The Analysis of the Impact of the CEO Power on the Investment-Cash Flow Sensitivity

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التحقيق في تأثير سلطة الرئيس التنفيذي على حساسية الاستثمار للتدفقات النقديه

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الملخص:-

تعد مسألة حساسية الاستثمار للتدفق النقدي أحد الموضوعات التي تم بحثها مؤخراً من قبل الباحثين الماليين. يقاس هذا المؤشر بمقدار التغييرات في النفقات الرأسمالية للشركة لكل وحدة تغيير في التدفق النقدي. لذلك، فإن الغرض من هذه الدراسة هو التحقيق في تأثير سلطة الرئيس التنفيذي على حساسية الاستثمار للتدفق النقدي في الشركات المدرجة في بورصة طهران. لهذا الغرض، تم تجميع فرضية واحدة (١) للتحقيق في هذه المشكلة وتم تحليل البيانات المتعلقة بـ ١٠٤ شركة عضو في بورصة طهران للفترة ما بين ٢٠١٤ و ٢٠٢٠. عدد البيانات التي تم جمعها لهذه الدراسة ٧٢٨ سنة للشركة. تم فحص واختبار نموذج الانحدار البحثي باستخدام طريقة بيانات اللوحة مع نهج التأثيرات الثابتة. وقد تم استخدام برنامج stata14 لأداء الأساليب الإحصائية. تظهر النتائج أن قوة الرئيس التنفيذي لها تأثير سلبي وهام على حساسية الاستثمار للتدفق النقدي. لذلك ، تشير النتائج إلى أن سلطة الرئيس التنفيذي تقلل من حساسية الاستثمار للتدفق النقدي من خلال تقليل تكاليف الوكالة ، ومواءمة مصالح المديرين والمستثمرين، وتقليل الانتهاكات من قبل المديرين، وتحسين القرارات التشغيلية، وزيادة جودة التقارير.

الكلمات المفتاحية: قوة الرئيس التنفيذي، حساسية الاستثمار، التدفق النقدي.

Abstract:-

The investment-cash flow sensitivity is an issue that has recently become the focus of financial researchers; therefore, the purpose of the present study is to investigate the impact of the CEO Power on the investment-cash flow sensitivity of the Companies listed in Tehran Stock Exchange. To this end, the hypothesis (1) was developed and then, the data of the 104 companies listed in Tehran Stock Exchange, belonging to the time era extending from 2014 to 2020, were analysed. The number of the data collected for this study was 728 years -company. The research regression pattern was examined using the panel data and adopting a fixed impacts approach. The obtained results suggest that CEO power has a negative and significant impact on the investment-cash flow sensitivity. Thereby, the results of this work demonstrate that the CEO power lowers the investment-cash flow sensitivity through the reduction of agency costs, aligning the interests of managers and investors, reducing managers' malfeasance, improving operational decisions and enhancing the quality of reporting.

Key words: CEO Powe r, Investment Sensitivity, Cash Flow .

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Introduction

The optimum investment is regarded as a highly significant duty of top directors of an organisation. The lack of proper investment leads to sustaining considerable costs by the company. If the company appropriates enormous amounts for investment, consequently, its expenditures will go up, and in case of a poor economic situation, it will result in the bankruptcy of the company. On the one hand, the failure to make adequate investment reduces the competitive power of the company and also leads to the company losing its share of the market to its rivals; moreover, the company will lose its customers and its sale will fall; the issues that require much cost and time to be resolved. In the meantime, concerning the resolution of economic problems of the company, the promotion of investment, together with the increase of its efficiency, is highly significant. The optimum investment requires, on the one hand, the prevention from the dedication of resources to those activities on which more than the optimum level has been invested (avoidance of over-investment), and on the other hand, it urges for the direction of resources into the activities needing more investment (refraining from under-investment (Samet and Jarbouee, 2017). The past research shows that the changes into the amount of available cash flow cause changes [into the sensitivity] of the level of investment, and it is due to the fact that the investment using the cash flow, as the inexpensive source of finance, compared to other resources, attracts managers. Indeed, the low costs of financing through the use of internal resources results in the investment-cash flow sensitivity, an issue that is possible to lead to over-investment or under-investment. Furthermore, the theories on the investment market are of some defects and the created financial friction by the agency raises the sensitivity of investment costs to the level of fluctuations in internal financing (Jensen, 1976). It should be noted that the sensitivity of investment costs to the internal cash flow is a phenomenon that has been dealt with adequately by the literature on the financial economy. Fazzari et al. (1988) showed that following the control of growth opportunities, the investment is sensitive to the cash flow. This sensitivity is higher in those companies paying lower dividends. However, some researchers showed that because of reasons other than financial restrictions, the investment-cash flow sensitivity is even possible to be observed in non-sensitive markets. Specifically, with regard to the difficulties of measuring final investment opportunities (Q-Tobin), the cash flow may contain some information concerning the investment opportunities which are not reflected in the Assessment Q-TOBIN. Simply, in these situations, it is possible (to state) that the sensitivity of cash flow is caused by the deviation in the wrong measurements of the Q-Tobin (Ericsson, 2000) In addition, in some companies, the cash flow can be a better criterion for measuring the growth opportunities, and as a result, some temporary differences are observed in the sensitivity of the flow of the invested cash funds (Alti, 2018). With regard to what mentioned, the sensitivity of the cash flow of the investment during the time of managers' access to the cash flow indicates the tendency of managers for over-investment (Jensen, 1986). The investment-cash flow sensitivity is considered as a component of financial decisions, and it is due to the fact that the companies investment capacity is somehow influenced by their financing capability, and accordingly, it is regarded as a sort of financial decision-making. A question raised in the financial literature is, "how does the financial sensitivity impact the company's investment decisions?" Experimentally, in the capital market, as far as the revenue of investment is equal to its expenditures, companies continue making investments (Hayashi, 1982). Thereby, as far as companies can afford to provide themselves with their needed finances, they will invest in opportunities with adequate profit-making. In companies with financial sensitivity and financing constraints, the investment will be influenced by the company's liquidity power (Abdoh and Varela, 2020).

Several factors impact the investment-cash flow sensitivity, and so far, some works of research have been carried out in order to determine the relationships between different financial and accounting variables and their values; however, the CEO power as a variable impacting the investment-cash flow sensitivity, specifically for the companies listed in Tehran Stock Exchange, the ones forming the statistical society of the present study, has been rarely studied. The interest in the CEO power and investment sensitivity can act as a good guide for investors and its neglect is also possible to result in the adoption of wrong long-term investment decisions by investors; thus, the impact of the CEO power on the investment-the cash flow sensitivity is investigated due the significance of the investment and

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stock market in the national economy. Such characteristics, due to their effect/s on the transparency of the financial reporting environment, reduction of the information asymmetry and the quality of disclosure by the company, create changes in the investment-cash flow sensitivity. Some studies have shown that the CEO power, together with the improvement of the information environment and reduction of agency costs, can effectively prevent such inappropriate managerial decisions. These findings show that the creation of the CEO power effectively helps the reduction of the opportunistic behaviours of managers, thereby, the CEO power can be associated with the reduction of the company's investment-cash flow sensitivity. As mentioned above, investors consider the cash fund as an important information source and adopt decisions based on this item. Therefore, the investment-cash flow sensitivity has long been regarded as a significant factor. The importance associated with the role of the CEO power in developing countries is due to the growth of such countries and their consequent significance in the recent decade. Moreover, the impact of the CEO power on the financial and accounting variables is an issue that has interested researchers. The past studies around the impact of the CEO power on the conditions of companies, have a broad domain and have dealt with the links of the CEO power and managerial characteristics with diverse financial outcomes. For instance, the said works have explored the relationship of the CEO power and accruals-based earnings management and the actual earnings management (Baker et al., 2018); the impact of the CEO power on the social responsibility (Li et al, 2016) and the impact of the CEO power on the capital's structure (Chi Chor Cheo et al., 2017); and thus, with regard to the importance of the investment and stock market within the national economy, the effect of the CEO power on the investment-cash flow sensitivity is investigated. Such characteristics, due to their effect/s on the transparency of the financial reporting environment, reduction of the information asymmetry and the value of the company, create changes in the transparency of the financial data and decisions of investors and the users.

Literature and Theoretical Foundation of the Research

The CEO Power and Its Impact on the Investment Sensitivity-Cash Flow Sensitivity

The CEO power and the company's results have been discussed in the course of time. In some companies, the CEO has concentrated his/her power on the important decisions of the company, an issue that will highly impact the company in the future. It is specifically common in large companies with a complex distribution of power among its members. However, in other companies, such decisions are made on the basis of power distribution among the top directors and through taking votes. Therefore, “What decision-making process does the best benefit the company?” In other words, “Whether is it good for the company to provide the CEO with the full power of decision-making?” To find the answer, understanding the role of the CEO in the company is necessary. The CEO is the highest executive position and responsible for the whole company. The CEO is recruited by the members of the board of directors in order to develop high-level strategies, make decisions, generate motivations and manage daily operations of the company. Several real-life instances suggest that autocrat executive directors make companies more efficient and such a managerial manner, finally, results in the success of the company. The most known examples in this regard are Steve Jobs (Apple CEO), John Ma (Alibaba Group CEO), and Elon Musk (Tesla CEO). Anyway, CEOs are not essentially the owner of companies, though they have more powers compared to other staff (Mersland and et al. 2016). In accordance with the agency theories, a strong CEO is inclined to create higher degrees of consolidation and, possibly, to carry out those activities that are detrimental to the company. The results of the past studies demonstrate that once more powers are conferred upon the CEO, it negatively impacts his/her performance and the value of the company; nonetheless, in some specific conditions, the power of the CEO generates greater profits, and accordingly, in the long run, it will benefit the company (Mersland and et al. 2016; Lisik et al. 2019). The first issue around remedying this malady is that “Whether does the change of managerial decisions is of high significance for understanding the future behaviour of the company?” Finkelstein and Hambrick (1996) found that the CEO is a highly significant factor for the company. The managerial decisions directly determine what direction the company is going to take in the future. Profitability, capital structure and strategies are the results of successful managerial operations. The second obstacle before finding the proper solution is the definition of power. According to Pfeffer (1997), “Power is the idea of overcoming the resistance”. Therefore, a more powerful CEO, due to the pressures of the board of directors and other executive directors, is possible to adopt/carry out invasive decisions. Based on the Jensen and Meckling's agency theory (1976), Bebchuck, Cremers and Peyer (2017) concluded that vesting more powers in CEOs lead to the lower profit-making and under-assessment of the company through activities such as Q-TOBIN ration (the criteria for the value of the company). A powerful CEO, who is under domination, is highly likely to merge and adopt absurd acquisitive decisions This type of behaviour increases the costs appertaining to the agency, and finally, severely slashes the price of the company's shares, and consequently, causes shareholders to suffer substantial damages. However, more moderate (logical) decisions will happen if the CEO has a friendly relationship with other directors and once they act together harmoniously. A very similar argument has been provided by Sah Stilgitz (1986, 1991); Sah Stilgitz (1986, 1991) divided their subjects into different groups. Then, each group received some projects with different qualities so that the members would decide to choose and carry out a project. Through different experiments, they found that a group, composed of several people, due to the impact of the diversity of views, would choose projects as the worst and best with many difficulties. Therefore, in the hypothesis of this study, the impact of changes in the performance and value of the company, the conditions of share liquidity and the investment-cash flow sensitivity is expected to be stronger on the result of the decision-making. Furthermore, Liu and Jirapron (2020) had some different findings suggesting the existence of a negative relationship between the CEO of more powers and the performance of the company. They found that there is a dispute between the CEO and the debtors. In companies with a higher number of top directors, the cost of debts is considerably higher than the mean. In addition, executive directors are possible to do some activities in order to hide some necessary information from indebted companies. The information asymmetry lowers the transparency and finally, it damages the company. However, some researchers claim that powerful executive directors will benefit companies in the long run. Frinkelstein and D'Aveni (2017) found that an alert board of directors is highly likely to employ powerful directors though the company has a low performance. According to them, if the company is in a tough situation, the advantage of having a strong CEO to act as the sole director of the company will also highly contribute to the creation of the danger of serious and bad decision-making. Once a shortage of resources and variable dangerous financial conditions exist, the powerful executive director had better make the company unanimous and enjoy a strong executive authority. In addition, experimental facts show that small companies have strong executive directors. And, according to Pradit and Pornsit (2021), a strong CEO experiences a vague information environment, a fact that results in some activities for the disclosure of less information. And the information asymmetry will push down the price of company's share upon its establishment. Besides, with regard to the research of Nandini & Deepak (2012), the high efficiency of a company in different industries appears to be connected to the characteristics of the communication managers. Specifically, a strong executive director is highly likely to act inside the industry by distinguishing his/her products. The majority of papers, like Pfeffer and Leblebici (1973), have delved into the link/s between the age of the directors and the industry. No significant relationship was observed between the focus of the industry and the age of the company's CEO and accordingly, the zero correlation exists between the said factors.

Overall, it can be mentioned that the power is the fundamental characteristic of a director and it is the required basis for his/her effectiveness within the organisation. Inside the organisation, directors determine the policy and have the power, and the performance of the organisation is also linked to their power. Employing the sources of power, directors can either prepare the ground for the development or the deviation of the firm, and it depends on the existential nature and manner of using the power and its resources; and thus, the more their power, the more appropriate and better their decisions. Therefore, concerning the decision-makings appertaining to the accounting income and reduction of the financial risk, strong directors with a good understanding of the accounting system and the existing regulations, usually are inclined to make long-term investments and work for future generative activities (such as management of cash funds and utilising them in the production sector and etc.) (Baker et al., 2018). Thereby, once more powers are vested in directors, it is possible to lead to the more efficient management of the company's operations, especially in the eras of critical operations in which managerial decisions can much impact the performance of the company. Moreover, while the company is facing crises, competent directors are capable of adopting some better decisions about providing the required finances (Baker et al., 2021). In addition, powerful directors enjoy higher degrees of independence and play a bigger observatory part toward the board of directors, and in many cases, it prevents from the violation of the rights of stakeholders, lowers the costs of agency; and, accordingly, the lower agency costs reduces the information asymmetry, enhances the transparency of financial information, and, finally, lowers the investment-cash flow sensitivity. A strong CEO also experiences a more transparent information environment, an issue that results in the conduction of some activities for the disclosure of information; the resulting information asymmetry will increase the price of the share upon its establishment, and it decreases the investment-cash flow sensitivity.

Literature Review

Literature

Rahnemay and Roudposhti and Zandi (2021), using a sample of 150 companies listed in Tehran Stock Exchange studied the impact of CEO power on the company's financial leverage during the era extending from 2014 to 2020. The results of their work showed that the more the powers vested in the CEO, the more the company's capital structure and financial leverage will move in the negative direction (a proportional relationship). And it decreases debts within the company's capital structure.

Tavangar Hamzeh Kalaee and Iskafi Asl (2021) investigated the links between the power of the CEO, characteristics of the audit committee and the quality of the internal control. To this end, the data of the 90 companies admitted to Tehran Stock Exchange was examined using Lajit analysis. Their results suggest that the power of the CEO has a negative moderating impact on the positive links between the size of the audit committee and the quality of the internal control.

Salehi et al. (2021), through a work titled "The Impact of the Managerial Optimism on the Investment-Cash Flow Sensitivity", given the existence or absence of financial constraints in the companies listed in Tehran Stock Exchange, studied the managerial optimism and its effect/s on the investment-cash flow sensitivity. The results of their work show that there is a positive and significant relationship between the managerial optimism and the investment sensitivity in the whole sample, besides, the same link exists between the companies classified as having or without financial constraints. Their results also suggest that the investment-cash flow sensitivity in companies with financial constraints is higher than those with no such restriction.

Through a work named “Corporate Governance System and Financial Constraints” (The Investment-cash Flow Sensitivity), Rahimian and Janfada (2020), using the linear and clustering regression methods, in the era extending from 2010 to 2016 studied the impact of corporate governance mechanisms on financial constraints in 102 companies listed Tehran Stock Exchange. According to the results of this research, the number of the major shareholders and the independence of the board of directors have an increasing and significant effect on the financial constraints of the companies listed in Tehran Stock Exchange.

Haqiqat and Zargar Fioji (2019) in their work “The impact of Financial Constraints and the Maintained Cash Fund on the Investment-Cash Flow Sensitivity”, in the era extending from 2002 to 2011, explored the investment-cash flows sensitivity together with the effect of financial constraints and cash flow of 130 companies. The results of their work show that there is a positive relationship between capital expenditures and the cash flow; besides, in the companies without financial constraints, compared to those with such limitations, higher degrees of the investment sensitivity exist. According to another finding of the mentioned study, the mutual impact of the maintained cash fund on the investment sensitivity is negative and it is stronger in the companies with financial constraints.

Sepasi et al. (2019) recognised that the sensitivity of the maintained cash fund to cash flows in different companies is different and asymmetric. In other words, they suggested that the intensity of the links existing between the rate of the maintained cash, cash fund and positive cash flows is different from the one associated with the negative links between the amount of the maintained cash and the cash flows.

Arab Salehi and Ashrafi (2018), through the work "The Analysis of the Relationship between the Financial Constraints and the Investment-Cash Flow Sensitivity", studied 72 companies, listed in Tehran Stock Exchange, from 1998 to 2008. Their findings point to the positive part of cash resources in the reduction of companies' investment-cash flow sensitivity. On the other hand, compared to the traditional criteria of financial constraints, no specific superiority was observed in the employment of the optimum cash resources.

Foreign Literature Review

Abdoh and Varela (2021) studied the effect of competition in the product market on the investment-cash flow sensitivity. Their results suggested that the competition in the product market has a negative and significant impact on the investment-cash flow sensitivity. Furthermore, the results of the said research showed that in the companies with no financial constraints, compared to those with such restrictions, the impact of the inside-product-market competition on the investment-cash flow sensitivity is bigger.

Samet and Jarboui (2020) studied the relationship of the corporate social responsibility and agency costs with the investment-ash flow sensitivity in 398 European countries in the time era extending from 2012 to 2018. Their results showed: (1) The relationship between the corporate social responsibility and the investment-*internal cash funds sensitivity is weak; (2) The agency costs of the cash fund moderate the negative impact of the social corporate responsibility on the investment-cash flow sensitivity. Therefore, this study experimentally proposes that the companies with the social corporate responsibility enjoy a better situation in terms of obtaining finances inside the capital market through the reduction of market friction and the costs of the agency.

Mersland et al. (20120) investigated the effect of the CEO power on the costs of the agency. In order to measure the costs of agency, they utilised four criteria of asset turnover, operational expenses, the company's liquidity and intangible assets ratio. The results of their study showed that the CEO power negatively and significantly impacts the agency costs.

Li et al. (2019) investigated the effect of the CEO power and social corporate responsibility on the value of the company. Their results suggested that the social responsibility has a positive an significant impact on the value of the company; besides, the results of the said research demonstrated that the CEO power positively and significantly impacts the value of the company. Furthermore, the results of the said study showed that the power of the CEO positively and significantly impacts the social responsibility.

Attig et al. (2018) studied the effect of the corporate social responsibility on the cash flow-investment sensitivity in the era extending from 1992 to 2010. Their results suggested that the corporate social responsibility impacts the investment-cash flow sensitivity through the reduction of information asymmetry and the agency costs. What mentioned is done in a manner that the investment-internal cash flow sensitivity is lowered while the score of the company's social responsibility goes up.

Ben Mohamed et al (2018), through a work titled "Investment-Cash Flow Sensitivity under Managerial Optimism", examined the investment-cash flow sensitivity using the panel data of the American companies belonging to the time era extending from 1999 to 2010. The results of the said work illustrate that this sensitivity is stronger in companies with financial constraints. They also demonstrate that the characteristics of the board of directors can reduce the number of changes in investment policies.

Francis et al. (2018) in the study on the corporate governance system and the investment-cash flow sensitivity investigated the impact of the corporate governance system on the financial restriction. They carried out the said study using the data of 14 countries; they concluded that better corporate governance reduces the dependence of companies on the internal cash flows; it also decreases the number of financial constraints.

Literature Hypotheses

Hypothesis no. 1 The CEO power has a significant impact on the investment-cash flow sensitivity.

Research Methodology

Data Analysis

As the results of the present study can be used in the decision-making process, in terms of purpose, it is applied. Besides, concerning its nature, it is analytical-correlational, because in such studies, the researcher attempts to assess the relationship between two or more variables. In order to analyse the data and extract results, the research has utilised the Excel 2010 and 14Stata. In addition, the panel data regression with fixed impacts approach was employed for testing hypotheses.

Statistical Society and Sampling Method

The statistical society of the present study included the companies listed in Tehran Stock Exchange in the time era extending from 2014 to 2020. The purposive method (systematic elimination) was also applied for sampling. To this end, all the companies encompassing the statistical society of the research, meeting the following requirements were chosen and the remaining were eliminated.

1. March[(1)] was required to be the final section of their fiscal year so that their data would be comparable;
2. They were required to be active in the production sector so that their data would be homogeneous;
3. The trading of their share in Tehran Stock Exchange shouldn't be stopped for more than three months;
4. The data on the variables chosen by this research should be available.

Laying down the mentioned requirements, 104 companies were chosen from among the ones listed in Tehran Stock Exchange in order to form the statistical sample of the present study.

Research Variables:-

Three categories of independent, dependent and control variables, encompassing this research variables, are the following:

Independent Variables

The CEO Power

Following the guidelines provided by Lisic et al. (2018), six criteria were employed for measuring the CEO power, they are:

Criterion no. 1 (Recomp_D)

The CEO Salary and compensations: the distribution of the CEO salary and compensations approved in the meeting held by the general assembly on the total payroll of the company's fiscal year. (Recomp_D) is a dummy variable; it is equal to 1 in case the result of dividing the compensations (approved by the company) by the ratio of the total payroll is more than the mean of this variable in the sample member companies of the related industry in same period, a fact that shows the CEO power; otherwise, it is 0 (as the data on the salary of directors and compensations of the members of the board and the CEO are not separately provided in Iran, thereby, the present work uses the total of compensations specified for the board and the CEO).

Criterion no. 2: Duality of the duties of the CEO and vice chairman of the board (duality)

A dummy variable that is equal to 1 if the CEO is the chairman or vice-chairman of the board; otherwise, it will be equal to 0.

Criterion no. 3 (CEOHolding_D)

The executive directors with a higher number of share are highly likely to limit the influence of the board and extend their own discretion in decision-making. Therefore, the executive directors owning a higher number of shares are more powerful (Finclestain, 1992). (CEOHolding_D) is a dummy variable, and in case the total share owned by the CEO in a company I stands above the mean of the total shares owned by the CEOs in the sample member companies of the related industry in the that era, it shows the CEO power and is equal to 1, otherwise it will be zero.

Criterion no. 4 (CEO_Tenure_D): The CEO Tenure

It is the number of the years the CEO has worked in the company. The CEO's tenure increases his/her influence and consequently, it adds to his/her power (Rayan and Wiginze, 2019). Therefore, CEOHolding_D is a dummy variable, and in case the tenure of the CEO in a company I is more than the mean of the total tenure of the CEOs in the sample member companies of the related industry in that era, it is equal to 1 and mirrors the power of the CEO; otherwise, it will be equal to 0.

Criterion no. 5: Number of Positions of Executive Directors (NumExec_D)

It defines the number of positions owned by executive directors prior to being installed as the CEO. If the CEO has worked in different positions inside the company, it will increase his/her expertise and knowledge, and it will lead to the improvement of the CEO power. And accordingly, this variable is equal to or higher than the executive positions in the industry. In this research, the executive positions prior to the CEO include the minister of interior, president, COO, CFO, vice president, vice-chairman with government duties and etc. Therefore, NumExec_D is a dummy variable, and in case the number of the positions of the CEO in a company I is more than the mean of the positions owned by the CEOs in the sample member companies of the related industry in that time era, it indicates the CEO power and will be equal to 1; otherwise, it is 0.

Criterion no. 6: Holding Positions of Executive Directors (NumYear_D)

NumYear_D is the number of the years in which the CEO of the company has worked as the president, the COO, the CFO, the vice president, vice chairman with government duties or the CEO. Executive directors with a long history of working in the company make CEOs who are highly informed of the company, and accordingly, they improve the power of the company's CEO. Consequently, NumYear_D is a dummy variable, and in case the number of the positions the CEO has had in a company I is more than the mean of the positions owned by the CEOs in the sample member companies of the related industry in that era, it shows the power of the CEO and will be equal to 1; otherwise, it will be zero.

Finally, the CEO Power index is the total of the above-mentioned indexes divided by six, and the result is possible to extend from 0 to 1; and, the closer it is to 1, the more powerful is the CEO and vice versa.

Dependent Variable of the Research

The Investment-Cash Fund Sensitivity

Following Samet and Jarboei (2018), here, the multiple regression model (1) is used for the assessment of the investment-cash fund sensitivity:

Model (1)

$$\left(\frac{I}{K}\right)_{i,t} = \alpha_0 + \beta_1\left(\frac{S}{K}\right)_{i,t-1} + \beta_2\left(\frac{CF}{K}\right)_{i,t-1} + \beta_3\left(\frac{I}{K}\right)_{i,t-1} + \beta_4\left(\frac{I}{K}\right)^2_{i,t-1} + \beta_5\left(\frac{D}{K}\right)^2_{i,t-1} + \varepsilon_{i,t}$$

I= investment on the fixed assets

K: capital of the company

S: Sale income

CF: cash fund

D: Total debts

Research Pattern

With regard to the theoretical framework and literature of the research, its model is the multivariate regression. Therefore, for testing the hypotheses of the research, the following patterns are chosen:

Pattern (1) for testing the first hypothesis of the research

$$\left(\frac{I}{K}\right)_{i,t} = \alpha_0 + \beta_1\left(\frac{S}{K}\right)_{i,t-1} + \beta_2\left(\frac{CF}{K}\right)_{i,t-1} + \beta_3 \text{CEO power}_{i,t} + \beta_4 \text{CEO power} * \left(\frac{CF}{K}\right)_{i,t-1} + \beta_5\left(\frac{I}{K}\right)_{i,t-1} + \beta_6\left(\frac{I}{K}\right)^2_{i,t-1} + \beta_7\left(\frac{D}{K}\right)^2_{i,t-1} + \varepsilon_{i,t} \quad (1)$$

The variables of the pattern are defined in table no. 2.

Table no. 2: Defining the variables of the Pattern

Symbol	Studied Variable
I	investment on the fixed assets
K	capital of the company
S	Sale income
CF	cash fund
D	Total debts

Research Findings

Descriptive statistics

The results belonging to the descriptive statistics of the research variables are provided in table no. 3.

Table no. 3: The descriptive statistics of the research variables

Variable	Number	mean	Standard deviation	minimum	maximum
I/K	782	0.033	0.037	0.000	0.333
S/K	782	0.867	0.594	0.062	5.144
CF/K	782	0.041	0.0477	04.001	0.460
CEO power	782	0.351	0.207	0.0000	1.000
D/K	782	0.605	0.206	0.0127	0.9998

***Source: Research Findings**

Table no. 3 provides the descriptive statistics appertaining to the research variables, separately defining descriptive parameters for each variable. These parameters usually cover the information on the central indexes such as maximum, minimum, average, mean and the data related to the dispersion indexes like standard deviation the chief central index is the average that shows the equilibrium point together with the centre of the distribution; and it is a good index demonstrating the centre of the data. For instance, the average of the CEO power is 0.351, a fact that shows the majority of the data appertaining to this variable are concentrated around this point. Generally, the dispersion parameters form an index for the determination of the data dispersion level together with each other or their dispersion level compared against the average; a highly significant dispersion parameter is the standard deviation. The value of this parameter compared to the capital of the company (S/K) is 0.876, and the value of the variable of the ratio of investment in the fixed assets compared to the capital of the company (I/K) is 0.037; a fact illustrating that S/K and I/K respectively have the highest and lowest dispersion values among the research variables. Besides, it should be noted that in order to prevent non-related data of the variables from impacting the results of the research, they all were eliminated at 1% level.

Inferential Statistics:

Prior to the assessment of models, firstly, the proper assessment pattern should be determined for each pattern through the Chow, Breusch–Pagan and Hausman tests; the table no. 4 presents the results of the said tests. Regarding the research model, the significance of the Chow, Breusch–Pagan and Hausman tests shows that these models have been assessed using the pattern of the fixed impacts.

Table no. 4: Results of the tests administered in order to choose the proper pattern for the assessment of models

Under investigation pattern	Chow Test		Breusch–Pagan		Hausman test	
	Statistic	significance	Statistic	sinificance	Statistic	significance
Model (1)	2.02	0.000	327.55	0.000	287.11	0.000

***Source: Research Findings**

However, with regard to the significance of the mentioned tests for the pattern (1), respectively Chow test (0.000), Breusch–Pagan test (00.000) and Hausman test (0.000), all below 5%, the research pattern was assessed using the fixed impacts; therefore, the preferred method was employed for the assessment of the research pattern. Table no. 5 shows the assessment of the research pattern using the preferred method.

Table no. 5: The results belonging to the assessment on the pattern (1) of the research for testing the first hypothesis

variable	Variable coefficient	T Statistic	Error level	Vif statistic
α_0	0.038	4.98	0.000	
$(\frac{S}{K})_{i,t-1}$	0.0039	1.06	0/290	1.09
$(\frac{CF}{K})_{i,t-1}$	0.17	8.21	0.000	1.11
CEO power	-0.19	-2.72	0.007	1.06
$\text{CEO power} * \left(\frac{CF}{K}\right)_{i,t-1}$	-0.085	-3.45	0.001	1.10
$(\frac{I}{K})_{i,t-1}$	0.303	4.90	0.000	2.80
$(\frac{I}{K})^2_{i,t-1}$	-0.440	-2.02	0.043	2.82
$(\frac{D}{K})^2_{i,t-1}$	-0.026	-2.63	0.009	1.15
The Adjusted Coefficient	0.191			
Wald Statistic	1.101			
The Possibility of Wald Statistic	0.344			
F Statistic	20.81			
The Possibility of F Statistic	0.000			

***Source: Research Findings**

According to the results provided by the table no. 5, and with regard to F statistic (20.81) and the error level (0.000), it can be claimed that the research model generally has a high significance. Besides, according to the adjusted coefficient of determination obtained for the pattern that is equal to 19 per cent, it can be stated that overall, the independent and control variables of the research explain more than 19 per cent of the changes in the dependent variable. In addition, as the Wald statistic is not significant, that is more than 5 per cent, accordingly, there is no serial correlation among the remaining parts of the research model. The values of variance inflation (vif) (the standard range of vif is between 1 and 10) demonstrates that there is nothing wrong with the dependent variables in terms of being on the same line.

According to the results of the assessment on the pattern (1) provided by table no. 4, and with regard to its error level [0.000], that is lower than the 0.50 error level, the coefficient of the CEO power is equal to -0.085. Therefore, the negative coefficient of the CEO power suggests that the increase of the CEO power lowers the investment-cash fund sensitivity. Thus, this hypothesis is confirmed at the confidence level of 0.95. The results of the test on this hypothesis are consistent with the theoretical foundations of the research and the study of Bomberg et al (2019).

Conclusion and Suggestions

The purpose of the present study was to analyse the power of the company's CEO on the investment-cash flow sensitivity of the companies listed in Tehran Stock Exchange. Therefore, in order to investigate this issue, the hypothesis (1) was developed, and then, the existing data were analysed. The obtained results suggest that the CEO power has a negative and significant impact on the investment-cash flow sensitivity. Indeed, power is the fundamental characteristic of a director and it prepares the ground for his/her effectiveness inside the organisation. Inside the organisation, directors determine the policy and hold the power, and the performance of the organisation is also linked to their power. Employing the sources of power, directors can either pave the way for the development or the deviation of the firm, and it depends on the existential nature and manner of using the power and its resources; and thus, the more the power of CEOs, the more appropriate and better their decisions. Thereby, concerning the decision-making appertaining to the accounting income and reduction of the financial risk, powerful directors, who have a good understanding of the accounting system and the existing regulations, usually are inclined to make long-term investment and work for future generative activities (such as Management of cashes and using them in the production sector and etc.). accordingly, once more powers are vested in directors, it is possible to lead to a more efficient management of the company's operations, especially in the eras of critical operation in which managerial decisions can much impact the performance of the company. Moreover, during the eras the company is facing crises, competent directors can adopt some better decisions about obtaining the required finances (Baker et al., 2021). In addition, strong directors enjoy higher degrees of independence and play a bigger observatory part towards the board of directors; and in many cases, it prevents from the violation of the rights of stakeholders, lowers the costs of agency; and, accordingly, the lower agency costs reduces the information asymmetry, enhances the transparency of financial information, lower the investment-cash flow sensitivity and finally, it increases the value of the company. A strong CEO also experiences a more transparent information environment, an issue that leads to the conduction of some activities for the disclosure of information; and the created information asymmetry will increase the price of the company's share upon its establishment.

With regard to the results of the tests on the research hypotheses, showing that there is a significant relationship between the CEO power and the investment-cash flow sensitivity, it is suggested that the users of these results of the present study should always pay attention to the fact that the increase of the investment-cash flow sensitivity, due to any reason (such as weakness of the CEO), leads to the increase of the investment risks. In other words, the risk-avoiding investors never consider the companies with the maximum of investment sensitivity as the ones suitable for investment.

(1) Isfand in the Persian solar calendar

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