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Impact of Corporate Governance and Macroeconomics Volatility on Capital Structure Decisions

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Abstract: Presently the role of corporate governance and macroeconomic factors has increased the importance of corporate financial decisions. Capital structure decisions are one of the main corporate financial decisions. The aim of the present study is to investigate the effect of corporate governance and macroeconomic volatility on firm`s capital structure decisions. This study focused on Energy and Fuel sector and panel data was used for the period 2005-2018. The econometric analysis concluded that lagged leverage have positive significant influence on leverage and the size of the firm have negative significant impact on leverage. Assets efficiency and inflation have positive impact on leverage but Dummy for Crises has negative impact on leverage. Moreover, study observes that overall impact of macroeconomic volatility on the firm leverage with the improved governance qualities resulted as negative. The evidence recommends that governance perform as helpful mechanism to control the usage of firm`s leverage throughout period of high fluctuations. This study is beneficial for the investors, corporate decision makers and public policy makers.

Keywords: Leverage, Macroeconomic Volatility, Corporate Governance, Capital Structure.

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INTRODUCTION

Corporate governance is explained as a structure of regulations, strategies and procedures that are used to organize and manage the firm. It also gives a method for getting organization codes of goals and holding on to internal control for performance calculation. According to (Jensen & Meckling, 2019), the awareness of corporate governance is created by the agency theory, which is established for the purpose of boosting investors. With the perception of this theory, agency theory elaborates the relationship between agent and principle. The principal can employ the agent to implement a work on his behalf. Corporate governance comprises instruments by which the benefits of shareholders are safe from the leaders of the organization.

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Experimental findings have influenced macroeconomic volatility with firm capital stock results-related findings. Such as, (Baum et al., 2009) examine the effect of economic elements and enterprise improbability on funds arrangement selections of non-banking corporations in America. They concluded the undesirable relationship between improbability and firm leverage. Their reports suggest that organizations are much more careful between and use few amounts of leverage in a larger improbability in the presence of macroeconomic environmental conditions. Organizations act in this technique because they estimate falling profits and prospective lack within cash flow outcomes. Other researchers observe the impact of enterprise precision and also the improbability of the macroeconomic of UK organizations. They also claim that organizations take a smaller amount of leverage throughout periods of greater instability.

Financing up-to-date businesses with the help of a suitable combination of securities is measured to be very significant for the long-term achievement and existence of the businesses. Analyzing the suitable combination of securities to financing new business investments will be resulted in growth in firm's value while poor finances choices will be resulted to reduce in value of the firm. Therefore, it is essential to understanding that carefulness must be assumed while any financial choices because in the presents of numerous internal and as well external variables that impact the capital structure decisions. Internal variables are including firm`s specific and control by the administration of the organization while macroeconomic variables are out the control for administration of the organization. Information about the levels, ways of directions and as well power of their influence regarding these variables will be help firm`s to make improved financial choice to confirm long-term existence and firm`s growth. This study is important from various aspects of financial managers in corporate sectors and investment analysts and macroeconomic policymakers. Firstly, this research encompasses the effect of macroeconomic volatility on firm`s capital structure decision making. It also identifies that macroeconomic volatility may influence the level of leverage in the energy and fuel sector of Pakistan. Secondly, this research makes an effort to examine the impact of corporate governance with association within economic volatility and firm`s capital structuring, and result show that the governance performs as operative instrument to reduce the use of the leverage level in the time duration of high fluctuations. The results are helpful for policymakers to reduce the negative impacts caused by the macroeconomic volatility. The major objective of this study is to explore the effect of macroeconomic volatility on the capital structure of the fuel and energy sector of Pakistan. Moreover, to analyze the role of corporate governance in decision-making for the capital structure energy sector and finally to investigate the moderating role of corporate governance between the macroeconomic volatility and the capital structure decisions.

LITERATURE REVIEW

Gill et al. (2012) explored the relations between corporate governance and the corporate sector of India in non-financial sector. They concluded that there exists a relationship between corporate governance and investing decisions of the firms. This research also includes the perspective of the board of directors and the level of confidence of corporations in the investment decision-making of the survey. However, they clarify that firms' total assets, size of board, and corporation performance are absolutely linked to India's investing decisions. Moreover, concluded that the governance, firm's total asset, and performance of corporations positively related to the service businesses and the manufacturing businesses in India.

Muthama et al. (2013) investigated macroeconomic variables' influence on the firm`s financial structure of chosen corporations in the state of Kenya. The study is methodical and also uses a descriptive examination strategy targeted at finding the magnitude level and level of management association amid chosen macroeconomic factors on a firm`s financial structure of corporations in the state of Kenya. The penal data from the period 2005-2008 was selected. For the investigation, multiple linear regressions were selected where the firm`s debt level degenerated against the Gross Domestic Product rate, rate of inflation and rate of interest. They concluded that macroeconomic forces have significant impact of the capital structure decisions. GDP ratio has positive impact whereas inflation has negative effect on the firm's short-term debt. However, the rate of interest is has also positive effect on the firm`s long-term debt.

Ali and Ahmed (2015) explored the connection between capital structure and corporate governance for textile sector of Pakistan. The data for 14 textile firms have been taken for the period 2012, 2013 and 2014. In research, leverage was selected as dependent variable and board and audit agency, chair duality, possession concentration, and firm size were taken as independent variable. Results shown that highly leveraged organizations perform superior to other contemporaries. The features of corporate governance are apprehensive; there is a significant association between the independence of the board and firm audit boards and capital structure. The experimental research conducted in the historical on this problem has not created any statistical indications which display that firm leverage has any connection with governance procedures.

Chow et al. (2018) examined the way in which corporate governance regulates the link between macroeconomic volatility and firm capital structure. For the investigation, data was obtained from non-financial organizations from 2004 to 2014. The variables taken for the macroeconomic volatility are volatility in imports and volatility in exports. The outcomes show that economic volatility has an undesirable effect on the capital stock decisions of Asian corporations. Moreover, the researcher discovered that the total impact of economic volatility on firms' leverage, along with the improved corporate governance quality, is negative. They recommend that governance performs as a useful instrument to control the firm's leverage throughout greater volatility. Additional examinations confirm that the board of director's independence, the division among the CEO and the roles of the chairman are also effective corporate governance instruments.

Ahmed et al. (2019) studied the impacts of corporate governance and corporation capital structuring on companies' performance. The panel pooled regression technique was implemented on annual records of two main areas: automobile and fertilizer, and it lasted from 2006 to 2016. Capital structure is analyzed using the current ratio, short-term and long-term debt, and debt-to-equity ratio, while profitability analysis is done using return on assets and return on equity. Outcomes indicate that the size of the board has a positive association, and the audit committee of the firms has a negative association with the profitability ratio of the automobile area and the opposite for the fertilizers area. A positive connection between the current ratio and the firm`s profitability in both areas is perceived, and a negative association of the debt-to-equity ratio of both areas has been perceived. At the same time, short and also long-term debt has not any important association in the fertilizers area. The outcomes should be helpful to investors, borrowers and also for financial analysts, particularly after worldwide financial disasters and failures of huge firms worldwide.

Rasool et al, (2021) conducted research to identify the behavior of financing composition through the main corporate financial decision of non-financial sectors of Pakistan. Data has been gathered from 52 non-financial firms from the period of 2015o 2020. Results of the study have been repossessed through OLS, Fixed Effect, Random Effect Model and Hausman Test by using E-views software. Profitability, liquidity, and earning validity are found to be negative factors that influence the firm's leverage. The positive factors of leverage, on the other hand, include business size and the tangible nature of assets. The organization's capital structure should be designed with a thorough understanding of the business policy on these factors.

DATA AND METHODOLOGY

This study used secondly data for fuel and energy sector of Pakistan for the period 2005 to 2018. For this purpose, data from 13 companies have been used listed on Pakistan Stock Exchange. Data were collected from audited financial statements available on the official website of State Bank Pakistan and from business recorder. Macroeconomic data has been taken from Pakistan Bureau of Statistics, Finance department official website and from survey of Pakistan. Descriptive statistics, correlation, Fixed Effect and Hausman test have been used to test the model. E-views 13 have been used to analyze the data.

Proxy Table

Variables	Proxy
Leverage:	Total Debts/ Total Assets
Lagged debt to total assets:	Lagged Debts/ Total Assets
Assets efficiency	Net sales / Total assets
Size of firm	Ln Total Assets
Tangibility	Fixed Assets/ Total Assets
Volatility of exports	SD of Monthly Exports
Volatility of imports	SD of Monthly import
Inflation	Decrease in the Purchasing Power
Exchange Rate	worth of the state money vs. with another state or economical region

Econometric Model

To examine the effect of corporate governance and macroeconomics volatility on capital structure decisions, the present study estimated the following model

$$Leverage_{it} = \beta_0 + \beta_1 Lagged\ lev_{it} + \beta_2 AE_{it} + \beta_3 Tangi_{it} + \beta_4 Size_{it} + \beta_5 Infl_{it} + \beta_6 ER_{it} + \beta_7 Gov_{it} + \beta_8 Imp - gov_{it} + \beta_9 CD_{it} + \varepsilon_{it} \ldots\ldots (1)$$

Where as
$\beta_0 = Coefficient\ of\ intercept\ (constants)$
$\beta_1 - \beta_9 = Coefficient\ of\ slopes$
Lagged lev =Lagged leverage
Tangi = Tangibility
AE =Assets Efficiency
Size = firm's size
Inf = Inflation
ER = Exchange Rate
Imp-gov= Imports (Governances)
Gov =Governance
CD =Crisis Dummy
$\varepsilon = Error\ term$

RESULTS AND DISCUSSION

Table 1: Descriptive Statistics.

Variable	Mean	Median	Maximum	Minimum	Std. Dev	Skewness	kurtosis
Lev	1.16	0.47	25.09	0.03	3.37	6.32	44.06
Lagg-Lev	0.90	0.45	24.61	0.03	2.49	8.01	74.10
Vol-Exp	0.20	0.12	1.04	0.09	0.26	2.85	9.27
Vol-Imp	0.23	.0.14	0.83	0.07	0.26	1.71	4.08
Gov	1.41	0.80	5.98	0.2	1.31	1.82	5.84
Crises-Dummy	0.11	0	1	0	0.32	2.43	6.90
Size	16.47	16.47	1.71	9.56	2.33	3.58	3.58
AE	0.35	0.06	19.66	0	0.47	1.25	3.43
Inf	8.34	7.65	20.29	2.53	4.61	0.91	3.46
Ex-Rate	110.77	102.77	236.99	60.17	0.72	1.85	5.82
Ex-Gov	0.32	0.12	6.18	0.02	0.72	5.70	41.64
Imp-Gov	0.38	0.12	4.95	0.03	0.76	4.16	22.37

Descriptive statistics indicates that leverage has 1.16 ± 3.37 mean and standard deviation respectively. The low value of standard deviation indicates that lower volatility in leverage. The overall data indicates normally distributed with little positively skewed values.

Table 2: Correlation Matrix

	Leva	Lagg-Lev	Vol-Exp	Vol-Imp	Gov	Cri-Dum	Size	AE	Inf	Exc-Rate	Ex-Gov	Imp - gov
Lev	1.0											
Lagg-Lev	.86**	1.0										
Vol-Exp	0.21*	0.01	1.0									
Vol-Imp	0.30**	0.27**	.61**	1.0								
Gov	-0.13	-0.10	0.1	0.2	1.0							
Cri-Dum	-0.12	-0.10	-0.1	-0.1	0.0	1.0						
Size	-.54**	-.47**	-0.1	-0.1	-0.1	0.1	1.0					
AE	-0.21*	-0.1	-0.2	-.34**	0.1	.28**	.21*	1.0				
Inf	-0.22*	-0.2	-.22*	-.33**	0.0	.65**	.21*	.61**	1.0			
ER	0.10	0.0	-0.1	0.1	0.0	-.26**	-0.1	-.22*	-.27**	1.0		
Ex-Gov	0.01	0.0	.71**	.46**	.49**	-0.1	-0.1	-0.1	-0.2	-0.1	1.0	
Imp-Gov	0.01	0.0	.42**	.66**	.63*	-0.1	-0.1	-0.18*	-.22*	0.0	.70**	1.0

**. Correlation is significant at the 0.01 level.

*. Correlation is significant at the 0.05 level

Outcomes stated in Table 2 are quite remarkable and reports that lagged leverage and volatility of imports have positive significant correlation with leverage at $p < 0.01$. However, Volatility of exports have positive correlation with leverage at $p<0.05$. The results indicate that volatility in imports and exports is directly related to the leverage decisions. However, Governance has a negative correlation with leverage but not significant. It is important to indicate that Size and Assets Efficiency have negative correlation with leverage at $p<0.01$and $p<0.05$ respectively but inflation has also significant correlation with Leverage at $p<0.05$. Crisis dummy have also negative correlation but not significant. Exchange rate have positive correlation with leverage but not significant. Export governance have positive correlation with the leverage but not significant. Imports governance have positive correlation with the leverage but not significant.

Fixed Effect Model

The econometric model for the unbalanced panel data has been applied. Leverage has been regressed to test the fixed effect with lagged leverage, asset efficiency, tangibility, size of firm, infl1ation, exchange rate, volatility of imports, governance, imports governance and dummy crisis. Lagged leverage result has positive significant influence on leverage at $p<0.01$. The size of the firm has negative significant impact on leverage at $p<0.01$, Assets efficiency has positive impact on leverage at $p<0.05$, However inflation has positive significant impact on leverage at $p<0.05$ and Dummy for Crises has negative impact at $p<0.10$.

Table 3 : Fixed Effect Model

	Coefficient	Prob.
Lagged leverage to TA	0.660	0.000*
Asset efficiency	0.390	0.040**
tangibility	-0.430	0.710
size	-1.360	0.000*
Inflation	0.020	0.035**
Exchange rate	0.000	0.840
Gov	-0.080	0.640
Volatility of imports(Gov)	0.080	0.760
Crisis dummy	-0.600	0.050***
Constant	22.270	0.000
Adjusted R-squared		0.830
Prob(F-statistic) (F-significance)		0.000

***. Correlation is significant at 0.01 level.

**. Correlation is significant 0.05 level

*. Correlation is significant at 0.10 level

Adjusted R^2 indicates that independent variables explain 83% to the dependent variable and model is a good fit model at F-sig <0.01.

Table 4 : Hausman Test

Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random		53.652	9.000	0.000
Cross-section random effects test comparisons:				
Variable	Fixed	Random	Var(Diff.)	Prob.
Lagged Leverage	0.661	1.038	0.003	0.000
Assets Efficiency	0.390	0.098	0.080	0.300
Tangibility	-0.426	0.401	0.468	0.227
Size	-1.362	-0.265	0.162	0.006
Inflation	0.017	0.016	0.000	0.951
Exchange Rate	0.001	0.002	0.000	0.120
Governance	-0.078	-0.201	0.006	0.121
Imports×Governance	0.077	0.191	0.005	0.102
Crisis Dummy	-0.599	-0.194	0.036	0.033

The above result shows that fixed effects are to be carefully chosen, because probability value 0 is not greater than the 0.05. Then Hausman description test have selected fixed effect model.

CONCLUSION

This study investigates the impact of corporate governance and macroeconomic volatility on capital structures decision in fuel and energy sector of Pakistan. The unbalanced panel data has been used for examining the 13 non-financial firms from Pakistan during the period 2005-2018 years. The Descriptive Statistics, Correlation, Fixed Effect Model and Hausman Test have been employed for the research analysis. Macroeconomic volatility proxies have been used for testing the models including, volatility of exports rate, volatility of imports rate, inflation, exchange rate Firm variables for corporate governance i.e assets efficiency, firm`s size and governance. The leverage is used as proxy of capital structure decision as dependent variable.

Results concluded that lagged leverage, volatility of exports and volatility of imports have positive significant relationship with leverage. The results indicate that volatility in imports and exports is directly related to the leverage decisions. It is important to mention that Size, Assets Efficiency and inflation have negative association with leverage. Further results conclude that lagged leverage result have positive significant influence on leverage and the size of the firm has negative significant impact on leverage. Assets efficiency and inflations has positive impact on leverage but Dummy for Crises has negative impact on leverage. Moreover, study observes that overall impact of macroeconomic volatility on firm financial leverage with the improved governance qualities resulted as negative. This alarming indication recommends that corporate governance should be taken as helpful instrument to reduce the use of firm leverage during the period of high volatility. Additional analysis confirms that board of director can play important role in monitoring and guiding the top management to sustain the interest of the investors and lenders. Future investigators can check the impact of macroeconomic volatility and corporate governance on capital structure decisions of firms by increasing the sample size as well as for long time durations the panel GARCH model can be used. The only limitation of this study was the time period and it may be dincrease for 10 to 15 years and more firms can be incorporated in the sample size.

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