



The Impact of Total Risk Management on Company's Performance: Evidence from Fuel and Energy Sector of Pakistan

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Abstract

The aim of the study is to determine the impact of total risk management on firm performance using the sample of fifteen non –financial firms of fuel and energy sector of Pakistan listed on Pakistan Stock Exchange (PSX) for the period of 2011 to 2015. Data were arranged from balance sheet analysis of the state bank of Pakistan. In this study descriptive, correlational and Ordinary Least Square (OLS) regression analysis were used. Firm performance measured by return on assets (ROA) is dependent variable, total risk management is independent variable, and financial leverage and firm size are control variables. The result showed that there is negative but significant relationship between total risk management and firm performance.

Key words: performance, total risk management

Introduction

Fuel and Energy sector is playing a significance role in the economic development of a country. Lack of coordination, investment in energy sector, infrastructure and unwilling Political parties result in energy shortage from a long time in Pakistan. But with the help of IMF and World Bank Pakistan government trying to overcome their energy shortage and to fulfill the demand from the internally available energy resources. Financial crises around the world proved that risk management processes are really necessary for the sustainability of the organizations and protecting the interest of shareholder and customers. Due to globalization and intense competition, risks are increasing and risk management is becoming an important part for the success of organizations. Risk management is an activity within management that is attaining importance because of businesses globalize operations and increasing competition (Zemzem & Kacemb, 2014).

Oil and gas sector is very essential for Pakistan's economy and its worth cannot be ignored due to increasing energy crises in the country. This sector has been outstanding since 1947. It has played a significance role in improvement of GDP whereas Pakistan is meeting about 18% of its oil demand from its local resources. Arslan and Zaman (2014), indicate that the current growth rate of economy shows that our oil demands will increase from 64.5 million tons in 2010-11 to

over 361.31 million tons in 2030. From the last 3 to 4 decades, the gas sector has played an important role by large local discoveries. But due to increasing population and industrial needs this sector would not remain self-sufficient. Pakistan has large number of reservoirs of oil and gas but it requires a huge foreign and local investment for the extraction, refinery and exploration of these valuable resources.

The risk management process contains a series of steps of identifying, analyzing, measuring, treating, monitoring and communicating risks, which allow continuous improvement of decision making (Saunders & Cornett, 2003). Risk is obvious and relate to every economic activity. Risk occurs when outcome is uncertain. Risk exists as a part of an environment in which various organizations operate so each and every business has to face risk. Without taking risk, growth of business is like a dreadful (Shafiq & Nasr, 2010). The examples of WorldCom, Enron, Pacific Exploration & Production, Samson Resources and Milagros Oil & Gas collapses clarify us the importance of risk management and internal management control for the survival of the organizations. By implementing risk management organization can decrease sudden & costly shocks and effective allocation of resources will be more effective. It improves communication and report senior management about threats organization is facing, therefore finally helping them in better decision making. All over the world, management of risk is something that is more linked to the building of bridges, mechanical, engineering, and in the disaster management perspective. Up to now, Pakistan has the similar situation and risk management is normally practiced in banking industry as prescribed by state bank of Pakistan (SBP). According the Chairman of the Federal Reserve of US, (Alan Greenspan, 2008) stated in a lecture delivered at (SBS) Stern Business School that: "Certainly, risk management failures occur and in two examples - the highly exposed cases of Barings and long term capital management - they proved destabilizing. ... Insufficiencies in risk management will result in wide range of failures chain".

Objective of the study

- To examine the impact of total risk management on firm performance of fuel and energy sector of Pakistan.
- To guide managers and investors in fuel and energy sector about the significance of total risk management while taking decision.

What is Total Risk Management?

In recent decades after the major corporate failures such as Enron, WorldCom and others, complexity and dynamicity of business environments put the issue of risk management one of the major concern for stakeholder and organizational success. Total risk management (TRM) is a holistic and integrative risk management approach which incorporate all the risk at each level. Therefore, total risk management indicate the ability of firm to manage the systematic and unsystematic risk. Effective and efficient risk management system will decrease the complications involved in planning, implementing and controlling of the business and will maximize the profitability of the organization. Investors are willing to invest in a risk free securities or well managed risk system to ensure the long term profitability of the organization.

Because every investor wants high profit at minimum level of risk over a period of time (Gizycki & Gizycki, 2001).

Risk management is a process of identifying loss exposures faced by an organization and selecting the most suitable way for treating these particular exposures effectively (Rejda, 2011). Effective risk management can give benefits to all organizations, whether, public or private and large or small (Ranong & Phuenngam, 2009). According to Andersen (2008), that there is a positive relationship between risk management and firm performance in those organizations having high level of intellectual capital. There is a positive relationship between total risk management and firm performance the study was based on the 12 out of 15 listed firm on Prague stock exchange having data from 2009 to 2014 to investigate the impact of total risk management on firm performance (Mohammed & Knapkova, 2016). Risk management has the empirical support for the negative relationship between financial leverage and firm performance. Zeitun and Tian (2007), using 167 Jordanian companies over fifteen year period (1989-2003), found that a firm's capital structure has a significant negative impact on the firm's performance. Rao et al., (2007) also confirm negative relationship between financial leverage and performance. Past research has proven that intellectual capital (IC) has positive effect on financial performance as measured by the economic return of the firm: return on assets, earnings per share and return on equity (Afroze 2011). Risk management is still at its early period, and risk management practices are used only when the level of risk is assumes to be high and the usage of these practices were only to meet time and budget goals. The same thing is shown by the results of Mehralian (2012) using firm data in the Tehran stock market, that all intellectual capital variables are positively correlated with ROE and ROA. It does not matter that proper risk management terms should be used like risk assessment, identification, monitoring, successful managers were good risk managers (Boehm W. B., 1999). (Akhtar et al, 2012) studied the relationship between financial leverage and financial performance of fuel and energy sector in Pakistan. Using the sample of 20 listed companies on Karachi Stock Exchange (KSE) from fuel and energy sector were selected for the year 2000-2005. Result indicates the negative relationship between firm performance and financial leverage. Therefore. Fuel and energy sector companies can improve the performance and economic growth if optimal capital structure are used. The above arguments lead us to the following hypothesis.

H₁: There is a significant and positive relationship between total risk management and firm's performance.

Conceptual framework

Conceptual framework is outline that is designed from a set of comprehensive ideas and theories that help a researcher to accurately identify the problem they are looking at frame their questions and find suitable literature. The conceptual framework of the study will contain dependent variable which is performance measured by return on assets, independent variables: total risk management and controlled variables which are firm size and financial leverage.



Methodology

The empirical study is based on the sample of 15 from 22 non-financial firms of fuel and energy sector listed on Pakistan stock exchange (PSX) for the period of 2011 to 2015. Data were assembled from balance sheet analysis of the state bank of Pakistan.

Table 1. Description of variables

Variable	Description	Type	Source
Performance	Net income (loss) over Total Assets (ROA).	Dependent	Andersen, 2008
Total Risk Management	coefficient of variation of yearly Sales over standard deviation Of economic returns	Independent	Andersen, 2008
Firm Size	Natural Logarithm of total Asset	Control	Andersen, 2008 Pagach and Warr 2011
Financial Leverage	Long term debt over total equity	Control	Andersen, 2008 Pagach and Warr 2011

To test the hypothesis, the study used descriptive, correlation and linear regression analysis. Performance is dependent variable which is measured by ROA. Total risk management is independent variable measured through coefficient of yearly sales over standard deviation of economic return. While control variables are included firm size and financial leverage. Firm size is measured by natural logarithm of total assets and financial leverage is measured through long term debt over shareholder equity.

Total risk management: Total risk management measured by coefficient of variation of yearly sales over the standard deviation of economic returns. Effective risk management can ensure the achievement of organizational objectives and targets. In today business world the idea of risk management is considering a strategic issue emerged in 19th (Bernstein, 1996).

Firm Size: Firm size which measured by taking natural log of total assets (Hoyt & Liebenberg, 2008). (Hoyt & Liebenberg, 2008) indicate a negative relationship between firm size and performance to control for size related deviation in performance, firm size will be included as a control variable. The size of a firm is considered to be a key element of firm's profitability, Penrose (1959) claims that larger firms can enjoy economies of scale and these can favorably impact on profitability.

Financial leverage: Financial leverage measured by long term debts over total shareholder equity. Financial leverage ratios indicate how much debt finances are used by firm to finance its business (Leach & Melicher, 2012). The relationship between financial leverage and performance are unclear. Because leverage reduces free cash flow and increase bankruptcy and financial distress cost (Hoyt & Liebenberg, 2011). In previous studies (Hoyt & Liebenberg, 2008; Baxter, 2013) uses Financial leverage and firm size as control variables for firm performance. Baxter (1967) suggested that the use of financial leverage is relate to a higher chance of bankruptcy risks & financial defaults. Due to the conditions that are relate with the use of debt, such as the timely interest payments, and the principle amount that should be paid by the organization, because of risk, shareholders demand higher returns which will put organizations in a critical situations.

Empirical Models

Based on the hypothesis we develop the under econometrics model.

$$ROA = \alpha_0 + \beta_1 TRM_{it} + \beta_2 FSIZE_{it} + \beta_3 FL_{it} + \varepsilon_{it} \dots \dots \dots (i)$$

Results and Discussions

Descriptive statistics and correlation analysis are reported in table 2. The total risk management measures are negatively correlated with firm performance, while financial leverage and firm size are positively correlated with firm performance.

Descriptive Statistics

Table 2. Descriptive statistics and correlation analysis: (n=15)

	Mean	S.D.	1	2	3	4
ROA	0.926	2.619	1			
TRM	0.128	0.146	-0.077	1		
FL	0.735	1.083	0.181	0.241*	1	
FS	1.000	0.126	0.399**	-0.104	0.409**	1

P* < 0.10; P** < 0.05; P*** < 0.001.

Results of regression

The result of the regression analysis are reported in table 3. The regression coefficient of total risk management on performance measure by (ROA) is negative and significant which does not provide support for hypothesis 1. Therefore, those firms that strictly implement total risk management practices and do not indulge in risky projects will lead to lower performance as the statement that higher risk higher return. There are some other variables which have the significance importance on the relationship of total risk management and performance which are environmental uncertainty, firm complexity, firm size, industry competition and monitoring pattern by board of directors. The fuel and energy sector of Pakistan is also affected by these factors. Small firms, lack of competing environment, lack of know-how, risk management complex practices, and controlling pattern by managers decrease the importance of total risk management for better organizational performance.

Performance	ROA
Model	I
Total risk management	-3.081***
Financial leverage	0.133
Firm size	3.363
Multiple R ²	0.081
Adjusted R ²	0.042
Durbin-Watson stat	1.636
F- Significance	0.108

Table 3. Results of regression analysis: (n=15)

p* <0.10 ; p** <0.05 ; p*** <0.001 .

Conclusion

The study investigate the relationship between total risk management and firm performance. The regression result indicate that there is negative but high significant relationship between total risk management and firm performance. According to Gordon et al, (2009) the relationship between risk management and firm performance is dependent on the contextual variables surrounding firm. Which are the environmental uncertainty, firm complexity, firm size, industry competition and monitoring pattern by board of directors. Behavioral and entrenchment investing perspective also provide support to the finding of the study.

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