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CEO Power Dynamics and Firms' Reported Earnings Quality in Egypt: Moderating Role of Corporate Governance

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Abstract

This study aims to explore the factors that influence the firm's reported earnings quality (FREQ) for a sample of Egyptian firms from 2008 to 2019 by using panel data. The findings show that CEO power dynamics (CEO duality, CEO ownership, CEO tenure and CEO political connections) as negative determinants of FREQ in Egypt. Further, we investigate the role of corporate governance as weakening or substitution mechanism. We find that board independence serves as weakening mechanism for negative association between CEO ownership and CEO tenure, and FREQ. In contrast, the findings do not hold for weakening or substitution role of board independence between CEO duality and CEO political connection, FREQ. The findings also support maxim of tokenism as role of gender diversity is insignificant. Importantly, we find the presence of gender critical mass serves as substitution mechanism for negative association between CEO power dynamics (CEO duality, CEO ownership, CEO tenure and CEO political connections) and FREQ. Finally, we observed robustness in our main analyses for propensity matching score and difference-in-difference techniques. The study has a novel contribution in existing research since it highlights the role of CEO power dynamic in an emerging economy and further provides an insight to the role of corporate governance.

Keywords: CEO power dynamics, corporate governance, firms' reported earnings quality, CEO tenure, CEO ownership, Egypt.

1. Introduction

The study aims to investigate the impacts of CEO power on firms' reported earnings quality (FREQ). The study mainly focuses on the characteristics of the upper echelon (CEO power) and their influences on FREQ. Since, Egypt has received criticism due to poor governance and the poor governance structure always empowers executives to manipulate the firm's resources. This led us to highlight the role of CEO power dynamic in firm's earnings quality that may provide timely empirical evidence of negative consequences of executive power. Further, corporate governance is defined as a mechanism that is often used to reduce the agency conflicts. This also motivated us to test the functioning of corporate governance in Egypt. Therefore, the study follows upper echelons theory (UET). UET states that the top executives are solely responsible in determining the firm's strategy (Hiebl, 2014; Nielsen, 2010). However, firms differ in terms of the balance of power between these executives. Further, literature also suggests that there is a probability of trade-offs in context of the costs and benefits of conferring more decision-making power with a CEO(Chatterjee& Hambrick, 2010a; Hong, Li, & Minor, 2016). This lays the foundation of two contrasting views. One view persists that a firm can gain efficiency if it has a powerful CEO since he/she may expedite firm's decision making process, resulting in a timely and efficient response to the anticipated challenges in the market (Ozbek & Boyd, 2020; Wang et al., 2019; Gupta et al., 2018). Similarly, theory suggests that a more centralized decision-making process may not be able to produce better results when the available info is more uncertain (Crossland & Chen, 2013). At the same time, it's the market nature that directs a powerful CEOS' role and the outcomes are highly correlated with CEO entrenchment.

To address the concern, we explored the role of CEO power on FREQ in Egyptian context. Firstly, we find no evidences in this regard in gulf countries where the likelihood of negative consequences of CEO power is more pronounced. Secondly, the new political regime urgently needs to enhance its uncertain validity quickly; for fear that it faces improved trials from excepted political forces. Since no windfalls likely in context of broad economic growth across several sectors, there is a need to evaluate the role of CEO power as information asymmetry and misuse of power is more likely in emerging markets like Egypt in contrast to developed markets where the law restricts the likelihood of abuse of power.

The remainder of the paper is as follows. Next section deals with research background of the study followed by section 3 highlighting literature reviews and hypotheses development. Section 4 presents research methodology which is followed by findings in section 5. Further 6 presents Conclusion and Recommendations followed by contribution and research limitation in section 7 and 8 respectively.

2. Research Background

The literature suggests that the pros and cons of entrenched CEOs depend upon market context or internal corporate governance structure of the firm (Amin et al., 2019). In capital market context, the entrenched CEOs may augment firm value because a CEO normally confronts severe performance pressure in highly developed market. In case of poor

performance, firm is always exposed to victim of takeover(Aguilera et al., 2008). Meanwhile, an entrenched CEO is more concerned to protect this prominent position in the firm; such a CEO may try to focus his courtesy on augmenting firm values in order to safeguard him from external threats(Chen & Young, 2010; Dechow et al., 2010; Harjoto & Jo, 2011). Resultantly, an entrenched CEO is more involved in activities that increase corporate values. In contrast, an entrenched CEO can destroy firm value in the context when capital market is not able to exert pressure. Once an entrenched CEO doesn't have external pressure or can preserve his prominent standing, CEO is likely to make self-concentrated decisions (Bear et al., 2010; El-Bannany, 2018; Hass et al., 2016; Jo & Harjoto, 2011). In addition, firm's poor governance also empowers CEO to use firm resources for self-centred objects. Once, a powerful CEO makes ''CEO-specific'' decisions, these decision often leads to resource exploitation which results in poor firm's performance(Craig Crossland & Chen, 2013; Gao et al., 2018; Gupta et al., 2018). In this vein, (Haynes & Hillman, 2010)contended that a powerful CEO is more often than not to take ''pet projects'' that damages firm's values. Further, a powerful CEO can also be more entrenched by offsetting the governance mechanism enacted by owners.

3. Literature Review and Hypotheses Development

In organizational context, power refers to the ability of an individual to employ his will and accomplish is goal in a certain affiliation (Singh et al., 2018). In this context, a CEO power denotes to the degree to which a CEO has power and impact over a firm's management. There are certain pros and cons of CEO power and the ultimate outcomes merely depend upon use of powers and intention that guard the power in specific objectives. The literature has limited empirical evidence that highlight the sources from where a CEO acquires powers. Basically, the sources empower a CEO to manipulate firm resources for personal benefits and earnings management may be a source of manipulation of firms' resources. Once a CEO acquires power, it makes him able to dominate the board (Baek & Kim, 2015) and with this increase in power, a CEO is in a better position to enforce the issue of personal (Godfrey et al., 2003; Wells, 2002). Therefore, it is very important to highlight the sources that either mitigates or constraint CEO power in economies with poor corporate governance structure (Shen & Lin, 2016; Wu et al., 2012). Likewise, a CEO also gains powers relative to corporate board if a CEO possesses a significant portion of ownership and it helps him/her in reducing board influence in certain decisions makings (Ding et al., 2018; Srinidhi et al., 2011). Additionally, a CEO can also acquire powers through political connections as he can derive substantial assistance from his political connections. These benefits may include superior access to financing, special dealing in the award of state contracts and greater probability of state bailout during predicaments. Keeping in view the context, we consider political connection, CEO tenure and ownership as the sources through them he can acquire power over the board. So, we develop hypotheses as under regarding the role of CEO power in FREQ.

3.1 CEO Duality

The literature suggests that CEO acquire more powers when he chairs board by promoting CEO entrenchment (Davidson et al., 2004; Yasser & Mamun, 2015). Once a CEO exercises duality, he can enjoy several discretions. First, a Chair CEO may direct meeting's schemata and contents. Second, he may have control over the most valued info evolving from different board meetings. Third, he can strengthen his power by selecting loyal directors (Krause et al., 2014; Li & Yang, 2019; Wang et al., 2019). In brief, CEO duality amplifies chair-CEO to pursue his personal benefits in a comparatively unrestrained way (Latif, 2018). In contrast ,a CEO with non-duality role may have fever power to promote CEO entrenchment (Surroca et al., 2020). Empirics strongly support the maxim that CEO duality influences his entrenchment. Therefore, CEO duality is expected to negative association with FREQ as a CEO with dual role is more likely to be involved in earnings management in firms with low profitability or negative earnings(Ben Mohamed et al., 2012; Jo & Harjoto, 2011; Maaloul et al., 2018; Nasr & Ntim, 2018). Therefore, we propose that CEO duality serve as one of the CEO power dynamics is negatively associated with FREQ.

- **H_1a:** A CEO who chairs the board (CEO duality) is more likely to be involved in earnings management; thus, resulting poor FREQ.

3.1 CEO Tenure

Empirics show that a CEO acquires power largely through his tenure in current position. A newly appointed CEO tends to confront substantial encounters and hindrances that he has never practised. First, he needs acceptance from his board in order to retain his job and secure his authority (Huang et al., 2008; Mitra et al., 2019; Wells, 2002). Therefore, until he can satisfy the anticipations of his board, his power remain much weaker than that of an established CEO (Baker et al., 2019). Once CEO is accepted by the board, his managerial capability and discretion also rise(Stock, Groß, & Xin, 2019). Hence this increased expertise and discretion may enable him to have certain choices like ''compliant'' directors. In this way, he can strengthen his influence over the corporate board (Huang et al., 2008; Wells, 2002). The presence of ''compliant'' directors ensures his supremacy in decision making. Resultantly, the corporate board loses its power to monitor effectually the entrenched CEOs. The entrenched CEO tendency to make decision of his liking would become more severe and in turn information asymmetry would prevail more seriously (Hong et al., 2016; Latif, 2018). Somehow, his power enables him to influence the board and acquire member support even in unethical practices like earnings manipulation. The problem is more sever in developing economies with weal investors' protection right. In Egypt, there is every probability that a CEO may be involved in earnings management to safeguard his personal interest at the cost of less protected stakeholders. Therefore, we hypothesise that CEO tenure is one of the key factors through which a CEO can acquire power and the acquired power may result in poor FREQ of the firm in Egypt.

- **H_1b:** The longer the CEO's tenure, the weaker the firm's reported earnings quality in Egypt.

3.2 CEO Ownership

As managers' acts on behalf of shareholders, managerial power accrues to them in their capability as agents(Ding et al., 2007; Hashmi et al., 2018; Jiang & Anandarajan, 2009). In general, when a CEO has a substantial ownership control, he exercises more powers over the corporate board (El-Bannany, 2018; García-Meca & Sánchez-Ballesta, 2009; Hoang et al., 2017). Further, a founder CEO or related to founders may gain more power, as he takes advantage of his exceptional positions to gain implicit control over corporate boards. Through a substantial ownership control, a CEO may influence directors' hiring/firing decision making; thus, the right of minority shareholders seems to be less protected (Baker et al., 2019). Resultantly, a CEO with increased power becomes more entrenched within a firm (Latif, 2018). This may result in earnings manipulation as CEOs often involved in practices that are used to protect their position(Ding et al., 2007; Yassin et al., 2010). A CEO can also use earnings management to smooth out fluctuations in earnings and present more consistent profits. CEOs can feel manipulate the company's accounting practices to meet financial expectations and keep the company's stock price. Empirics have documented that the executive power acquired by larger equity stakes may increase probability to make self-centred verdicts (Chatterjee & Hambrick, 2010b) and may have establishing special effects (Wells, 2002). Therefore, we suggest that CEO with substantial ownership is more likely to involve in earnings management that result in poor FREQ.

- **H_1c:** The higher level of CEO ownership has negative impacts on firm's reported earnings quality in Egypt.

3.3 CEO Political Connection

Political connections on the board of directors may result in severe agency conflicts (Hashmi et al., 2018; Makhaiel & Sherer, 2018); Maaloul et al., 2018; Shen & Lin, 2016). A CEO can acquire substantial power through his political connection and such power may divert managers from their ultimate goal of maximizing stockholder wealth (Makhaiel & Sherer, 2018)). So far, literature highlights adverse effects of political connection on the accounting and internal control systems (Hashmi et al., 2018; Jaafar et al., 2015)). If a CEO is politically connected, he can induce board to disclose selective information in and window dress the financial statements (Hashmi et al., 2018; Ozili, 2017; Yassin et al., 2010). Further, the agency conflicts are more pronounced in firms that are politically connected in politically unstable economy(Hashmi et al., 2018; Yassin et al., 2010). Thus, we expect a significant reduction in disclosure of key information (Hashmi et al., 2018; Salleh, 2009). Similarly, a politically connected CEO is more likely to be involved in earnings manipulation (Hashmi et al., 2018; Salleh, 2009).Hashmi et al., (2018) stated that politically connections are only valuable in developing countries with higher levels of corruption. We argue that a CEO acquires power from his political connection and a politically connected CEO is more likely to reduce the credibility of reported earnings (Cao et al., 2019; Hashmi et al., 2018; (Makhaiel & Sherer, 2018; Maaloul et al., 2018; Salleh, 2009; Shen & Lin, 2016). Thus, we hypothesize as follows:

- **H_1d:** Apolitically connected CEO has negative impacts on firm's reported earnings quality in Egypt.

3.4 Role of Corporate Governance

If CEO power is related with unethical practices like earnings management, then the question arises what factors can weaken/exacerbate its consequence? Therefore, we undertake corporate governance likelihoods, which determine the power dynamics between a CEO power and corporate board, to be basic weakening/exacerbating factors. As per managerial entrenchment theory, entrenchment refers to managerial maneuverer for self-interest. Corporate decisions are the likely outcomes of interaction between CEO and corporate board (Burkhard & Van Essen, 2018), CEO power can be often curtailed by governance likelihoods. As per the notion of power dynamic, corporate governance contingencies serve as set of power trade-offs between CEOs power and corporate board (Bear et al., 2010; Oh & Chang, 2018) and emphasis on the effectiveness of board vigilance along with CEOs vis-a`-vis the corporate board (Finkelstein et al., 2009; Nasr & Ntim, 2018; Stock et al., 2019). Once a CEO becomes entrenched, he can use power dynamics to track his personal interests at the cost of owners. Environments may come, though, in which the corporate board is predominantly vigilant, possibly limiting a CEO from tracking his managerial interests (Singh et al., 2018).

3.1.1 Board Vigilance and Firm's Reported Earnings Quality

Being the central construct of corporate governance, board vigilance refer to an effective mechanism that monitors and disciplines CEO and is properly intricate in firm's strategies. It is of fundamental importance to search the factors that serve as board vigilance to constrain CEO power and align them in the best interest of organization(Finkelstein et al., 2009). There is a need to consider a range of relational mechanisms that prevails in the market. For the purpose, we explore the role of board vigilance in constraining CEO power. In view of innate principal-agent conflicts, top executive can self-serve if board vigilance is comparatively on the weaker side(Li & Yang, 2019). Though, conditions that endorse board vigilance may still be real. Based on these viewpoints, we confer two conditions of resilient board vigilance: board independence and gender diversity. To address the concern of board vigilance, we developed hypotheses as under.

3.1.2 Board Independence and Firm's Reported Earnings Quality

The power dynamics between corporate board and a CEO are highly associated with board independence. Board independence has been considered as primary mechanism to monitor and control top management. Corporate governance theorists emphasized presence as independent directors as the mechanism that ensures board vigilance (Finkelstein et al., 2009; Nasr & Ntim, 2018; Stock et al., 2019). Higher board independence can curtail CEO power and direct them for stakeholders benefits that than CEO self-serve motive. In addition, outside directors are more vigilant, have access to market knowledge and follow the ethical norms(García-Meca & Sánchez-Ballesta, 2009; Khalil & Ozkan, 2016; Lin & Hwang, 2010). Consequently, they rely on firm performance heavily while evaluating CEO performance and monitor any manipulation in earnings. They are more likely to constraint any unethical practice by CEO as they are interested to develop their personal repute as

directors (Finkelstein et al., 2009). Similarly, independent directors have considerable incentive to monitor a CEO vigilantly. Precisely, we are interested the monitoring role of board independence in curtailing unethical practices likes earning manipulation. Therefore, we proclaim that the monitoring role of the board independence in a corporate board can hypothetically confine the toxics significance of CEO power(Baker et al., 2019; Mitra et al., 2019; Wells, 2002). In Egyptian context, we explore the curtailing role of board independence in earnings manipulation.

- **H_2a:** The higher board independence is more likely to restrain the negative relationship between CEO power (CEO duality/ CEO ownership/ CEO political connection) and a firm's reported earnings quality in Egypt.

3.1.3 Gender Diversity and Firm's Reported Earnings Quality

Prior literature shows conflicting evidence regarding the role of female directors in earnings management context. However, there are evidences that show that female presence results in better board monitoring (Baker et al., 2019; Mitra et al., 2019; Wells, 2002). Further, it is believed that female directors are comparatively more independent and active in motoring since they are not a part of "old boys' networks"(Bear et al., 2010b; Gul et al., 2013; Perafán Peña, 2018). At the same time, they are less tolerant to opportunistic behaviours. According to resource dependency theory, female directors often different in skills, knowledge and their background and they help board make better decision by bringing about contrary and acute rational. Therefore, their presence may increase in monitoring intensity and quality; thus, reducing CEO influence on corporate decisions(Ben-Amar et al., 2017; Reddy & Jadhav, 2019). In this vein, earnings management refers to the distortion of reported firm financial performance and is known as one of the most important salient features of CEO self-serving behaviours(Thiruvadi & Huang, 2011). Normally, a CEO is involved in manipulating firm's earnings upward to evade his removal due to poor firm performance; whereas, downward manipulation is used when he has already maximized the bonus(An, 2017). Resultantly, a CEO self-interested behaviours might deceive investors about firm's fundamental financial performance or influence promised upshots(Gul et al., 2013; Perafán Peña, 2018). Thus, as per agency theory, it's a primary duty of the board is to reduce managerial opportunistic discretions in financial statements through active nursing(Carter et al., 2010; Francoeur et al., 2008; Hoang et al., 2017; Lanis et al., 2017; Nekhili et al., 2018). In the recent past, literature reported evidences supporting the maxim that women are directly associated with better board's monitoring functions. Their characteristics include involvement in decision making, more participative, driven by ethical and social norms. The presence is associated with less earnings management, less firm frauds and less tax avoidances (Arayssi et al., 2016; El-Bannany, 2018). Therefore, we propose that presence of women on the corporate board can curtail the CEO power and reduce or eliminate the negative impacts of CEO Powers on FREQ. Based on these viewpoints, we construct the following hypothesis.

- **H_2b:** The board gender diversity is more likely to restrain the negative relationship between CEO power (CEO duality/ CEO ownership/ CEO political connection) and a firm's reported earnings quality in Egypt.

3.2 Control Factors

We also include control factors in the model to account for the possibly baffling effects of firm-specific factors that may have impacts of FREQ. we use governance and firm's specific control in our main regression model. Governance control includes board meeting, board size, and CEO education and audit quality following (Ding et al., 2007; Jiang & Anandarajan, 2009; Latif, 2018). Whereas, accounting control factors are market-to-book value, return on assets (ROA), financial leverage, firm growth, dividend pay-out ratio and firm size in line with (Khalil & Ozkan, 2016; Sarun, 2015). The definition and measurement of each variable is provided in appendix A. we also control for year and industry effects in our main models.

4. Research Methodology

4.1 Measurement of Earnings Quality

To measure earnings quality, we employ standard techniques from accruals quality literature (Abdul Rahman & Mansor, 2018; Ozili, 2016; Rezaee & Tuo, 2019; Soliman et al., 2018). Though there are alternative methods for measuring discretionary accrual (DAC), weused the modified cross-sectional Jones (1991) model following (Elkalla, 2017). To measures DAC, we fist estimated totalaccruals (TC). In order to decompose the DAC and normal accruals from TC, we followed cross-sectional Jones model. In the proxy, a high absolute value represents higher earnings management and, thus a poor FREQ. we determined the extent of the measurement error so as to capture unintentional because of business activity or intentional due to opportunistic earnings management (Elkalla, 2017). We need at least 20 observations in the each industry for estimation. We used the two-digit SIC code to classify the industry. Following equation is used to measure TC.

$$TC_{i,t} = \alpha_1 \left(1/A_{i,t-1}\right) + \alpha_2 \Delta REV_{i,t} + \alpha_3 PPE_{i,t} + \varepsilon_{i,t} \qquad (1)$$

In equation 1,

$TC_{i,t}$= total accrual/total assets

$A_{i,t-1}$= the lagged of total assets

$\Delta REV_{i,t}$= annual change in revenue/total assets

$PPE_{i,t}$ = s property, plant, and equipment/total assets

$\varepsilon_{i,t}$ = error term

In equation 1, DAC is represented by non-standardized residual of Jones model

4.2 Model Specification

We used two different models to test hypotheses of the study. At first stage, the following panel regression model is used to test the impacts of CEO power dynamics on FREQ.

$$FREQ_{it} = \alpha_0 + \beta_1 CEO\ duality + \beta_2 CEO\ ownership + \beta_3 CEO\ tenure + \beta_4 CEO\ political\ connections + \beta_5 governance\ control + \beta_6 financial\ controle + \beta_7 year\ FE + \beta_8 industry\ FE + \varepsilon_I (1)$$

Where FREQ represents the firm's reporting earnings quality of firm i at time t. CEO duality, CEO ownership, CEO tenure and CEO political connections are the CEO power dynamics used in current study. Governance controls includes CEO education, audit quality, board size and board meetings. Similarly, financial controls are ROA, firm size, financial leverage, market-to-book value, asset growth and dividend pay-out ratio. Year and industry fixed effects are also included for unobserved heterogeneity or the unobservable individual firm effects. To examine the validity of fixed effect model, the Hausman specification test is used which shows that that the difference between the panels models (FE and RE coefficients) is statistically significant. Hence, we used FE model for our study.

In second model, we include gender diversity and considered that FREQ and gender diversity are endogenous. In this context, the probable influence of board gender diversity may be caused by specific firm-level factors concurrently impacting FREQ and gender diversity. Hence, our model is exposed to classical endogeneity effect. To address the possibility of any endogeneity concern, we used the two-step General Method of Moments (GMM) estimation technique (also known as system GMM) (Rehman et al., 2020). The study used GMM based on certain assumptions. Despite a strong instrumental approach, system GMM is exposed to certain limitations. Firstly, it allows for heteroskedasticity in the data (Baltagi et al., 2016) if we compare it with an ordinary least square model (OLS). In contrast to this, there is evidence that supports the view that a two steps system provides hypothetically robust results (Heid et al., 2012). Secondly, for instrumental validity, we applied the AR (1) and AR (2) test for validity of instruments. The assumption is that two step GMM can only be applied when there is only first order correlation (AR (1) (Roodman 2009). The findings in table 4 support the view that there exists first order correlation in our model and AR (2) is insignificant. Third, following (Baum et al., 2006), we applied Hansen J-test statistics and the results showed that the p-value of Hansen J-test lies between the tell-tale sign (maximum "1" and at minimum "0.25"). Our findings show the value of the Hansen test Chi-square, p-value is within the prescribed limit. Therefore, we are sure that system GMM is the most appropriate methodology for our research. The following Equation is used.

$$FREQ_{it} = \alpha_0 + \beta_1 FREQ\ (t-1) + \beta_2 CEO\ power\ dynamics + \beta_3 board\ independence + \beta_4 gender\ critical\ mass + \beta_5 CEO\ power\ dynamics\ x\ board\ independence + +\beta_6 CEO\ power\ dynamics\ x\ gender\ critical\ mass + \beta_7 governance\ control + \beta_8 financial\ controle + \beta_9 year\ FE + \beta_{10} industry\ FE + \varepsilon_I (2)$$

CEO power dynamics includes four measure of CEO power as used in equation 1. We used different interaction terms (CEO power dynamics (duality, ownership, tenure and political

connections) and corporate governance (board independence and gender critical mass). We also included year and fixed effect in equation 2 also.

4.2 Data

Finalizing data for final analysis was quite a challenge for us as the number of listed firms varies significantly for the year 2000 to 2018. Therefore, we use 2008 as our start year and the number of firms varies year-wise. Table 1 below presents the number of firms included in our panel data set. In our unbalanced panel data, we included only those firms that remained listed for at least five years. Secondly, we include only manufacturing sector since financial sector asset structure, accounting policies and profitability are significantly different. We obtained data from DataStream Thomson Reuters for financial and governance variables. We also cross-matched the data set with published financial report of each firm for the period. For political connection variable, we collected data for each CEO from the bio-data provided in financial reports. For gender critical mass, we observed the provided information about board in each financial report. In case of confusion, we match the name with picture of board member so as to differentiate in gender. In addition, we provided number of observations for our main variable in table 1.

Table 1: Data Description

Year	Total firms	Financial firms	Manufacturing firms
2008	182	19	163
2009	177	26	151
2010	174	20	154
2011	173	19	154
2012	170	18	152
2013	169	19	150
2014	171	19	152
2015	170	18	152
2016	170	18	152
2017	170	18	152
2018	170	18	152
2019	170	18	152
Number of firms' year observations (total)			**2066**
Less financial firms year observation			(230)
Final observations			**1826**

CEO non-duality firms' year observations			1618
CEO duality firms' year observations	**(1826-1618)**		**208**
Non-gender diverse firms' year observation			**587**
Gender diverse firms' year observation	**(1826-**587)		**1239**
Gender non-critical mass firms' year observations	(1826-162)		1664
Gender critical mass firms' year observations			**162**
CEO non-politically connected firms	(1826-326)		1500
CEO politically connected firms			**326**
Table 1 includes number of firms included in our panel year-wise, number of observations. Only, those firms are included in that remained listed for at least four years in sample period.			

5. Findings

5.1 Descriptive Statistics

Table 2 presents descriptive statistics and variance inflation factor (VIF) of our variables used in our study. The results for CEO-duality indicate that nearly 12.85% of firms have CEO chair on their board. The mean value of CEO ownership, CEO political connection and board independence are 13.06, 17.85% and 24.59% respectively. CEO tenure has a mean value of 5.478; whereas, CEO educations mean value equals to 3.7622. Further board independence is 24.59% which is far below the benchmark of 33% in developed markets. Likewise, mean value of ROA is 8.672%, and it ranges from78.91% to -4.102%. The average board member 11.872 and 21.82% of the firms has better audit quality. Reported statistics value of firm size, asset growth and market-to-book value are 6.1674, 6.178% and

2.1178 respectively. Only 10% firms have gender critical mass on their corporate boards. Lastly, the mean value of dividend pay-out ratio is 4.190% and it ranges from 0 to 16.28%.

Further, we also apply Variance Inflation Factor (VIF) to measure the severity of multicollinearity in regression analysis. Based on value of VIF, we can easily address the concern of collinearity (Rezaee & Tuo, 2019). In regression analysis, multicollinearity exists when two or more of the independent variables demonstrate a linear relationship between them (Rehman et al., 2020). The results presented in table 2 indicate that there is no issue of multicollinearity in our model; since, the value is far below the maximum range of 9.

Table 2: Descriptive Statistics and Variance Inflation Factor

Variables	Mean	Maximum	Minimum	S/D	VIF
CEO-duality	12.85%	1.0000	0.0000	21.28%	2.1029
CEO-ownership	13.06%	86.18%	4.102%	46.10%	1.9821
CEO-tenure	5.478	21.000	3.0000	0.1983	2.018
CEO-political connection	17.85%	1.0000	0.0000	23.10%	1.0673
CEO-education	3.7622	4.0000	2.0000	0.192	1.0291
Board independence	24.59%	51.87%	12.63%	19.67%	1.7821
Gender critical mass	10.01%	1.0000	0.0000	31.14%	1.0878
Board size	11.872	26.000	7.0000	0.0914	2.1902
Board meeting	6.1834	14.000	4.0000	0.1082	1.8051
Audit quality	21.82%	1.0000	0.0000	0.2717	1.3216
ROA	8.672%	78.91%	-4.102%.	0.1892	1.7827
Firm size	6.1674	13.192	4.1029	0.1721	2.7821
Assets Growth	6.178%	14.08%	-2.166%	0.0817	2.1891
Market-to-Book Ratio	2.1178	5.1928	0.2933	0.1942	1.0673
Dividend payout ratio	4.190%	16.28%	0.0000	8.192%	0.7832

% represents the variable included in percentage. We used log of total assets as firms' size. Only main values are provided for brevity purpose. We used VIF model to address the concern of collinarity, we did not presented correlation matrix as VIF values ensures no issue of multicollinearity in our model.

5.1 Determinants of Earnings Quality

5.1.1 CEO Power and Earning Quality

Table 3 below presents the findings of association between the measures of CEO power and earnings quality of the Egyptian firms. The findings show that CEO-duality is a negative and significant determinant of FREQ in Egypt (β=-0.1082 &p<.05). It support the maxim that CEO with dual role exercises more powers in firm's decision making and at the same time faces less constraints in decision like earnings manipulation. Once, CEO exercises dual role, he can use his discretionary power to manipulate firm's earnings(Dechow et al., 2010; Nasr & Ntim, 2018; Ozili, 2016). This is also in line with CEO power dynamic that he can influence the corporate board quite easily (Paiva et al., 2016; Sarun, 2015). Hence, our hypothesis 1a is accepted. Secondly, our findings show that CEO-ownership negatively impacts the FREQ quality in Egypt (β=-0.0994 &p<.05). This is in line with the view that CEO acquires power through ownership. Through ownership, CEO is able to appoint the directors who usually show obedience in corporate board (Paiva et al., 2016; Sarun, 2015); at the same time, the directors are not in accordance with liking are fired from the corporate board (Dechow et al., 2010). Hence, we conclude that CEO can acquire power through having a significant portion in firm ownership and he uses his acquired power in manipulated earnings in Egypt. The finding strongly supports the negative role of CEO-ownership in FREQ quality in Egypt. So, our hypothesis 1b is strongly supported. Thirdly, we explore CEO-tenure as a measure of power dynamics to capture its impacts on FREQ. The result show that CEO-tenure (β=-0.0681 & p<.10) negatively and significantly impacts FREQ. This implies that as CEO tenure increases, CEO is able to establish his control over the corporate board(Lin & Hwang, 2010; Zhang, 2009). This augments his influential role and he can easily get favour by the board for earnings manipulation(Bao & Lewellyn, 2017; Mitra et al., 2019). Therefore, the longer the CEO tenure, the higher the probability of poor reported earning quality in Egypt. Our hypothesis 1c is also supported. Lastly, we find that CEO-political connections (β=-0.155 & p<.01) have negative and significant association with FREQ of the Egyptian firms. Such a negative relation may be attributed to CEOs personal benefits from his continued political relationship, or might be exerted pressure political heavy weights (Bao & Lewellyn, 2017; Ding et al., 2018; Gaio & Pinto, 2018; Salleh, 2009). The findings strongly support our hypothesis 1din Egyptian context. Resultantly, we found a strong support for our main hypothesis 1 that CEO-power is negatively associated with FREQ.

To capture corporate governance attributes, we also include CEO education, board size, board meeting and audit quality as control factors. We found that CEO-education has positive and significant association with earnings quality (β=0.0608 & p<.10) in line with earlier findings (Chen et al., 2016; Ham et al., 2018; Hoang et al., 2017). Similarly, we found that board meeting and audit quality are positively and significantly associated with FREQ in Egypt (for board meeting β=0.146 & p<.05 and for audit quality β=0.277 & p<.01)(Khalil & Ozkan, 2016). This implies that CEO-education, board meeting and audit quality improves the firm's reported quality in Egypt. However, we did not find any

support for board size. We further include firm's specific characteristics and findings show that ROA and market to book value are positive determinants of FREQ in Egypt (for ROA β=0.128 & p<.05 and for market to book value β=0.063 & p<.10).This shows that firms with positive ROA and higher market to book value are more likely to have higher FREQ in Egypt (Rezaee & Tuo, 2019; Yeh et al., 2014). In contrast, we find that firm assets growth is negative determinants of FREQ (β=-0.078 & p<.05). This means firm in growth stage are more likely to manipulate earnings to secure their position. We also control for year and industry effects in our main model.

Table 3: CEO-Power and Earning Quality

	Discretionary Accruals	
CEO-power dynamics	Coefficient	S.E
CEO-duality	-0.1082**	0.0335
CEO-ownership	-0.0994**	0.0287
CEO-tenure	-0.0681*	0.0405
CEO-political connection	-0.1556***	0.0388
Governance Control Factors		
CEO-education	0.060*	0.0365
Board size	0.127	0.0974
Board meeting	0.146**	0.0569
Audit quality	0.277***	0.0622
Control Factors		
ROA	0.128**	0.0488
Firm size	0.009	0.0335
Assets Growth	-0.078**	0.0379
Financial leverage	-0.0892**	0.0263
Market-to-Book Ratio	0.063*	0.0376
Dividend payout ratio	0.0671	0.0549
Constant	-1.063**	
Year effect + Industry effect	Yes	
F-test	5.276***	
R-square. (%)	42.19%	
Hausman test	0.004***	

Dependent variable is FREQ. CEO power dynamics are main variable of concerns. Measurement of each variable is provided in appendix A. Year and industry effects are included in regression. S.E means standard errors. *** represents 1% level of significant ** represents 5% of level of significance * represents 10% level of significance.

5.1.2 Board Vigilance and Earnings Quality

In the second stage, we examined the constraining role of board vigilance for CEO power dynamics in context of FREQ in Egypt. Table 4 reports the findings of the role of board vigilance. To avoid any complexity in model, we separately run regression each interaction term. We regress four different models to address the concern. Before explaining the interaction term, we highlight the direct impacts of CEO power dynamics and board vigilance on FREQ. The findings show that CEO duality, CEO-ownership, CEO-tenure and CEO-political connections are negatively associated with FREQ (refer to column 1-4 in table 4). These findings are in line with the findings reported in table 3 above. Further, the findings show that gender critical mass **is** positive and significant determinant of earnings quality in Egyptian market ($p<0.1$: refer to column 1-4) in line with (Arayssi et al., 2016; Elkalla, 2017; Hoang et al., 2017; Lanis et al., 2017; Latif, 2018). Similarly, board independence has positive and significant impacts on FREQ ($p<0.1$: refer to column 1-4 in table 4). However, we did not find any significant association between gender dummy and gender dummy-2, and FREQ. Therefore, the findings strongly support the presence of gender critical mass on corporate board to ensure high reported earning quality in Egypt. At the same time, the findings depict that presence of one or two female serve as tokenism on corporate board in line with earlier studies(Hoang et al., 2017; Latif, 2018). However, we find moderate relation between board independence and firm's reported earning in Egypt in line with earlier findings.

In column 1, we include two interaction terms between CEO duality and board vigilance (board independence and gender critical mass) to observe the constraining role of board vigilance. The interaction term between CEO-duality and board independent remains negative and significant ($\beta=-0.110$& $p<.05$). In comparison, we find no change in coefficient and level of significant in comparison to findings of CEO-duality ($\beta=-0.108$ & $p<.05$). Further, the coefficient value of board independence changes from positive ($\beta=-0.108$ & $p<.05$) to negative in interaction term. This implies that board independence does not substitute or weaken the negative association between CEO-duality and FREQ(Abad et al., 2018; Amin et al., 2019; Perafán Peña, 2018). However, the findings for interaction term between CEO-duality and gender critical mass show positive and significant impact on FREQ ($\beta=0.226$ & $p<.01$: refer to column 1 in table 4). The positive and significant coefficient value of interaction term indicates that presence of gender critical mass serve as substitution for negative relation between CEO-duality and FREQin Egypt.

In column 2, we include interaction terms between CEO-tenure and board vigilance (board independence and gender critical mass).The findings show that the interaction term between CEO-tenure and board independence is negative and insignificant (refer to column 2 in table 4). Based on the finding of this interaction term, it is concluded that board independence does not substitute or weaken the negative association between CEO-tenure and FREQ(Zhang, 2009). This implies that board independence cannot be used as a substitution mechanism for negative association between CEO-tenure and FREQ (Bao & Lewellyn, 2017). In addition, we find that interaction term between CEO-tenure and gender

diversity is positive and significant (β=0.211 & p<.01; refer to table 4). The findings support the maxim that gender critical mass substitutes the negative and significant association between CEO-tenure and FREQ in line with earlier findings (Misangyi & Acharya, 2014; Oh & Chang, 2018).

In column 3, we employ interaction terms between CEO-ownership and board vigilance (board independence and gender critical mass) for their association with FREQ. The interaction term between CEO-ownership and board independence is negative and insignificant (refer to column 3 in table 4). The finding implies that The board independence does not substitute or weaken the negative association between CEO-ownership and FREQ (Abad et al., 2018; An, 2017; Ozili, 2016). At the same time, we find that interaction term between CEO-ownership and gender critical is positive and significant (β=0.199& p<.01; refer to table 4). The findings also support the substitution role of gender critical mass for negative association between CEO-ownership and FREQ. Lastly, we use interaction terms between CEO-political connection and board vigilance (board independence and gender critical mass) for the negative association between CEO-political connection and FREQ. The findings depict that interaction term between CEO-political connection and board independence is negative and significant (β=-0.148 & p<.05; refer column 4 in table 4). So, board independence neither weakens nor substitutes the negative association between CEO-political connection and FREQ. Importantly, we find that interaction term between CEO-political connection and gender critical mass is positive and significant (β=0.199 & p<.01; refer to table 4) (Misangyi & Acharya, 2014; Oh & Chang, 2018). So, our findings support the substitution role of gender critical mass for CEO-political connections. We also included control factors, year effect and industry effect in model 2. For brevity purpose, we did not show the findings of control factors as we are interested mainly in interaction terms.

Table 4: Board Vigilance and Firm's Reported Earnings Quality (System GMM Regression)

	Column 1		Column 2		Column 3		Column 1	
Board-vigilance	Coefficient	S.E	Coefficient	S.E	Coefficient	S.E	Coefficient	S.E
Board independence	0.0327*	0.0186	0.0338*	0.0188	0.0367*	0.0190	0.0309*	0.1840
Gender-dummy (t-1)	-0.009	0.0083	-0.009	0.0084	-0.009	0.0085	-0.009	0.0821
Gender-2 (t-1)	0.011	0.0092	0.011	0.0093	0.011	0.0094	0.011	0.0910
Gender critical mass (t-1)	0.242***	0.0789	0.242***	0.0798	0.242***	0.0807	0.242***	0.7806
CEO power Dynamics								
CEO duality	-0.108**	0.0487	-0.1082**	0.0492	-0.1082**	0.0498	-0.1082**	0.4818
CEO tenure	-0.099**	0.0468	-0.0994**	0.0473	-0.0994**	0.0478	-0.0994**	0.4630
CEO ownership	-0.068*	0.0362	-0.0681*	0.0366	-0.0681*	0.0370	-0.0681*	0.3581
CEO political connections	-0.155***	0.0444	-0.155***	0.0449	-0.155***	0.0454	-0.155***	0.4393
Interaction terms								
CEO duality × Board independence	-0.110**	0.0531						
CEO duality × Gender critical mass	0.226***	0.0382						
CEO-tenure × Board independence			-0.006	0.0056				
CEO-tenure × Gender critical mass			0.211***	0.0667				
CEO ownership× Board independence					-0.0564	0.4453		
CEO ownership× Gender critical mass					-0.0681*	0.0398		
CEO political connections × Board independence							-0.148***	0.0392
CEO political connections × Gender critical mass							0.198**	0.0884
Control factors	**Included**		**Included**		**Included**		**Included**	
Year and industry dummy	Yes		Yes		Yes		Yes	
F (Prob > F)	614.16*** (p= 0.000)		772.48***(p= 0.000)		593.09*** (p= 0.000)		690.14*** (p= 0.00)	
Arellanoe-Bond test AR(1) (z, p-value):	-1.95*** (p=0.004)		-1.89*** (p=0.000)		-1.78*** (p=0.002)		-2.03*** (p=0.000)	
Arellanoe-Bond test AR(2) (z, p-value):	-1.122 (p= 0.355)		-0.981 (p= 0.436)		-1.063 (p= 0.421)		-1.054 (p= 0.285)	
Hansen test (Chi-square, p-value):	134.08 (p=0.206)		155.14 (p=0.266)		132.82 (p=0.191)		148.82 (p=0.218)	
We used different model for each interaction term. Control factors are included in our main model. ***, ** and * represent level of significance at 1%, 5% and 10% respectively.								

6. Discussion of Main Findings

The study mainly addresses two concerns highlighted by the literature. First, we investigate the role of CEO power dynamics in FREQ in Egypt. The findings show that CEO power dynamics (CEO duality, tenure, ownership and political connection) are negatively associated with FREQ in Egypt. The findings may be attributed to higher information asymmetry or poor shareholders' protection rights in Egypt. In Egyptian market, CEO often uses his discretionary power to protect his entrenched benefits or to provide benefits to a special class of shareholders. Importantly, we found that the negative role of political connected CEO is more pronounced ($p<.01$) in FREQ. This may be attributed to the political structure in Egypt. Our findings strongly support the maxim that politically connected CEOs manipulate firm earnings in economies where shareholders protection is on the weaker side. In conclusion, our findings are in line with the view that CEO power dynamics are negatively associated with poor FREQ in Egypt in contrast to earlier findings where researchers documented positive impacts of CEOs power dynamics on FREQ.

Secondly, the study also explores constraining role (either weakening or substitution) of governance mechanisms. The study split the moderating (weakening) and substitution role of corporate governance in Egypt. Findings show that board independence weakens the negative association between CEO tenure and CEO ownership, and FREQ in Egypt. At the same time, we find that board independence does not weaken the negative association between CEO duality, CEO political connections, and FREQ. Importantly, we find that gender critical mass serve as substitution mechanism in Egyptian market. Our findings strongly support the critical mass theory and provide evidences supporting that gender critical mass totally substitute the negative impacts of CEO power dynamics (CEO duality, tenure, ownership and political connection) on FREQ.

6.1 Additional Tests

6.1.1 Difference in Difference Approach

In current study, we used difference-in difference approach to support our main findings following (Rezaee & Tuo, 2019). We were unable to construct a single measure of CEO power dynamics as we used four different power dynamics and the probability of shielding effect. The firms having CEO duality may have politically connected CEO or higher/low CEO tenure or low/higher ownership. To address the concern, we constructed four different panels (refer to table 5). We only report main findings and used t-test to find the difference in FREQ because FREQ is our main variable of concern. In panel A, we find that firm with CEO dual role have significantly poor FREQ, fever board meetings and poor audit quality (refer to panel A: t-test difference in column 3). Similarly, we mean split criteria for construction panel B. The findings show that lower CEO ownership leads to higher FREQ and higher audit quality (refer to panel B: t-test difference in column 6). In panel C, we again used median split criteria to construct CEO higher and lower subsamples. The findings of t-test in column 9 show that higher CEO tenure leads to poor significantly FREQ in Egypt. Similarly, higher CEO tenure leads to poor audit quality and market to book value. Lastly, in panel C, we again split the sample into CEO political connected and non-political connected firms in Egypt. Our findings depict that politically connected

CEOs are more involved in earnings management. Hence, the FREQ of these firms is significantly different from their counterpart. Meantime, we find that these firms have significantly poor FREQ and lower market to book value (refer to panel C: t-test difference in column 12). In conclusion, we find that CEO power dynamics are negatively and significantly associated with poor FREQ in Egypt. These findings also support our main findings that state that powerful CEOs are more involved in poor FREQ in Egypt.

6.1.2 Propensity Score Matching Approach

Females may prefer to join high growth, profitable and larger firms (Zalata et al., 2019). To address this concern, we used a propensity score matching approach for heterogeneities between sample firms. For the purpose, we used nearest neighbourhood approach to match gender critical mass firms with those of their counterpart(Nekhili et al., 2018; Zalata et al., 2019). We used Board size, ROA, Firm size and Market-to-Book Ratio. In table 1, we mentioned the year observation of gender critical mass firms that is matched through propensity matched firms leading to unbalanced data set since the number of gender critical mass firms remained changing. In addition, we allow only those firms in our main model that has gender critical mass presence on board for at least three years so that the effects of gender critical mass may normally be analysed. This also restricts our main sample in this context.

Importantly, we regress different model to justify substitution role of gender critical mass based on propensity matched sample (refer to table 6 below). The findings show that role of board vigilance is quite similar as presented in our main finding (refer to table 4). We only find minor variation in coefficient value which is quite negligible. At the same time, the results of CEO power dynamics are also robust to our main findings in table 4. Only minor variations in coefficient values are observed. Lastly, we find that interaction term between CEO power dynamics and gender critical mass are positive and significant. Hence, our main findings robust that gender critical mass serves as substitution mechanism for negative association between CEO power dynamics and FREQ in Egypt.

Table 5: T-Test Differences in CEO Power Dynamics

	Panel A			**Panel B**		
	1	2	3	4	5	6
	CEO-duality	CEO-non-duality	Difference (1-2)	CEO-ownership> mean value	CEO-ownership< mean value	Difference (1-2)
Firm's reported earnings quality	0.0682	0.1674	-0.099**	0.0702	0.1781	-0.108**
Board meeting	0.0414	0.0623	-0.021**	0.0431	0.0663	-0.023
Audit quality	0.0943	0.2862	-0.192**	0.0982	0.3045	-0.206**
ROA	0.102	0.112	-0.010	0.1063	0.1191	-0.013
Market-to-Book Ratio	1.202	1.264	-0.062	1.2521	1.3447	-0.093
	Panel C			**Panel D**		
	7	8	9	10	11	12
	CEO-tenure> mean value	CEO-tenure< mean value	Difference (1-2)	CEO-political connection	CEO-political connection	Difference (1-2)
Firm's reported earnings quality	0.0731	0.1895	-0.116**	0.0762	0.2015	-0.125***
Board meeting	0.0449	0.0705	-0.026	0.0468	0.0750	-0.028
Audit quality	0.1023	0.3239	-0.222**	0.1066	0.3446	-0.238***
ROA	0.1107	0.1268	-0.016	0.1153	0.1348	-0.020
Market-to-Book Ratio	1.3043	1.4305	-0.126*	1.3586	1.5218	-0.163***

We constructed four different panel based on CEO power dynamics as it is not possible to construct a single panel due to mixing of one power dynamic with another.
Panel A and D are constructed based on dummy variable criteria; whereas, panel B and C are constructed following median split criteria.
For findings purpose, we used t-test criteria in mean value of firm's reported earnings quality, board meeting, audit quality, ROA and market-to-Book Ratio.
For brevity, purpose, we only include main variable of interest.
*and ** represents significant level at 5% and 1% respectively

Table 6: Propensity Matching Score (Gender Critical Mass Firms)

	Column 1	Column 1	Column 1	Column 1
Board-vigilance	Coefficient	Coefficient	Coefficient	Coefficient
Board independence	0.0411*	0.0377*	0.0298*	0.03145*
Gender-dummy (t-1)	-0.004	-0.004	-0.010	-0.008
Gender-2 (t-1)	0.015	0.015	0.016	0.019
Gender critical mass (t-1)	0.251***	0.208***	0.233***	0.199***
CEO power Dynamics				
CEO duality	-0.163**	-0.156**	-0.119**	-0.181**
CEO tenure	-0.122**	-0.103**	-0.0967**	-0.105**
CEO ownership	-0.092*	-0.072*	-0.0609*	-0.089*
CEO political connections	-0.165***	-0.149***	-0.171***	-0.166***
Interaction terms				
CEO duality × Gender critical mass	0.259***			
CEO-tenure × Gender critical mass		0.266***		
CEO ownership× Gender critical mass			0.314***	
CEO political connections × Gender critical mass				0.186**
In this table, we only presented main findings. The findings of control factors are not presented in the table. *, **and *** represent significant level at 10%, 5% and 1% respectively.				

6. Conclusion and Recommendations

The study is conducted to address two important concerns in the context of FREQ in emerging markets. At the first stage, we highlighted the role of CEO power dynamics (CEO duality, CEO tenure, CEO ownership and CEO political connections) in FREQ in Egypt. Our findings support the maxim that a powerful CEO is more involved in earnings management and the firms' with powerful CEOs are more likely to exhibit poor FREQ. Our findings contradict with earlier findings of Oh & Chang, (2018) who demonstrated positive impacts of CEO power on FREQ on a global sample (DeBoskey et al., 2019; Francis et al., 2008; Lisic et al., 2016). Our results may be attributed to poor governance mechanisms in Egypt; whereas, earlier literature is based on economics with comparatively strong governance mechanisms (Hasnan et al., 2020). Among the four CEO power dynamics variables, we find that the negative role of CEO duality and political connections are more pronounced. Our findings are mainly attributed to the poor governance structure and more political involvement in firms' management. Poor shareholders' protection laws in Egypt are also one of the reasons that allow CEOs to manipulate earnings. In the second phase, we highlighted the constraining role of board vigilance for negative association between CEO power dynamics and firms' reported earning quality in Egypt. For the

purpose, we use board independence and gender critical mass as proxy for corporate governance in Egyptian market for board vigilance. Our findings depicted that board independence weakens the negative association between two CEO power dynamics (CEO ownership and CEO tenure) and FREQ in Egypt in line with earlier findings of (Kweh et al., 2020). At the same time, we find no evidence for construing role of board independent between other two CEO power dynamics (CEO duality and CEO political connections) and FREQ in Egypt. The insignificant role of board independence may be an outcome of strong political interferences in Egypt whereas other economies have comparatively less such influences. Further, our findings support the maxim that gender critical mass substitute the negative relation between CEO power dynamics and FREQ in Egypt. Our findings are also robust to reverse causality, difference-approach and propensity matching score.

Based on these findings, we conclude that powerful CEO is more involved in earnings management that results in poor FREQ. Therefore, there is a need to have a construing mechanism for these negative effects of CEO power dynamics (Bao et al., 2019). Though, board independence serves as a weakening mechanism for negative association between CEO ownership and tenure, and FREQ, yet its effects diffuses when CEO exercises duality or has political connections. On the other hand, our evidences confirm the notion that presence of fever women on corporate board serve as token on corporate board. However, we find a strong support for presence of gender critical mass as substitution for negative consequences of CEO power dynamics in Egypt. Therefore, the stakeholders are advised to ensure gender critical mass in firms where CEO is powerful or the firms are more involved in earnings management.

7. Contribution of the Study

The study has several contributions to the literature. First, the study contributes to upper echelons theory (UET) by highlighting the role of top executives in firm reported earning quality in line with earlier studies (Hiebl, 2014; Nielsen, 2010). The study confers that the CEO as upper echelon manipulates firm's resources for personal benefits in Egypt. Therefore, we argue that there are trade-offs in the framework of the costs and benefits of convening more decision-making power to a CEO in line with earlier studies (Chatterjee & Hambrick, 2010a; Hong et al., 2016). Our findings support gender critical mass theory as the role of gender critical mass substitute the negative association between CEO power dynamics and FREQ. Thirdly; we provide empirical evidence showing the negative use of CEO power in the context of FREQ in Egyptian market. For the purpose, we use four measures of CEO power (CEO duality, ownership, tenure and political connections) and the findings show their negative and significant association with FREQ. Once the negative relation is established between CEO power dynamics and FREQ, we further explore the role of corporate governance mechanism as source of weakening or substitution mechanism (Hong, Li, & Minor, 2016). For this purpose, we use board independence and gender critical mass as a measure of board vigilance to weaken or substitute the negative impacts of CEO power dynamics on FREQ.

8. Limitations and Future Directions

Our research also has some limitations. First, further study can use other characteristics of upper echelon like education and gender to enhance the current study in Egyptian context. Second, it is limited to Egyptian context and findings may be carefully interpreted due to unique characteristics of Egyptian economy. It can be extended to other economies so that it has maximum support. Thirdly, we did not include the financial sectors and our findings can't be justified for the financial sector. The researchers can consider the role of CEO power dynamics for corporate social responsibility performance, financial performance, firm frauds etc.

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Appendix A
Variables and Measurement

Variables	Measurement
CEO-duality	Dummy variable equal to 1 if CEO also serve as chair otherwise 0
CEO-ownership	Percentage of share held by CEO
CEO-tenure	Number of years CEO serving in that firm
CEO-political connection	Dummy variable equal to 1 if CEO is politically connected otherwise 0
CEO-education	CEO education categories in four categories (bachelor, Master, Post-doc and professional)
Board independence	Percentage of independent directors
Gender critical mass	Dummy variable equal to 1 if firms have gender critical mass (three female on board) otherwise 0
Board size	Number of member of corporate board
Board meeting	Number of meeting in a year
Audit quality	Dummy variable that equals to 1 if a firm is audited by top 5, otherwise 0
ROA	Return of asset mentioned in financial statement
Firm size	Log of total assets
Assets Growth	Current asset mines last year assets scaled by last year assets
Market-to-Book Ratio	Market to book value mention if financial report
Dividend payout ratio	Dividend payout ratio mentioned in financial report