

Compute the financial breakeven point for each alternative plan assuming tax rate at 50%.

Solution: We know that the financial breakeven point is the EBIT where EPS is 0.

$$\therefore \quad \text{FBEP} = \frac{(\text{EBIT} - I)(1 - t) - P_d}{N} = 0$$

Financial breakeven point for Plan I:

$$\frac{(\text{EBIT} - 0)(1 - 0.5) - 0}{1,50,000} = 0$$

$$\Rightarrow \quad 0.5\ \text{EBIT} - 0 = 0$$

$$\therefore \quad \text{EBIT} - 0 = 0$$

Financial breakeven point is 0

Financial breakeven point for Plan II:

$$\frac{(\text{EBIT} - 40,000)(1 - 0.5) - 0}{1,00,000} = 0$$

$$\Rightarrow \quad 0.5\ \text{EBIT} - 20,000 = 0$$

$$\therefore \quad \text{EBIT} = 40,000$$

Financial breakeven point is 40,000

Financial breakeven point for Plan III:

$$= \frac{(\text{EBIT} - 20,000)(1 - 0.5) - 50,000}{75,000} = 0$$

$$\Rightarrow \quad 0.5\ \text{EBIT} - 10,000 - 50,000 = 0$$

$$0.5\ \text{EBIT} = 60,000$$

$$\therefore \quad \text{EBIT} = 1,20,000$$

Financial breakeven point is 1,20,000

Indifference Level / Points

The indifference level of EBIT is one at which the EPS remains same irrespective of the debt equity mix.

Out of several available financial plans, the firm may have two or more financial plans which result in the same level of EPS for a given EBIT.

Such a level of EBIT at which the firm has two or more financial plans resulting in same level of EPS, is known as indifference level of EBIT.

Computation

There are two approaches to calculate indifference point: Mathematical approach and Graphical approach.

Example : Debarathi Co. Ltd., is planning an expansion programme. It requires Rs 20 lakhs of external financing for which it is considering two alternatives. The first alternative calls for issuing 15,000 equity shares of Rs 100 each and 5,000 10% Preference Shares of Rs 100 each; the second alternative requires 10,000 equity shares of Rs 100 each, 2,000 10% Preference Shares of Rs 100 each and Rs 8,00,000 Debentures carrying 9% interest. The company is in the tax bracket of 50%. You are required to calculate the indifference point for the plans and verify your answer by calculating the EPS.

Solution: Capital Structure

	Plan I (Rs)	Plan II (Rs)
Equity share capital	15,00,000	10,00,000
10% Preference share capital	5,00,000	2,00,000
9% Debentures	–	8,00,000
Total	**20,00,000**	**20,00,000**
Number of equity shares	15,000	10,000

Let, at X level of EBIT, the EPS under both the plan will be same.

EPS under 1st alternative: $\frac{X(1-t)-P_d}{N_1} = \frac{X(1-0.5)-50,000}{15,000}$

Again, EPS under 2nd alternative: $\frac{(X-I)(1-t)-P_d}{N_2} = \frac{(X-72,000)(1-0.5)-20,000}{10,000}$

Now, equalizing both the EPS we get:

$$\Rightarrow \quad \frac{X(1-0.5)-50,000}{15,000} = \frac{(X-72,000)(1-0.5)-20,000}{10,000}$$

$$\Rightarrow \quad \frac{0.5X-50,000}{15,000} = \frac{0.5X-36,000-20,000}{10,000}$$

$$\Rightarrow \quad \frac{0.5X-50,000}{3} = \frac{0.5X-56,000}{2}$$

$$\Rightarrow \quad 1.5X-1,68,000 = X-1,00,000$$

$$\therefore \quad X = \frac{68,000}{0.5} = \text{Rs } 1,36,000$$

We may verify the result by calculating EPS under both the plans.

Computation of EPS under Different Plans

	Plan I	Plan II
EBIT	1,36,000	1,36,000
Less: Interest		72,000
EBT	1,36,000	64,000
Less: Tax	68,000	32,000
EAT	68,000	32,000
Less: Preference Dividend	50,000	20,000
Earnings available to equity shareholders	18,000	12,000
No. of equity shares	15,000	10,000
$\therefore$ EPS = Earning available to equity shareholders / Number of equity shares	18,000 / 15,000	12,000 / 10,000
	= Rs 1.20	= Rs 1.20

Graphical Approach

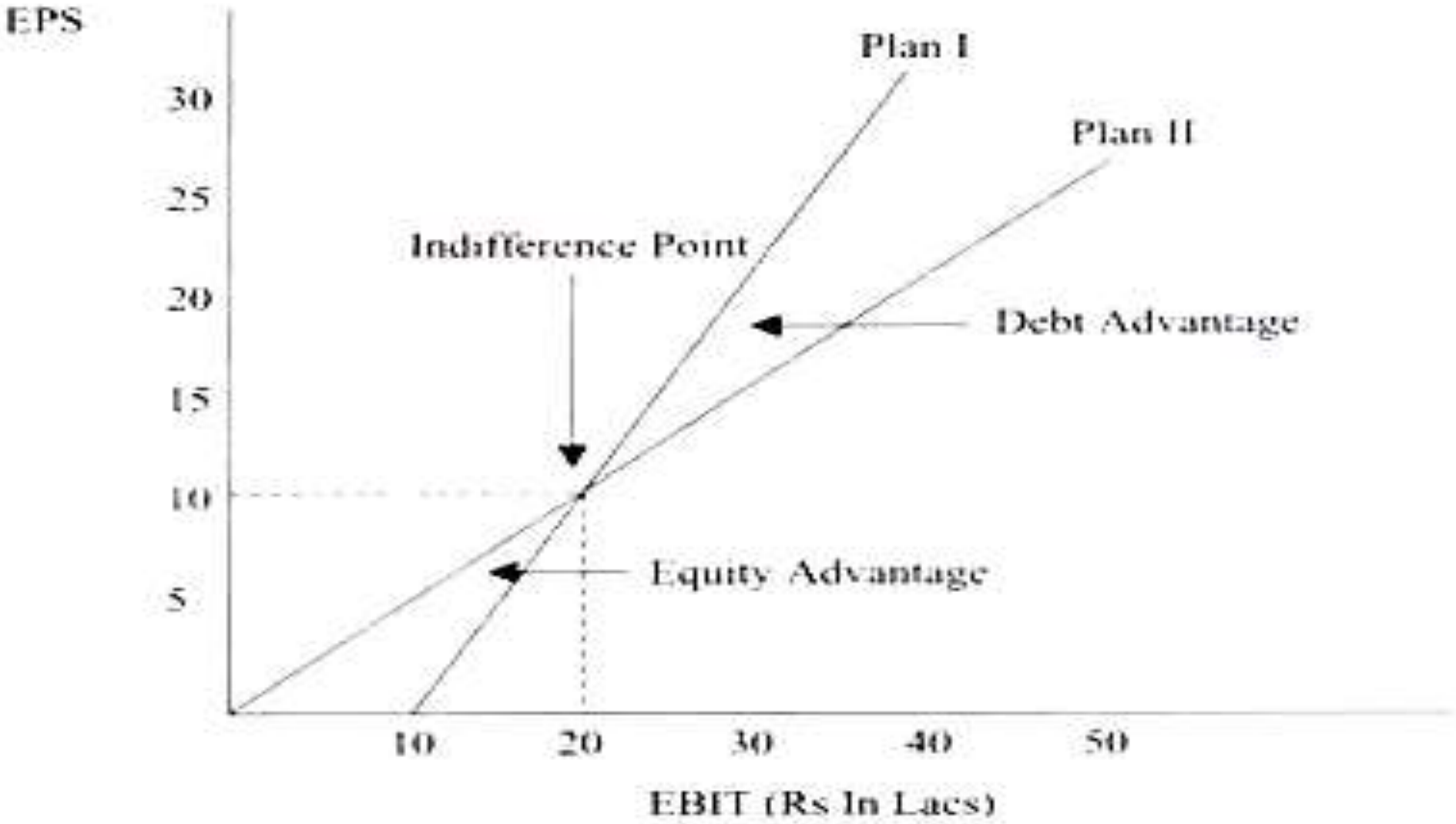


FIGURE 5.1 Graphical Presentation of Indifference Point


Thank
You