Analysis of Factors Affecting the Financial Performance of Companies: A Case of Energy Sector of Pakistan

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Abstract

This study is about the determinants of financial performance of energy sector of Pakistan. The sample comprised twenty nine companies listed in Pakistan Stock exchange from the four sectors belonging to energy industry for the period of 2009-16. Two measures namely ROA and ROE have been used to measure financial performance. In this study firm specific and macroeconomic determinants of energy industry of Pakistan have been examined and their impact on financial performance has been investigated. For hypothesis one, financial leverage, growth, size, age, risk, liquidity and GDP have significant impact on ROA. Financial leverage and age have significant and negative impact on ROA. Growth, size, risk, liquidity and GDP have significant and positive impact on ROA. For hypothesis two, tangibility, market share, rate of interest and rate of inflation are found to have insignificant impact on ROA. Financial leverage, growth, risk, tangibility, liquidity, GDP and INF has significant impact on ROE. Risk, tangibility and INF are found to have significant and negative impact on ROE. Financial leverage, growth, liquidity and GDP have significant and positive impact on ROE. Size, age, market share and rate of INT are found to have insignificant impact on ROE. It has been concluded that firm specific and macroeconomic factors have significant impact on financial performance of energy industry.

Keywords: Financial performance, determinants of financial performance, ROA, ROE, energy industry

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Introduction

Energy sector is a very important input for the economic growth of a country (Chontanawat, Hunt, & Pierse, 2008). Economic development of a country involves higher levels of energy consumption (Stern, 2011). The countries having high per capita gross domestic product (GDP) have high energy consumption (Soytas & Sari, 2003). Availability of energy leads to industrialization in the country. Generation of energy also leads to efficient use of natural resources. Availability of energy needs to industrialization and this creates the employment opportunities for the people (Aqeel & Butt, 2001). Development of infrastructure also needs the availability of energy resources. Expansion of energy industry also leads to the increase in income of country (Asafu-Adjaye, 2000).

Energy acts as a base for the smooth functioning of the world's economy. The economic development of countries depends on the level of their access to energy resources (Lee & Chang, 2008). Energy industry consists of all the firms which are involved in generation, distribution, transmission and sale of energy. There is a strong link between the energy consumption and economic growth of a country (Lee & Chang, 2008). All economic activity requires energy resources and hence energy industry acts as a steering wheel in the sustainable growth of economy (Stern, 2011).

Financial performance of firms is of immense significance for investors, stakeholders, decision makers and economy. The return on investments is highly valuable for investors, and a well performing business can bring high and long-term returns for their investors. Better financial performance of a firm also increases the income of its employees, brings better quality products for its customers, and has better environment friendly production units. Higher profitability means more future investments, which will generate employment opportunities and enhance the income of people and will also satisfy the state by efficient payment of the taxes (Mirza & Javed, 2013). In Pakistan, demand for energy has increased tremendously in the last decades as a result of industrial development and population growth. Unfortunately, there is less increase in energy production in comparison to the rise in demand for energy hence energy crises has been emerged in Pakistan and it is a major hurdle in delivering the energy resources to the country.

This study investigated the determinants of financial performance of energy industry of Pakistan. Two kinds of performances are there in a firm i.e. financial performance and non-financial performance (Tailab, 2014). Financial performance is a measure of a firm's earnings, profits, appreciations in its value as evidenced by the rise in the entity's share price (Mwangi & Murigu, 2015).

Financial performance of a firm can be analyzed by profitability, growth of dividend, sales turnover, asset base, and capital employed. Profitability can be used as a proxy for financial performance (Omondi & Muturi, 2013).

Theoretical Background and Review of Literature

There are four studies directly related to this research which have discussed the determinants of financial performance of non-financial sector companies. They have used the panel data regression technique for the data analysis (Tariq, Ali, & Usman, 2013; Al-Jafari & Samman, 2015; Hunjra, Chani, Javed, Naeem, & Ijaz, 2014; Mirza & Javed, 2013). Tariq, Ali, and Usman (2013) conducted a compractive research on food and textile sector of Pakistan regrading the determination of the factors impacting the financial performance. The findings indicate that long term debt has negative relationship with firm performance. Size, risk and tangibility and non-debt tax shield have positive relationship with the financial performance of the food sector of Pakistan. Another study by Al-Jafari and Samman (2015) was performed to investigate the deteminants of profitability in Oman.

Hunjra, Chani, Javed, Naeem, and Ijaz (2014) discussed the effect of microeconomic variables on financial performance of cement sector of Pakistan. The results revealed that size, age, growth and leverage has significant impact on the financial performance of the cement sector. Leverage has positive impact when ROA is used as a measure financial performance of firms while size, age and growth have postive impact when financial performance is measured by ROE.

A study conducted by Mirza and Javed (2013) aimed to investigate the various determinants of sixty Pakistani corporate firms which are listed in Karachi Stock Exchange for the period of 2007 to 2011.The results of the study conclude that the firms which have proper risk management policies and capital structures are more profitable. Yazdanfar (2013) investiagted the profitability determinants among non-financial companies in Sweden belonging to four different industrial sectors from 2006 to 2007. A comparative study conducted by Nikolaus (2015) on Netherlands and Indonesia regarding the determinants of financial performance of non-financial listed companies covers a period of 2009 to 2013. Firm specific and macro-economic variables have been discussed and their relationship with financial performance of firms has been highlighted. Zaid, Ibrahim, and Zulqernain (2014) investiagted the determinants of profitability for Malaysian companies. The study has used return on equity (ROE) as a measure of the profitability of construction companies. Results revealed that size and liquidity of firms have positive relationship with their performance however capital structure has negative

relationship with ROE. Macroeconomic variables i.e. GDP, economic cycle and interest rate have insignificant relationship with the financial performance of Malaysian construction companies. Goddarda, Tavakolib, and Wilson (2013) has conducted a study on the manufacturing and services firms of UK, Italy, France and Belgium to study the determinants of profitability. Profitability has been measured by ROA

A study conducted by Pratheepan (2014) investiagted the profitability determinants of manufacturing companies of Sri Lanka.Balance panel data set has been used. Firm specific determinants have been discussed in the study. Whereas size, leverage, liquidity and tangibility are taken as independent variables. Positive relationship is found between size and profitability and tangibility has inverse relationship with profitability. A study conducted by Ehi-Oshio, Adeyemi, and Enofe (2013) investiagtes the determinants of corporate profitability in the developing economies. Relationship between capital structure, size of firm, liquidity, financial leverage and corporate profitability is analyzed. Another study conducted by Kiran, Kakakhel, and Shaheen (2015) on oil and gas sector of Pakistan analyzed the impact of corporate social responsibility (CSR) on profitability of firms. Variables of the study are as CSR spending, net profits, net profit margin and total assets. A study conducted on the listed firms of Nairobi Securities Exchange of Kenya for the period 2006 to 2012 used the multiple regression analysis. It has been investigated that size, age, leverage and liquiduty play an important role in improving the financial performance of company (Omondi & Muturi, 2013).

Research objectives

1. To investigate the impact of firm specific and macroeconomic determinants on the financial performance measured by return on assets (ROA)

2. To investigate the impact of firm specific and macroeconomic determinants on the financial performance measured by return on equity (ROE)

Hypotheses of the Study

H_1:   Firm specific and macroeconomic determinants significantly affect the financial performance measured by return on assets (ROA)

H_2:   Firm specific and macroeconomic determinants significantly affect the financial performance measured by return on equity (ROE)

Research Methodology

This study is quantitative in nature. This research uses the published and secondary data hence it is a secondary research. The population of the study comprises of all the companies listed on Pakistan stock exchange belongs to energy sector. This study will only include the energy industry. Energy industry of Pakistan includes the four main sectors i.e. refineries, power generation and distribution companies, oil and gas exploration companies and oil and gas marketing companies. Out of total 35 companies, 29 companies have been selected from these four sectors comprising the energy industry. For this purpose, the yearly data relating to the variables has been collected for the period 2009 to 2016. Data sources comprise of the publications of State Bank of Pakistan, annual reports from the official websites of the energy companies and economic surveys of Pakistan. Hence the nature of data is secondary. Panel data analysis is used in this study

Material and Methods

Variables of the Study

Total thirteen variables have been discussed in this research in order to analyze the internal and external determinants of financial performance of energy industry of Pakistan.

Table Description and Measurement of Variables

Serial no.	Variable name	Measurement	Description
1	Return on assets	EBIT/(Average of current and previous year's total assets)	Financial Performance Indicator
2	Return on equity	Net Profit Before Taxes/ Average of Shareholder's Equity	Financial Performance Indicator
Firm specific variables			
1	Financial Leverage	Total Debt/Total Equity	Indicator of Financing patterns of company i.e. debt and equity
2	Size	Natural Log of Total Sales	Sales as indicator of size of firm
3	Growth	(Current Year Assets – Previous Year Assets)/ Previous Year Assets	Growth of firm in terms of assets
4	Age	No. of Years since its Incorporation	Number of years since establishment of the firm
5	Risk	EBIT /EAT	Indicates the risk associated with financing
6	Tangibility	Fixed Assets/Total Assets	What portion of total assets includes fixed assets
7	Liquidity	Current Assets/Current Liabilities	Indicates the availability of liquid assets
8	Market share	Firm's revenue/ Industry revenue	How much of a market is captured by the firm
Macroeconomic variables			
1	Real GDP Growth Rate	As reported by State bank of Pakistan (SBP)	Macroeconomic criteria as indicator of Economic Growth
2	Rate of Inflation (INF)	As reported by Economic Survey of Pakistan	Criteria reflecting changes in the purchasing power of money
3	Rate of Interest (INT)	KIBOR rates as reported by State bank of Pakistan (SBP)	Criteria reflecting cost of financing

Source: (Tariq, Ali, & Usman, 2013)

Model Specification

Considering the framework of the study which has been elaborated in the previous chapter, the following model is specified:

Financial performance = f {firm specific variables, macroeconomic variables}

$$ROA = \beta_0 + \beta_1\ FNLEV + \beta_2\ G + \beta_3\ SIZE + \beta_4\ AGE + \beta_5\ RISK + \beta_6\ TANG + \beta_7\ LIQ + \beta_8$$
$$MKTSH + \beta_9\ GDP + \beta_{10}\ INF + \beta_{11}\ INT + \mu$$
$$ROE = \beta_0 + \beta_1\ FNLEV + \beta_2\ G + \beta_3\ SIZE + \beta_4\ AGE + \beta_5\ RISK + \beta_6\ TANG + \beta_7\ LIQ + \beta_8$$
$$MKTSH + \beta_9\ GDP + \beta_{10}\ INF + \beta_{11}\ INT + \mu$$

Where,

ROA = return on assets   **ROE** = return on equity   **FNLEV** = financial leverage

G = growth   **SIZE** = size of firm   **AGE** = age of firm

RISK = risk   **TANG** = tangibility   **μ**= Error Term

MKTSH = market share   **GDP** = gross domestic product

INF = rate of inflation   **INT** = rate of interest

Results and Discussion

Hypothesis	Profitability measured in terms of Return of Assets (ROA)	Beta (â) Value	P-Value	Results
	Financial Leverage	-0.215788	0.0000	H_1 accept
	Growth	0.195926	0.0362	H_1 accept
	Size	4.849900	0.0445	H_1 accept
	Age	-0.479774	0.0438	H_1 accept
	Risk	0.099433	0.0002	H_1 accept
	Tangibility	-0.333619	0.1901	H_{01} accept
	Liquidity	0.535899	0.0302	H_1 accept
	Market Share	-0.203980	0.7269	H_{01} accept
	Gross Domestic Product	1.982620	0.0491	H_1 accept
	Rate of Inflation	-2.043311	0.5176	H_{01} accept
	Rate of Interest	1.649308	0.5127	H_{01} accept
	Profitability measured in terms of Return on Equity (ROE)			
	Financial Leverage	0.395167	0.0012	H_2 accept
	Growth	0.140053	0.0282	H_2 accept
	Size	0.015904	0.3218	H_{02} accept
	Age	0.245890	0.1638	H_{02} accept
	Risk	-0.236617	0.0468	H_2 accept
	Tangibility	-0.301572	0.0432	H_2 accept
	Liquidity	0.969449	0.0000	H_2 accept
	Market Share	-1.567331	0.2428	H_{02} accept
	Gross Domestic Product	6.022212	0.0379	H_2 accept
	Rate of Inflation	-8.408602	0.0437	H_2 accept
	Rate of Interest	5.148011	0.1813	H_{02} accept

Results of the Study

Financial leverage

For hypothesis one, the coefficient of financial leverage variable is negative and the P-value of financial leverage indicates that null hypothesis is rejected. For hypothesis two, the coefficient of financial leverage variable is positive and the P-value of financial leverage indicates that null hypothesis is rejected. Hence it means that financial leverage significantly impacts the return on equity (ROE) and this impact is positive.

Growth

For hypothesis one, the coefficient of growth variable is positive and the P-value of growth indicates that null hypothesis is rejected. Hence, it means that growth significantly impacts the return on assets and this impact is positive. For hypothesis two, the coefficient of growth variable is positive and the P-value of growth indicates that null hypothesis is rejected.

Size

For hypothesis one, the coefficient of size variable is positive and the P-value of size that null hypothesis is rejected. For hypothesis two, the coefficient of size variable is positive and the P-value of size indicates that null hypothesis is accepted and results are insignificant.

Age

For hypothesis one, the coefficient of age variable is negative and the P-value of size that null hypothesis is rejected. For hypothesis two, the coefficient of age variable is positive and the P-value of size indicates that null hypothesis is accepted and results are insignificant.

Risk

For hypothesis one, the coefficient of risk variable is positive and the P-value of risk indicates that null hypothesis is rejected. For hypothesis two, the coefficient of risk variable is negative and the P-value of risk indicates that null hypothesis is rejected

Tangibility

For hypothesis one, the coefficient of tangibility variable is negative and the P-value of tangibility indicates that null hypothesis is accepted. Hence, it means that risk has insignificant impact on return on assets (ROA). For hypothesis two, the coefficient of tangibility variable is negative and the P-value indicates that null hypothesis is rejected.

Liquidity

For hypothesis one, the coefficient of liquidity variable is positive and the P-value of financial leverage indicates that null hypothesis is rejected. For hypothesis two, the coefficient of liquidity variable is positive and the P-value of liquidity indicates that null hypothesis is rejected.

Market share

For hypothesis one, the coefficient of market share variable is negative and the P-value of market share indicates that null hypothesis is accepted. For hypothesis two, the coefficient of market share variable is negative and the P-value of market share indicates that null hypothesis is accepted.

Gross domestic product

For hypothesis one, the coefficient of gross domestic product variable is positive and the P-value of gross domestic product indicates that null hypothesis is rejected. For hypothesis two, the coefficient of gross domestic product variable is positive and the P-value of gross domestic product indicates that null hypothesis is rejected.

Rate of inflation

For hypothesis one, the coefficient of rate of inflation variable is negative and the P-value of rate of inflation indicates that null hypothesis is accepted. Hence, it means that rate of inflation insignificantly impacts the return on assets (ROA). For hypothesis two, the coefficient of rate of inflation variable is negative and the P-value of rate of inflation indicates that null hypothesis is rejected. Hence, it means that rate of inflation significantly impacts the return on equity (ROE) and this impact is negative.

Rate of interest

For hypothesis one, the coefficient of rate of interest variable is positive and the P-value of rate of interest indicates that null hypothesis is accepted. For hypothesis two, the coefficient of rate of interest variable is positive and the P-value of rate of interest indicates that null hypothesis is accepted.

Conclusion

The purpose of this study is to investigate the determinants of financial performance. The sector which has been chosen for this study is energy sector. The results have been drawn by using the panel data analysis. The results of this study show that some factors have positive impact on financial performance while some have negative impact. Financial leverage, growth,

size, age, risk, liquidity and GDP have significant impact on ROA. Financial leverage and age have significant and negative impact on ROA. Growth, size, risk, liquidity and GDP have significant and positive impact on ROA. Tangibility, market share, rate of interest and rate of inflation are found to have insignificant impact on ROA. The second objective is to examine the influences of the determinants of financial performance on return on equity (ROE). Financial leverage, growth, risk, tangibility, liquidity, GDP and INF has significant impact on ROE. Risk, tangibility and INF are found to have significant and negative impact on ROE. Financial leverage, growth, liquidity and GDP have significant and positive impact on ROE. Size, age, market share and rate of INT are found to have insignificant impact on ROE.

Recommendations

The financial managers of the energy sector companies should control the internal factors which need importance. The policymakers should make the integrated policies for energy industry of Pakistan by keeping in view these factors. The decision makers and investors should take into account the above factors for taking the investment decisions. It is recommended to other industries of Pakistan that they should make their financial decision by considering the significant internal and external factors regarding firm performance

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