

Does CEO power moderate the link between labor productivity and financial performance: agency theory or stewardship theory

Labor
productivity
and financial
performance

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Abstract

Purpose – This study investigates the moderating effect of CEO power on the relationship between labor productivity and financial performance in the Tehran Stock Exchange (TSE).

Design/methodology/approach – In this study, the power of the CEO variable was measured using the power index method and its effect on the relationship between labor productivity and financial performance was tested using a multivariate regression. The study sample consisted of 1,040 observations and 130 firms listed on the TSE over an eight-year period between 2012 and 2019. Panel data and appropriate statistical techniques were applied to estimate models. In this study, Tobin's Q and return on assets (ROA) are the two variables used to measure financial performance.

Findings – The results of the hypotheses show that the link between labor productivity and financial performance based on Tobin's Q and ROA strengthens with increasing CEO power. Thus, the stewardship theory is approved on the TSE. In addition, CEO power and labor productivity have a positive impact on firm performance.

Research limitations/implications – To the best of the author's knowledge, this is the first study to examine the moderating impact of CEO power on the relationship between labor productivity and firms' financial performance in emerging capital markets. Therefore, the results of this study can be used by investors, board of directors, policymakers and regulations.

Practical implications – Taking into consideration the sanctions on Iran's economy during the study period and to increase the productivity and financial performance of the company, the results of this study can provide a practical guide for the board of directors to consider the characteristics of CEO power and how to choose it in the emerging capital market. Additionally, the study results show that investors should choose companies with strong CEO to invest in the Iranian capital market.

Originality/value – The current study is the first study conducted in an emerging economy to examine the moderating impact of CEO power on the link between labor productivity and financial performance.

Keywords CEO power, Labor productivity, Financial performance, Agency theory, Stewardship theory

Paper type Research paper

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1. Introduction

One topic of interest for researchers over the last decade is the power of the CEO and its economic consequences for the company. The position of the CEO is a source of power and the CEO has always been considered one of the most powerful in the company. In addition, CEO plays an important character in strategic management of the company when they have more power and can exert their will over others (Finkelstein, 1992; Adams *et al.*, 2005). The CEO power has potential influence on a company's decisions. Bandiera *et al.* (2012) also believed that power comes from the position and nature of the duties that the CEO is assigned to perform. Finkelstein (1992) and Adams *et al.* (2005) define CEO power as the ability of managers to examine and overcome conflicting internal and external situations and to influence the critical decisions of the organization. The CEO looks to create wealth and maximize future opportunities for stakeholders (Papadakis, 2006). Finkelstein (1992) provided four dimensions to create CEO power, which may explain how CEO power is generated: (1) structural power, (2) ownership power, (3) expert power and (4) prestige power. Therefore, understanding the role of CEO power in the relationship between labor productivity and financial performance is necessary to develop existing theories on CEO power.

Regarding the issue of CEO power, many studies emphasized the corporate governance literature and most of the studies have examined the impact of CEO power on firm's outcomes. The results on the impact of CEO power on firm's financial performance are contradictory. A review of previous literature shows that a positive effect of CEO power on a firm's outcomes can be achieved by considering the moderating role of the CEO power variable (Breit *et al.*, 2019; Adams *et al.*, 2005; Sheikh, 2018; Alodat *et al.*, 2022). Some studies show that CEO power has a negative impact on company performance (Veprauskaitė and Adams, 2013; Bebchuk *et al.*, 2011). In general, in order to explain the behavior of the CEO's power, two dominant theories (i.e. agency and stewardship) have been used which are based on theories of corporate governance. Therefore, this is a research gap and CEO power needs further investigation by considering the moderating role.

In relation to the research gap and its relevance, this study offers experimental evidence that the effect of CEO power on the link between labor productivity and financial performance. Several reasons can be mentioned to investigate this issue in the Tehran Stock Exchange (TSE). First, the stewardship theory rejects the assumptions of the agency theory. The stewardship theory is based on social psychology theory. Considering human collective behavior, it is assumed in the stewardship theory that managers seek to achieve goals that maximize the company's interests and their decisions are aimed at personal interests. Davis *et al.* (1997) believed that CEO who has a strong strategic view and responsibility for the realization of the company's goals can impose less conflict of interest and less monitoring cost on the company. This, in turn, improves the development of distinctive core capabilities, competitive advantages and higher financial returns over time (Davis *et al.*, 1997). Therefore, when the CEO is strong, the organization's resources are directed and coordinated with the interests of stakeholders. Thus, in response to the question of whether the behavior of CEOs in the Iranian capital market can be explained based on the stewardship theory, it is necessary to gather empirical evidence. Second, in the previous study, the moderating variables of CEO power did not examine the relationship between labor productivity and company performance. Therefore, the lack of empirical evidence motivated this study. In addition, in a situation where the Iranian economy is subjected to economic sanctions, attention to labor productivity in the Iranian economic environment is of great importance for the TSE because increasing labor productivity can lead to increased production and sales and ultimately increase financial performance. In addition, even if economic sanctions (i.e. commercial and financial penalties applied by one or more countries against a targeted self-governing state, group or individual) and pressures on Iran are removed, the importance and attention of Iranian managers to improve labor productivity will not decrease. Our study aims to fill this gap by examining the impact of moderating variables of CEO power on the relationship between labor productivity and financial performance. This

study contributes to the literature on CEO power, labor productivity and financial performance in an emerging economy. Most of the research has been conducted in developed countries and competition between companies has been the main motivation to increase labor productivity. However, the present study was conducted during a unique period because economic pressures and sanctions have created problems for the TSE. Therefore, attention to labor productivity in the context of sanctions has not yet been examined. Finally, from the author's point of view, the investigation of the link between labor productivity and financial performance by considering the role of CEO power is the first study done in this field. Using a sample of 130 Iranian listed companies over the period 2012–2019, we found that the relationship between labor productivity and financial performance improved as CEO power increased. In this study, fixed-effect panel regression was applied to test the study hypotheses by considering the observed cross sections of the same individuals at different points in time. To investigate the robustness of the results, I used the GMM technique. The estimation results showed that there is no difference between GMM and panel techniques. The structure of the rest of the study is as follows: [Section 2](#), we discussed related literature review and hypotheses development. [Section 3](#) suggests the models and variables. [Section 4](#) presents the main results. Finally, conclusions are present in [Section 5](#).

2. Literature review and hypotheses development

2.1 Labor productivity and financial performance

Productivity and performance are important concepts that measure the success of an organization in achieving its goals. Productivity is defined as the efficient use of an organization's resources (OECD, 2001). Productivity is defined as a company's ability to use inputs to achieve the highest output. [Heshmati and Rashidghalam \(2018\)](#) believe that labor is the important part to measuring productivity. The authors argued that the labor productivity factor can be used to calculate efficiency in production procedure, which states the generation of a firm with higher value-added per unit of a worker. [Velnampy \(2011\)](#) suggested that there is a very high correlation between productivity and performance. The results of previous studies indicate that productivity is an important and effective factor in company performance ([Nguyen et al., 2019](#); [Yazdanfar, 2013](#); [Farnham and Hutchinson, 2011](#); [Martikainen et al., 2009](#)). [Yousaf \(2022\)](#) found that labor productivity has a positive effect on company performance. [Javeed et al. \(2021\)](#) revealed that CEO power positively influences firm performance. [Bandiera et al. \(2020\)](#) suggested that firms with leader CEOs are, on average, more productive, and that this difference arises only after the CEO is hired. [Amutabi and Wambugu \(2020\)](#) claimed that profitability depends on labor productivity. [Salman and Yazdanfar \(2012\)](#) found that productivity has a positive and significant effect on firm's financial performance, as measured by return on assets (ROA). [Agiomirgianakis et al. \(2006\)](#) found that labor productivity, firm size and firm age have a positive and significant impact on financial performance, measured by ROA. [Palia and Lichtenberg \(1999\)](#) found a strong positive link productivity and financial performance, which suggesting that the capital market rewards companies with increase productivity. We proposed the following hypothesis:

H1. The labor productivity has a positive impact on financial performance

2.2 CEO power and financial performance

The issue of top management power, including CEO power and its relationship with company results, is a topic of interest for researchers in strategic management, organizational and financial behavior. The CEO is a key position in corporate governance in every business, so CEO power influences corporate decision-making. The agency theory and stewardship theory, which are theories of corporate governance, were used to explain the effect of the moderator variable of CEO power. Studies where the CEO power has a negative impact financial performance have used the agency theory to explain it ([Theng and Hooy, 2017](#);

Veprauskaitė and Adams, 2013; Adams *et al.*, 2005). The agency theory assumes an economic model of man; agent behavior is based on self-interest and may conflict with the principal's interest (Madison, 2014). The agency theory points out that the separation of ownership from management creates a conflict of interest (Jensen and Meckling, 1976). Hence, the managers try to maximize their self-interest when they want to make decisions. Accordingly, it is expected that the moderator variable of CEO power causes decisions to be in the direction of self-interest (e.g. opportunistic behavior), therefore, has a negative impact on firms' performance. In summary, based on the agency theory, it can be expected that a strong CEO with the advantage of information asymmetry can influence the board of directors and provide their personal benefits at the expense of shareholder utility (e.g. see Morse *et al.*, 2011). The results obtained from previous researches are in the same direction as the agency theory (Theng and Hooy, 2017; Veprauskaitė and Adams, 2013; Bebchuk *et al.*, 2011; Liu and Jiraporn, 2010). Adams *et al.* (2005), using the agency theory, show that CEO power has a negative effect on financial performance.

Contrasting the agency theory is the stewardship theory. The previous study revealed that the stewardship theory can be useful in explaining the positive impact of CEO power on financial performance (Davis *et al.*, 1997; Qiao *et al.*, 2017; Fang *et al.*, 2020). The stewardship theory suggests that CEOs act as stewards because they are trustworthy, collectivist and pro-organizational individuals, who behave in the best interest of the organization by minimizing their own self-serving behavior (Davis *et al.*, 1997). This implies that the moderator variable of CEO power improves firm operating efficiency, lowers financing costs and increases firm productivity (Qiao *et al.*, 2017). The results obtained from previous researches are in the same direction as the stewardship theory (Fang *et al.*, 2020; Wal, 2019; Saidu, 2019; Qiao *et al.*, 2017).

The stewardship theory assumes a humanistic model of man; steward behavior is based on serving others and therefore aligns with the principal's interest. Governance structures that empower stewards are prescribed to facilitate continued alignment of interests (Madison, 2014). The stewardship theory suggests that CEOs are motivated through intrinsic awards and will balance their interests with those of other stakeholders (Martin and Butler, 2017). The stewardship theory assumes that CEOs identify with the mission of their organization and are intrinsically motivated to pursue organizational goals. CEOs with greater than typical power will better advance the interests of the firm and its shareholders (Qiao *et al.*, 2017). In addition, Breit *et al.* (2019) found that a moderator variable of powerful CEOs may have a positive impact on a firm's outcomes under certain circumstances. Adams *et al.* (2005) suggested that powerful CEOs better implement their decisions and that this has a positive (negative) effect when the CEO makes good (bad) decisions. In general, the literature review shows that the CEO's power based on the stewardship theory has a positive and significant effect on the company's performance (Chen, 2014; Hu and Alon, 2014; Javed *et al.*, 2021; Brahmana *et al.*, 2020). Additionally, previous studies have shown that labor productivity affects company performance (Nguyen *et al.*, 2019; Yazdanfar, 2013). In short, the logic and reasons for proposing the research hypothesis based on the stewardship theory are as follows:

Ceteris paribus, increases product quality and labor productivity leads to additional revenue; hence a firm earns more profits (Farnham and Hutchinson, 2011). Velnampy (2011) indicates that the correlation between labor productivity and financial performance is high. In addition, the stewardship theory confirms the positive effect of CEO power on company performance. Thus, it can be concluded that the labor productivity and the power of the CEO affect the performance of the company simultaneously. Considering the stewardship theory and previous studies (Nguyen *et al.*, 2019; Yazdanfar, 2013; Yousaf, 2022), we argued that the role of moderator CEO power can improve the relationship between labor productivity and financial performance. The result of applying these theories is that employees try to use the firm's resources effectively and efficiently to create value for stakeholders. Thus, we expect that according to the stewardship theory, a strong CEO can optimally use the company's

limited resources by strengthening coordination, cooperation and process control among employees (i.e. increasing productivity), ultimately leading to an increase in the company's financial performance. Thus, we proposed the following hypothesis:

- H2. CEO power has a positive effect on the relationship between labor productivity and company performance.

3. Research methodology

3.1 Sample selection

The data of this research were collected from the annual financial reports of the TSE between 2012 and 2019. Information related to financial statements and audit reports is extracted from the CODAL database [1]. Table 1 presents the following steps were performed to obtain the final sample. By applying those criteria, 130 companies, including 1,040 firm-year were selected from the TSE. Table 1 (available in supplementary material to the article)

3.2 Models and variables

This study examines two hypotheses. In the [first hypothesis](#), I used [model \(1\)](#). It examines the impact of labor productivity on financial performance. In the second hypothesis, I used [model \(2\)](#). It examines the effect of the interaction variable of labor productivity and CEO power on company performance. The models are as follows:

$$\begin{aligned} PERFORMANCE_{it} = & \beta_0 + \beta_1 EMPRO_{it} + \beta_2 GENDER_{it} + \beta_3 TENURE_{it} + \beta_4 SIZE_{it} \\ & + \beta_5 LEV_{it} + \varepsilon_{it} \end{aligned} \quad (\text{Model 1})$$

$$\begin{aligned} PERFORMANCE_{it} = & \beta_0 + \beta_1 CPS_{it} + \beta_2 EMPRO_{it} + \beta_3 CPS_{it} * EMPRO_{it} + \beta_4 GENDER_{it} \\ & + \beta_5 TENURE_{it} + \beta_6 SIZE_{it} + \beta_7 LEV_{it} + \varepsilon_{it} \end{aligned} \quad (\text{Model 2})$$

In [models \(1\)](#) and [\(2\)](#), the hypothesis is not rejected when the coefficient of $EMPRO_{it}$ and $CPS_{it} * EMPRO_{it}$ are significant.

3.2.1 Variables. The dependent variable in all models is company performance, which is calculated based on Tobin's Q and ROA ratios. The independent variable of research in the [model \(1\)](#) is calculated based on studies of [Stuebs and Sun \(2010\)](#) and [Breit et al. \(2019\)](#). The labor productivity (i.e. $EMPRO_{it}$) is calculated by dividing net sales by the number of employees. The moderating variable in research models is CEO power (CPS). The control variables of this study were selected based on the data available in the Iranian capital market and previous studies ([Bebchuk et al., 2011](#); [Liu and Jiraporn, 2010](#); [Stuebs and Sun, 2010](#); [Breit et al., 2019](#)). Control variables include gender of CEO (GENDER), CEO tenure (TENURE), firm size (SIZE) and leverage ratio (LEV). Table 2 shows how to calculate the variables of the study. Table 2 (available in supplementary material to the article).

4. Results

4.1 Descriptive statistics

The results of the descriptive statistics of the research variables are shown in Table 2. The results of the descriptive statistics provide information about the mean, median, standard

deviation, maximum and minimum. Descriptive statistics (mean and standard deviation) of Tobin's Q variable are 1.531 and 0.577, respectively. The average Tobin's Q in the TSE during the study period is higher than one. One of the reasons for this high-performance criterion in the Iranian capital market is that in most companies the value of firm assets is calculated basis on historical cost and financial reports are not adjusted based on inflation. The mean and standard deviation of the CEO power (CPS) variable during the research period are 0.237 and 0.430, respectively. The results show that the sample of research companies, on average 0.237 has high CEO power (CPS). The results of the labor productivity variable show that in the Iranian capital market, the net sales of companies are on average 1.657 times the number of laborers and the results of the gender variable show that in the TSE, about 91% of men are in the position of CEO. Table 3 (available in supplementary material to the article).

4.2 Regression results

In Table 3, the results present the model diagnostic test results (i.e. the F-Limer and the Hausman tests). To determine the panel or pooled data method, there is a requirement to use the F-Limer 's test. Provided that the panel data method is chosen, it is necessary to use the Hausman test to choose between random effects or fixed effects. The results of the tests indicated that the fixed-effects method was used for all models. Table 4 available in supplementary material to the article.

In this study, to check the presence of autocorrelation and heteroskedasticity in the residual of the fitted models, Wooldridge serial correlation and likelihood ratio test (LRT) tests were used, respectively. Table 4 presented the results of these tests. The results of the heteroskedasticity test show that all the models have heteroskedasticity. Therefore, the generalized least squares (GLS) was used to solve the heteroskedasticity. In addition, in all the models, there is autocorrelation for performance variables. Therefore, the AR (1) has been added to research models to solve the autocorrelation. Table 5 (available in supplementary material to the article).

Table 5 presents the results of testing the research hypotheses for the dependent variable of financial performance. Considering two variables to measure financial performance (i.e. Tobin's Q and ROA), all models are presented separately for the dependent variables. Table 6 (available in supplementary material to the article).

The [first hypothesis](#) of study indicates that labor productivity has a positive effect on financial performance. The coefficient and *t*-statistic for the variable of Tobin's Q is 0.048 and 4.325, respectively. Also, the coefficient and *t*-statistic for the variable of return on assets (ROA) is 0.035 and 5.239, respectively. At the *p*-value = < 5%, labor productivity has a positive and significant effect on financial performance. Thus, the consistent with those reported by [Yousaf \(2022\)](#), [Amutabi and Wambugu \(2020\)](#) and [Nguyen et al. \(2019\)](#), the hypothesis of study is accepted. According to the [second hypothesis](#), the moderator variable of CEO power increases a company's financial performance. Based on the dependent variable of Tobin's Q, the coefficient and *t*-student statistics is a moderator variable (i.e. CPS*EMPRO) 0.011 and 4.861, respectively. Also, when the [second hypothesis](#) of the research is tested with the dependent variable of ROA, the coefficient and *t*-student statistics is the moderator variable (i.e. CPS*EMPRO) 0.029 and 5.385, respectively. At the *p*-value = < 5%, the interactive variable has a positive and significant effect. This result shows that a strong CEO can strengthen the link between labor productivity and financial performance in the TSE. Therefore, the [second hypothesis](#) of the research is accepted. In addition to, further analysis shows that in both models, the CEO power variable is positive and significant. Thus, the financial performance of the TSE has increased with an increase in CEO power. The adjusted R-squared in [model \(2\)](#)

is equal to 0.448 and 0.489, which indicates that approximately 44 and 48% of the dependent variable changes are explained through independent and control variables. *F*-statistic shows that the estimated regression is valid in both models and the results are reliable.

4.3 Additional analysis for CEO power

To increase confidence in the robustness of the study findings and decrease endogeneity concern, Table 6 presents the results of estimating [model \(2\)](#) using the generalized method of moments (GMM) technique. [Arellano and Bover \(1995\)](#) show that GMM technique can eliminate the heteroscedasticity by using the first differences. The panel data deals with heterogeneity by taking the first differences and eliminating the individual effect, making the estimations unbiased. It also addresses the problem of endogeneity. Thus, [Arellano and Bover \(1995\)](#) suggested that the lagged independent variables be added as an instrumental variable to the model. Also, The Arellano–Bond test for autocorrelation of model error distribution is used. Finally, the Sargan test of over-identifying restrictions applied to check the validity of the instrument and Wald tests used overall significance in regression. The results indicate that the effect of CEO power on the relationship between labor productivity and financial performance is positive and significant. Thus, the [second hypothesis](#) of this study is not rejected. (see [Table 7](#)) [Table 7](#) (available in supplementary material to the article).

5. Conclusion

The role of powerful CEO in company performance has been increasingly well-investigated over time. Powerful CEO with power characteristics such as structural power, ownership power, expert power and prestige power can influence correct decision-making regarding the use of organizational resources. Decisions are made to increase the company's productivity. Accordingly, the main purpose of this study is to investigate the effect of CEO power on the relationship between labor productivity and financial performance of the TSE during the period 2012–2019. To achieve the research purpose, two hypotheses were tested. Based on diagnostic tests, fixed-effects method was used for all research models. These results were confirmed through GLS and GMM regressions. Empirical evidence for the [first hypothesis](#) indicates that labor productivity has a positive effect on the financial performance (Tobin's Q and ROA) of the TSE. The result of the [second hypothesis](#) is that CEO power moderates the relationship between labor productivity and financial performance which is measured based on Tobin's Q and ROA. Considering the empirical evidence from the research hypotheses test, to increase the financial performance, it is necessary for companies listed on TSE to implement the most suitable strategies to increase the labor productivity. Also, a strong CEO can strengthen and improve the relationship between labor productivity and financial performance with greater planning and coordination throughout the TSE. Finally, this study provides important evidence that the stewardship theory is approved by the TSE. Thus, steward behavior aligns the principal's interest and others. These findings have implications for policy makers, regulators, managers and investors. Policymakers and regulators can use the results of this research to strengthen the corporate governance developed for companies listed on the TSE and provide practical guidance on how to select a CEO and its characteristics. Considering the economic sanctions and unfavorable financing conditions of companies, the board members of the TSE should consider the characteristics of a strong CEO when choosing a CEO to increase the influence of the CEO on financial performance. Finally, investors can consider the selection of a strong CEO as a positive signal and good news in the Iranian capital market and expect an increase in the firm financial performance.

In short, this research has been conducted in a unique period because Iranian companies in the research period have faced many problems in terms of working capital, financing and so on due to economic sanctions and role of CEO power in this situation is more important for managing the company. It is no exaggeration to say that the results of this study provide important evidence for board members to choose a strong CEO on the TSE.

5.1 Limitations and further researches

The present study had several limitations. The appointment of a CEO in accordance with corporate governance codes or other laws may also limit the results of this research. We suggested that future research studies to examine the moderating role of CEO appointments based on corporate governance or other rules. The power of the CEO can have more dimensions, but in this study, based on the data available in Iran and previous research, the power index of the CEO was measured. We recommended that future studies to investigate other power index of the CEO. Second, this study's limitation is that it only searched for Iranian companies from 2012 to 2019 to meet the study's aims. Hence, we recommended that future studies to investigate CEO power for other emerging market. We recommended the future studies to investigate the effect of the CEO power on the relationship between labor productivity and CRS or ESG. Finally, we recommended that future studies to examine the other moderators (i.e. CEO compensation) to demonstrate this effect.

Note

1. <https://Codal.ir>

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Supplementary material

The supplementary material for this article can be found online.

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