



## Leverage Analysis in Select Cement Companies - A Study

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### ABSTRACT

The employment of an asset or source of funds for which the firm has to pay a fixed cost or fixed return may be termed as Leverage. Consequently, the earnings available to the shareholders as also the risk are affected. The leverage analysis is useful to assess the business risk, financial risk as well as the total risk of the firm. Hence the need is felt to undertake a study on the leverage analysis in terms of Degree of Operating Leverage, Financial Leverage and Combined Leverage in three select cement companies namely, ACC Ltd., J.K and Madras Cements Ltd. during the period of 10 years from 2003-04 to 2012-13. The paper concludes that, operating risk is highest in ACC, financial risk is highest in Madras and ultimately total risk is slightly higher in J.K Cement Ltd than the other two companies.

### KEYWORDS

OL, FL, CL, EBIT

### INTRODUCTION

The employment of an asset or source of funds for which the firm has to pay a fixed cost or fixed return may be termed as Leverage. Consequently, the earnings available to the shareholders as also the risk are affected. If earnings less variable costs exceed the fixed cost, or earnings before interest and taxes (EBIT) exceed the fixed return requirements, the leverage is called favourable. When they do not, the result is unfavourable leverage. There are three types of leverages. They are 1. Operating Leverage, 2. Financial Leverage and 3. Combined Leverage

#### 1.1. OPERATING LEVERAGE (OL)

OL results from the existence of fixed operating expenses in the firm's income stream. The operating costs of a firm fall into three categories such as Fixed, Variable and Semi-variable Costs. The OL may be defined as the firm's ability to use fixed operating costs to magnify the effects of changes in sales on its EBIT. The business entities employ assets with fixed cost in the hope that volume will produce revenues more than sufficient to cover all fixed and variable costs.

#### 1.2. FINANCIAL LEVERAGE (FL)

FL is related to the financing activities of a firm. It results from the presence of fixed financial charges in the firm's income stream (such as interest on debt and dividend on preference shares). They are to be paid regardless of the amount of EBIT available to pay them. After paying them, the EBIT belong to the ordinary shareholders. FL is concerned with the effect of changes in EBIT on the earnings available to equity holders (EPS). Favorable or positive leverage occurs, when the firm earns more on the assets purchased with the funds than the fixed cost of their use. Unfavorable or negative leverage occurs, when the firm does not earn as much as the funds cost. Thus, financial leverage is based on the assumption that the firm is to earn more on the assets that are acquired by the use of funds on which a fixed rate of interest /dividend is to be paid. The difference between the earnings from the assets and the fixed cost on the use of funds goes to the equity holders.

#### 1.3. COMBINED LEVERAGE (CL)

CL is the product of OL and FL. It indicates the effect that changes in sales will have on EPS. Since both these leverages are closely concerned with ascertaining the ability to cover fixed charges (fixed operating cost in the case of OL and fixed financial costs in the case of FL), if they are combined, the result is total leverage and the risk associated with CL is known as total risk.

### 2. NEED FOR THE STUDY

The cement sector notably plays a critical role in the economic growth of the country and its journey towards conclusive growth. Cement is vital to the construction sector and all infrastructural projects. The construction sector alone constitutes 7 % of the country's gross domestic product. Since the leverage affects the earnings available to the shareholders and their risk, the need is felt to undertake a study on the leverage analysis in select cement companies.

### 3. OBJECTIVES

1. To discuss the principles and types of leverages.
2. To analyse the Degree of Operating, Financial and Combined Leverages in select cement companies.
3. To examine the operating risk, financial risk and there by total risk of the select cement companies.

### 4. SOURCES OF DATA AND METHODOLOGY

The present study is based on secondary data. The sources of secondary data include Annual Reports, circulars, research periodicals, Text Books, news papers like Economic Times, websites and other published sources of three select cement companies viz., ACC Ltd.J.K. Cement Ltd. and Madras Cements Ltd. The collected data are processed; tabulated; analyzed and interpreted for a period of 10 years i.e. from 2003-04 to 2012-13 with the help of statistical techniques like Percentages, Ratios, and Averages etc. Finally conclusions have been drawn based on the facts revealed by the study.

### 5. DATA ANALYSIS

#### 5.1. DOL (DEGREE OF OPERATING LEVERAGE)

When proportionate change in EBIT (Earnings Before Interest and Tax) as a result of a given change in sales is more than the proportionate change in sales, OL exists. OL can be more precisely expressed in terms of the DOL. OL can be favorable or unfavorable, higher levels of risks are attached to higher degrees of leverage. The larger the fixed operating cost, the higher is the firm's OL and its operating risk. High operating leverage is good when revenues are rising and bad when they are falling. Operating risk is the risk of the firm not being able to cover its fixed operating costs. The larger the magnitude, the larger the volume of sales required to cover all fixed costs.

The analysis of OL of the sample companies is presented in TABLE 1. It can be understood that, the highest average DOL exists in ACC Ltd. with the quotient of 6.79 among the three companies during the study period. The quotient of DOL implies that for every 1 % change

**TABLE-1**  
**DEGREE OF OPERATING LEVERAGE**

Year/Company	ACC Ltd.	J.K. Cement Ltd.	Madras Cements Ltd.
2003-04	-	-	-
2004-05	10.43	-	-
2005-06	3	1.6	1.42
2006-07	0.87	4.61	4.12
2007-08	-	1.35	1.41
2008-09	2.64	-	-
2009-10	14.73	1.79	0.26
2010-11	0.08	-	5.2
2011-12	1.21	6.15	2.14
2012-13	21.34	0.73	0.38
Avg.	6.79	2.71	2.13
Sample Average			3.88

(Source: Annual Reports)

in sales, there will be 6.79 % change in EBIT in ACC. However OL exists only when there are fixed operating costs. If there are no fixed operating costs, there will be no OL. The least average DOL exists in Madras Cements Ltd. with 2.13; it means that for every 1% change in sales results in 2.13% change in EBIT in the direction of the sales change. It is clear that, the ACC has very high average operating risk and Madras Cements has least operating risk for the period. The two companies, J.K and Madras Cements have moderate OL as the quotients of them are below the sample average i.e. 3.88.

**5.2. DFL (DEGREE OF FINANCIAL LEVERAGE)**

FL can be more precisely expressed in terms of the Degree of Financial Leverage (DFL). As a rule, when a percentage change in EPS (Earnings Per share) resulting from a given percentage change in EBIT is greater than the percentage change in EBIT, FL exists. In other words, FL occurs when the quotient of DFL is more than one.

**TABLE 2 exhibits the analysis of the DFL of the three selected cement companies for 10****TABLE-2**  
**DEGREE OF FINANCIAL LEVERAGE**

Year/Company	ACC Ltd.	J.K. Cement Ltd.	Madras Cements Ltd.
2003-04	-	-	-
2004-05	-	-	-
2005-06	0.5	1.14	0.75
2006-07	0.91	1.59	1.29
2007-08	2.28	1.96	0.96
2008-09	0.75	1.53	50.26
2009-10	0.79	1.49	0
2010-11	9.86	1.29	1.11
2011-12	-	1.29	1.22
2012-13	-	3.05	0.88
Avg.	2.51	1.67	7.06
Sample Average			3.75

(Source: Annual Reports)

years period. On an average basis, the FL exists in three companies. The highest DFL is exit in Madras Cements with the quotient of 7.06. The presence of fixed interest sources of funds leads to a more than proportion change in EPS as a result of change in EBIT level. The greater the amount of fixed interest sources of funds, the higher is the FL. The quotient implies that 1 % change in EBIT will cause 7.06 % change in EPS in the same direction (increase / decrease) in which the EBIT changes. The quotient 1.67 is comparatively lower in J.K.

High fixed financial costs increase the FL and, thus, financial risk. The financial risk refers to the risk of the firm is also required to raise the level of EBIT necessary to meet financial charges. If the firm cannot cover these financial payments, it can be technically forced into liquidation. Therefore the very existence of the business is at stake. Obviously, the manage-

ment should take into consideration all such factors while formulating the firm's financing plan in terms of the mix of various sources of long-term funds, viz; long-term debts, preference shares, equity funds including retained earnings.

**5.3. DCL (DEGREE OF COMBINED LEVERAGE)**

CL is a measure of the total risk of the firm. To keep the risk within manageable limits, a firm which has high DOL should have low FL and vice-versa. The usefulness of DCL lies in the fact that it indicates the effect that sales changes will have on EPS. Its potential is also great in the area of choosing financial plans for new investments.

The analysis of the DOL is exhibited in TABLE 3. It is observed from the average analysis that, the DCL is high with 3.08 in J.K. It indicates that for every 1 % change in sales results in 3.08 % change in EPS in the direction of the change in sales. Since the DCL is highest, the total risk is highest in J.K among selected companies. The total risk associated with the business is low in other two companies as the DCL is almost all equal with 2.08 and 2.06 in ACC and Madras Cements Ltd. It means that for every 1 % change in sales gives 2.08 % and 2.06% change in EPS in the case of ACC and Madras Cements respectively. When the average total risk of the selected companies is compared with the sample average, The J.K, which has more DCL, associated with more total risk than the sample average (2.41), while the other two companies have the moderate total risk as their DCLs are below the sample average.

**TABLE-3**  
**DEGREE OF COMBINED LEVERAGE**

Year/Company	ACC Ltd.	J.K. Cement Ltd.	Madras Cements Ltd.
2003-04	0	-	0
2004-05	0	-	0
2005-06	1.5	1.82	1.07
2006-07	0.79	7.31	5.3
2007-08	0	2.66	1.35
2008-09	1.97	0	0
2009-10	11.64	2.66	0
2010-11	0.76	0	5.79
2011-12	0	7.94	2.61
2012-13	0	2.21	0.33
Avg.	2.08	3.08	2.06
Sample Average			2.41

(Source: Annual Reports)

**6. CONCLUSIONS**

1. The highest DOL exists in the case of the ACC Ltd. with the quotient of 6.79, which implies higher operating fixed cost as well as higher business risk. It implies that for every 1 % change in sales, there will be 6.79% change in EBIT. The least OL exists in Madras Cements Ltd. with the quotient of 2.13 which means lower operating fixed cost.
2. The highest DFL also exists in Madras Cements Ltd. with the quotient of 7.06, implies high fixed financial costs that increases financial risk. The DFL indicates that for every 1 % change in EBIT, there will be 7.06% change in EPS.
3. Since the DCL is highest with the quotient of 3.08, the total risk is highest in the J.K Cement Ltd. among the selected companies. It indicates that for every 1 % change in sales results in 3.08 % change in EPS in the direction of the change in sales in ICL. The other two companies have almost all equal average risk.

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