

## Relationship between Financial Leverage and Financial Performance: Evidence from Fuel & Energy Sector of Pakistan

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### ABSTRACT

Fuel and energy sector serves as the backbone of the economy. The segment provides support, not only for the economic development of the country by showing positive trends towards the sectoral growth, but also serves as a steering wheel for the growth of manufacturing, trading and service sector. It provides significant inputs for production, trade and service. A general concept prevails that the financial leverage is helpful to enhance the financial performance of the companies. For measuring the impact of financial leverage on the financial health of the companies, it is essential to know whether a positive relationship exists between the financial leverage and financial performance or not? So, this study is intended to test the hypothesis and to measure a relationship between the financial leverage and the financial performance of the fuel and energy sector in Pakistan. The paper also examines the generalization that firms with higher profitability may choose high leverage by using various statistical tools. The findings of the study show a positive relationship between the financial leverage and the financial performance of the companies by accepting the alternate hypothesis  $H_1$  and  $H_0$  is rejected. The results of the study confirm that the firms having higher profitability may improve their financial performance by having high levels of financial leverage. The study provides evidence by evaluating different facts. It reveals that the players of the fuel and energy in Pakistan can improve at their financial performance by employing the financial leverage and can arrive at a sustainable future growth by making vital decisions about the choice of their optimal capital structure.

**Key Words:** Financial leverage, Firms' Performance, Key Indicators- Financial Ratios, Fuel and Energy Sector in Pakistan

### 1. INTRODUCTION

There is a general perception that a relationship exists between the financial leverage and the performance of the companies. In this study, we test the hypothesis. Employing a sample of 20 listed public limited companies from Fuel and Energy sector listed at Karachi Stock Exchange (KSE). The study aimed at measuring the relationship between financial leverage and the financial performance. To test the hypothesis, the main variables used in the study consist of a dependent variable which is financial performance of fuel and energy sector while an independent variable financial leverage in fuel and energy sector. Basically, the study aims at measuring the relationship between the two stated variables. The key financial performance indicators used in the study are return on assets ( % ), return on equity ( % ), dividend cover ratio ( % ), dividend ratio to equity ( % ), net profit margin ( % ), earning per share before tax, earning per share after tax ( % ), sales as % of total assets ( % ), earning per share before tax growth( % ), sales growth ( % ). Financial leverage of the industry will engage the key leverage indicators commonly used including the gearing ratio ( % ), debt equity ratio ( % ) and debt equity ratio. The results will assess the real scenario about the relationship of financial leverage with financial performance of the industry.

### 2. BACKGROUND

Energy serves as a steering wheel for the economy of a country to step towards sustainable economic growth. According to Statistics and Analysis of Energy Data, in December 2006, Electricity, Oil, Gas, and Coal conducted by EIA (Energy information administration), Pakistan has shown a nominal expansion in its energy sector, in spite of the major disaster of

earthquake happen in 2005. Pakistan's economy has improved from years of slow growth, due to droughts and other natural disasters in various sectors of economy.

In fiscal year 2004-05, the gross domestic product of Pakistan has shown a growth rate of 8.4% while in year 2005-06, the GDP growth rate of 6.6 % was achieved. In year 2004-05 high growth in inflation 9.1% resulted in increase in prices of oil, house rents and shortage in basic food item. In order to implement control measures for reducing inflation, the State Bank of Pakistan declared the interest rates would rise. As a result of such strategy, the inflation rate decline to 7.6% by the end of the year 2005-06.

The two major donors to Pakistan The World Bank and International Monetary Fund (IMF) have recognized the positive growth and progress in performance in the country's restructuring, but they pointed out the slow growth sectors i.e, energy sector and public institutions. In current period, two major reasons for increased imports of oil from Middle East are the increased consumption and flat production in the country. Pakistan is relying on oil and petroleum products import due to lack of refining capacity. 50% of total energy utilization in Pakistan is covered by the natural gas reserves. All domestic natural gas production is currently consumed by the country but higher production is required by Pakistan to be an importer of natural gas. In this regard, Pakistan is making efforts to explore various LNG and pipeline import options in order to meet the expected demand growth. The demand for electricity in country is rapidly increasing. In order to meet expected demand in 2010, 50% growth in capacity is required as per government estimates.

Economic survey of Pakistan year 2006-07 provides that the economy of the country is demonstrating 7.6% growth per annum for the period of previous three years, as in this regard government is trying to maintain it for future growth. The government realizes a quite strong relationship between economic growth of energy and its demand and making efforts in this regard. Government is taking new project in action like, setting up of new nuclear power plant, overhauling existing power generation plants to enhance their generation capacity, utilizing 175 billion tones of Thar coal reserves, import of LNG; increase in oil and gas exploration in the country; import of piped natural gas from Iran and Turkmenistan's; exploiting the affordable alternate energy resources. By promoting efficient use of energy resources the supply can be increase. Production of crude oil per day showed up an increase of 1.7% from to 65,385 barrels per day to 66,485 barrels during the month of July-March 2006-07. The production of crude oil has showed a raise of 18.2 million barrels in the months of July-March 2006-07 from 17.9 million barrels in contrast of July –March last year, which indicates a raise of 1.7%.

Pakistan's CNG fleet is number 1 in Asia and the Number 3<sup>rd</sup> in the world's. The government has already invested Rs 60 billion in this sector and trying to start different projects as well. The incredible expansion in this sector has created 60,000 new jobs. With the collaborative effort of Federal Government and Cabinet Division, collectively trying to provide motivation to the people by giving relief in interest payment of the loans, which is essential to acquire new CNG vehicles. For this purpose, the cities of Hyderabad, Quetta, Peshawar, Islamabad, Rawalpindi, Lahore and Karachi, are cutting out diesel vehicles to replace it by CNG vehicles for intra-city hauling. The whole range of wagons, mini buses and new buses, will be converted on CNG – or dual fuel transportation. Provincial governments in country are also taking steps to sponsor CNG conversions. In this regard government of Punjab announced 20% capital cost for every new CNG vehicle (Energy-Overview of the Economy, Economic Survey of Pakistan fiscal year 2006-07).

The country Government states the policy objectives for the energy sector in "Petroleum Exploration & Production Policy 2007" published by Ministry of Petroleum & Natural Resources; the objectives include the promotion of Foreign Direct investment in country through increased healthy competition for investments in the energy sector, promotion of local oil and gas companies of Pakistan for stated sector investment opportunities, training of country officials in Energy and Petroleum sector to according to international standards and creating an environment of retaining in the region. Further more they aim at promotion of enhanced Energy and Petroleum activity in the front line areas by offering incentive competitive environment.

The Government of Pakistan is also working on project to build a pipeline from Iran's natural gas reserves to Indian marketplace across the country's region (Statistics and Analysis of Energy Data, Electricity, Oil, Gas, Coal conducted by EIA (Energy information administration), 2006) .In august 2006, Pakistan resigned a memorandum of understanding 2005 until 2007 with Iran. Price to be paid for Gas is the major concern for both countries India and Pakistan. The three countries selected an international consultant to act as a mediator for the solution of pricing issue. Pakistani administrators focused on their ability to maintain the pipeline while Iran took the responsibility to cover 60 % of the construction cost .The annual expected earning from this pipeline is for Pakistan could be \$70 million in transit fees. If India chooses to quit its share in the pipeline project, Iran and Pakistan have agreed to work on a bilateral pipeline project. Dolphin Project in Qatar is a

second import possibility under consideration. Sub sea pipeline from Oman will help out supply of natural gas to Pakistan. A pipe line from Turkmenistan to Pakistan through Afghanistan is another alternative for Pakistan. The Price charged by Turkmenistan and the security situation of Afghanistan are major constraint in this regard.



Source: Ministry of Petroleum and Natural Resources in Pakistan

Figure 1: Proposed regional Gas Pipeline routes

In short, we can say that the fuel and energy sector is making a significant contribution towards the economic growth of the country along with current developments, pursued by further prospects for future development.

### 3. SIGNIFICANCE & STUDY RATIONAL

Energy serves as a steering wheel for the economy of a country to step towards sustainable economic growth. Energy is used as an input for various industries, and is also used as a commodity to be used in commerce and trade activities. Energy is the most vital resource for the industrial growth as it functions like a backbone on which the whole industrial body is dependent. To prosper, a country needs to embrace the growth in energy sector. More or less each and every production unit working in the economy is using the energy as a raw material to base its production by using such resource. Particularly for the manufacturing sector its significance is same as the Importance of blood in veins. The study conducted for observing the impact of financial leverage on the financial performance of the companies will help out the companies to know about the effect and increase the profitability by considering the option of leverage, if it proves to make a significant positive impact on financial performance.

The fuel and energy sector is the major consideration of the study as this sector is growing rapidly and serves as the primary concern to provide the input to the other industries. The change in oil & gas prices creates a jerk to the other industries if it is raised because it may raise the proportionate costs of production in various industries and even a common consumer may suffer a lot as the results of inflation and reduced purchasing power. Not only the manufacturing sector suffers but various financial sector industries also have deep concerns as their revenues may also squeeze due to increased inflation, lower purchasing powers etc. and also other economic effects. There is a general hypothesis that leverage increases the risk of the firm which in turn increases the proportionate returns leading to the ultimate wealth maximization of the shareholders, which is to be tested in the study. If leverage brings returns and ultimately the maximization of value to the company, the long term sustainable growth in fuel and energy sector is possible. If the fuel and energy sector is growing, new developments will be observed, it will lead towards the overall country's industrial growth as many other industrial players are dependent on fuel and energy for production. So, the study carries a great significance not only for the fuel and energy sector but also for the dependent bodies. It makes a considerable meaning even if we say the trade activity revolves around the fuel and energy sector in the whole world.

### 4. DIRECTION FOR FUTURE RESEARCH

The research will provide a direction for further research on fuel and energy sector in Pakistan regarding the impact of financial leverage on the performance of companies operating, measuring a cause and effect relationship. It may lead to the

future researches to be carried out by analyzing the individual company's performance and making a comparison with the whole industry by using the industry performance as benchmarks. After measuring the relationship between the leverage and the financial performance, a further study to measure the significance of financial leverage for the sector under discussion can be carried out and what impact would it make on the financial performance if the financial leverage of the companies is increased or reduced and how can the industry players maximize their shareholders' wealth by using leverage. How the firm's stock value is influenced by using the different levels of leverage and how companies lying in such sector or the industry players can achieve the sustainable growth by implying the leverage concept. What impact the leverage can make on the sectoral risks and the company specific risks and how to measure, evaluate, and control the systematic and asystematic risks involved for levered companies in such industry. What impact would the increased risks by leverage can make over the required rate of return of the companies? These are some questions which may be answered in several studies for the fuel and energy sector in Pakistan to lead towards the sustainable future growth.

## 5. HYPOTHESIS- $H_1$ :

Financial leverage has got a positive relationship with financial performance of the companies operating in fuel and energy sector.

## 6. LITERATURE REVIEW

The Stock leverage can be defined as the ratio of total liabilities to total assets. It can be seen as alternative for the residual claim of equity holders. However, the stock leverage may not be a healthy indicator in terms of identifying the firms default risk in near future (Rajan; Zingales, 1995). The earnings are independently and identically distributed, so the leverage remains same in each period (Scott, 1976). The multi period earnings and leverage relationship is examined by Barnea, Haugen, and Talmo, (1987). In their point of view adequate earnings cause brings losses for tax benefits as Raymar (1991) find that the leverage increases with the ratio of operating earnings to value. According to Barnea, Haugen, and Talmo, (1987), the leverage to risk relationship is dependent upon the economy-wide pricing variables while Raymar (1991) comes across the result that optimal leverage generally decreases with business risk. The diminished future debt usage implies smaller terminal firm value (Haugen; Senbet, 1998). They further elaborate that the default acts as the deterrent to leverage in their model, and default occurs primarily due to a depressed value of the firm, Sensitivity of firm's earnings is paramount in the determination of the debt optimum. Thus, stable (low Sensitivity of firm's earnings) firms with high earnings risk may be highly levered. If earnings processes are heterogeneous (either as reflected by sensitivity of firm's earnings or in a more general sense), simple earnings variability measures would not adequately capture the relation between a firm's business risk and its use of debt.

The free cash flow indicators identified in literature are observed as low levels of financial leverage, inadequate valuable investment opportunities; considerable and sustainable cash flows; and high level of diversification (Jensen, 1986).

While in view of Gibbs (1993) no relationship exists with investment opportunity and initial financial leverage. Management has incentives to minimize the liquidation risks of the companies. Moreover, the management may opt to avoid the corrective action of the capital market by financing unprofitable projects internally with retained earnings. This, too, has the effect of reducing leverage. Thus, we can infer that such action of management may reduce the risk of the firm by reducing leverage and so the returns as result. The author further explains that with decreasing board power, the management may tend to be stable and in a position to resist takeover. Decreasing values of leverage and investment opportunity are expected to increase likelihood of capital structure reforms due to takeover threat. The ultimate findings of the author reveal that the Degree of operating leverage (Mandelker, G.N., and S.G. Rhee, 1984) also determines the capital structure mix, as firm then exposed to industry influence at some scale and those having higher degree of operating leverage may have less debt percentage and vice versa. In an empirical study (Hatfield, Cheng, Davidson, 1994) of high debt and low debt firms belonging from the same industry, the results shown that in opposition of the perception of market decision of granting finances by comparing firm's leverage ratio with the industry average has been proved to reverse case.

Ferri; Jones (1979) has observed the relationship between leverage and size of the firm as it is a general perception that the likelihood of larger firms to be diversified is more, as they can access to the capital markets easily, may benefit from the higher credit ratings for issue of debt, and lower interest rates on external financing. It reveals that leverage may enhance the profit after taxes due to lower interest rates and ultimately the higher earnings may result in the higher EPS or dividend payout ratios which may increase the firm's performance. Even if the marginal earnings as the result of lower interest rates and tax shields are retained for the company's growth, it may maximize the company's value in long term and may lead towards the achievement of wealth maximization objective for which the real owners invest. So, the author found the relationship between the size of the firm and leverage class. More over, the paper investigated possible linkages between a firm's financial structure and its industry class, variability in income, and operating leverage. The results of the

study's effort to relate firm characteristics to leverage class can be summarized in this way: a) industry class is linked to a firm's leverage, but in a less pronounced and direct manner than has been previously suggested; b) variation in income, measured in several ways, could not be shown to be associated with a firm's leverage. Modigliani and Miller (1958 and 1963) support this verdict, that financial leverage and firm value have insignificant relationship while it exists only when those operate in taxable environment call for tax payments affecting capital structure.

J. Fred Weston (1989) comments on MM's propositions which state that Equilibrium in a perfect capital market requires that the market value of a firm not be changed by its financing decisions and the required return on equity will raise (linearly) with financial leverage. There is an inverse relationship among profitability change and leverage change in short run provided with the fixed dividends and investments where the dominant mode of external financing is debt. It has been observed that large firms are inclined to issue less equity. With the increase in firm size, the negative effect of profitability on leverage should be stronger but if the smaller firms are provide with investment opportunities, it may diminish correlation of profitability & leverage by larger equity issuance.(Rajan; Zingales, 1995).

The authors persist to elucidate about coverage ratio that a measure of the risk that share holders will not be able to make predetermined payments and will have to surrender control i.e., the to interest expense & the ratio of earnings before interest, taxes, and depreciation (EBITDA) ratio of earnings before interest and taxes (EBIT)to interest expense. A basic issue for both measures is that they assume the rolling over of short-term liabilities including short term debt and accounts payable, which may not necessarily be true during financial distress. More over Jensen (1989) argue that the implication arising from inability to make fixed payments at high levels of debt may be different from those in low debt levels. The case of first scenario explained above is more likely to lead to liquidation while the second may lead to restructuring. Takeover pressures may force the firm to enhance leverage and the managers may increase their debts to ensure the payment of future cash flows as a result of restructuring. This, in turn, may make the firm unattractive to raiders (Zwiebel,1992).

The studies indicate that if the risk of the firm is increasing by leverage, it may lead the firm towards liquidation or takeovers. We can generate a proposition out of this that the firm may need sufficient profitability to service the debts. Bernanke Campbell, and Whited (1990) observed the restructuring activity in the 1980s also had substantial impact on the cross-sectional distribution of leverage. A general perception is that Increased leverage and increased risk of the firm may increase the probability of default and so the bankruptcy costs or the costs of financial distress. Rajan; Zingales (1995) observed that the cost of financial distress are higher in the firm having high market-to-book ratios that's why a negative correlation is expected. There may be other potential reasons for why the market-to-book ratio is negatively correlated with leverage. Fama and French (1992) recommended that there is a price of distressed risk as a high discount rate may be used for the contribution of firms with high leverag in financial distress. Mostly the firms with low market to book ratios demonstrate a negative correlation if preceding explanation is true. In fact the firms with high market to book ratio illustrate negative correlation rather than the firms with low market-to-book ratios. It is not always a chance that the scenarios mention above are caused by financial distress Rajan; Zingales (1995)

Managers may opt for less leverage in order to decrease the level of firm risk to shield their under diversified human resource (Fama, 1980) or their unwillingness to embrace performance pressures related to obligation to expel huge amount of cash ( Jensen, 1986). On the other hand, Harris and Raviv (1988) and Stulz (1988) recommend that entrenchment motives may compel managers to increase leverage beyond the optimal point because they want to increase voting power of their stakes in equity and diminish the possible takeover attempts. It means the entrenchment motives lead to higher performance. The encouragement for limited liability stockholders to raise the risk of the firm by increasing leverage has been extensively noted (Galai and Masulis, 1976).

Harris and Raviv (1991) provided that there are corresponding leverage ratios commonly accepted by the firm in a given industry whereas leverage ratios vary across industries. When the firms increase there leverage, shareholders' bid for common shares with low market value and less dividend than the value at liquidation and fixed dividend offered on preferred stock. Thus, the net effect on the firm is to increase its fixed obligations. In our opinion, it may lead to the greater creditors' influence and the representation in the board of directors of the company which may lead the management to take risky projects for the company to maximize the returns as returns are the function of proportionate risks. Moreover, as the common shareholder have a vote per share, so the voting rights of equity holders may decline who intent to participate in the offer (Pinegar; Lease, 1986). Furthermore the author examines that leverage change may not require to change the tax status before event that may influence the change in firm value. Specifically, announcements of preferred-for-common exchange offers lead to positive firm revaluations in almost all of the

leverage-increasing events. When there are preference to common share exchange offers, a negative change may occur in firm value as revealed by signaling hypothesis.

According to Masulis' (1983) and DeAngelo and Masulis' (1980) assumption that a firm may question and optimal level of debt that it could have may increase or diminish its value and may move push away or towards industry average. Firms efforts to work out Optimal capital structure (DeAngelo and Masulis, 1980) is determined by various agency costs bankruptcy or tax gain on losses from leverage usage, compensating for other tax shield instruments of depletion, depreciation, amortization and investments tax credits. According to Robert L. Hirsch, SAIC, (2005); the management of an oil reservoir over its multi-decade life is influenced by: 1) an operator's other investment opportunities 2) history of production, status of the reservoir and geology 3) nature and cost of production-enhancing technologies; 4) enhancements timing ; 5) the financial condition of the operator; 6) actual and expected future oil prices 7) political and environmental circumstances, etc. Risk as an important imperative of firms operating in an industry, consistent earnings depending on the total cost affected by (Samuel H. Baker) output variability and determines financial leverage decision. Output varies due to nature of firm operating environment.

Another research conducted by Hamada (1972), found the relationship of equity cost and leverage of firms across industries. More variations were observed for the firms using leverage than that preferring unlevered capital structure. A study by Hall and Leonard Weiss (1967) explained the presence of significant relationship of greater equity/debt ratio with profitability, but also an influence of reducing risk, resulting in an increased profitability is observed. According to Louis, Cheng and Davidson (1994), the market response to the debt announcements may be affected by the growth of firm. The firm with high growth rate may absorb the increased financial leverage as it may have ability to pay the incremental interest expense and visa versa.

## 7. RESEARCH METHODOLOGY

The research to be conducted is a quantitative research involving an empirical study among different variables. The sample size consists of 20 listed public limited companies from Fuel and Energy sector listed at Karachi Stock Exchange (KSE). All companies except 20 listed public limited companies from Fuel and Energy sector listed at Karachi Stock Exchange are excluded form the study. The core data for the research will be collected by using the relevant annual reports of the companies and it would help in gaining authentic results. Balance sheet analysis of public limited companies registered on the KSE (2000-2005), statistics provided by State bank of Pakistan and data issued by DWH department will serve as guideline in measuring the financial performance of the companies by implying ration analysis as financial performance indicators. For the collection of supportive data several websites, Research Journals & articles will provide a significant guideline for studying the literature and previous studies being carried out on the relevant topics. Instruments of data entry & analysis being used imply descriptive statistics, formulas, and charts engage Microsoft Excel, software for data analysis.

There is a general belief that the financial leverage affects the performance of the companies. This study will measure the relationship between financial leverage and the financial performance. To test the hypothesis, the main variables used in the study consist of a dependent variable which is financial performance of fuel and energy sector while an independent variable financial leverage in fuel and energy sector. Basically, the study aims at measuring the relationship between the two stated variables. The financial performance will be measured by employing the ten key indicators commonly used return on assets ( % ), return on equity ( % ), dividend cover ratio ( % ), dividend ratio to equity ( % ), net profit margin ( % ), earning per share before tax, earning per share after tax ( % ), sales as % of total assets ( % ), earning per share before tax growth( % ), sales growth ( % ). On the other hand the independent variable, financial leverage will engage the key leverage indicators commonly used including the gearing ratio ( % ), debt equity ratio ( % ) and debt equity ratio. The results will evaluate whether a positive relationship exists between the financial leverage and financial performance or not?

## 8. DATA ANALYSIS AND DISCUSSION

The data analysis shows the statistical results regarding financial leverage and the financial performance. Most commonly used measure of financial leverage is calculation financial ratios, of which capital gearing ratio and debt to equity ratio are being analyzed. Gearing ratio<sup>[1]</sup> demonstrates the level of financing provided by internal financier's fund (owner's) to external financier funds. The highly geared companies with high leverage ratio are more flexible to respond in unfavorable circumstances as they are exposed to risk of fixed payment even in downturns. High levels of equity provides a margin and can be viewed as a determined of financial strength. According to our data summarization maximum gearing ratio is 87.13% in Pakistan's Energy sector and minimum is 0%. Firms are using

leverage with the combination of equity. Average of is 22.10% and it's variance from mean average is 619 points approximately, while standard deviation of 25% almost as shown in Table 1.

Table 1: Statistical Analysis of Various Leverage Indicators

Financial leverage Among Companies	Maximum	Minimum	Average	Variance	Standard Deviation
gearing ratio ( % )	87.133	0	22.10416683	619.3020724	24.88578053
Debt equity ratio ( % )	1392.267	0.413333333	210.59985	128981.0135	359.1392675
Debt equity ratio	13.923	0.012305	2.453972583	11.87838562	3.44650339

Debt to equity ratio measures the company's financial leverage calculated by dividing its total liabilities by stockholders' equity. It indicates what proportion of equity and debt the company is using to finance its assets. Energy sector's maximum debt/equity ratio is 13.92%, with a minimum of 0.012% and sector average is 2.45%; showing 11.87% variations from mean and a standard deviation of 3.446%.

Table 2: Statistical Analysis of Various Performance Indicators

Financial Performance of Companies	Maximum	Minimum	Average	Variance	Standard Deviation
Return on assets ( % )	37.3	-4.03333333	9.908333333	106.7877632	10.33381649
Return on Equity ( % )	83.55	-27.3666667	22.39083333	637.6461835	25.25165704
Dividend cover ratio ( % )	658.166667	0	171.5425	22256.5739	149.186373
Dividend ratio to equity ( % )	27	0	9.7275	56.74994956	7.533256239
Net profit margin ( % )	58.25	-82.4666667	14.02	727.3790175	26.9699651
Earning per share before tax	61.5333333	-1.23333333	25.69	325.7340234	18.04810304
Earning per share after tax(%)	235	-18.7666667	20.105	2745.001904	52.39276576
Sales as % of total assets( % )	626.4	10.2833333	163.2091667	34065.34522	184.5679962
Earning per share before tax growth ( % )	120.5	-320.416667	-12.8166667	10148.31687	100.7388548
Sales growth ( % )	204.75	-4.68333333	27.825	2022.703202	44.97447278

Table 2 shows the findings about financial performance indicators. Return on assets' [ii] maximum and minimum ratios of the industry is 37.3% and -4.03%, while industry average is 9.9%. Variance of 10.33 explains the variability of earning on assets investment by using industry proposed financial leverage structure. ROE [iii] of this sector is quite high of 83.55% as maximum, while average of 2.3%, variability is 25.25% much greater when earning on equity trades off for financing decision of by using leverage or equity financing. Dividend ratio to equity Industry average is 9.7, while highest is 27%, standard deviation is 7.5 which is comparatively lesser than other performance indicators. It shows the firms sensitivity for keeping shareholders satisfied, earning good industry perception. Net profit margin [iv] analysis indicates 14.02% margin for energy sector companies showing the maximum returns of 58.25% after tax and a minimum of -82.5%. The EPS [v] before taxes for the industry reaches to the peak at 61.5% while represents a minimum of -1.2%. Earning per share before tax and after tax shows the average of approximately 25% and 20% respectively. Maximum EPS before taxes growth is -320.4% that reaches up to 120.5% maximum in the industry with a mean EPS growth of -12.58%. Sales as % of total assets show the average of 163% approximately while sales growth [vi] is 27% average for the industry with a minimum of -4.6% and touching a height at 204.75%.

Table 3: Correlations of various Financial Performance Indicators with Leverage Ratios

Financial indicators	Gearing Ratio (%)	Debt equity ratio (%)	Debt equity ratio
Return on assets (%)	-0.524531583	-0.093848976	-0.109757491
Return on Equity (%)	-0.489766751	0.240329538	0.221742643
Dividend cover ratio (%)	-0.269137937	0.497179868	0.477460399
Dividend ratio to equity (%)	-0.402391189	-0.02726646	-0.033036793
Net profit margin (%)	-0.216375712	-0.233401722	0.174713067
Earning per share before tax	-0.455429789	0.23057712	0.18052581
Earning per share before tax	-0.455429789	0.23057712	0.18052581
Earning per share after tax (%)	-0.351619287	-0.054309775	0.101362849
Sales as % of total assets (%)	-0.411185047	0.251475029	0.193272234
Earning per share before tax growth (%)	-0.179575772	0.26298237	0.259195851
Sales growth (%)	0.218433803	0.177118528	0.137645603

Table 3 depicts the relationship among various leverage indicators and the financial performance indicators. Most of the correlations between leverage and financial performance show a positive relationship among leverage and the financial performance of the companies when we compare the debt to equity ratio with most of the financial performance indicators. On the other hand, the gearing ratio shows most of the relationships negative with the leverage indicators shown in figure 5. The justification in this regard is the possibility of having preferred stock in the capital structure of some companies lying in the industry which is being the part of capital with fixed return. The gearing ratio takes into account the effect of capital with return numerator which not only accommodates the debt but also the outstanding shares of preferred stock. When the ratio is calculated by dividing the capital with fixed return to the capital with variable return (which includes equity), the gearing ratio results may differ from that of debt to equity ratio. The debt equity ratio takes into account the long term debt.

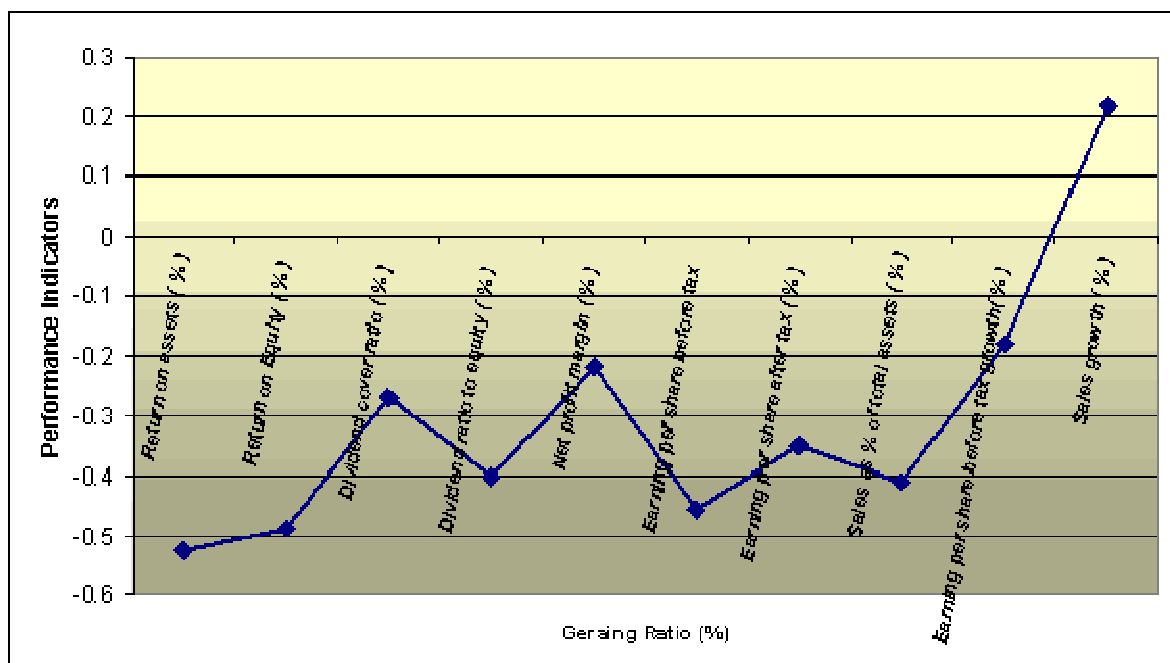


Figure 2: Relationship of various performance indicators with gearing ratio (%)



Most of the financial performance indicators except ROA and Dividend cover ratio show the positive relationship with the leverage indicators. The best possible reasoning that may support the fact is that the dividends cover ratio is not directly related to the leverage. But it is only showing the adequacy of profit available for the payments to be made on the account of dividends. The other ratio (ROA) results showing a negative correlation with leverage indicators measures the profitability over the total assets financed by total capital employed which not only takes into account the effects of debt but also the equity. The later variable in the capital employed may cause the ROA ratio to be deteriorated in case of some companies which ultimately transforms the industry averages.

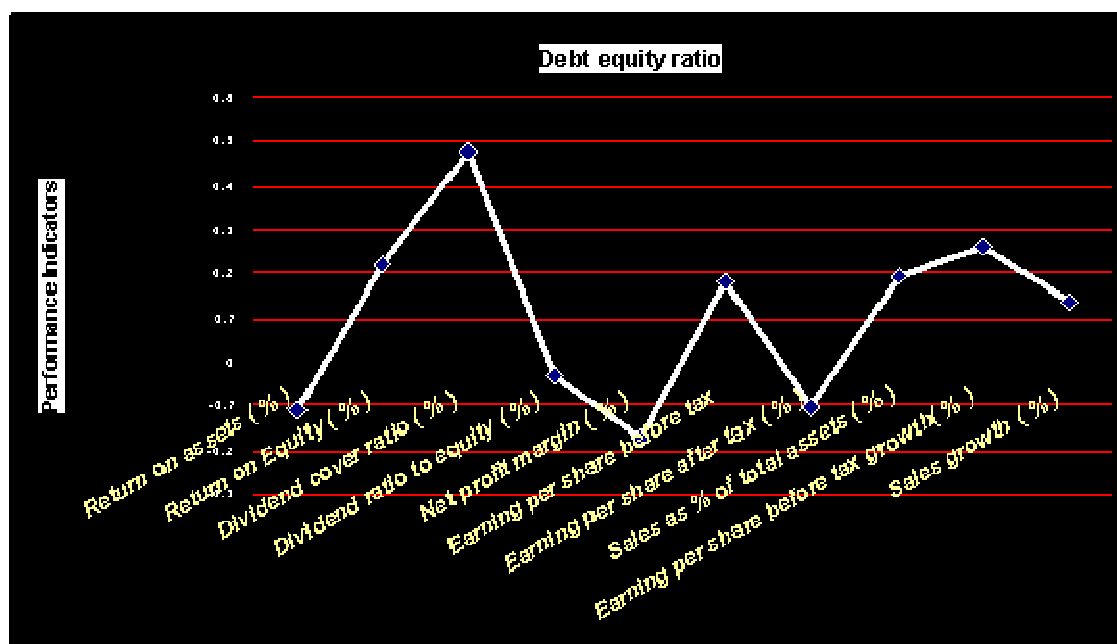


Figure 3: Relationship of various performance indicators with debt equity ratio

The overall trend and relationship of financial performance indicators along with the leverage is still measuring a positive relationship shown in Figure 5. It proves the  $H_1$  hypothesis of the study which says that a positive relationship prevails between the leverage and financial performance and rejects the  $H_0$  hypothesis of the research. Hence, the companies lying in the fuel and energy sector in Pakistan can improve at their financial performance by opting for the optimal level of leverage for them.

## 9. CONCLUSION

We can conclude the findings of the study by saying that the financial leverage has got a positive relationship with financial performance and the alternate hypothesis is accepted. The null hypothesis is rejected by the results of the study. Hence, the companies in the fuel and energy sector may enhance their financial performance and can play their role for the growth of the economy while improving at their optimal capital structures. Leverage may translate into profitability and value maximization of the firms in fuel and energy sector in Pakistan in long term. The fuel and energy sector industry can play an important function in the uplift of the economy by reviewing its capital structure priorities. The employment of debt in the capital structure of the companies may make a positive impact on the performance. In order to maximize the return on investment leverage may be used as “the variable” while making considerations to improve at financial health of the companies by raising their financial performance.

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## APPENDIX

### Exhibit : Energy Overview

<b>Recoverable Coal Reserves (2003)</b>	3,362 million short tons
<b>Total Per Capita Energy Consumption (2003)</b>	12.4 million Btus
<b>Natural Gas Consumption (2004)</b>	967.6 billion cubic feet
<b>Coal Production (2004)</b>	3.5 million short tons
<b>Coal Consumption (2004)</b>	5.2 million short tons
<b>Electricity Installed Capacity (2004)</b>	20.4 gigawatts
<b>Electricity Production (2004)</b>	80.2 billion kilowatt hours
<b>Electricity Consumption (2004)</b>	74.6 billion kilowatt hours
<b>Total Energy Consumption (2004)</b>	2 quadrillion Btus*, of which Natural Gas (46%), Oil (35%), Hydroelectricity (14%), Coal (5%), Nuclear (1%), Other Renewables (0%)
<b>Energy Intensity (2004)</b>	5,086.7 Btu per \$2000-PPP
<b>Oil Production (2006)</b>	59.4 thousand Barrels per day, of which 97% was crude oil.
<b>Oil Consumption (2006)</b>	350 thousand barrels per day
<b>Crude Oil Distillation Capacity (2006)</b>	269 thousand barrels per day
<b>Proven Natural Gas Reserves (January 1, 2006)</b>	28.2 trillion cubic feet

**Source:** "Country Analysis Brief", Energy Data, Statistics and Analysis - Oil, Gas, Electricity, Coal conducted by EIA (Energy information administration), December 2006.

[i] *Capital Gearing Ratio* = Capital with Fixed Return \*100/ Equity

*Debt to Equity Ratio* = Total Liabilities \*100/ Shareholder's Equity

[ii] Return on assets = ROA = (100 x Net Profit After Tax/ Total Assets )

[iii] Return on Equity = (100 x Net Profit After Tax/ Equity (Common Stock)

[iv] Net profit margin = (100 x Net Profit After Tax/ Net Sales)

[v] EPS = Earning per share

[vi] Sales growth (current year's 'sales - last year's sales / last year's sales)

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