



# Role Of Ebit And Eps Analysis, Break-Even Analysis And Leverages In Decision Making

By

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## Abstract

The objective of financial management is to maximize the shareholders wealth. If earning per share increases, the share prices increase, which leads to the higher valuation of the firm. The use of debt in its capital structure increases the earning per share, thereby increases the wealth of the shareholders. But as the debt is inducted in the capital structure of the company, an element of financial risk comes into existence. Therefore, the decision makers, venture capitalist, financiers and the top management must be judicious about the quantum of debt (leverage) in companies' capital structure. Similarly, fixed cost has a very essential role in calculation of Break-even point (BEP) of the product you manufacture. High operating fixed costs leads to high BEP which increases the business risk (operating leverage). So proper balance is needed in the operating and financial leverage. The objective of writing this paper is make aware the managers of the start-ups about the relevance of the EBIT-EPS analysis, leverage, and computation of Break-even point and use these concepts for decision making, planning and control purposes.

**Key Words:** EBIT and EPS analysis, Leverages, Start-ups, Financial Break-even point, Cash BEP,

Financial management is concerned with procurement and utilization of funds in an efficient manner. It is concerned with maximization of shareholders wealth. Based on the above lines one can say that the scope of financial management essentially includes three types of decision 1. Investment decisions, 2. financing decisions and 3. dividend decisions.

Financing decisions are concerned with capital structure decisions. It is a judicious mix of debt and equity. The company should have that capital structure where cost of capital is minimum, and the value of the firm is maximum. The crucial role of EBIT and EPS (Earning Per Share) analysis is associated with the financing decisions. This analysis helps in deciding which capital structure we should go for. If judicious combination of debt and equity is there, it has direct impact on the EPS of the company. If EPS of the company moves in the positive direction, it signals the better performance of the company leading to surge in the share prices.

As share prices increase the wealth of the shareholders increases and thereby it has direct impact on the valuation of the firm.

The role of finance managers, entrepreneurs especially those dealing with start-ups, and even otherwise, cannot be undermined. They must take a rational decision what kind of capital structure they should go for their start-ups. Here lies the role of EBIT and EPS analysis.

Normally start-ups have lot of constraints in their initial years. The entrepreneurs of these new start-ups are not backed by well-established owners like big corporations. By and large, they start with limited resources whether it is finance and/or human resources. Hence, they must be extra cautious in repayment (loan) of the principal amount and the interest on that on time. Before starting the new venture, they must brood over regarding payment of salaries also. They should know what the financial break-even point of this new start-up is.

The objective of writing this paper is to suggest the role of EBIT and EPS analysis, Financial Break-even Point, and leverages to new entrepreneurs in decision making for selection of an apt capital structure. Another objective is to let them know the computation of various Break-even points and leverages and how to use this information in taking decisions. Starting up a new venture is always associated with risk; and entrepreneurs of start-ups being dynamic in nature must understand that the selection of a type of capital structure especially with debt carries the risk. They must understand the relationship of debt and EPS.

### **Objectives of study**

- (1) To analyze the business risk, financial risk and total risk associated with the startup companies.
- (2) To let the new venture capitalists, managers of the start-ups and decision makers know, and higher management to understand the relevance of the EBIT and EPS analysis.
- (3) To let the decision makers, know the concepts of various Break-even points and their relevance in decision making in planning, budgeting, and control.

### **Review of Literature**

Given below are some of the studies which have highlighted relevance of BEP in the decision making while some of them did empirical study on financial and operating leverage.

[1] Dr. Sangeeta porwal, 2021 in her article emphasized the need of Break-even analysis for studying the cost-volume -profit relationship. The objective of writing the paper was to develop the understanding how to calculate different types of Break-even points in different business models and how they are useful in decision making, planning and control. Author developed real life case-based situation to explain the different types of Break-even points and how it is useful to start-ups businesses and their management in decision making. According to author, it is important to know Break-even point in advance for new startups. Start-up entrepreneurs must identify a proper classification of fixed cost and variable cost with minute detail before calculation of Break-even point.

[2] The study conducted by Meysam Kaviani, 2014, have given greater emphasis on operating, financial and combined leverages, and its connection to other financial indicators. The author has adopted a quantitative and mathematical line of argument by conducting comprehensive financial analysis of leverages and Break-even points. They have taken various practical examples for illustration of the concepts. The paper aims to provide financial analysts with a better generic insight into the subject, and extended examination from different angles of the presented concepts.

[3] Dr. Putama K, 2014. According to him it provides a visualization to the managers to see how different capital structures effect earnings and value of the firm. The study conducted the analysis with respect to average profitability, debt funds level of infrastructure sector of EBIT between the companies and for a period of five years (2009-2013). He found that infra structure maintain same level of debt equity ratio, same interest cover (PBDITA), but the debt equity ratio and EBDITA was different for different years

[4] Alope Gupta and Debasish Sur (2013) conducted a study for measuring and analyzing the business and financial risk of HUL during a period of 10 years (2002-03 to 2011-12). Findings of the study was that HUL changed its financing policy by increasing its dependence on owners' equity resulting in lower degree of financial risk during later part of the ten-year period. Theoretically, there should be a positive association between risk and return. However, another finding was that there was a negative relationship between high risk and high premium during the study period.

[5] Sur,D., Mitra S. and Banerjee, D (2013) analyzed Business risk in NTPC Ltd. during pre-liberalization and Post-liberalization Periods (1984-85 to 2011-12). The result showed that the business risk associated with NTPC during post-liberalization period was less than that of the pre-liberalization period.

[6] P. Arun Prakash; Dr. A. M. Mohamed Sindhasha (2016), did an empirical study that evaluated the relationship between profitability and leverage in thirty pharmaceutical companies in India during the period 2006-to 2015. The results disclosed that independent variables such as, size and total debt ratios had statistically significant relationship with the different proxies of profitability and they determined the profitability to a great extent.

## Methodology

The paper is essentially developed from the angle of guiding new start-ups, their managers, venture capitalists and decision makers of the new ventures about the relevance of the capital structure, leverages and Break-even points. The case developed below explains the relevance of these concepts.

The paper is divided in five parts, namely:

1. EBIT and EPS Analysis and Indifference Point with case- based situation.
2. Financial Break-even Point and its relevance to new start-ups.
3. Simple BEP, Cash BEP and their relevance.
4. Leverages, interpretation, and their importance in decision making for start-ups.
5. BEP (time based) or Pay Back Period. Case based explanation has been used to clarify each concept.

### 1. EBIT and EPS Analysis and Indifference Point with case-based situation

#### Case study

Mr. John, who has graduated in Mechanical engineering discipline, is interested in starting a Company for manufacturing various types of locks (residential and commercial purpose) at Aligarh under One District and One Product scheme of the Government. He enquired about the capital requirements for his project from the other related persons who are dealing with similar kind of products in the market. Capital budgeting project would cost Rs. 70,00,000.

Mr. John has two alternatives to finance his new start-up. He can either raise Rs. 70,00,000 in equity form by issuing the equity share of Rs. 100 each from the market or get half of the total sum of project cost by issuing Debentures (Bonds) and remaining amount by issuing in the form of equity shares. There is an assurance from

the merchant bankers who can assist his company to raise the money for any of the two options. Debentures would carry 10% interest rate.

Normal tax rate is 25% but the government has given an incentive to start-ups reducing the tax rate by 15%.

Various market surveys have been done by experts and experts project the sales of the product is likely to be Rs. 70,00,000 per annum. Experts believe that sales figure will remain unaffected irrespective of type of capital structure. The variable cost ratio is 35.72% of sales excluding interest on debentures. The sale price per unit of the product would be Rs. 7000. Fixed costs include Rs. 3,00,000 as depreciation on fixed assets. The overhead figure is exclusive of interest on Debentures. The total cost structure with respect to the product is projected as follows. The life of the project is likely to be 5 years.

Sales		Rs 70,00,000
Variable costs:		
Material	10,00,000	
Labour	10,00,000	
Overheads	5,00,000	
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Contribution		25,00,000 (approx.)
Fixed costs:		35,00,000
Rent of the premises	5,00,000	
Insurance of the premises	2,00,000	
Depreciation on fixed assets	3,00,000	
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EBIT		10,00,000
		25,00,000
Interest (10%)		3,50,000
EBT		21,50,000
Taxation (10%)		2,15,000
Net income after tax		19,35,000

Mr. John is interested in knowing which of the capital structure he should opt for.

Mr. John must select the capital structure that has impact on increasing earnings per share so let us calculate the EPS.

## Calculation of EPS under both the options

(i) Equity and debt option	
EBIT	25,00,000
Interest (10%)	3,50,000
EBT	21,50,000
Taxation (10%)	2,15,000
Net income after tax (EAT)	19,35,000

No. of shares =  $35,00,000/100 = 35,000$

EPS =  $EAT/No. \text{ of shares} = 19,35,000/35,000 = \text{Rs } 55.28$  (approx.)

(ii) Equity option	
EBIT	25,00,000
EBT (No interest)	25,00,000
Taxation (10%)	2,50,000
Net income after tax (EAT)	22,50,000

No. of shares =  $70,00,000/100 = 70,000$

EPS =  $EAT/No. \text{ of shares} = 22,50,000/70,000 = \text{Rs. } 32.14$  (approx.)

Mr. John should understand that the capital structure having debt has a high EPS. Higher EPS has a direct correlation with higher prices of share leading to higher valuation of company. Therefore, he should opt for capital structure having debt element in it, as it increases the shareholders wealth which is the aim of the financial management. Another advantage of having a debt capital structure is that it will have lesser number of shareholders than that of purely having a capital structure based on only equity. Likely participation in the management of the company by the shareholders would be lesser because of lesser number of shareholders.

Mr. John should not disregard the risk element while considering the debt capital structure. Since capital structure is leveraged, timely payment of interest is very essential, otherwise debenture holders may go to the court for winding up of the company. Moreover, if loan is taken from any financial institution instead of raising Debentures in the market, timely payment of interest on loan is essential. If interest on loan is not paid in time, the financial institution (from whom loan is taken) may classify it as a nonperforming loan. The direct implication of it can be that representatives of financial institution can participate in the management of the John's Company.

As an owner Mr. John must take the moral responsibility of paying debt at right time rather than not paying it deliberately. Lately, there are number of entrepreneurs have been adopting this strategy of not paying it intentionally and should not run away. It should be taken as a social responsibility by Mr. John. All start-ups' owners must consider this as an ethical issue. Another issue that must be considered by owners of start-ups is the environmental issues. The product they come out should not be detrimental to the environment. In short, environmental issues, moral and ethical issues, and seriousness about the payment of debt (principal and interest amount) must be considered. Owners should be responsive to the society because of which companies flourishes.

## Role of Indifference point in selection of capital structure

Indifference point acts a guide for selection of a capital structure out of two proposed. Indifference point refers the level of EBIT where EPS of the two-capital structure is the same. Let us calculate the EPS of both the capital structure and equate the same to find out the level of EBIT.

EPS of first (equity) Capital structure =  $\{(EBIT - Interest) * (1-T)\} / \text{No of Shares}$

$$\{(EBIT - 0) * (1-0.10)\} / 70,000 \text{ ----- (1)}$$

EPS of Second (Debt) Capital structure =  $\{EBIT - Interest\} * (1-T) / \text{No of shares}$

$$\{(EBIT - 3,50,000) * (1-0.10)\} / 35,000 \text{ ----- (2)}$$

Equating (1) and (2) and finding out the Value of EBIT which is Rs. 7,00,000.

Rs. 7,00,000 is the indifference point. At this level, the decision makers are indifferent which capital structure they should select. If level of EBIT, they expect in the business, is higher than that of indifference point they should go for the capital structure which is leveraged/having the debt element. If level of EBIT expected is lower than that of indifference point, they should go for equity capital structure.

### 2. Financial Break-even point and its relevance in start-ups

In general resources are not available in plethora, whether it finance or human resources. New start-ups normally need start-ups capital. Capital has its own cost associated with these new ventures. Fixed charges like interest, etc., must be paid in time. Timely payment of the principal amount is also essential to carry on business smoothly. Hence, managers of the start-ups must know the financial Break-even point.

Mr. John's financial Break-even point in term of rupee is 3,50,000. They must achieve the sales equal to Rs. 3,50,000 / (7,000 - 2,500) = 100 units.

### 3. Simple Break-even point and Cash Break -even point and their relevance

Simple break-even is calculated as follows.

$$\text{Fixed cost/Contribution per unit} = 10,00,000 / (7,000 - 2,500) = 223 \text{ units}$$

$$\text{Cash BEP} = \text{Cash fixed cost/ Contribution per unit} = 7,00,000/4,500 = 156 \text{ units}$$

Assumptions under calculation of Break-even point

1. Proper classification of fixed cost and variable cost with minute details.
2. Time period for which fixed cost is considered as fixed
3. Selling price per unit and variable cost remains the same during the time period considered.
4. Other should we give formula derivation

These assumptions have direct impact on calculation of BEP. The start-ups must be very careful in computing BEP. BEP is the point of sales revenue where operating cost (total cost and variable cost) is equal to sales revenue. It tells how many units are to be sold to recover the operating cost. Managers of these company must focus on achieving the sales as early as possible. They must focus on the strategies to increase the sales as early as possible and proper marketing surveys are needed in this respect to attain the BEP, simple BEP and Financial BEP.

#### 4. Leverages, interpretation, and their importance in decision making for start-ups

Derivative word for leverages is 'lever' which is used in science discipline. Lever is an instrument that magnifies the power. The same concept has been applied in finance. Leverages in finance can take three forms: (i) Operating leverage (ii) Financial leverage (iii) Combined leverage.

- (i) Operating leverage refers to degree of responsiveness of percentage change in EBIT and percentage change in sales. When a proportionate change in EBIT because of a given change in sales is more than proportionate change in sales, operating leverage arises. For measurement purpose the word 'Degree' is added in all types of leverage (operating, financial and combined). Hence it is called Degree of operating leverage. It can be calculated as follows:

Degree of operating leverage (DOL) = Percentage change in EBIT / Percentage change in sales

Operating leverage arises because of fixed operating costs that must be met irrespective of volume. As the fixed cost increases operating leverage increases. Operating leverage measures business risk. It has a direct impact on the Break-even point of the company. As the fixed operating cost increases, the Break-even cost increases. The operating leverage may also be measured by an alternative formula which is given below and accordingly we can calculate degree of operating leverage:

Degree of operating leverage = Contribution/ EBIT = 35,00,000/25,00,000 = 1.4

For interpreting the figure of 1.4 of degree of operating leverage, it means for every one percent increase in sales, EBIT will be up by 1.4 percent.

- (ii) Financial leverage refers to degree of responsiveness of percentage change in EPS and percentage change in EBIT. When a percentage change in EPS resulting from a given percentage change in EBIT is greater than percentage change in EBIT, financial leverage arises.

Degree of Financial Leverage (DFL) = Percentage change in EPS / Percentage change in EBIT

Financial leverage occurs because of the fixed commitments, which are there, in the form of interest etc., and they are to be met irrespective of the volume. It measures the financial risk. High financial costs increase the financial leverage but also increases the risk. The financial leverage may also be measured by an alternative formula which is given below and accordingly we can calculate degree of financial leverage:

Degree of financial leverage = EBIT / (EBIT-I) = 25,00,000 / 21,50,000 = 1.163

For interpreting the figure of 1.163 of Degree of financial leverage, means for every one percent increase EBIT, EPS will also go up by 1.16 percent.

- (iii) Combined leverage refers to degree of responsiveness of percentage change in EPS and percentage change in sales. It is the product of degree of operating and financial leverage. It helps in selection of financial plans for the new investments. It refers to the total risk of the firm. If operating leverage is higher, it should go for lower financial leverage. On the contrary, if financial leverage is higher, it should go for lower operating leverage.

Degree of Combined leverage (DCL) = (Operating leverage \* Financial leverage) = 1.628

For interpreting the figure of 1.628 of combined degree of financial leverage, means for every one percent increase in sales, EBT (also EPS) will go up by 1.628 percent.

## Significance of leverages in decision making

A firm having high operating leverage and high financial leverage is a very risky proposition. Keeping both the leverages low will mean that the management is too conservative even in using the legitimate opportunity of for maximizing the wealth of the shareholders. In case firm having a low operating leverage, it can opt for high financial leverage. If firm having the high operating leverage, it should opt for low financial leverage.

5. **BEP (time based for recovery of investment of the project) or Pay Back Period.** It refers to the number of years that will take cash benefit to recover the cost of the investment.

BEP (time-based recovery of cost of investment in the project) = Original cost of the investment/ Cash flows after tax but before depreciation (CFAT)

Where CFAT = EAT+ Depreciation = 19,35,000 + 3,00,000 = 22,35,000

$$70,00,000 / 22,35,000 = 2.74 \text{ years}$$

In 2.74 years, Mr. John will be able to recover the original cost of the investment done in start-up. Calculation of payback period is important in case of start-ups. Owners of start-up, being dynamic in nature and looking the opportunity to start again a new venture, generally faces with paucity of funds, need to have an estimation when they will be recovering the cost of the project. Better planning and budgeting can be done.

## Suggestions

1. The decision makers must properly classify the fixed costs and the variable costs with minute details. If these are not classified properly, it has a direct impact on computing Break-even point, cash Break-even point and the Financial break-even point leading to wrong decisions.
2. Decision makers should incorporate the debt in the capital structure in making the choice of capital structure. But they must visualize the risk involved in the selection of debt capital structure. Non-payment of interest on debt has serious consequences on the smooth running of the organization.
3. There must be a proper balance of operating leverage and financial leverage keeping into consideration the risk appetite by the owners. Keeping both the leverages high is a risky postulation. Keeping both leverage low is depiction of conservative policy. One can keep either of the leverage low and the other one higher.
4. The start-up managers should comprehend the concept of EBIT-EPS analysis in selection of capital structure. One must see the impact on EPS of the capital structure selected for the company.
5. Environmental, moral and ethical issues related to their project must be met by them willingly, thereby, making themselves more responsive to the society.



## References

Social responsibility if loan is taken, it should be paid, otherwise it becomes NPS

[1] Dr. Sangeeta Porwal, Relevance of Break-even Points for Start-ups in Decision Making (Case-Based Approach), International Journal of Applied Research, Vol 7, Issue 11, Part A (2021), pp. 53-59.

<https://doi.org/10.22271/allresearch.2021.v7.i11a.9101>

[2] Meysam Kaviani, A Modern Theory to Analysis of Break-even Point and Leverages with approach of Financial Analysis, Research Journal of Finance and Accounting, Vol 5, No.11, 2014 page 68-76.

[3] Dr. Putama K, EBIT-EPS Analysis as a Tool to Understand the Performance of Indian Infrastructure Sector, Indian Journal of Applied Research, Vol 4, Issue 3, March 2014 page 246-247.

[4] Alope Gupta and Debasish Sur; Business and Financial Risks in Hindustan Unilever Ltd.: An Empirical Analysis, Asia-Pacific Finance and Accounting Review, Vol 4 Number 4 July-Dec 2013, ISSN: 2278-1838, p 77-93.

[5] Sur,D., Mitra S. and Banerjee, D; Business Risk in NTPC Ltd. During the Pre-liberalization and Post-Liberalization Periods: A Comparative Analysis, The Management Accountant, Vol 48, No. 2, 2013, pp. 206-12.

[6] P. Arun Prakash, Dr. A. M. Mohamed Sindhasha, *A Study on Impact of Leverage ON Profitability: Empirical Evidence from Select Pharmaceutical Companies in India*. Asian Journal of Research in Social Sciences and Humanities Vol. 6, No. 7, July 2016, pp. 1036-1043. ISSN 2249-7315.

### Other references

Amit Aggarwal, Analysis on the structure of capital income on TD and DE, European Journal of Molecular & Clinical Medicine ISSN 2515-8260 Volume 7, Issue 4, 2020 646.

Clarkson, M. B. E. (1991). 'Defining, evaluating, and managing corporate social performance: The stakeholder management model'. In J. E. Post (ed.), Research in Corporate Social Performance and Policy, 12, pp. 331-358. |

'Social responsibility of business', New York Times Magazine. Gephart, R. P., Jr. (1991). 'Multiple methods for tracking corporate social performance: Insights from a study of major industrial accidents, In J. E. Post (ed.), Research in Corporate Social Performance and Policy, 12, pp. 359- 385. |

Graves, S. B. and S. A. Waddock (1994). 'Institutional owners and corporate social performance', Academy of Management Journal, 37(4), pp. 1035-1046. |

Prahalad, C. K. and G. Hamel (1994). 'Strategy as a field of study: Why search for a new paradigm?' Strategic Management Journal, Summer Special Issue, 15, pp. 5-16. |

Brealey, Richard A., Myers, Stewart C., Marcus., Alan J, "(2001). Fundamentals of Corporate Finance", Third Edition.

Brigham, E.F. (1995), "Fundamentals of financial management", Fort Worth: Dryden Press.

Robinson, Thomas R., Hennie van Greuning., Elaine Henry and Broihahn, Michael A, (2002), "International financial", CFA Institute investment series.

Ross, Westerfield., Jaffe., (2002),"Corporate Finance", Sixth Edition, Vol 1.

Bhaduri, S.N. (2002). Determinants of capital structure choice: a study of the Indian corporate sector". Applied financial economics, vol. 12, p. 655-665.

Baker, M. Wurgler, J (2002): Market timing and capital structure. *Journal of Finance*, 57(1):1–32.

Agrawal, A, O.P., Bansal, P.K., Kathpal, S., 2020 Effect of financial performance on corporate social responsibility and stock price: a study of BSE listed companies, *International Journal on Emerging Technologies*, 11(1), pp. 286-291

Purnamawati G (2016), The effect of Capital Structure and Profitability on Stock Price (Study of the Manufacturing sector in Indonesia Stock Exchange,, *International Journal of Business, Economics and Law*, Vol. 9, Issue 1 (Apr.), ISSN 2289-1552. Pp. 10-16

Muthukumaran K., (2012), “Impact of Capital Structure on the Stock Price Performance”, *International Journal of Fuzzy Mathematics and Systems*, Volume 2, Number 4 (2012), pp. 391-400

