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The Asymmetric Effect of CEO Power on Energy Firms' Strategic Decisions

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This study investigates the effect of CEO power on energy firms' performance, riskiness, and working capital. Our panel quantile regression estimates based on Pakistan data suggest a positive effect of CEO power on firm performance in lower and middle quantiles. Powerful CEOs mitigate excessive risk-taking when the riskiness of firms reaches certain levels. CEO power is negatively related to working capital when the cash holdings exceed a certain level.

I. Introduction

CEOs play a vital role in making strategic decisions that substantially influence firm value (Sheikh, 2018a). However, they differ with respect to power distribution. CEOs make all the fundamental decisions in some firms, while the decisions may be collectively taken with other top management members in others (Hendricks et al., 2019). Since more power to CEOs comes with both costs and benefits, different theories are proposed in favor or against CEO power. Agency and managerial power theorists argue that CEOs may expropriate shareholders' resources for their private benefit, thereby, being detrimental to firm value (Sheikh, 2019). They override board decisions and gain more opportunities to extract rents at the expense of the firm's wealth (Van Essen et al., 2015; Yahya, Manan, et al., 2021). Especially, when earnings quality and corporate governance are weak, powerful CEOs take excessive risk leading the firm to distress (Altunbaş et al., 2020). In contrast, the advocates of the resource dependency theory consider CEO power as a rich resource to the firm as it facilitate boards toward positive strategic change (Haynes & Hillman, 2010), enhance environmental, social, and corporate governance disclosure (Javeed & Lefen, 2019; Y. Li et al., 2018), improve corporate innovation in the face of market competition (Sheikh, 2018b), leading to an increase in the firm's profitability (Fang et al., 2020; Sheikh, 2018a).

The contradictory evidence emerged due to the ignorance of cultural role in previous studies. In more hierarchical countries, such as Pakistan, India, and China, people are expected to show respect to their superiors and accept the given distribution of power. Accordingly, in such social networks, CEOs enjoy a higher bargaining power compared to other executives (or directors). Since they consider the given power of distribution as legitimate, they support the CEOs' position and are less likely to question their decisions (Urban, 2019). In such societies, CEOs select members with similar ideas and courses of action (Fracassi & Tate, 2012). Accordingly, a managerial-friendly board is developed that mitigates conflict among boards and supports timely strategic decisions. Thus, instead of creating chaos on the board and delaying the strategic decisions, giving power to an individual may produce positive outcomes for the firm (Fang et al., 2020).

Accordingly, the positive outcome of CEO power is evident in more hierarchical countries. For example, Fang et al. (2020) argued that stronger boards superfluously intervene in CEOs' decisions, thus, CEOs with more power distribution positively affect bank performance in China. Gupta and Mahakud (2020) revealed a positive effect of CEO duality (a measure of CEO power) on bank performance in India. Javeed et al. (2021) also reported similar results by analyzing the manufacturing firms of Pakistan. Since our study has employed energy firms of Pakistan, we theorize that powerful CEOs produce positive outcomes through optimal strategic decisions. Nonetheless, the effect of CEO power is conditional on the market, firm-level, and governance factors (Gunasekarage et al., 2020; T. Li et al., 2017). Although extensive efforts are made by previous studies to examine the effect of CEO power on firm outcomes with the lens of interaction and intervening factors, most of these studies assume linearity. Accordingly, their practical implications are questioned by current studies (Bruna et al., 2021; Dang A. et al., 2018).

The contribution of the study is to employ the conditional quantile regression to investigate the asymmetric ef-

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fect of CEO power on risk-taking, firm performance, and working capital management (WCM). The quantile regression allows us to examine the effect of CEO power on the whole distribution of firm risk, firm performance, and working capital, rather than, a single measure of the central tendency of the distribution (Canay, 2011). We hypothesize that powerful CEOs use their discretion to balance the aggressive and conservative approaches to optimally manage firm performance. They decrease risk-taking only when it reaches a certain level, avoid aggressive working capital approaches, and exercise their power in firms with a low level of performance. Consequently, they optimally manage firm resources to justify their compensation and power distribution.

II. Methodology

A. Data and Variables

Energy firms of Pakistan are selected to test the nonlinear relationship between CEO power and firm-level outcomes. After excluding the missing data, 29 firms are retained over the period from 2010 to 2020. The dependent variables of the study are firm performance, firm risk, and working capital management. Firm performance is measured by the return on assets (ROA). Firm risk is measured by annualized standard deviation, while cash conversion cycle (CCC) is used to proxy WCM (Khan et al., 2020). CEO power is the independent variable of the study. Several proxies are previously used to measure CEO power including CEO duality, CEO tenure, and CEO pay slice (CPS). However, the CPS is a widely used and recognized measurement for CEO dominance (Bebchuk et al., 2011). Since annual reports of Pakistani listed companies have not disclosed the information on the top five executives, we have modified the CPS as CEO total compensation to total compensation (paid to all directors and executives including CEO compensation). Our control variables include board size (natural logarithm of total board members), financial leverage (debt to equity ratio), firm age (natural logarithm of firm age in years), firm size (natural logarithm of total assets) and *COVID19* (dummy variable, i.e., 1 = year 2020, 0 = otherwise). It is essential to control for the effect of COVID-19 as the Pakistani stock market and industry were trapped by fear, uncertainty, and economic inactivity (Yahya, Shaohua, et al., 2021).

B. Model

To analyze the effect of CEO power on firm risk, firm performance, and working capital management, the following regression models are developed:

$$\begin{aligned} Y_{i,t} = \alpha_0 &+ \beta_1 CEOP_{i,t-1} + \beta_2 BSIZE_{i,t} \\ &+ \beta_3 FLV_{i,t} + \beta_4 FAGE_{i,t} \\ &+ \beta_5 FSIZE_{i,t} + \beta_6 COVID19_{i,t} \\ &+ \beta_7 INDUSTRY_{i,t} + \varepsilon_{i,t} \end{aligned} \tag{1}$$

where *Y* represents ROA, WCM, and Risk, *CEOP* denotes CEO power, *BSIZE* is board size, *FLV* is financial leverage, *FAGE* represents firm age, *FSIZE* is firm size, *COVID19* represents the pandemic year (i.e., 2020). *INDUSTRY* is the industry fixed-effects, and ε denotes the error term. The lagged value of CEO power is added to address the concerns of endogeneity issues, following previous studies (Bruna et al., 2021; Dang A. et al., 2018). Although it is assumed that CEO power influences capital, risk, and other firm-level decisions, it is quite possible that firms provide or restrict the power of CEOs based on their level of risk-taking, performance, and WCM policies. The classical regression models stated in Eq. (1) are rewritten below to estimate conditional quantile regression:

$$\begin{aligned} Q_\tau\left(Y_{it}|E_{it}\right) = \; y_{it} = \alpha + \; &\beta CEOP_{it} \\ &+ \; \gamma_1 x_{1,it} + \ldots \\ &+ \gamma_k x_{k,it} + \; \varepsilon_{it} \end{aligned} \tag{2}$$

where y_{it} is the set of dependent variables (firm performance, risk-taking, and WCM efficiency) in year *t*. $x_1, \ldots, x_k$ indicates the set of control variables. *t* indicates time while *i* denotes firm. $Q_\tau\left(Y_{it}|E_{it}\right)$ is the τ^{th} quantile regression function. We have divided the quantile distribution from the 10^{th} percentile to the 90^{th} percentile. The highest quantile (70^{th} to 90^{th}) are categorized as high-performing, high-risk, and conservative WCM policy firms, respectively. The lowest quantiles, that is, 10^{th} to 30^{th} percentiles are considered low-performing firms, low-risk firms, and aggressive WCM policy firms. The moderate quantile (30^{th} to 60^{th}) are considered moderate-performing, moderate-risk, and moderate WCM policy firms.

III. Results and Discussion

The descriptive statistics reported in Table 1 show a moderate level of profitability and firm risk. The CEOs in the energy sector of Pakistan have a lower level of power as they are receiving only 9% (on average) compensation compared to the total compensation paid to directors and executives. The positive value of WCM efficiency (measured by CCC) indicates that firms are following conservative WCM policies. The Shapiro-Wilk statistics of all variables are significant indicating non-normality in the data. The test supports the use of quantile regression.

The quantile regression results show the asymmetric effect of CEO power on firm performance, firm risk, and WCM efficiency (see Tables 2 - 4). In accordance with our hypothesis, we find that powerful CEOs use their discretion more in low-performing and moderate-performing firms as the relationship between CEO power and firm performance is positive and significant in lower and middle quantiles (10^{th} to 60^{th}). Our evidence proves CEO power is a valuable resource for low-moderate performing firms. Furthermore, they are less likely to intervene or exercise their power when firm performance is already high. It is also revealed that powerful CEOs avoid excessive risk-taking. After reaching a certain level of riskiness, powerful CEOs try to mitigate the firm's risk as the relationship between CEO power and firm risk is significant and negative in high-risk firms (60^{th} to 90^{th}). Lastly, our results show that powerful CEOs try to balance the aggressive and conservative WCM policies. After reaching a certain level of working capital, they reduce the cash holdings to avoid overspending on unnecessary and unprofitable projects.

Table 1. Descriptive Statistics

Variable	Mean	Std. Dev.	W-stat	*p*-values
ROA	0.102	0.125	0.931	0.000
RISK	0.385	0.292	0.567	0.000
CEOP	0.089	0.126	0.715	0.000
WCM	46.041	298.797	0.705	0.000
BSIZE	9.622	2.337	0.981	0.001
FAGE	3.457	0.817	0.962	0.000
FSIZE	17.897	2.166	0.834	0.000
FLV	0.300	0.393	0.765	0.000

This table reports descriptive statistics of variables used in this study. Here, *ROA* denotes return on assets, *RISK* is the firm's risk, *CEOP* is the CEO power, *WCM* is working capital management efficiency, *BSIZE* is the board size, *FAGE* is the firm age, *FSIZE* is the firm size, and *FLV* is the financial leverage. Additionally, Std. Dev. denotes the standard deviation and W-stat is the Shapiro Wilk test statistics. The null hypothesis for the Shapiro Wilk test is that the data are normally distributed.

IV. Conclusion

Grounded on resource dependence theory and Hofstede's model of national culture, we provide evidence in favor of CEO power for energy firms in Pakistan using the panel quantile regression. CEO power is a rich firm resource that revives distressed firms, reduces excessive risk-taking, and optimally balances the aggressive and conservative working capital policies of the firm. Since our study provides insight into the non-linear relationship between CEO power and the firm's strategic decisions, further study should not assume linearity among the underlying variables. Additionally, it is important to discuss the importance of culture, while investigating the effect of corporate governance mechanisms in different regions. We suggest that institutions and policies should provide certain discretion to their CEOs in more hierarchical countries. It is acknowledged that there are different sources of CEO power in previous studies, and we have analyzed it only with the measurement by Bebchuk et al. (2011). Classifying CEO power into expert power and structural power will provide more fruitful insights into the current domain.

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Table 2. Quantile Regression Results (CEO Power and Firm Performance)

Variables	Quantile Levels								
	10th	20th	30th	40th	50th	60th	70th	80th	90th
CEOP	0.182**	0.127**	0.064*	0.114**	0.139**	0.207***	0.074	0.145	0.288
	(0.092)	(0.059)	(0.063)	(0.051)	(0.060)	(0.073)	(0.071)	(0.109)	(0.094)
BSIZE	0.061	0.018	0.010	-0.027	-0.015	-0.059	-0.026	0.001	0.069
	(0.060)	(0.038)	(0.041)	(0.033)	(0.039)	(0.047)	(0.046)	(0.071)	(0.061)
FAGE	-0.052***	-0.041***	-0.047***	-0.040***	-0.038***	-0.022	-0.032**	-0.028	-0.010
	(0.018)	(0.012)	(0.013)	(0.010)	(0.012)	(0.015)	(0.014)	(0.022)	(0.019)
FSIZE	0.017***	0.013***	0.007**	0.006**	0.005*	0.006	-0.002	-0.002	0.001
	(0.005)	(0.003)	(0.004)	(0.003)	(0.003)	(0.004)	(0.004)	(0.006)	(0.005)
FLV	-0.011	0.015	0.008	0.013	0.004	0.021	0.017	0.010	-0.015
	(0.032)	(0.020)	(0.022)	(0.018)	(0.021)	(0.025)	(0.024)	(0.038)	(0.032)
COVID19	-0.064*	-0.061***	-0.060***	-0.034*	-0.020	-0.026	-0.022	0.024	-0.001
	(0.036)	(0.023)	(0.025)	(0.020)	(0.023)	(0.028)	(0.027)	(0.042)	(0.036)
INDUSTRY	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.130	0.011	0.170*	0.277***	0.270***	0.314***	0.478***	0.435***	0.283**
	(0.136)	(0.087)	(0.094)	(0.075)	(0.088)	(0.108)	(0.105)	(0.162)	(0.139)
Pseudo R2	0.188	0.171	0.159	0.151	0.156	0.152	0.140	0.133	0.195

Note: *CEOP* is the CEO power, *WCM* is working capital management efficiency, *BSIZE* is the board size, *FAGE* is the firm age, *FSIZE* is the firm size, *FLV* is the financial leverage, *COVID19* denotes pandemic year (i.e. 2020), and *INDUSTRY* denotes industry dummies. Values presented in parenthesis are standard errors. *, **, *** represents statistical significance at 10%, 5%, and 1% levels, respectively.

Table 3. Quantile Regression Results (CEO Power and Firm Risk)

Variables	Quantile Levels								
	10th	20th	30th	40th	50th	60th	70th	80th	90th
CEOP	0.004	0.003	0.000	-0.003	-0.006	-0.008**	-0.009*	-0.029*	-0.026**
	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.010)	(0.018)	(0.030)
BSIZE	0.001	-0.001	-0.003	-0.002	-0.003	-0.003	-0.004	-0.015	-0.037*
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.006)	(0.012)	(0.020)
FAGE	0.000	0.001	0.001*	0.002**	0.001	0.001	0.001	-0.002	0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.004)	(0.006)
FSIZE	0.000	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001*	-0.003***	-0.003**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.002)
FLV	-0.003***	-0.003***	-0.003***	-0.003***	-0.003***	-0.004***	-0.005	-0.005	-0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.003)	(0.006)	(0.011)
COVID19	0.012***	0.010***	0.011***	0.011***	0.010***	0.010***	0.010***	0.009	0.004
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.004)	(0.007)	(0.012)
INDUSTRY	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.013***	0.022***	0.032***	0.038***	0.037***	0.040***	0.039***	0.116***	0.172***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)	(0.014)	(0.026)	(0.045)
Pseudo R2	0.141	0.160	0.175	0.171	0.167	0.164	0.152	0.145	0.232

Note: *CEOP* is the CEO power, *WCM* is working capital management efficiency, *BSIZE* is the board size, *FAGE* is the firm age, *FSIZE* is the firm size, *FLV* is the financial leverage, *COVID19* denotes pandemic year (i.e. 2020), and *INDUSTRY* denotes industry dummies. Values presented in parenthesis are standard errors. *, **, *** represents statistical significance at 10%, 5%, and 1% levels, respectively.

Table 4. Quantile Regression Results (CEO Power and WCM)

Variables	Quantile Levels								
	10th	20th	30th	40th	50th	60th	70th	80th	90th
CEOP	478.055	165.861	8.330	-120.325**	-173.493***	-248.156**	-275.941**	-140.093	142.790
	(385.179)	(194.361)	(97.194)	(59.547)	(72.372)	(106.070)	(119.592)	(198.770)	(330.710)
BSIZE	-424.660*	-247.803**	-88.522	-104.934***	-110.464**	-153.905**	-211.103***	-250.244***	-262.876
	(250.308)	(126.305)	(63.161)	(38.696)	(47.031)	(68.929)	(77.716)	(129.170)	(214.911)
FAGE	130.786*	43.745	-7.231	-21.372*	-28.908**	-34.337*	-36.223	-38.554	-73.254
	(77.177)	(38.943)	(19.475)	(11.931)	(14.501)	(21.253)	(23.962)	(39.827)	(66.263)
FSIZE	42.815**	17.053	4.550	-2.610	-5.270	-8.317	-18.257***	-26.102**	-57.113***
	(22.092)	(11.148)	(5.575)	(3.415)	(4.151)	(6.084)	(6.859)	(11.401)	(18.968)
FLV	101.016	53.298	47.180	55.339***	55.333**	74.586**	83.420**	73.010	83.864
	(133.245)	(67.235)	(33.622)	(20.599)	(25.036)	(36.693)	(41.370)	(68.761)	(114.403)
COVID19	-242.932*	-99.291	-21.607	-17.649	16.653	40.662	250.628***	357.253***	336.173***
	(149.619)	(75.497)	(37.754)	(23.130)	(28.112)	(41.202)	(46.454)	(77.210)	(128.461)
INDUSTRY	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-643.450	-60.084	120.033	383.770***	484.926***	688.730***	1045.968***	1346.955***	2213.173***
	(570.700)	(287.974)	(144.008)	(88.227)	(107.230)	(157.158)	(177.192)	(294.508)	(489.996)
Pseudo R2	0.177	0.049	0.038	0.058	0.090	0.127	0.174	0.242	0.309

Note: *CEOP* is the CEO power, *WCM* is working capital management efficiency, *BSIZE* is the board size, *FAGE* is the firm age, *FSIZE* is the firm size, *FLV* is the financial leverage, *COVID19* denotes pandemic year (i.e. 2020), and *INDUSTRY* denotes industry dummies. Values presented in parenthesis are standard errors. *, **, *** represents statistical significance at 10%, 5%, and 1% levels, respectively.

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