INTERFACE OF LEVERAGE AND EARNINGS: AN INVESTIGATION INTO SOME SELECTED NIGERIAN MANUFACTURING COMPANIES

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Abstract

This paper examined the interface of leverage and earnings: an empirical investigation on some selected Nigeria manufacturing companies in order to investigate if the use of operating and financial leverage has significant impact on the earnings of the organizations. The scope of this research covered two companies selected as case study (Nigerian Breweries Plc and Bendel Feed and Flour Mill Plc and their Annual Reports). The data gathered for this study consist of primary and secondary sources of data. Multiple regression analysis was the statistical method uses to test the hypotheses. In conclusion, the financial manager should understand the appropriate mix of these leverages in order to maximize profit and the wealth of shareholders.

Key words: Leverage; earning, financial and operating

Companies in carrying out their operations make use of financial and operating leverages in various degrees. The joint use of financial and operating leverage can be measured by calculating the degree of the combined leverage which is the product of both operating leverage and financial leverage. Against this backdrop, a manager is able to determine the effect on total leverage caused by adding financial leverage to operating leverage. The degree of combined leverages brings either positive or negative impact on organizations. Like financial leverage, operating leverage is one of the components of the firms' risk. Corporate risk can be classified into business risk and financial risk. Business risk refers to the relative dispersion (variability) in the firm's Earning Before Interest and Taxes (EBIT) and it has a direct impact on the firms' investment decision.

Financial risk is a direct result of the firms' financial decision.

Therefore, in selecting a proper financing mix, organizations should consider the effect in variability in earnings that would be available to the shareholders, and the additional chance of insolvency borne by the common shareholder as a result of the use of financial leverage. Because the effects of business risk are variability of sales and of production costs, operating leverage seems to magnify the impact of these factors on the variability of profits.

Considering the central position of operating leverage which refers to the use of fixed costs in the operation of firms, that is in the firms' cost structure a financial manager should always consider the effect of an increase in fixed costs associated with new machinery and a reduction in variable costs attributable to a lower labour bill. Where there is prospect for future sales increase, increasing the degree of operating leverage might be wise decision. Firms will not have operating leverage if its ratio of fixed costs to total costs in nil, hence, operating leverage in only one factor for the course of variability; therefore, knowledge of the operating and financial leverage concept will assist the financial managers in making changes in the firms' cost structure. The significance of financial leverage is that high leverage can discourage investors and also put firms in a disadvantaged position. Financial leverage varies with the fluctuations in earning per share.

Statement of Problem

The cost of capital is affected by the composition of its financial structure. Financial and operating leverage are very critical in the process of arriving at an appropriate financial structure. The introduction of the Structural Adjustment Programme in Nigeria in 1986 led to the interbank Foreign Exchange Market (IFEM) consequent upon which the forces of demand and supply now determine the exchange rate. The exchange rate of the Nigerian naira against the major currencies such as dollar, pound sterling had continued to nosedive, leading to high cost of important of raw materials and machineries; the offshoot of SAP is now under capacity utilization. It is against this background that the study of leverage with respect to the performance of some selected Nigeria Manufacturing Companies in the Nigerian economy becomes pertinent.

Objective of the Study

The objectives of this study are as follows:

i. To investigate if the use of operating and financial leverage has significant impact on the earnings of the organizations.
ii. To investigate the variability of operating leverage on turnover.
iii. The study attempt to consider the impact of combined leverage on earnings per share.

Scope of the Study

The period covered in this study for the two companies selected as case study are the Financial Summary of 5-years from 2003-2007 and data were gathered from the Nigerian Breweries Plc and Bendel Feed and Flour Mill Ltd., Annual Reports.

Research Questions

This study sought to answer some important questions and form a basis in the formulation of hypotheses. The questions are as follows:

a. Is there any impact of operating and financial leverage on earnings per share?
b. Is there any relationship between operating leverage relative to different sales bases?
c. Do sales have effect on earnings?
d. Does operating and financial leverage have effect on earnings?

Test of Hypotheses

In an attempt to investigate the interface of leverage and earnings, the following hypotheses were tested in order to justify this study.

H_0: Operating leverage has no significant influence on earnings.

H_0: Financial leverage has no significant influence on earnings.

H_0: The expected value of financial and operating leverage has no significant influence on earnings.

H_0: Sales have on significant influence on earning

Conceptual Framework

Leverage, as a business term, refers to debt or to the borrowing of funds to finance the purchase of a company's assists. Business owners can use either debt or equity to finance or buy the company's assets. Using debt, or leverage, increases the company's risk of bankruptcy. It also increases the company's returns, specifically its return on equity. This is true because, debt financing is used rather than equity financing.

In finance, leverage (sometimes referred as gearing in the United Kingdom and Australia) is a general term for any technique to multiply gains and losses leverage exists when an investor achieves the right to a return on a capital base that exceeds the investment which the investor has personally contributed to the entity or instrument achieving a return. Common ways to attain leverage are borrowing money, buying fixed assets and using derivative.

Leverage is operated in two senses viz: (i) Financial Leverage and (ii) Operating Leverage.

Financial leverage can be aptly described as the extent to which a business or investor is using the borrowed money. Business companies with high leverage are considered to be at risk of bankruptcy, if in case they are not able to repay the deceits, it might lead to difficulties in getting new lenders in future. It is not that financial leverage is always bad. However, it can lead to an increased shareholders return on investment. Also, vary after, there are tax advantages related with borrowing also known as beverage.

Financial leverage indicates the reliability of a business on its deceits in order to operate knowing about the method and techniques or calculating financial leverage can help you determine a business financial solvency and its dependency upon its borrowings (http//www.dangolpabitra.biogspot.com).

According to Pandey (2002); financial leverage is the use of the fixed charges sources of funds, (such as debt and preference capital) along with the owner's equity in the capital structure. This can also be called trading on equity. The use of the term "trading on equity" is because it is the owner's equity that is used as a basis to raise debt; that is the equity that is traded upon. The supplier of debt (funds) has limited participation in the company's profits and therefore, the supplier will insist on protection in earnings and protection in values represented by ownership equity.

Oloyede (2000) stated that following advantages:

i. A proportionate increase in earning per share will lead to a greater than proportionate increase in the cost of equity.
ii. A positive financial leverage occurs when the profits of the firm is increased because while a negative financial leverage leads to decrease profit arising from the injection of debt. The degree of operating leverage (DOL) is the percentage change in sales (Pandey, 2002). The degree of operating leverage shows the sensitive of net income to change in EBIT.

Norms and Limits

If the financial leverage ration of a company is higher than 2-to-1, it indicates financial weakness. If the company is leveraged highly, it is considered to be near bankruptcy. Also, it might not be able to secure new capital if it is incapable of melting its current obligations (bizfinanc.about.com/ad/ princingyou).

Samuels and Wilkes (1981); defined operating leverage as the proportion of change in earnings due to change in sale volume, it relates to way in which a change in the level of sales of a company affects operating profits. Pandey, (2002) refers operating leverage as the use of fixed costs in the operation of a firm.

Operating leverage measures the degree to which a firm or project incurs a combination of fixed and variable costs.

A business that makes few sales, with each sale providing a very high gross margin, it said to be highly leveraged. A business that makes many sales, with each sale contributing a very slight margin, is said to be les leveraged. As the volume of sales in a business increases, each new sale contributes less to fixed costs and move to profitability.

A business that has a higher proportion of fixed costs and a lower proportion of variable costs is said to have used more operating leverage. Those businesses with lower fixed costs and higher variable costs are said to employ less operating leverage (http//www.dango/ pabitra. biogspot.com).

Investopedia Explains Operating Leverage

The higher the degree of operating beverage the greater the potential danger from forecasting risk, that is, if a relatively small error is made in forecasting sales, it can be magnified into large errors in case flow projections. The opposite is true for businesses that are less leveraged. A business that sells millions of products a year, with each contributing slightly to paying for fixed costs, is not as dependent on each individual sale.

Where operating leverage causes a change in sales volume, it will have impact on both net income available to common stockholders and earnings per share. Therefore, if a firm uses considerable amount of both leverages, even a small change in the level of sales will result in wide fluctuations in net income and EPS (Earning Per Share). The primary aim of a company in using financial leverage is to increase shareholders' return under favourable economic conditions (Pandey, 2002). Financial leverage is the use of debt to increase the expected return on equity. It will increase shareholder's return on the condition that fixed charges fund (such as the loan from financial institutions and others sources or debentures) can be obtained at a cost lower than the firm's rate of return on net assets/ return on investments (RONA or ROI) where the difference between the earnings generated by assets financed by the fixed charge funds and cost of these funds is distributed to shareholders, the earnings per share (EPS) or return on equity (ROE) increase. EPS or ROE will decrease if the companies obtain the fixed charges funds at a cost higher than the rate of return on the firm's assets. Hence, EPS and ROE are significant figures for analyzing the impact of financial leverage.

In deriving the degree of operating leverage, it is assumed that the selling price, fixed cost and variable cost are held constant. That is, they do not vary in output in business terminology, a high degree of operating leverage, other things are constant, implies a relatively small change in operating income (Brigham and Campsey,1985). The higher a firm's operating leverage, the higher its business risk. The more operating leverage the firm has, the greater potential for large swings in the company's operating profits. Operating profits vary over time with sales variability; operating profits. The higher are the variability of operating profits for any given variability of sales. Profit fluctuations occurring due to high fixed costs are referred to as operating risk and operating leverage is an important determinant of such risk (Pandey, 2002). Operating leverage, i.e. the commitment to fixed production charge must add to the beta of a capital project (Myers, 2003). Fixed costs are cash outflow that occur regardless of whether the asset is active or idle. Favourable leverage is a situation in which EPS rises as a result of the injection of debt into the capital. Unfavourable leverage is a situation in which EPS falls as a result of debt introduced into the capital structure.

Financial leverage is a change in EPS caused by the use of fixed payment securities to fund a company's operations. Business risk and financial leverage have impact on the leverage of a company. Business risk depends on the industry to which a business belongs and on general economic conditions. Financial risk is the additional variability of earnings induced by leverage.

Keown (2003); opined that financial structure is the mix of all items that appear on the right-had side of the company's balance sheet. Capital structure is the mix of the long-term sources of funds used by the firm. Therefore, financial structure is current liabilities equals' capital structure?. The assets owned by the firm affect the maturity profit of financial plans. A company heavily committed to real capita investment represented primarily by fixed assets on its balance sheet, should finance those assets with permanent (long-term) types of financed capital. Permanent portion of the firm's investment in current assets should likewise be financed with permanent capital.

The firms cost of equity rises when the firm increase its use of financial leverage because the financial risk of the equity increase while the business risk remains the same (Westerfield, Ross & Jordan, 2000). The total systematic risk of the firm's equity has two parts; (i) business risk and (ii) financial risk. The first part (the business risk) depends on the firm's asset and operations and is not affected by capital structure. Given the firm's business risk (and its cost of debt), the second part (the financial risk) is completely determined by financial policy.

Methodology

The data gathered for this study consist of primary and secondary sources of data. Five (5) years historical data gathered from the financial statements were used in the analysis of this data. Inferential statistics was employed using chi-square (x^2) to test for the significant of the formulated hypotheses. The smaple size was 25 chosen from the two companies using simple random sampling techniques.

Data Presentation

In an attempt to show the impact of leverage on earnings of these two companies, table was used to present the companies financial statement for a five year period each.

Data Analysis

Table 1: 5 Year Financial Summary of the Nigeria Brewerise Plc

Year	Sales N000 x4	EBIT N000 y	Financial leverage N000 x2	EPS	Operating leverage N000 x1
2003	62,974,995	13,060,788	2,068,530	194k	50,041,941
2004	73,594,134	14,425,759	5,277,630	96k	54,448,027
2005	70,130,968	15,453,895	8,038,144	109k	52,428,880
2006	86,322,075	66,948,433	6,884,566	144k	49,679,917
2007	111,740,297	27,357,040	4,042,308	250k	50,194,644

Source: NB Plc. Annual Report (2007)

The table above shows the measurement of leverage using different sales base and earnings before interest and taxes. It is clear that the higher the sales, the higher earnings before interest and taxes, which has a direct impact on the Nigerian Bottling Plc's financial leverage that finally translates on its earning per share for the different year under review.

Table 2: 5 year Financial Summary of the Bendel Feed and Flour Mill Ltd

Year	Sales N000 x4	EBIT N000 y	Financial leverage N000 x2	EPS	Operating leverage N000 x1
2003	9,186,869	3,231,043	1,096,005	113k	10,538,633
2004	12,033,111	5,268,116	1,701,140	184k	11,521,472
2005	25,575,545	6,481,065	401,924	225k	12,074,011
2006	39,001,435	10,035,471	2,546,120	240k	15,287,033
2007	48,564,392	12,553,245	2,170,816	193k	37,022,763

Source: Financial Annual Report (2007)

The table above shows the measurement of leverage using different sales base and earnings before interest and taxes. It is clear that the higher the sales, the higher earnings before interest and taxes, which has a direct impact on the Bendel Feed and Flour Mills Ltd financial leverage that finally translates on its earning per share for the different year under review.

Hypotheses Testing and Interpretation

Decision Based on Observed and Computed Chi-Square Analysis

S/N	Hypotheses	Computed X^2 Value	Table Value X^2 At 1df	Decision at 0.05 Level of Significance
1	H_0: Operating leverage has no significant influence on earnings	9.004	3.841	Accept alternative hypothesis (H_1)
2	H^0: Financial leverage has no significant influence on earnings	12.698	3.841	Accept, alternative hypothesis (H_1)
3	H_0: The expected value of financial and operating leverages have no significant influence on earnings.	8.678	3.841	Accept, alternative hypothesis (H_1)
4	H_0: Sales have no significant influence on earnings	15.392	3.841	Accept, alternative hypothesis (H_1)

The test of the hypotheses have gone to establish the fact that leverage has an impact on the earnings on the two selected companies which also shows that sales have a prominent role to play in the earnings of the companies.

Conclusion

The importance of the concept of operating leverage is that is assists the financial mangers of the companies in making appropriate decisions concerning changing the cost structure of the firms. For instance, if there are high prospects for future sales, then increasing the degree of operating leverage sales, increasing the degree of operating leverage might be a wise decision. The greater the degree of financial leverage, the more the fluctuations is earnings per share. Financial leverage is positive when the profits of the firms increase because of the introduction of debt and negative when he profits decrease because of employment debt. The total risk facing organizations can be managed by combining operating leverage and financial leverage in varying degrees. The test of hypotheses with regression produced the above result. This shows that the variables have significant influence on earning of the two firms by 98.1%, finally, the financial managers should understand the appropriate mix of these leverages in order to maximize profit and the wealth of shareholders.

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