

## “Leverage (Financial and Operating) Impact on profitability of oil and gas sector of SAARC Countries”

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### Abstract

*The main objective of this topic is to analyze and understand the effect of leverage on the profitability of the oil and gas sector of SAARC countries. It analyzes the relationship between leverage (Financial, operating and combined) and EPS of this sector. It aims to analyze how earning capacity of this sector is affected by operating costs and fixed financial charges. This explains the relationship between the Debt equity ratio and EPS and how effectively this sector be able debt financing. In this study selected oil and gas companies are taken for analysis and hypothesis are examined with the statistical methods of one way ANOVA and t-test.*

*Leverage is basically explained as the use of borrowed money to make an investment and return on that investment. It is more risky for a company which has ratio of financial leverage. But financial leverage is commonly used in various circumstances specially oil and gas sector as a means of altering the cash flow and financial position of a company. There are the following four positions which show a relationship with the level of financial leverage.*

*First, it is the relation of equity and debt that means the rate of capital. The other is the influences on business operations and cycle of financial leverage. Then the company's industry and its branches as whole financial leverage level. Then the correlation between the current financial leverage ratio of the company with the middle leverage level. Lastly, the possibility of company's mission and philosophy with the situation connected to the ratios of financial leverage. The outcome of the financial leverage can also be used to push up income and growth however, it is much common for business industries in the phase of the boom period. Financial leverage ratio is relative to changing of profit and contrary to stability. Financial leverage greatly affects return on assets, return on investment and return on equity.*

### Need and Objectives of the Study:

An investor who would like to be rational and scientific in his investment activity has to evaluate a lot of information about past performance and the expected future performance of the companies, industries and the economy as a whole before taking the investment decision and hence, the present study attempts to analyze the impact of leverage on profitability of selected oil and gas companies in SAARC.

The following are the objectives of the study

- To understand and analyze the leverage effects of the selected oil and gas companies.
- To analyze the impact of leverage on profitability

- To assess the relationship between the financing mix and earnings per share.

### Scope:

### Financial Leverage

Financial Leverage is caused due to fixed financial interest in every organization. It is the ability of a business to use fixed financial charges to magnify the effects of changes in EBIT on the earning per share and profits. It involves the use of funds obtained at a fixed cost in the hope of increasing the return to the shareholders in future. The financial leverage is employed by every company is intended to earn more return on the fixed-charge funds than their costs. The surplus (or deficit) will increase (or decrease) the

return on the owner's equity and return on investments.

### **Combined Leverage**

Operating and financial leverages together cause wide fluctuation in EPS for a given change in sales and operating costs. It can be calculated by multiplying the operating leverage and financial leverage. The operating leverage affects the EBIT and the financial leverage affects the EPS, ROE and ROI. The management has to manage a right combination of the operating and financial leverage. A company whose sales fluctuate widely and erratically should avoid use of high leverage because it will be exposed to a very high degree of risk.

### **Leverage and Earning Per Share**

There is a close relationship between the financial leverage and Earning per Share of the company. If degree of financial leverage is high and the return on investment is greater than the cost of debt capital, then the impact of leverage on EPS will be favorable. The impact of financial leverage is unfavorable when the earning capacity of the firm is less than what is expected by the lenders (i.e.) the cost of debt.

### **Leverage and Return on investments:**

The return on investment comes from leverage appreciation of the assets value which is normally based on income. It means assets are purchased with only a portion of the purchase price coming from the buyer and the balance coming from the lender. Any increases in the value of the entire assets represent a real return on the original amount invested and the investor will make profits in the long run.

### **Literature Review**

Different industry presents different profitability. One of the old researches by Kotany (1922) found that different industry generates different level of profitability. Each industry requires different amount of capital and generates different amount of return such as the rates of profit in shoe

manufacturing industry is greater than tanning, commercial wheat flour mill, meat packing, milk and milk products, and agriculture industry.

Leland and Pyle (1977) model also predicts a positive correlation between firm quality and leverage. Similar arguments are presented by Brennan and Kraus (1987); Kale and Noe (1991). Graham (2000) estimates the marginal tax benefit of debt as a function of the amount of interest deducted and calculates total tax benefits of debt by integrating under this function

Hirshliefer and Thakor (1992) argue that when managers have career concerns, using stock options may actually motivate them to follow a conservative investment policy.

Previous studies of the relationship between leverage and growth, such as McConnell and Servaes (1995) and Lang et al. (1996), use pooling regressions and in effect ignore individual firm effects.

The theories of Jensen (1986), Stulz (1990), and Grossman and Hart (1982) also suggest a negative relationship between leverage and investment, but their arguments are based on agency conflicts between managers and shareholders.

Grounded on the pecking order theory, Myers and Majluf (1984) argued that the firm prefers the debt finance to the equity finance when using external financing. The signaling theory (Ross, 1977; Heinkel, 1982; Stien, 1992) states that a firm with favorable prospects will raise new capital through debt financing, while a firm with unfavorable prospects will go through equity financing. Incentive-signaling model developed by Ross (1977), provides a theory for the determination of the financial structure of the firm.

In their 1969 college textbook, Weston and Brigham told some of today's businessmen and women that, "High fixed costs and low variable costs provide the greater percentage change in profits both upward and downward." [Weston, 86]

Archer and D'Ambrosio in their 1972 textbook said that, "The higher the proportion of fixed costs to total costs the higher the operating leverage of the firm..." [Archer, 421]. In their 1972 textbook,

Schultz and Shultz, said that, "Since a fixed expense is being compared to an amount which is a function of a fluctuating base (sales), profit-and-loss results will not bear a proportionate relationship to that base. These results in fact will be subject to magnification, the degree of which depends on the relative size of fixed costs vis-a-vis the potential range of sales volume. This entire subject is referred to as operating leverage." [Schultz, 86]

Roden and Lewellen took a sample of US firms from 1981 through 1990 and found a positive relationship between profitability and leverage.

Lang, Ofek and Stulz (1996) further contend that leverage affects growth of firms that have fewer investment opportunities because the likelihood of managers wasting resources in such firms is higher. Lang et al. (1996) distinguish between the impacts of leverage on growth in a firm's core business from that in its non-core business. They argue that if leverage is a proxy for growth opportunities, its contractionary impact on investment in the core segment of the firm should be much more pronounced than in the non-core segment.

Debt on the other hand is usually defined as a contractual obligation to make a fixed payment or to make series of payments (Williams, Smith, and Young, 1998). Therefore, debt can also be defined as the liabilities mentioned in the balance sheet.

Debt is one of the tools used by many companies to leverage their capital in order to increase profit. However, the affectivity of debt to increase profitability varies between companies. The ability of the company's management to increase their profit by using debt indicates the quality of the management's corporate governance. Good corporate governance shows the companies' performance on their use of debt to increase their profit (Maher and Andersson, 1999).

One of the ways to measure the profit enjoyed by shareholders is by using return on equity (ROE) ratio. The reason is that ROE ratio is comparable between one companies to the other and can indicate the profitability of one industry with the other (Helfert, 2001).

This is supported by Helfert (2001) on his book that financial performance measures and its

meanings vary by industry segments. Type of industry indicates risk, and tenacity to economic and political condition that affect the companies' profitability. Therefore different industry might presents different rate of profitability.

Liang and Singh [2001] assert that the typical simplified financial statement approach used in textbooks fails to focus on the key issues and may lead to student confusion by introducing additional details that must also be explained. They offer a break-even point implied by the typical EBIT-EPS analysis used in many textbooks. Liang and Singh contend the break-even point suggests a straightforward cost of funds perspective that students can easily understand. Although Liang and Singh state their indifference point in terms of operating ROI, they demonstrate the decisions suggested by their criterion are identical to those found using examples which rely on break-even EPS analysis and the associated assumptions concerning numbers of shares outstanding.

Burney, Boyles, and Marcis [2001] discuss the use of the common comparative financial statement approach when the example statements are developed ad hoc during a spontaneous explanation of financial leverage which may arise before capital structure is formally addressed in the course. The authors point out those unintended counterproductive results may arise when such an ad hoc example is not properly structured with respect to interest rates and returns on equity. In their paper, reference is also made to the indifference point for capital structure changes as being defined relative to the Basic Earning Power (BEP) ratio, which is identical to Liang and Singh's operating ROI.

Luoma and Spiller [2002] discuss teaching financial leverage in the context of accounting education. Primarily arguing for specific coverage of financial leverage in introductory accounting textbooks, they essentially introduce the multi-case simplified financial statements approach common in finance textbooks to their intended audience of accounting educators. Luoma and Spiller acknowledge that such material is usually given an entire chapter in prominent finance textbooks, but express concern that the lack of coverage in

introductory accounting textbooks does not communicate the importance of the issue to financial managers who may take only the typical introductory level two course sequence in accounting. Their treatment of the issue is of interest to finance professors primarily because of its inclusion of relevant common accounting terminology (for example, “leverage benefit to common shareholders”).

Huang and Song employed a database which contained the market and accounting data from more than 1000 Chinese listed companies up to the year 2000. Authors found that leverage in Chinese firms increases with firm size, non-debt tax shields and fixed assets, and decreases with profitability and correlates with industries.

Abor collected data from listed firms in Ghana and found a positive relationship between profitability and leverage. Nguyen and Neelakantan used small and medium Vietnamese firms to collect data and found that leverage is positively related to firm growth and firm size, and negatively related to tangibility.

As it is explained by Michael Porter that industry presents different pattern of profitability due to different forces that the industry exposed to such as concentration, entry barriers, and growth (Spanos, Zaralis, and Lioukas, 2004).

This means that when the macroeconomic condition is declining, then the value of return on equity ratio will also decline because the cash is used for investment. The other findings made by Lawrence, Diewert, and Fox (2004) describe that firm's profit is affected by the change in productivity, price, and firm's size.

However, to increase the assets to generate more profits, companies might use leverage. One type of leverage that companies use is debt. When debt is used to expand the companies by adding more operational assets, then it can generate more cash flows which are expected to increase the value of return on equity ratio (Brigham and Ehrhardt, 2005).

This means that the company's management can make use of the debt to increase the profit. It also can indicate the ability of company's management

to maximize its operation on assets in making profit (Brigham and Ehrhardt, 2005).

Lyandres and Zhdanov (2005) find a positive relationship between leverage and investment for COMPUSTAT firms from 1970–2003. They argue that in a dynamic setting, firms compare the benefits of waiting, as value of real options increase with time, against the cost of rising default risk.

The debt indicates all the current liabilities and long term debt. While the assets which is used in calculating debt ratio, are the total assets mentioned on the balance sheet. This ratio indicates the size of debt in accordance to the assets owned. Theoretically the increase in the value of debt ratio will also trigger the increase value of ROE ratio (Brigham and Ehrhardt, 2005). Profitability can be affected by operating decisions when the assets are used effectively to increase profit. Operating decisions can indicate the effectiveness of the companies' management in making the profit from the assets used. Therefore operational efficiency can be achieved by dividing sales or revenue with total assets (Sari, 2007).

There are several previous researches regarding the effect of debt to the value of ROE. One of them is Husnan (2001) that described that the use of debt statistically significant to the change in the value of non-multinational companies ROE, while it is not significant to the multinational companies. However, the research made by Harjanti and Tandelilin (2007) to all manufacture companies listed in Jakarta Stock Exchange from 2000 to 2004 indicated that profitability which was proxy by ROE, basic earning power (BEP), and gross profit ratio had negative significance to leverage.

If the Gross Domestic Product increases, then there is possibility that the inflation rate will also increase. Then if the inflation rate increases, the government will try to suppress it by increasing the Bank Indonesia interest rate (Chen, and Mahajan, 2008).

According to Brigham and Ehrhardt (2005), the value of ROE is affected by profit margin ratio, total assets turnover and equity multiplier or so called asset to equity ratio. Equity multiplier ratio

is one of the financial ratios that can describe the availability of debt in making profit.  $ROE = \text{Profit margin} \times \text{Total Assets Turnover} \times \text{Equity multiplier}$

The research on the use of Du Pont analysis to measure the profitability of a company has been used by many researchers. One of them is Listiadi (2007) who described that Du Pont analysis to investigate the company's profitability that uses return on equity analysis is best used to measure the return on stockholder's capital. Chen and Mahajan (2008) investigated the effects of macroeconomic conditions on corporate liquidity in 45 countries from 1994 to 2005.

The results show that macroeconomic variables such as gross domestic product growth rate, inflation, short term interest rate and government deficit affect corporate cash holdings. Company tends to hold more cash when the macro economy is developing, and reduce the cash for investment when the macro economy is declining.

Their research finds that when the companies increase their size to increase their productivity, the shareholders will enjoy higher return even though the product price decreases. This means that when the companies size increase, the profit of the companies will also increase.

Denis and Denis (2006) also look at the relationship between leverage and investment, but they do it in the context of diversified and focused firms. They argue that in diversified firms, investment is unevenly distributed over the high and low growth segments, and managers have the discretion to allocate debt service burden between different segments.

According to MSCI Barra Research bulletin in 2008 is that a positive return to this risk factor indicates that highly leveraged firms are performing better than their less leveraged counterparts and vice versa. It was found that this factor generally moved in the same direction as the overall stock market but was also strongly influenced by the degree of risk aversion, dropping sharply during times of market stress, as observed during the current crisis as well as previous ones in the late 1990s and early 2000s.

The first study on bankruptcy and financial dire straits of enterprises was conducted by Beaver (1967). Covering 79 successful and failing enterprises during the period between 1954 and 1964, his study discusses the reasons of failure such as bankruptcy, failure in due payment of the bond yield and failure to pay the profit shares.

On the other hand, Altman (1968) uses the multiple discriminant analysis in his study. Within the scope of his analysis, he categorizes the enterprises into two groups: bankrupt and non bankrupt enterprises. Analyzing 33 bankrupt and 33 non-bankrupt enterprises according to the 22 ratios he identified under the category of basic ratios (liquidity ratio, financial leverage ratios, solvency ratios, efficiency and profitability ratios), the author achieved a successful prediction rate of 94% by obtaining the discriminant scores which yield the best results (Z score).

Myers explains that agency costs of debt may cause firms to take riskier investment after the issuance of debt to expropriate wealth from the firm's bondholders because the firm's equity is effectively a stock option.

Al-Qaisi collected data from United Arab Emirates (UAE) and found a negative relationship between profitability and leverage, and a positive relationship between firm size and leverage.

Odit and Gobardhun collected data from Mauritius firms. The authors found a positive association between leverage, asset structure, and firm's growth. fza and Hussain used pooled data regression model on the sample of 26 firms of Automobile sector of Pakistan and found that capital structure is negatively correlated with profitability and positively correlated with taxes.

Previous studies of the relationship between leverage and growth, such as McConnell and Servaes (1995) and Lang et al. (1996), use pooling regressions and in effect ignore individual firm effects. To address the endogeneity issue mentioned earlier, that leverage might proxy for growth opportunities, Lang et al. (1996)

distinguish between the impacts of leverage on growth in a firm's core business from that in its non-core business.

They argue that if leverage is a proxy for growth opportunities, its contractionary impact on investment in the core segment of the firm should be much more pronounced than in the non-core segment.

The 3rd Meeting of SAARC Energy Ministers held in Colombo on January 29 with the participation of all SAARC Member States, the SAARC Secretariat and the SAARC Energy Centre. The meeting was chaired by Minister of Power and Energy of Sri Lanka, Mr. W. D. J. Seneviratne.

The Meeting of Energy Ministers was preceded by a meeting of Senior Officials on January 28, chaired by Secretary of the Ministry of Power and Energy of Sri Lanka, Mr. M. M. C. Ferdinando. The meeting discussed issues that included a Regional Energy Trade Study, an Action Plan on Energy Conservation and Energy Efficiency, Concept of a South Asian Energy Ring, Common Template on Technical and Commercial Aspects of the Electricity Grid Interconnections amongst the SAARC Member States and a Concept Paper on Joint Import of Crude Oil.

The main objective of this topic is to analyze and understand the effect of leverage on the profitability of the oil and gas sector of SAARC countries. It analyzes the relationship between leverage (Financial, operating and combined) and EPS of this sector. It aims to analyze how earning capacity of this sector is affected by operating costs and fixed financial charges. This explains the relationship between the Debt equity ratio and EPS and how effectively this sector be able debt financing. In this study selected oil and gas companies are taken for analysis and hypothesis are examined with the statistical methods of one way ANOVA and t-test.

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#### **SAARC Energy Sector Overview**

SAARC Member states have wide variation in the energy resources endowments. Pakistan and India are accounted for major share and contribution of oil, Natural gas and coal. However these geographical area of SAARC countries are large enough due to population and need in future that they are not able to meet future demands and needs so they have to contact with other sources of needs and other investments in other sources. Nepal and Bhutan heavily dependent on hydroelectric power plants and they see that they should have enough resources of energy to fulfill future demands and needs. Afghanistan is heavily dependent on imported energy.

The Maldives is largely dependent on oil and Bhutan, Nepal and Sri Lanka need a large part of their commercial energy needs, particularly electricity from hydropower, but are greatly dependent on imported petroleum products to meet the energy needs in other sectors of the economy. Bangladesh is largely reliant on natural gas. Such a greatly dependence on a single energy source form not only limits the choices of meeting different energy demands but also enhances the energy security concerns.

## Current Energy Trade between SAARC Member States

The existing geographical energy trade is made among the SMS is limited to electricity transfer between Bhutan-India and as well as India-Nepal which is of 5,620GWh and 329GWh respectively and export in petroleum products between India, Nepal, Bhutan, Bangladesh and Sri Lanka.

While the electricity is traded as based on different resources, the petroleum trade is particularly India is importing crude oil in excess of its demand to satisfy the petroleum demand in Bhutan, Nepal and some part of that of Sri Lanka. As a result of increase refining capacity and availability of excess of specific petroleum products, India started exporting diesel to Bangladesh. With the Indian Oil companies taking stake in the Sri Lankan petroleum industry, it is helping in partially meeting the petroleum product demand in Sri Lanka.

Bangladesh imports round 3-4 million tons of coal from the SAARC alliances and beyond the amount of imports may increase largely in coming years and the Government of Bangladesh is actively considering some coal based power plants for the country and the regional energy trade between South Asia and the rest of the world covers petroleum, coal, and limited electricity trade.

No inter or intra-Geographical gas transmission infrastructure is in place to meet the gas imports, except for the LNG terminals in India satisfying its own requirements. The inter-regional electricity trade is limited to Afghanistan importing power from Central Asian Republics (CAR) and Pakistan from Iran.

But the volume of this trade is nominal in comparison to its potential, the exploitation of which would require building of the essential infrastructure to support trade.

### Financing of Projects

There are many and different stakes across the world who use cars and have financial worth to

invest and continue their projects and willingness to export energy to other SAARC countries and across geographical boundaries. Their investments by exporting the energy supplies to South Asia and them themselves, or in association with other investors can finance the interregional energy trade projects between South Asia and its neighboring regions.

### Methodology

The study will adopt an analytical and descriptive research design. The data of the sample companies will be collected from the annual reports and the balance sheet published by the companies and the websites of the companies of SAARC Countries.

**Sampling Techniques:** The study will be done with special reference to public limited companies. The reason is being that the data or financial statements are readily available for them. The technique of Convenient Sampling is being adopted for the study.

### Sample Design

#### Sampling Techniques:

The study is done with special reference to public limited companies. The reason is being that the data or financial statements are readily available for them. The technique of Convenient Sampling is being adopted for the study. The election of sample companies is made on the basis of market capitalization and they are selected among the top gainers during the last 10 years of SAARC countries.

**Sample size:** SAARC Public Limited companies.

#### Tools Used for Analysis

Leverage analysis, Mean, Standard Deviation,

Skewness "Lack of symmetry" used to understand the distribution of data.

It is the convexity of frequency curve and to test Correlation analysis and test of significance.

#### Analysis of variance (ANOVA):

The statistical tool that is used for testing hypothesis is one-way Analysis of Variance.

**Theoretical framework:**

**Dependent Variable:**

Return on Equity, Return on Investment, Return on Assts

**Independent Variable:**

Leverage (Financial, Operating)

**Hypothesis of the Study**

For better understanding of the effect of leverage on the profitability, the following hypothesis can be framed.

FL= Financial Leverage, OL = Operating Leverage, CL = Combined Leverage

**Hypothesis 1 (H0):** There is no significant relationship between FL and ROI

**Hypothesis 2 (H0):** There is no significant relationship between FL and ROE

**Hypothesis 3 (H0):** There is no significant relationship between FL and ROA

FL=Financial leverage

OP=operating leverage

**Models:**

$ROE = \alpha_1 + \beta_{11}FL + \beta_{12}OP + U_i$  -----  
Model (1)

$ROI = \alpha_2 + \beta_{21}FL + \beta_{22}OL + U_i$  -----  
Model (2)

$ROA = \alpha_3 + \beta_{31}FL + \beta_{32}OL + U_i$   
----- Model (3)

**ROI= Return on investment**

**Hypothesis 1 (H0):** There is no significant relationship between FL and ROI

**Hypothesis 1 (H1):** There is significant relationship between FL and ROI

This performance tool is used to evaluate and analyze the efficiency of an investment or to compare the efficiency of different investments that have made. For calculation of ROI, the return of an investment is divided by the cost of the investment; the result is expressed as a percentage or a ratio.

The Return on investment formula:

$$ROI = \frac{(\text{Gain from Investment} - \text{Cost of Investment})}{\text{Cost of Investment}}$$

The above given formula is for "gains from investment", explains to the proceeds obtained from selling the investment of different interest. Return on investment is a very popular measure because of its versatility and simplicity. That is, if an investment do not have a positive ROI, or if there are other opportunities and chances with a higher ROI, then the investment should be not be undertaken.

The aim of the "return on investment" metric is to measure, per period, different rates of return on money invested in an economy in order to measure whether or not to undertake an investment.

ROI and related metrics provide a picture of profitability, making adjustment for the size of the investment assets tied up in the organization. ROI is often compared to expected (or required) [rates of return](#) of money investment.

Marketing decisions have various potential connection of ROI (profits), but these same decisions often effect assets in usage and capital requirements (for example, notes receivables and inventories in Balance sheet). Marketers and analysts should understand and predict the position of their company and the returns to be expected.

In current study of USA market analysis it is shown in a survey that nearly 200 senior marketing managers, 77 % responded that they found the "return on investment" metric very useful.

### **Calculation**

For a single-period of an organization review the division of the return (net profit) by the resources that were made (investment).

$$\text{Return on investment (\%)} = \text{Net profit} / \text{Investment} \times 100$$

or

$$\text{Return on investment} = (\text{Gain from investment} - \text{Cost of investment}) / \text{cost of investment}$$

### **Leverage and Return on Investment (ROI)**

A great deal of the return on investment comes from leveraged appreciation of the assets value by which is normally based upon the return.

By leverage, we mean that the assets are being purchased with a portion of the purchase price coming from the buyers and the balances coming from lenders. The loan will be repaid by the occupants' rental payments to the new buyers; therefore any appreciation in value of the asset represents a real return on the original amount invested. In short, the original loan will ultimately be paid off by tenants and the investors will profit in the long period.

The more leverage, the greater returns can be, but the losses can be larger as well. Leveraging your investment essentially makes the return more volatile, and if you can't stomach the risk, don't bother. If you own less risky investments than only individual stocks (and we hope you do) it makes little sense to lever your investments. If you want to up the risk in your portfolio, why not just take a smaller step and adjust your equity allocation upward? If you feel particularly strongly about a particular stock, you can invest in a LEAP, which may provide the upside of leverage when returns are high but may allow you to avoid paying out additional principal if the investment goes south.

### **Comprehensive analysis of SAARC countries**

<b>ANOVA</b>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	9214.345	4607.172	3.581862	0.035657376
Residual	47	60453.77	1286.251		

Total	49	69668.12
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$$ROI = \alpha_3 + \beta_{41}DFL + \beta_{42}DOL + U_i$$

$$ROI = 30.19 - 0.112DFL + 0.45DOL$$

A unit increase in DFL decreases the ROI by 0.11 units while a unit increase in DOL increases the ROI by 0.45 units.

	<i>ROI</i>	<i>DFL</i>	<i>DOL</i>
ROI	1		
DFL	-0.31323	1	
DOL	-0.0823	0.689841	1

Correlation between ROI and DFL is -0.313, shows negative relationship i-e; increase in DFL decreases the ROI  
 And correlation between ROI and DOL is -0.082, shows negative relationship i-e; increase in DOL decreases the ROI.

**1. Comparative analysis Of Pakistan and India**

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	6305.999	3152.999	1.46941	0.02
Residual	17	36477.91	2145.759		
Total	19	42783.91			

$$ROI = \alpha_3 + \beta_{41}DFL + \beta_{42}DOL + U_i$$

$$ROI = 135.15 - 35.58DFL - 0.088DOL$$

a unit increase in DFL decreases the ROI by 35.6 units and a unit increase in DOL decrease the ROI by 0.09 units.

	<i>ROI</i>	<i>DFL</i>	<i>DOL</i>
ROI	1		
DFL	-0.38326	1	
DOL	0.007957	0.07907	1

correlation between ROI and DFL is -0.38, shows negative relationship i-e; increase in DFL decreases the ROI  
 And correlation between ROI and DOL is 0.008, shows positive relationship i-e; increase in DOL increases the ROI.

## 2. Comparative analysis Of Pakistan and Bangladesh

### ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significanc e F</i>
Regression	2	1518.351	759.1755	3.04675	0.007
Residual	17	4235.984	249.1755		
Total	19	5754.335			

$$ROI = \alpha_3 + \beta_{41}DFL + \beta_{42}DOL + U_i$$

$$ROI = 3.83 + 0.068DFL + 0.65DOL$$

A unit increase in DFL decreases the ROI by 0.068 units and a unit increase in DOL increase the ROI by 0.65 units.

	<i>ROI</i>	<i>DFL</i>	<i>DOL</i>
ROI	1		
DFL	0.470386	1	
DOL	0.500549	0.802073	1

correlation between ROI and DFL is 0.47, shows positive relationship i-e; increase in DFL increases the ROI  
And correlation between ROI and DOL is 0.50, shows positive relationship i-e; increase in DOL increases the ROI.

## 3. Comparative analysis Of Pakistan and Nepal

### ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significanc e F</i>
Regression	2	5506.923095	2753.462	2.63E+32	0.02
Residual	17	1.7819E-28	1.05E-29		
Total	19	5506.923095			

$$ROI = \alpha_3 + \beta_{41}DFL + \beta_{42}DOL + U_i$$

$$ROI = 6.01 + 1DFL + 1.36DOL$$

A unit increase in DFL increases the ROI by 1 unit and a unit increase in DOL increase the ROI by 1.36 units.

	<i>ROI</i>	<i>DFL</i>	<i>DOL</i>
ROI	1		
DFL	1	1	
	0.49892		
DOL	6	0.49892597	1

correlation between ROI and DFL is 1, shows positive relationship i-e; increase in DFL increases the ROI  
And correlation between ROI and DOL is 0.49, shows positive relationship i-e; increase in DOL increases the ROI.

#### 4. Comparative analysis Of Pakistan and Sri Lanka

##### ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	5299.222	2649.611	3.172274	0.006
Residual	17	14199.09	835.2404		
Total	19	19498.31			

$$ROI = \alpha_3 + \beta_4 DFL + \beta_5 DOL + U_i$$

$$ROI = -18.52 - 0.19 DFL + 1.39 DOL$$

A unit increase in DFL decreases the ROI by 0.19 units and a unit increase in DOL increase the ROI by 1.39 units.

	<i>ROI</i>	<i>DFL</i>	<i>DOL</i>
ROI	1		
DFL	0.34032	1	
DOL	0.16334	0.923924	1

correlation between ROI and DFL is -0.34, shows negative relationship i-e; increase in DFL decreases the ROI  
And correlation between ROI and DOL is -0.16, shows negative relationship i-e; increase in DOL decreases the ROI.

##### Findings:

From the analysis it is shown that there is a significant relationship between DFL, DOL and ROI therefore, fixed operating expenses and the financing mix decisions of the firm are significantly affecting the earning capacity and ability of the firm. The

leverage effect and influence are positive when the earnings of the firm are larger than the fixed financial charges to be paid for the lenders and financial institution. The leverage is an important factor which impacts on the profitability of the organizations and the wealth of the shareholders can be maximized while during the firm is able to employ more debt.

##### ROE= Return on equity

**Hypothesis 2 (H0):** There is no significant relationship between FL and ROE

**Hypothesis 2 (H1):** There is significant relationship between FL and ROE

The amount of net return returned as a percentage of shareholder's equity.

Return on equity calculates a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested.

## ROE is expressed as a percentage and calculated as

Return on Equity = Net Income/Shareholder's Equity

Net return is for the full fiscal year (before dividends paid to common stock holders but after dividends to preferred stock.) Shareholder's equity does not include preferred shares.

Also known as "income on net worth" (RONW)

The benefit comes from the incomes reinvested in the company at a high ROE rate, which gives the company a higher growth rate.

The benefit can also come as a dividend on common shares or as a combination of dividends and investment in the company.

ROE is presumably irrelevant if the earnings are not reinvested.

One of the most important profitability metrics is return on equity (or ROE for short). Return on equity reveals how much profit a company earned in comparison to the total amount of shareholder equity found on the balance sheet. If you think back to lesson three, you will remember that shareholder equity is equal to total assets minus total liabilities. It's what the shareholders "own". Shareholder equity is a creation of accounting that represents the assets created by the retained earnings of the business and the paid-in capital of the owners.

### Why Return on Equity Is Important

A business that has a high return on equity is more likely to be one that is capable of generating cash internally. For the most part, the higher a company's return on equity compared to its industry, the better. This should be obvious to even the less-than-astute investor. If you owned a business that had a net worth (shareholder's equity) of \$100 million dollars and it made \$5 million in profit, it would be earning 5% on your equity ( $\$5 \div \$100 = .05$ , or 5%). The higher you can get the "return" on your equity, in this case 5%, the better.

## The Effect of Leverage

Leverage (debt) increases the expected rate of return on the equity. This is simply because leveraged investments are riskier than unleveraged ones.

Since both the expected return and the risk increase, the net effect on the value of the project is unclear. More debt can penalize the present value of the future cash flows because they must be discounted at a more severe rate.

### About Operating Leverage

A business with higher operating leverage has higher fixed costs than variable costs. Fixed costs remain unchanged regardless of sales. Variable costs fluctuate with sales. Net income equals sales minus variable costs minus fixed costs. Higher operating leverage is good when sales rise because net income rises faster than it would if you had lower operating leverage. Higher operating leverage has the opposite effect when sales decline because profits fall faster.

### Degree of Operating Leverage

Measure your net income's sensitivity to a change in sales using the degree of operating leverage. DOL equals sales minus variable costs, divided by net income. A higher DOL represents higher operating leverage. For example, assume your business has \$100,000 in sales, \$30,000 in variable costs and \$10,000 in net income. Subtract \$30,000 from \$100,000, and divide your result by \$10,000 to get a DOL of 7.

### Effect of Operating Leverage on Net Income

The percentage change in net income based on a percentage change in sales equals DOL times the percentage change in sales, times 100. For example, if you're small business has a DOL of 7 and a 5 percent increase in sales, multiply 7 times 0.05 times 100 to get a 35 percent increase in net income. If you instead had a lower DOL of 3 and the same sales

increase, your net income would rise by just 15 percent, or 3 times 0.05 times 100.

**Return on Equity**

ROE equals net income divided by stockholders' equity, times 100. Stockholders' equity -- which is listed on the balance sheet -- is the value of stockholders' stake in a business. For example, assume your small business has \$10,000 in net income and \$50,000 in stockholders' equity. Divide \$10,000 by \$50,000, and multiply your result by 100

to get a 20 percent ROE. This means you generate net income equal to 20 percent of stockholders' equity.

**Effect of Operating Leverage on ROE**

Because net return is the numerator of the ROE formula, operating leverage has a similar effect on ROE as it does on net return. A higher Degree of operating leverage boosts ROE when sales rise, but it also accelerates the lows in ROE when sales decline. You can boost your DOL by raising your fixed costs relative to variable costs, but be aware of the negative effects on ROE when sales decrease.

**Comprehensive analysis**

**Hypothesis 2 (H1):** There is significant relationship between FL and ROE

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	1290.532	645.2658	1.053111	0.03
Residual	47	28798	612.7233		
Total	49	30088.53			

**ROE** =  $\alpha_{11} + \beta_{21} DFL + \beta_{22} DOL + U_i$

ROE =  $51.03 + 0.015 DFL - 0.304 DOL$

a unit increase in DFL increases the ROE by 0.015 units and a unit increase in DOL decreases ROE by 0.304 units.

	<i>ROE</i>	<i>DFL</i>	<i>DOL</i>
ROE	1		
DFL	0.08266	1	
DOL	-0.1945	0.689841	1

Correlation between ROE and DFL is -0.08266, shows negative relationship i-e; increase in DFL decreases the ROE. Correlation between ROE and DOL is -0.1945, shows negative relationship i-e; increase in DOL decreases the ROE.

**1. Comparative analysis Of Pakistan and India**

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
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Regression	2	1814.973	907.4863	13.17587	0.00035
Residual	17	1170.873	68.87489		
Total	19	2985.846			

$ROE = \alpha_1 + \beta_1 DFL + \beta_2 DOL + U_i$   
 $ROE = 48.01 + 4.5DFL - 0.7DOL$

A unit increase in DFL increases the ROE by 4.5 units and a unit increase in DOL decreases ROE by 0.7 units.

DFL	0.243962	1	
DOL	-0.75747	0.07907	1

Correlation between ROE and DFL is 0.244, shows positive relationship  
 Correlation between ROE and DOL is -0.76, shows negative relationship

	<i>ROE</i>	<i>DFL</i>	<i>DOL</i>
<b>ROE</b>	1		

**2. Comparative analysis Of Pakistan and Bangladesh**

**ANOVA**

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	6346.356	3173.178	10.64282	0.001007
Residual	17	5068.585	298.152		
Total	19	11414.94			

$ROE = \alpha_1 + \beta_1 DFL + \beta_2 DOL + U_i$

$ROE = 79.30 + 0.53DFL - 1.34DOL$

A unit increase in DFL increases the ROE by 0.53 units and a unit increase in DOL decreases ROE by 1.34 units.

	<i>ROE</i>	<i>DFL</i>	<i>DOL</i>
ROE	1		
DFL	0.681925	1	
DOL	0.366845	0.802073	1

Correlation between ROE and DFL is 0.68, shows positive relationship i.e; increase in DFL increases the ROE.  
 Correlation between ROE and DOL is 0.37, shows positive relationship i.e; increase in DOL increases the ROE.

**3. Comparative analysis Of Pakistan and Nepal**

**ANOVA**

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	4781.927	2390.964	2.18E+32	0.01
Residual	17	1.86E-28	1.1E-29		
Total	19	4781.927			

$ROE = \alpha_1 + \beta_1 DFL + \beta_2 DOL + U_i$   
 $ROE = 0 + 1DFL + 0DOL$

A unit increase in DFL increases the ROE by 1 unit and a unit increase in DOL has no effect on ROE.

**4. Comparative analysis Of Pakistan and Sri Lanka**

ROE	1				
ANOVA	1	1			
	0.00158983				Significance F
DOL	df	4	0.00159	MS	1
Regression	2	1096.114	548.057	2.273606	0.03

Correlation between ROE and DFL is 0.24 shows positive relationship i-e; increase in DFL increases the ROE.

Correlation between ROE and DOL is 0.001 shows positive relationship i-e; increase in DOL increases the ROE.

$$ROE = \alpha_1 + \beta_1 DFL + \beta_2 DOL + U_i$$

$$ROE = 15.25 - 0.08 DFL + 0.572 DOL$$

A unit increase in DFL decreases the ROE by 0.08 units and a unit increase in DOL increases ROE by 0.57 units.

	ROE	DFL	DOL
ROE	1		
DFL	0.33632	1	
DOL	0.19101	0.923924	1

Correlation between ROE and DFL is -0.33., shows negative relationship i-e; increase in DFL decreases the ROE.

Correlation between ROE and DOL is -0.19, shows negative relationship i-e; increase in DOL decreases the ROE.

**Findings:**

From the analysis it is shown that there is a significant relationship between DFL, DOL and ROE therefore, fixed operating expenses and the financing mix decisions of the firm are significantly affecting the earning capacity and ability of the firm. The leverage effect and influence are positive when the

earnings of the firm are larger than the fixed financial charges to be paid for the lenders and financial institution. The leverage is an important factor which impacts on the profitability of the organizations and the wealth of the shareholders can be maximized while during the firm is able to employ more debt.

**ROA= Return on Assets**

$$= \frac{\text{Net Income}}{\text{Total Assets}}$$

An indicator of measurement, how profitable a company is relative to its total assets value therefore ROA gives a concept that as to how efficient and effective management is at using its assets to generate earnings. Calculation is made by dividing a company's annual earnings by its total assets; that is therefore is displayed as a percentage. Sometimes this is explained to as "return on investment in assets" and sometimes it is known as return on assets.

The formula for return on assets is:

The ROA formula looks at the ability and feasibility of a company to utilize its assets to gain a net profit and economic benefits.

**Note:** Some investors and analysts add interest expense back into net income when performing this calculation because they like to use operating returns and incomes before cost of borrowing.

ROA tells us that what earnings are generated from invested capital (assets). ROA for public listed companies can differ substantially and will be largely dependent on the industry. This is because of that when using ROA as a comparative measure, it is best known to compare it against a company's previous ROA standards or the ROA of a similar company.

The assets of the company are composed of both debt and equity therefore both of these types of financing are used to fund the operations and assets of the company. The ROA figures explain investors an idea of how effectively the company is converting the money it has to invest into net income.

The higher the ROA number, the better will be, because the company is earning more money on less risky investment. For example, we can say that if one company has a net return of \$1M and total assets of \$5M, its ROA is 20%; however, if another company gains the same amount but has total assets of \$10M, it will have an ROA of 10%.

Based on this analysis, the first company is better at converting because of its investment into profit. When we think about it, management's most important job is to make better choices in allocating its resources and funds. Anybody can make a profit and return by throwing a ton of money at a problem, but few managers gain at making large profits with little investment.

ROA is an indication, how profitable a company is before leverage, and is compared with companies in

the same industry with same specification of company. Since the figures for total assets of the company depends on the carrying value of the assets, some action is required for companies whose carrying value may not correspondence to the actual MV. Return on assets is a common figure used for analyzing performance of financial institutions and organizations. (Such as banks). Because the most of their assets will have a carrying value that is near to their actual MV. ROA is not useful for analysis between industries because of factors of scale and peculiar capital demands.

Net income in the numerator of the return on assets formula can be found on a organization's statement of financial income. Net profit is the amount earned by a company after subtracting out the expenses incurred, including depreciation and taxes. Average total assets in the denominator of the return on assets calculation formula is found on a company's statement of financial position. The average of total assets should be made based on the periods being evaluated.

#### **Use of ROA Formula**

The ROA formula can be utilized by an investor/Analyst or by a company internally and externally to evaluate if the company is turning a profit relative to their assets. It is important for an investor to consider that a company's return on assets can differ depending on which industry the companies do business in. A specific company may provide a product range that requires additional assets to manufacture the products relative to another industry.

## Analysis

ROA indicates about the number of cents gained on each dollar of assets. Thus higher values of return on assets show that business is making more profitable and returns. This ratio should be only used to compare companies in the same sector of companies. The reason for this is that companies in some sectors are most asset-motivated i.e. they need an expensive plant and equipment to generate income and returns compared with others. Their ROA will naturally become lower and lower than the ROA of companies which are low capital asset-insensitive. An increasing trend of ROA indicates that the profitability of the company is making improvement. Conversely, a decreasing trend means that profitability is declining and haphazard condition.

### **Return on Assets as a Measure of Asset Intensity** (or How "Good" a Business Is).

The lower the profit per dollar of assets, the more asset-intensive a business is which means the higher the profit per dollar of assets, the less asset-intensive a business is.

All things being equal, the more capital asset-intensive a business, the more capital fund/money must be reinvested into it to continue generating more earnings. This is a bad indicator if a company has a ROA of 20%, it means that the company is earning \$0.20 for each \$1 in assets. As a general rule, anything below 5% is very asset-largely (manufacturing, railroads), anything above 20% is asset-light.

The first choice requires that we calculate [net return margin](#) and [asset turnover](#).

### **Return on Assets (ROA) Ratio and Financial Leverage Gain**

When a business realized a financial leverage gain for the year, it means that it is earning more profit on the money it has borrowed than the interest paid for the use that borrowed money. A good part of a business's net return for the year could be due to financial leverage.

### Comprehensive analysis SAARC countries

There is significant relationship between FL and ROE

$\alpha$ : the constant ,  $\beta$ : the regression coefficient

#### ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	1707.569	853.7843	1.056479	0.03
Residual	47	37982.63	808.141		
Total	49	39690.19			

$$ROA = \alpha_2 + \beta_1 DFL + \beta_2 DOL + U_i$$

$$ROA = 36.95 - 0.01 DFL - 0.2075 DOL$$

A unit increase in DFL decreases the ROA by 0.01 units and a unit increase in DOL decreases the ROA by 0.21 units.

	<i>ROA</i>	<i>DFL</i>	<i>DOL</i>
<b>ROA</b>	1		
	-		
<b>DFL</b>	0.17411	1	
	-		
<b>DOL</b>	0.20172	0.689841	1

Correlation between ROA and DFL is -0.174, shows negative relationship i-e; with the increase in DFL , ROA decreases.

Correlation between ROA and DOL is -0.201, shows negative relationship i-e; increase in DOL decreases the ROA.

### 1. Comparative analysis Of Pakistan and India

#### ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	300.1788	150.0894	10.60119	0.001026
Residual	17	240.6823	14.15778		
Total	19	540.8611			

$$ROA = \alpha_2 + \beta_1 DFL + \beta_2 DOL + U_i$$

$$ROA = 31.89 - 3.14 DFL - 0.31 DOL$$

A unit increase in DFL decreases the ROA by 3.14 units and a unit increase in DOL decreases the ROA by 0.31 units.

	<i>ROA</i>	<i>DFL</i>	<i>DOL</i>
ROA	1		
DFL	0.24641	1	
DOL	0.68137	0.07907	1

Correlation between ROA and DFL is -0.246, shows negative relationship i-e; with the increase in DFL , ROA decreases.

Correlation between ROA and DOL is -0.068, shows negative relationship i-e; increase in DOL decreases the ROA.

## 2. Comparative analysis Of Pakistan and Bangladesh

### ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	15611.05	7805.525	26.49714	0.05
Residual	17	5007.858	294.5799		
Total	19	20618.91			

$$ROA = \alpha_2 + \beta_{31}DFL + \beta_{32}DOL + U_i$$

$$ROA = 58.96 + 0.76DFL - 1.36DOL$$

A unit increase in DFL increases the ROA by 0.76 units while a unit increase in DOL decreases the ROA by 1.36 units.

	<i>ROA</i>	<i>DFL</i>	<i>DOL</i>
ROA	1		
DFL	0.83991	1	
DOL	0.537908	0.802073	1

Correlation between ROA and DFL is 0.84, shows positive relationship i-e; with the increase in DFL , ROA increases.

Correlation between ROA and DOL is 0.53, shows positive relationship i-e; increase in DOL increases the ROA.

## 3. Comparative analysis Of Pakistan and Nepal

### ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	7696.314888	3848.157	2.41E+32	0.04
Residual	17	2.71232E-28	1.6E-29		

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Total 19 7696.314888

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$$ROA = \alpha_2 + \beta_1 DFL + \beta_2 DOL + U_i$$

$$ROA = 3.6 + 1 DFL - 8.5 DOL$$

A unit increase in DFL increases the ROA by 1 unit while a unit increase in DOL decreases the ROA by 8.5 units.

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	<i>ROA</i>	<i>DFL</i>	<i>DOL</i>
ROA	1		
DFL	1	1	
DOL	0.03632	0.03631505	1

---

Correlation between ROA and DFL is 1, shows positive relationship i-e; with the increase in DFL, ROA increases.

Correlation between ROA and DOL is -0.036, shows negative relationship i-e; increase in DOL decreases the ROA.

#### 4. Comparative analysis Of Pakistan and Sri Lanka

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>e F</i>
Regression	2	348.8477	174.4239	14.3972	0.00022
Residual	17	205.9571	12.11512		
Total	19	554.8048			

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$$ROA = \alpha_2 + \beta_1 DFL + \beta_2 DOL + U_i$$

$$ROA = 11.78 - 0.026 DFL + 0.067 DOL$$

A unit increase in DFL decreases the ROA by 0.026 units and a unit increase in DOL increases the ROA by 0.067 units.

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	<i>ROA</i>	<i>DFL</i>	<i>DOL</i>
ROA	1		
DFL	0.78504	1	
DOL	0.68255	0.923924	1

---

Correlation between ROA and DFL is -0.78, shows negative relationship i-e; with the increase in DFL, ROA decreases.

Correlation between ROA and DOL is -0.68, shows negative relationship i-e; increase in DOL decreases the ROA.

**Findings:**

From the analysis it is shown that there is a significant relationship between DFL, DOL and ROA therefore, fixed operating expenses and the financing mix decisions of the firm are significantly affecting the earning capacity and ability of the firm. The

leverage effect and influence are positive when the earnings of the firm are larger than the fixed financial charges to be paid for the lenders and financial institution. The leverage is an important factor which impacts on the profitability of the organizations and the wealth of the shareholders can be maximized while during the firm is able to employ more debt.

**Data Collection**

Financial statements are the raw data collected from various websites like www.capitaline.com and other company websites

**Time Period of the Study**

The study has been conducted during July 2001 to Dec 2010 for 10 years data.

**Limitations:** There is limited data available for 10 years in SAARC countries.

**Conclusions**

From the analysis it is shown that there is a significant relationship between DFL, DOL, ROI, ROE, and ROA therefore, fixed operating expenses and the financing mix decisions of the firm are significantly affecting the earning capacity and ability of the firm. The leverage effect and influence are positive when the earnings of the firm are larger than the fixed financial charges to be paid for the lenders and financial institution. The leverage is an important factor which impacts on the profitability of the organizations and the wealth of the shareholders can be maximized while during the firm is able to employ more debt.

**References****Text Books**

- 1] C.R.Kothari,(1995),“ResearchMethodology” , New Delhi, Wishswa Prakashan.
- 2] Dr. S P Gupta, (33 rd Revised Edition 2004), “Statistical Methods”, New Delhi,Sultan&Sons.
- 3] I.M Pandey, Financial Management, Vikas Publishing House Pvt ltd.,(2009)
- 4] Khan&Jain, Financial Management, Tata McGraw-Hill(2007)

**Journals**

- [1] European Journal of Economics, Finance and Administrative Sciences ISSN 1450- 2275 Issue 32 (2011)
- [2] The Universal Effects of Compounding and Leveraged Funds Volume 1 • spring 2009
- [3] Understanding Investment Leverage, AB0409E (03/2005) Manulife Bank

- [4] The impact of leverage on firm investment: Canadian evidence, Journal of Corporate Finance 11 (2005) 277– 291
- [5] The Leverage Cycle, By Jean Geanakoplos Cowles Foundation Paper No.1304
- [6] Leverage and growth: effect of stock options Bank of Finland Research Discussion Papers 19 2011 ISBN 978-952-462-776-4 ISSN 1456-6184 (online)
- [7] Liquidity and Leverage Tobias Adrian Federal Reserve Bank of New York, First Version: June 2007 This Version: May 2008
- [8] Leases, Debt and Value. By: *Aswath Damodaran* Stern School of Business 44 West Fourth Street New York, NY 10012 April 2009
- [9] African Journal of Business Management Vol. 5(4), pp. 1312-1324, 18 February, 2011 Available online at <http://www.academicjournals.org/AJBM> ISSN 1993-8233 ©2011 Academic Journals
- [10] Financial Leverage, October 2008, MSCI Barra.
- [11] International Research Journal of Finance and Economics ISSN 1450-2887 Issue 19 (2008) Euro Journals Publishing, Inc. 2008

- [12] Journal of Applied Finance & Banking, vol.1, no.2, 2011, 19-37  
ISSN: 1792-6580 (print version), 1792-6599 (online)
- [13] M.P. Odit and Y.D. Gobardhun, The determinants of financial leverage of SME's in Mauritius, *The International Business & Economics Research Journal*, 10(3), (2011), 113-125.
- [14] S.C. Myers and N.S. Majluf, Corporate financing and investment decisions when firms have information those investors do not have, *Journal of Financial Economics*, 13, (1984), 187-221.
- [15] A Research Paper on Portfolio Leverage ratios by David Asermely in December 2010
- [16] An Analysis of the Effects of Operating and Financial Leverage on the Major U.S. Air Carriers' Rates of Return: 1990-2003.
- [17] The Effect of Leverage on Firm Value and how the firm financial quality influence on this effect By Ming-Chang Cheng\* and Zuwei-Ching Tzeng
- [18] Does the Trade-off Theory Explain Debt Structure and Valuation for Divesting Parents in a Prosperous Australian Economy? By Cecil W. Lui, This article is derived from a chapter of my doctoral dissertation entitled "Divestiture Announcements in Australia: Causes and Consequences".
- [19] Review of Accounting Studies, 8, 531–560, 2003 Kluwer Academic Publishers. Manufactured in The Netherlands
- [20] African Journal of Business Management Vol. 5(4), pp. 1312-1324, 18 February, 2011 Available online at <http://www.academicjournals.org/AJBM>
- [21] Lintner, J. (1962), 'Dividends, Earnings, Leverage, Stock Prices, and the Supply of Capital to Corporations'. *Rev. Econ. Stat.*, 44(3):243- 269.
- [22] The impact of leverage on firm investment: Canadian evidence *Journal of Corporate Finance* 11 (2005) 277– 291
- [23] Financial leverage and firm value Kuben ryan 27526977 in Gordon Institute of Business Science. 13 November, 2008
- [24] Tang, C.-H. H., & Jang, S. S. (2007). Revisit to the determinants of capital structure: A comparison between lodging firms and software firms. *Hospitality Management*, 26, 175-187.
- [25] Lewellen, K., 2006. Financing decisions when managers are risk averse. *The Journal of Financial Economics* 82 (3), 551-589.
- [26] Figlewski, S., and X. Wang, 2000, "Is the "Leverage Effect" a Leverage Effect?" Working Paper New York University.
- [27] Gritta, R., G. Chow and N. Freed "Measuring the Degrees of Operating, Financial, and Combined Leverage Facing the U.S. Air Carriers: 1979-1995," *Transportation Law Journal* 26 (1), (Fall 1998), 51-71.
- [28] Jones, Charles. *Investments: Analysis and Management*. 9 ed. John Wiley & Sons, New York, N.Y. (2004), Ch. 6.
- [29] Brigham, Eugene and L. Gapenki. *Intermediate Financial Management*. Dryden Press, Orlando, FLA. (2004), Ch. 12.
- [30] Helfert, Erich A. (2001). "Financial Analysis: Tools and Techniques a Guide for Managers". McGraw-Hill, United States of America.
- [31] Maher, Maria, and Thomas Andersson. *Corporate Governance: Effect on Firm Performance and Economic Growth*. Organization for Economic Co-Operation and Development. Organization for Economic Co-Operation and Development, 1999, page1-51.
- [32] KEPE (Center of Economic Planning and Research) (1989) Small and medium sized enterprises (SMEs). Reports for the Program 1988–1992 (in Greek).
- [33] Michaelas, N., Chittenden, F. & Poutsouris, P. (1999) Financial policy and capital structure choice in U.K. SMEs: empirical evidence from company panel data, *Small Business Economics*, 12, pp. 113–130.
- [34] Courtis, K. J. (1978) Modeling a financial ratio categoric framework, *Journal of Finance and Accounting*, (Summer), pp. 219–223.
- [35] Tamari, M. (1980) The financial structure of the small firm—an international comparison of corporate accounts in the U.S.A., France, U. K., Israel and Japan, *American Journal of Small Business*, 4, pp. 20–34.
- [36] Gupta, M. C. (1969) The effects of size, growth and industry on the financial structure of manufacturing companies, *Journal of Finance*, 24, pp. 517–529

[37] Levratto, N. (1997) Small firms finance in France, *Small Business Economics*, 8, pp. 279–295.

[38] Rivaud-Danset, R., Dubocage, E. & Salais, R. (1998) Comparison between the financial structure of SME versus large enterprise using the BACH data base, Université Paris–Nord, Faculté de Sciences Economiques, June

[39] Mira, S. F. (2002) On capital structure in the small and medium enterprises: the Spanish case, *Instituto de Estudios Europeos, Universidad San Pablo–CEU*, No. 2, March

[40] Jaggi, B. & Gul, F. (1999) An analysis of joint effects of investment opportunity set, free cash flows and size on corporate debt policy, *Review of Quantitative Finance and Accounting*, 12, pp. 371–381

### Tables Listed Companies

Pakistan	India
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1. Karachi Electric Supply Corporation Ltd.
2. Mari Gas Company Ltd.
3. Oil & Gas Development Company Ltd. (OGDC)
4. Pakistan State Oil Company Ltd.
5. Shell Gas LPG (Pakistan) Ltd.
6. Shell Pakistan Ltd.
7. Sui Southern Gas Company Ltd.
8. Sitara Energy Ltd.
9. National Refinery Ltd.
10. Kohinoor Energy Ltd.

1. Aban Offshore Ltd
2. BGR Energy Systems Ltd
3. Bharat Petroleum Corporation Ltd(BPCL)
4. Essar Oil Ltd
5. Indian Oil Corporation Ltd ( IOCL)
6. Gas Authority of India Ltd(GAIL)
7. Gujarat Gas Company Ltd
8. Chennai Petroleum Corp. Ltd(CPCL)
9. Cairn India Ltd
10. BOC India Ltd (Part of Linde Group)

Bangladesh	Sri lanka
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1. Bangladesh Petroleum Corporation
2. Jamuna Oil Company
3. Petrobangla
4. Titas Gas

Ceylon Petroleum Corporation

Nepal	Bhutan	Afghanistan	Maldives
Nepal Oil Corporation	N/A	N/A	N/A

### Graphs and data Collection and analysis

#### Comprehensive Analysis of SAARC Countries

Years	Countries	Impact Of Leverage on ROE			Impact Of Leverage on ROA			Impact Of Leverage on ROI		
		Dep. Variable	independent Variable		Dep. Variable	independent Variable		Dep. Variable	independent Variable	
		ROE	DFL	DOL	ROA	DFL	DOL	ROI	DFL	DOL
2001	Pakistan	25	2	34	12	2	34	11	2	34
2002	Pakistan	28	2	32	14	2	32	11	2	32
2003	Pakistan	29	2	26	12	2	26	11	2	26
2004	Pakistan	30	2	36	14	2	36	12	2	36
2005	Pakistan	32	2	45	17	2	45	13	2	45
2006	Pakistan	43	2	40	20	2	40	44	2	40
2007	Pakistan	38	2	35	15	2	35	44	2	35
2008	Pakistan	48	3	35	16	3	35	38	3	35
2009	Pakistan	32	3	29	10	3	29	33	3	29
2010	Pakistan	43	3	30	12	3	30	49	3	30
2001	India	21	2	53	10	2	53	91	2	53
2002	India	26	2	46	14	2	46	134	2	46
2003	India	29	2	38	18	2	38	182	2	38
2004	India	15	2	43	9	2	43	104	2	43
2005	India	3	2	52	2	2	52	10	2	52
2006	India	18	2	54	8	2	54	41	2	54
2007	India	14	2	59	6	2	59	78	2	59
2008	India	6	3	65	2	3	65	9	3	65
2009	India	12	3	64	4	3	64	20	3	64
2010	India	11	2	59	5	2	59	20	2	59
2001	Bangladesh	69	94	45	74	94	45	26	94	45
2002	Bangladesh	86	97	44	89	97	44	32	97	44
2003	Bangladesh	82	95	43	86	95	43	34	95	43
2004	Bangladesh	113	100	46	113	100	46	49	100	46
2005	Bangladesh	90	100	44	90	100	44	37	100	44
2006	Bangladesh	58	100	51	58	100	51	35	100	51
2007	Bangladesh	49	100	56	49	100	56	41	100	56

2008	Bangladesh	34	100	57	34	100	57	37	100	57
2009	Bangladesh	42	101	45	42	101	45	48	101	45
2010	Bangladesh	53	100	57	53	100	57	81	100	57
2001	Sri Lanka	21	340	81	9	340	81	31	340	81
2002	Sri Lanka	45	300	85	9	300	85	30	300	85
2003	Sri Lanka	35	290	78	8	290	78	35	290	78
2004	Sri Lanka	56	340	80	7	340	80	40	340	80
2005	Sri Lanka	61	545	82	11	545	82	31	545	82
2006	Sri Lanka	-16	680	85	-2	680	85	-68	680	85
2007	Sri Lanka	17	400	80	-1	400	80	-50	400	80
2008	Sri Lanka	18	356	76	9	356	76	70	356	76
2009	Sri Lanka	21	330	75	9	330	75	45	330	75
2010	Sri Lanka	23	350	71	8	350	71	34	350	71
2001	Nepal	29	90	0	12	90	0	11	90	0
2002	Nepal	82	95	43	86	95	43	34	95	43
2003	Nepal	48	89	0	16	89	0	38	89	0
2004	Nepal	49	100	56	49	100	56	41	100	56
2005	Nepal	29	90	0	12	90	0	11	90	0
2006	Nepal	18	356	76	9	356	76	70	356	76
2007	Nepal	56	340	80	7	340	80	40	340	80
2008	Nepal	58	100	51	58	100	51	35	100	51
2009	Nepal	21	330	75	9	330	75	45	330	75
2010	Nepal	18	2	54	8	2	54	41	2	54
2001	Bhutan									
2002	Bhutan									
2003	Bhutan									
2004	Bhutan									
2005	Bhutan	N/A			N/A			N/A		
2006	Bhutan									
2007	Bhutan									
2008	Bhutan									
2009	Bhutan									
2010	Bhutan									
2001	Afghanistan									
2002	Afghanistan									
2003	Afghanistan									
2004	Afghanistan	N/A			N/A			N/A		
2005	Afghanistan									
2006	Afghanistan									
2007	Afghanistan									
2008	Afghanistan									

2009 Afghanistan  
 2010 Afghanistan

**ROE**

	<i>Coefficient</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	51.03071	10.1897	5.008067	8.19E-06	30.53167868	71.52975	30.53168	71.52975
X Variable 1	0.014809	0.029703	0.498582	0.6204	0.044945506	0.074564	-0.04495	0.074564
X Variable 2	-0.3044	0.228755	-1.33067	0.189719	0.764593384	0.155799	-0.76459	0.155799

**ROA**

	<i>Coefficient</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	36.95902	11.70234	3.158258	0.002773	13.41693735	60.50109	13.41694	60.50109
X Variable 1	-0.01154	0.034112	-0.33832	0.73663	0.080166295	0.057085	-0.08017	0.057085
X Variable 2	-0.20756	0.262714	-0.79006	0.433458	0.736072534	0.320951	-0.73607	0.320951

**ROI**

	<i>Coefficient</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	30.18992	14.76359	2.044889	0.046488	0.489398069	59.89043	0.489398	59.89043
X Variable 1	-0.1122	0.043036	-2.60707	0.012199	0.198775402	-0.02562	-0.19878	-0.02562
X Variable 2	0.450737	0.331438	1.359945	0.180335	-0.21602959	1.117504	-0.21603	1.117504

**SUMMARY OUTPUT**

Observations 50

**ROE**

**SUMMARY OUTPUT**

*Regression Statistics*

**ROA**

*Regression Statistics*

Multiple R	0.207102
R Square	0.042891
Adjusted R Square	0.002163
Standard Error	24.75325

Multiple R	0.207418
R Square	0.043022
Adjusted R Square	0.0023
Standard Error	28.42782

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Observations	50
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**SUMMARY OUTPUT**

**ROI**

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*Regression Statistics*

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Multiple R	0.363676
R Square	0.132261
Adjusted R Square	0.095335
Standard Error	35.86433
Observations	50

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**Thank You Very Much**