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Investigating the Relationship Between CEO Optimism, CEO Selection, Compensation, and Corporate Investment Decisions

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Abstract

This study aims at investigating the relationship between CEO optimism, CEO selection, compensation, and corporate investment decisions. The study focused on companies listed on the Tehran Stock Exchange between 2015 and 2021. The present research falls into the category of applied research. If we classify research types based on nature and methodology, the current research method falls into the descriptive research category and, in terms of methodology, is considered a correlational study. For data collection, a library research method was employed. Data were collected from financial statements, explanatory notes, and the stock exchange monthly magazine for the sample companies. Using a systematic elimination method, 126 companies were selected as the statistical sample. Descriptive and inferential statistics were used for data description and summarization. To analyze the data, preliminary tests such as variance heterogeneity tests, Levene's, Hausman, and Jarque–Bera tests were conducted. Subsequently, a multivariate regression test was used to confirm or reject the research hypotheses (using E-Views software). The obtained results indicated that CEO optimism significantly influences CEO selection, bounces, and corporate investment decisions.

Keywords: CEO optimism, CEO selection, compensation, corporate investment decisions

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Introduction

Within the business landscape, CEOs play a pivotal role as leaders and key decision-makers. Their optimism and outlook on the company's future performance significantly shape their choices. CEO optimism can significantly impact corporate investment decisions. These decisions encompass resource allocation, selection of investment projects, investment policies, and other investment-related choices. CEO optimism refers to the positive outlook and confidence that CEOs have regarding the company's future. It reflects the difference CEOs perceive between success and failure and their belief in the company's ability to achieve its goals (Itzhak Ben-David et al., 2013)

However, excessive self-confidence among managers can lead to the misuse of company resources for personal gain. Consequently, they may be more inclined to invest excessively in research and development. The dynamism of corporate investment decisions increases with higher levels of managerial self-confidence. As self-confidence increases, the number and size of corporate achievements grow, leading to improved company performance. However, it also results in increased performance volatility. Some contend that an abundance of self-confidence could diminish financial efficiency and operational cash flows, thereby increasing the company's exposure to risks. It is expected that more optimistic CEOs in newly established companies will have a greater inclination toward investment opportunities and high research and development expenditures. Additionally, more optimistic CEOs receive higher compensation than their less optimistic counterparts.

The severance packages offered by newly hired companies to overconfident executives exceed those provided by the previous employer to the outgoing CEO. Existing literature indicates that overconfident CEOs significantly influence company outcomes. They drive excessive investment decisions, costly mergers and acquisitions, and lax accounting practices. Moreover, they induce higher research and development productivity, foster more innovative outputs, transform growth opportunities into company value, and create greater shareholder commitments (Chen & Hsu, 2022). This study is designed to examine CEOs who were selected as CEOs after being relocated by other companies. Therefore, the main research question is formulated as follows: How is the relationship between CEO optimism, CEO selection, bounces, and corporate investment decisions?

2.Theoretical Framework and Literature Review

The expanding body of literature underscores how managerial biases influence corporate financial decisions. CEOs, driven by their unwavering self-confidence, often allocate excessive investments to projects that ultimately diminish the company's value. Senior managers must face the risk of forced departure due to value-destroying investments. Consequently, boards should seek replacements for senior executives who enhance the company's value (Chen & Hsu, 2022). Previous research suggests that overconfident CEOs are more prone to involuntary turnover. Since overconfident CEOs tend to overestimate their abilities and invest in projects that erode company value, other firms assume that less confident CEOs are less likely to be rehired as CEOs. However, excessive confidence in CEOs positively influences innovative growth opportunities (Hershleifer et al., 2012). Additionally, self-confident CEOs exhibit stronger beliefs in the company's prospects, garner

more respect, and receive greater attention from their peers (Kennedy et al., 2013).
Research findings from prior studies suggest that CEO overconfidence has a positive impact on innovative growth opportunities and encourages increased capital investment. If companies with more growth opportunities and higher research and development employ optimistic senior managers, these CEOs tend to increase investment in companies with greater growth prospects and higher research and development expenditures (Chen & Hsu, 2022). In the realm of financial and accounting literature, compelling evidence has emerged concerning the influence of managerial overconfidence on investment decisions. One of the key takeaways from these studies is that overconfident CEOs may mistakenly predict highly favorable cash flows from projects, leading them to overvalue many projects beyond their true worth. Even in projects with negative net present value, overconfident CEOs tend to invest excessively. On one hand, excessive self-confidence leads CEOs to over utilize internal financial resources and engage in excessive capital investment. On the other hand, due to their idiosyncratic views, these managers underutilize external financial resources, especially when the company faces internal financial constraints, resulting in inefficient capital allocation (Mohammadi et al., 2019).

2.1. Literature Review

In a study titled "The Impact of Excessive Managerial Confidence on Corporate Social Responsibility Activities," Zamani et al. (2022) explored this topic. The hypothetical test results demonstrated a significant inverse relationship between excessive managerial confidence and corporate social responsibility activities. Shafieinezhad (2022) investigated the relationship between overconfidence in CEOs and internal financial supply, emphasizing the role of internal financing in improving business opportunities and mitigating capital shortages. However, it may lead to excessive capital investment, especially in companies with overly confident managers. This issue of overinvestment is more prevalent in government-owned companies than non-governmental ones. Khatti and Gholinezhad (2021) examined the relationship between excessive confidence and optimism in managers and the capital structure of companies listed on the Tehran Stock Exchange. Their findings indicated a significant association between excessive confidence in managers and the capital structure of accepted companies, but no significant relationship was observed between managerial optimism and the same structure. Studeh et al. (2021) investigated the impact of excessive self-confidence in managers on internal financial supply and the efficiency of investments in companies listed on the Tehran Stock Exchange. The research revealed that the cash flows of each company directly affect investment sensitivity, and when managers exhibit excessive confidence, they tend to invest more from free cash flows. Davoudi and Ghafourian (2019) explored the relationship between CEO turnover due to excessive confidence and company performance in accepted companies on the Tehran Stock Exchange. Their study found a significant negative relationship between CEO turnover due to excessive confidence and company performance. Mohammadi et al. (2019) conducted a study titled "Excessive Confidence in CEOs and Its Impact on Corporate Investment Efficiency.". The results indicate that excessive confidence in managers has a significant inverse impact on investment efficiency and a direct and meaningful relationship with overinvestment. Further

investigations reveal that when managers have access to internal financial resources, they tend to overinvest. Conversely, when financing is secured from external sources, managers are inclined to underinvest. Therefore, excessive managerial self-confidence significantly affects their financial decisions. Often, these managers exhibit overly confident behavior, leading to suboptimal investment decisions. As overinvestment increases, capital efficiency decreases in companies. Zinali and Aghabigi (2019) conducted a study titled "The Relationship between CEO Overconfidence and Company Performance and Earnings Management in Companies Listed on the Tehran Stock Exchange." Their findings demonstrate a direct and significant association between CEO overconfidence and company performance. Additionally, a direct and meaningful relationship exists between CEO overconfidence and earnings management based on accruals. Hassani et al. (2018) investigated the "Impact of Inflation Rate Fluctuations on the Relationship between Managerial Overconfidence and Overinvestment." The research findings indicate a positive and significant relationship between managerial overconfidence and overinvestment. However, inflation rate fluctuations have an inverse and significant effect on the relationship between managerial overconfidence and overinvestment. Hamedi and Saraf (2017) explored the topic titled "The Relationship between CEO Overconfidence and Financial and Economic Performance in Companies Listed on the Tehran Stock Exchange." Their empirical results revealed a significant positive association between CEO overconfidence and stock returns, while a significant negative relationship existed between CEO overconfidence and shareholders' equity returns. However, there was no significant relationship between CEO overconfidence and market value added. Badiei and Davoudi Kasbi (2017) explored the study titled "The Relationship between Managerial Overconfidence and Financial Performance Evaluation Measures and Financial Risk." Their research indicated no significant relationship between excessive managerial confidence and financial performance evaluation measures. However, a direct and significant relationship existed between managerial overconfidence and financial risk, particularly in financially distressed companies. Qaemmaghami (2017) investigated "The Impact of Managers' Optimism on High Stock Valuation in Selected Companies on the Tehran Stock Exchange." The findings demonstrated that the independent variable of book-to-market ratio had a positive and significant impact on high stock valuation. Additionally, the variable representing managers' optimism, derived from the difference between predicted and actual dividend payouts, had a positive and significant effect on stock valuation. The virtual variable for optimism, which takes a value of one when the difference is non-negative and zero otherwise, also significantly influenced high stock valuation. Furthermore, the simultaneous effects of book-to-market ratio and managers' optimism on high stock valuation were positive and significant. Moradi and Jafarnejad (2016) conducted a study on "The Relationship between CEO Overconfidence and Firm Performance and Risk in Companies Listed on the Tehran Stock Exchange." Their research revealed a significant negative relationship between CEO overconfidence and firm performance. However, the relationship between CEO overconfidence and financial performance evaluation measures was not significant. These studies shed light on the intricate

interplay between managerial confidence, investment decisions, and financial outcomes in the context of listed companies.

Chakraborty et al. (2023) investigated "Corporate Governance and Investment Decisions of Retail Investors in Shareholders' Equity: Does Group Dependence and Company Age Matter?" The results of multiple regression analysis revealed a negative relationship between risk aversion and corporate investment decisions. Additionally, the research findings demonstrated that the interaction between risk aversion and the number of independent board members had a negative and significant effect on corporate investment decisions. Chen & Hsu, 2022 (2022) explored the topic titled "CEO Optimism, CEO Selection, Penalties, and Corporate Investment Decisions: The Case of CEOs Rehired by Another Company after Financial Circulation." They found that newly established companies with higher growth opportunities and greater research and development costs exhibit a greater inclination to employ CEOs with excessive confidence. Furthermore, CEOs with more optimism, compared to their less optimistic counterparts, receive higher total penalties from the companies they are newly employed by. Ultimately, CEOs with excessive confidence working in companies with high growth prospects and increased research and development tend to show a greater propensity toward increased corporate investment. Lai et al. (2021) delved into "CEO Overconfidence and Labor Investment Efficiency in North America." The research findings indicated that companies with more confident CEOs have a higher likelihood of investing. The results hold true for alternative measures of CEO overconfidence, including post-accounting accruals, CEO experience, age, managerial ability, advanced technology industry, and strong economic recession. Lu et al. (2020) conducted a study titled "The Role of CEO Overconfidence in the Relationships between Managerial Incentives and Research and Development Expenditures." The results revealed an inverse U-shaped relationship between executive loss aversion and research and development investment. Moreover, excessive executive overconfidence acts as a positive moderator between executive loss aversion and research and development. Salehi et al. (2019) explored "The Relationship between CEO Overconfidence and High Stock Valuation in Selected Companies on the Tehran Stock Exchange." The research findings demonstrated that the ratio of book value to market value had a positive and significant impact on high stock valuation. The impact of the virtual variable for CEO overconfidence, which takes a non-negative value, was also positive and significant on high stock valuation. Finally, Moradi and Jafarnejad (2016) investigated "The Relationship between CEO Overconfidence and Firm Performance and Risk in Companies Listed on the Tehran Stock Exchange." Their research revealed a significant negative relationship between CEO overconfidence and firm performance.

Vitanova (2019) explored the topic titled "The Relationship between Leadership Power, Overconfidence, and Corporate Performance." The results indicate a positive and statistically significant impact of overconfidence on corporate performance. Bouteska et al (2018) delved into the study titled "The Role of Overconfidence and Shareholder Loss Aversion in Stock Market Performance." Their findings suggest that overconfidence has a positive effect on the stock market performance of industrial companies but a negative effect in service firms. Furthermore, strong evidence indicates that excessive overconfidence

dominates, leading investors to rely excessively on their own confidence rather than avoiding shareholder losses. Kkoo Ho et al (2018) investigated "The Impact of Excessive Confidence and Behavioral Bias (Overconfidence) of Managers on Capital Investment Stickiness." Ultimately, their results demonstrated that managerial overconfidence, when combined with bias and overconfidence, intensifies capital investment stickiness. This finding provides explicit evidence of corporate investment distortions. Choi et al. (2018) examined "Self-Attribution of CEOs with Excessive Confidence and Asymmetric Sensitivity of Investment-Cash Flow." These results hold true for companies with financial constraints and those with stronger prior performance. In general, their findings align with related literature supporting the notion that excessive managerial overconfidence reinforces investment commitment.

Takada and Moramia (2017) conducted a study titled "The Impact of Financial Input Quality on Earnings Forecast Accuracy (Managerial Optimism) in Japan." Simultaneous disclosure of managerial forecasts and income statements indicates that companies that have disclosed specific financial details rely on lower-quality financial resources for generating statements and, potentially, earnings forecasts. Their results also suggest that companies with financial restatements likely utilize lower-quality financial inputs, resulting in weaker and less accurate managerial forecasts. Kim and Na (2016) explored "How Managerial Optimism in Earnings Forecasts Affects Stock Returns: Evidence from the Relationship between Analysts' Earnings Forecast Dispersion and Negative Returns." Contrary to the previously established relationship between analysts' earnings forecast dispersion and negative returns, their findings reveal a strong positive relationship between the time-series dispersion of analysts' earnings forecasts and stock returns. Additionally, the time-series dispersion of analysts' earnings forecasts appears to contain systematic risk components, which in turn impact stock returns. Chen and Chen (2015) investigated "The Effect of Excessive Managerial Confidence on Risk in Financial Institutions." This article demonstrates that overly confident executive managers, especially during economic downturns, increase both overall risk and bankruptcy risk. Banks can mitigate the negative impact of excessive managerial confidence by increasing the size of their board of directors and preventing the CEO from also serving as the board chair. Regulatory authorities can reduce banking risks by strengthening formal supervisory oversight.

3. ***Methodology***

The present study falls within the category of applied research and, in terms of nature, belongs to descriptive research. Methodologically, it aligns with correlational research. Data and information were collected using library research methods, including financial reports, explanatory notes, and stock market magazines. Descriptive and inferential statistics were employed for data analysis. Initially, tests for variance heterogeneity, the Levene's, and the Hausman tests were conducted. To validate or reject the research hypothesis, the E-views software was utilized. The study's statistical population comprises companies listed on the Tehran Stock Exchange during the years 2015 to 2021. A systematic elimination method resulted in a sample size of 126 companies for hypothesis testing. For the first hypothesis, we estimate Model 1 as follow:

(1) hired rateit=α+β1 OPT it+ β2 Ageit+β3 Past profitabilityi t+β4Past stock returnit+ β5ROAit+β6Returnit+β7Sizeit+β8Tobin' sQit+β9Volatilityit +£it

To address the second hypothesis, we estimate Regression Model 2:

(2) compensation it=α+β1 OPT it+ β2 Ageit+β3 Past profitabilityi t+β4Past stock returnit+ β5ROAit+β6Returnit+β7Sizeit+β8Tobin' sQit+β9Volatilityit +£it

To address the third hypothesis, we estimate Regression Model 3:

(3) investmentit =α+β1 OPT it+ β2 Ageit+β3 Past profitabilityi t+β4Past stock returnit+ β5ROAit+β6Returnit+β7Sizeit+β8Tobin' sQit+β9Volatilityit +£it

Where:

Hired rate: probability of hiring (choosing) the CEO

Compensation: CEO bonus

Investment: Company's investment

OPT: Managers' Optimism

Age: the life of the company

Past profitability: Past profitability

Past stock return: past stock return

ROA: return on assets

Return: stock returns

Size: The size of the company

Tobin's Q: Tobin's ratio

Volatility: Fluctuations in stock returns (Chen and Hsieh, 2022)

4. Research variables Measurement

4.1. Dependent Variables:

A. Probability of CEO Employment (Selection): This binary variable equals 1 if the CEO is different from the previous period and 0 otherwise 1 (Chen and Hsieh, 2022).

B. CEO Compensation: Calculated from accumulated net profit (loss), decisions made by the annual ordinary general meeting of shareholders, and summarized decisions of the ordinary general meeting of shareholders. Since companies typically disclose only a single figure as compensation without specifying various types (including non-cash compensation), the reported amount is considered the total compensation. According to Article 134 of the Commercial Law enacted in 1968, if specified in the company's articles of association, the general meeting of shareholders can allocate a certain proportion of the annual net profit to the board of directors as compensation. However, the compensation for managers in public joint-stock companies should not exceed 5% of the profit distributed to shareholders in the same year; in private joint-stock companies, it should not exceed 10% of the profit distributed to shareholders in the same year. Additionally, non-executive board members are not entitled to receive continuous or discontinuous payments from the company beyond what is stipulated in this article.

C. Company Investment: The ratio of capital expenditures to total assets1.

4.2. Independent variable

A. Managers' optimism: the absolute value of the difference between the expected profit per share and the actual profit per share divided by the stock market price at the beginning of the period.

4.3. Control Variables:

A. Company Age: The natural logarithm of the number of years since the company's establishment1 (Chen & Hsu, 2022).

B. Past Profitability: Net profit from the previous period divided by total assets in the previous year1 (Chen & Hsu, 2022).

C. Past Stock Returns: Equal to the stock returns from the previous period (same source).

D. Asset Returns: The ratio of net profit to book value of assets (same source).

E. Stock Returns: The average monthly stock returns during the year (same source).
F. Company Size: The natural logarithm of total assets (same source).
G. Tobin's Q: To calculate Tobin's Q , we use formula 4:
Tobin^' s Q=(equity market value+liabities market value)/(total assets replacemnet value) (4)
H. Volatility of stock returns: standard deviation of monthly stock returns during the year (same source)

4.4. Research hypotheses

Based on the research title and theoretical framework, we propose the following hypotheses:

Hypothesis 1: There is a significant relationship between CEO optimism and CEO selection.
Hypothesis 2: There is a significant relationship between CEO optimism and CEO compensation.
Hypothesis 3: There is a significant relationship between the CEO's optimism and the company's investment decisions.

5. Data analysis

5.1. Descriptive statistics of research variables

Before hypothesis testing, the variables are summarized in Table (1).

Table (1): Descriptive statistics of the research variables

Descriptive Indices	Research Variables											
	CEO Compensation	Company Investment	Probability of CEO Employment ((Selection	Managers' optimism	Company Age	Past Profitability	Past Stock Returns	Asset Returns	Stock Returns	Company Size	Tobin's Q	Volatility of stock returns
	Compensation	Investment	hired rate	OPT	Age	Past profitability	Past stock return	ROA	Return	Size	Tobin'sQ	Volatility
Mean	4.6541	0.0273	0.3764	0.0822	3.6555	0.1365	0.5460	0.1503	0.0951	14.982	5.0984	0.1817
median	4.6927	0.0264	0.0000	0.0222	3.7612	0.1104	0.2189	0.1259	0.0767	14.727	3.0126	0.1504
Max	9.7843	0.1156	1.0000	2.1236	4.2341	0.6731	8.1034	0.6731	0.5676	21.327	201.86	1.2228
min	0.0000	-0.0716	0.0000	0.0000	2.0794	-0.4044	-0.6580	-0.4044	-0.1469	11.197	0.5416	0.0214
Std	1.7935	0.0279	0.4847	0.2021	0.3716	0.1556	1.0068	0.1627	0.1076	1.6925	8.8524	0.1205
Skewness	-0.0414	0.0633	0.5101	1.3775	-1.0066	0.4851	2.6052	0.4038	0.9669	0.8048	1.3584	2.1040
Kurtosis	3.3809	3.1841	1.2602	5.5586	4.1803	3.9412	10.371	3.5621	4.5090	4.1990	4.8184	10.291
observation	882	882	882	882	882	882	882	882	882	882	882	882

Source: research finding

In Table (1), the mean for CEO compensation is approximately 65.4. The median indicates that half of the data points are below this value, and the other half are above it, resulting in a median value of approximately 69.4 for the CEO compensation variable. The standard deviation (a crucial measure of dispersion) is 79.1 for the same variable. The skewness coefficient for the CEO compensation variable is negative and close to zero, indicating that the distribution is slightly left-skewed. The kurtosis index, which measures the sharpness or flatness of the frequency curve relative to the standard normal curve, is positive for all variables in this study

5.2. Reliability Test of Research Variables

To assess the reliability of the variables, the Levene's test has been utilized, and the results are presented in Table (2).

Table (2): Levene's test results

Research variables		Levin-Lin test statistic	Significance level	result
CEO Compensation	Compensation	-132.749	0.0000	Reliable
Company Investment	Investment	-29.1567	0.0000	Reliable
Probability of CEO Employment (Selection)	hired rate	-18.5572	0.0000	Reliable
Managers' optimism	OPT	-419.521	0.0000	Reliable
Company Age	Age	-133.623	0.0000	Reliable
Past Profitability	Past profitability	-2.48796	0.0064	Reliable
Past Stock Returns	Past stock return	-28.4689	0.0000	Reliable
Asset Returns	ROA	-9.17811	0.0000	Reliable
Stock Returns	Return	-34.3383	0.0000	Reliable
Company Size	Size	-10.8592	0.0000	Reliable
Tobin's Q	Tobin's Q	-9.77700	0.0000	Reliable
Volatility of stock returns	Volatility	-23.9561	0.0000	Reliable

Source: research finding

In Table 2, all variables are at a reliable level. Therefore, their results are accumulated and regression models can be estimated.

5.3. The constant variance of error terms (residuals)

The assumption of heterogeneity of the variance of the residuals was examined through the LR test in Table 3) :

Table (3) LR test results

	Statistic type	**Statistic value**	**probability**
Hypothesis 2	F -statistic	642.7602	0.0000
Hypothesis 3	F -statistic	1461.617	0.0000

According to Table)3(, the statistical significance level (p-value) for the F-statistic is less than 5%. Consequently, we reject the null hypothesis that assumes homoscedasticity (equal variance) for hypotheses 2 and 3. Therefore, for hypotheses 2 and 3, the Generalized Least Squares (GLS) method is used for estimation and testing.

5.4. Correlation test

The results of correlation test are shown in Table (4).

Table (4): Correlation test results

Correlation	hired rate	OPT	Age	Past profitability	Past stock return	ROA	Return	Size	Tobin's Q	Volatility
hired rate	1									
OPT	0.0683	1								
Age	-0.0591	0.0774	1							
Past profitability	-0.0053	-0.0478	0.0265	1						
Past stock return	0.0707	0.0203	0.0186	-0.0037	1					
ROA	-0.0139	-0.0263	0.0632	0.4994	-0.0696	1				
Return	-0.0395	0.0514	0.0081	0.0124	-0.0451	-0.0173	1			
Size	0.0605	0.0260	0.0786	0.2514	-0.0127	0.2307	0.0073	1		
Tobin'sQ	-0.0184	-0.0101	-0.0355	0.0453	-0.0953	0.1510	-0.0745	-0.1811	1	
Volatility	-0.0372	0.0276	0.0358	-0.0260	-0.0633	-0.0125	0.4108	-0.0365	0.0038	1

Table 4 indicates that when the correlation coefficient is less than 0.75, there is no strong correlation between the independent variables. In other words, the variables are not strongly related to each other.

5.5. Diagnostic Tests in Mixed Data

To determine the estimation method, the F-Limer and Hausman tests were conducted for hypotheses 1 and 2, and the test results are described in Table (5).

Table (5): the results of the F-Limer and Hausman tests

	F-limer	Significance level	result	Hausman test	Significance level	result
Hypothesis 2	8.848225	0.0000	Panel data	16.731752	0.0431	Fixed effects
Hypothesis 3	2.494571	0.0000	Panel data	24.026884	0.0004	Fixed effects

In Table (5), according to the obtained results, the panel data method is accepted for hypothesis 2 and 3 models and according to hypothesis 2 and 3 models, the chi-square test probability is less than 5%, therefore the fixed effects are used to estimate and analyze hypothesis 2 and 3 models.

5.6. Summary of Research Hypotheses Analysis

5.6.1. The first hypothesis test

The results of the first hypothesis are presented in Table (6).

Table (6): the results of the first hypothesis test by using logistic data method

		coefficients	Standard error	-statistic Z	Significance level	result
y-intercept		-0.386292	0.921337	-0.419274	0.6750	Non-significant
Managers' optimism	OPT	0.729388	0.355154	2.053726	0.0400	positive
Company Age	Age	-0.391511	0.188985	-2.071658	0.0383	negative
Past Profitability	Past profitability	-0.084079	0.643450	-0.130669	0.8960	Non-significant
Past Stock Returns	Past stock return	0.138733	0.069067	2.008654	0.0446	positive
Asset Returns	ROA	-0.197264	0.623720	-0.316270	0.7518	Non-significant
Stock Returns	Return	-0.757605	0.942649	-0.803698	0.4216	Non-significant
Company Size	Size	0.086348	0.043819	1.970559	0.0488	positive
Tobin's Q	Tobin’sQ	-0.000299	0.008366	-0.035776	0.9715	Non-significant
Volatility of stock returns	Volatility	-0.058521	0.847660	-0.069038	0.9450	Non-significant
Mcfadden determination coefficient		0.415049				
Hosmer-Lemshow probability		0.2944				
LR-statistics		17.58090				
LR significance level		0.040359				
Wald test		4.217790				
significance level of Wald test		0.0403				

Source: research finding

In table 6, the z-statistic probability for the constant coefficient and the coefficients of Managers' optimism, company age, past stock returns, and company size on the selection of the CEO is less than 5%. Therefore, the above relationship is statistically significant. The coefficient of optimistic managers on the selection of the CEO is positive and significant. The z-statistic probability for variables such as past profitability, asset returns, stock returns, Tobin's Q, and stock return volatility on the selection of the CEO is greater than 5%. Consequently, the estimated coefficients for these variables are not statistically significant in the regression model. Therefore, with 95% confidence, this variable is insignificant in the regression model. The determination coefficient, which indicates the explanatory power of the independent variables, can explain approximately 41% of the variation in the dependent variable. This is an acceptable level for such models. Here, the p-values for the Hosmer-Lemeshow test are greater than 5%, indicating that the model fits the actual observations well. As observed, the significance level of the Wald statistic is less than 5%, rejecting the null hypothesis that the coefficients are zero. In other words, these coefficients are not zero. Considering the model, since the variable of optimistic managers positively and significantly affects the selection of the CEO, we reject the null hypothesis (H0). It can be concluded that there is a meaningful relationship between the optimism of managers and the selection of the CEO.

5.6.2. The second hypothesis test

The results of the second hypothesis are presented in Table (7).

Table (7): the results of the second hypothesis test by using logistic data method

		coefficients	**Standard error**	**-statistic t**	**Significance level**	**result**
y-intercept		5.065809	0.842222	6.014817	0.0000	positive
Managers' optimism	OPT	0.544661-	0.115050	-4.734118	0.0000	negative
Company Age	Age	0.337239	0.269372	1.251948	0.2110	Non-significant
Past Profitability	Past profitability	-0.231608	0.192394	-1.203821	0.2290	Non-significant
Past Stock Returns	Past stock return	-0.005262	0.015873	-0.331509	0.7404	Non-significant
Asset Returns	ROA	0.203783	0.183465	1.110744	0.2670	Non-significant
Stock Returns	Return	-0.666406	0.249287	-2.673245	0.0077	negative
Company Size	Size	-0.119289	0.035346	-3.374944	0.0008	negative
Tobin's Q	Tobin’sQ	0.007298	0.003188	2.289046	0.0224	positive
Volatility of stock returns	Volatility	0.704445	0.238034	2.959427	0.0032	positive
R^2		0.609648				
Adjusted R^2		0.539625				
F-statistic		46.82118				
Significance level		0.000000				
Durbin-Watson Test		1.649760				

Source: research finding

In Table (7), the t-statistic probability for the coefficients of optimistic managers, stock returns, company size, the Kyoto ratio, and stock return volatility on CEO compensation is less than 5%. Therefore, the above relationship is statistically significant. The estimated coefficient for the variable of optimistic managers on CEO compensation is negative and significant. The t-statistic probability for variables such as company age, past profitability, past stock returns, and asset returns on CEO compensation is greater than 5%. Consequently, the estimated coefficients for these variables are not statistically significant in the regression model. Therefore, with 95% confidence, this variable is insignificant in the regression model. Here, the Watson statistic value of 65.1 falls within the range of 5.1 to 5.2, indicating that the model's assumptions are validated. Given the model, as the variable of optimistic managers has a negative and significant impact on CEO compensation, we reject the null hypothesis (H0). There exists a significant relationship between managers' optimism and CEO compensation.

5.6.3. The third hypothesis test

The results of the third hypothesis are showed in Table (8).

Table (8): the results of the third hypothesis test by using logistic data method

		coefficients	**Standard error**	**-statistic t**	**Significance level**	**result**
y-intercept		-0.142437	0.005652	-25.20096	0.0000	positive
Managers' optimism	OPT	0.009081	0.000687	13.21830	0.0000	positive
Company Age	Age	0.002120	0.001689	1.255322	0.2098	Non-significant
Past Profitability	Past profitability	0.079130	0.001429	55.37155	0.0000	positive
Past Stock Returns	Past stock return	-0.000215	9.58E-05	-2.245373	0.0250	negative
Asset Returns	ROA	-0.022626	0.001294	-17.47872	0.0000	negative
Stock Returns	Return	0.018524	0.001351	13.70834	0.0000	positive
Company Size	Size	0.010198	0.000253	40.24274	0.0000	positive
Tobin's Q	Tobin'sQ	0.000169	3.09E-05	5.466612	0.0000	positive
Volatility of stock returns	Volatility	0.000708	0.001416	0.500038	0.6172	Non-significant
R^2		0.637680				
Adjusted R^2		0.572685				
F-statistic		433.4463				
Significance level		0.000000				
Durbin-Watson Test		1.977363				

Source: research finding

In Table (8)., the statistical t-test probability for the coefficients of variables such as CEO overconfidence, past profitability, past stock returns, asset returns, stock returns, Company Size, and Tobin's Q on corporate investment decisions is less than 5%. Therefore, the observed relationship is statistically significant, and the estimated coefficient for the CEO overconfidence variable is positive and meaningful in terms of investment decisions.

Additionally, the t-test probability for variables related to company age and stock return volatility on investment decisions exceeds 5%. Consequently, the estimated coefficients for these variables are not statistically significant. Thus, with 95% confidence, this variable is considered insignificant in the regression model. The adjusted coefficient of determination indicates that the independent variables can explain approximately 57% of the dependent variable's variations. Notably, the Watson statistic value of 98.1 falls within the range of 5.1 to 5.2, confirming the model's independence assumptions. Given the hypothesis that CEO overconfidence significantly impacts investment decisions, we reject the null hypothesis (H0). In summary, a significant relationship exists between CEO optimism and corporate investment decisions.

6. Discussion and Conclusion

The current study seeks to explore how CEO overconfidence influences CEO selection, compensation, and capital investment decisions within companies. Based on our first hypothesis, we conclude that CEO overconfidence significantly and directly affects the selection of a company's CEO. The argument is that overconfident managers are more prone to making irrational decisions than others, especially in capital investment choices. Their actions may lead to a reduction in the company's value and put it at risk. Managers with excessive confidence often overstate their abilities and performance while underestimating the potential financial distress costs. Consequently, companies are likely to replace such CEOs during future periods, as they increase the company's risk. Chen and Hsu (2022) discovered that CEOs characterized as "optimistic" demonstrate stronger prior performance and are more likely to be rehired as CEOs by other firms. This finding aligns with our study results. In relation to our second hypothesis, we observe that CEO overconfidence exerts a significant negative impact on CEO compensation. Positive media reports amplify the overinvestment resulting from CEO overconfidence, whereas negative reports can mitigate it. This implies that overly optimistic managers view underperforming projects—even those with negative net present value—as opportunities for value creation. However, this perception may not align with reality. According to signaling theory, negative performance changes in projects can negatively impact market prices and investor expectations about the company's future performance, ultimately reducing future benefits and CEO compensation. In this context, Vaez et al. (2018) also found that earnings accuracy dimensions significantly affect board compensation, which is consistent with our research findings. Finally, our third hypothesis indicates that CEO overconfidence directly influences capital investment decisions. Overly optimistic CEOs tend to increase investment, particularly in regions with higher marketization. One of the most significant factors that may influence such results is that managers who are optimistic about the profitability of their business units feel that the stock market undervalues them. Consequently, overly optimistic managers tend to engage in excessive capital investment. In reality, they perceive poorly performing investment projects—even those with negative net present value—as value-creating opportunities. This leads to increased investment. In a similar context, Gholami Jamkarni et al. (2018) discovered a significant correlation between executive managers' characteristics and investment efficiency,

which is consistent with our study's findings

Based on the results obtained from testing the first hypothesis, it is recommended that investors pay attention to behavioral characteristics of CEOs, including optimism. Market regulators and lawmakers are advised to create levels of financial analysts to evaluate the quality of earnings forecasts made by management. Additionally, new forecasts should be provided to the market to address the uncertainty about the accuracy of managers' predictions regarding sales and future profits. This approach can help control the intensity of CEO optimism.

For the second hypothesis, it is advisable that companies prioritize hiring knowledgeable and pragmatic CEOs during the selection process. These CEOs can improve efficiency, optimize financial strategies, mitigate bankruptcy risks, and ultimately benefit shareholders. Additionally, they may also receive higher compensation.

In conclusion, investors should consider behavioral factors, including CEO optimism, when selecting investment opportunities. Furthermore, companies can establish committees comprising specialized shareholders and managers to make informed investment decisions. This proactive approach can mitigate resource wastage and curb irrational choices by overly optimistic managers. Researchers are encouraged to delve deeper into these areas in their future studies:

- Considering that management decisions play a crucial role in investment efficiency, it is recommended to conduct further studies on the relationship between excessive CEO confidence and investment efficiency.
- In this research, CEO overconfidence was measured using the deviation of predicted earnings from actual realized earnings. For future studies, it is suggested to explore other metrics and compare their results with those obtained in this study.
- Since comprehensive research in this area has not been conducted in the country, it is advisable to extend the investigation over a longer time horizon.
- Additionally, the impact of other behavioral biases of CEOs, such as myopia, self-confidence, and risk aversion, on CEO selection, compensation, and capital investment decisions should be explored.

Regarding research limitations, the primary challenge lies in extrapolating the results to diverse conditions and timeframes. It's plausible that the relationships identified in this study might not apply universally or in subsequent periods. Therefore, prudent caution is necessary when extending the findings. However, it's important to note that these limitations do not undermine the study's validity, which remains robust in terms of both internal and external validity.

References

- Badiee and Davoodi Kasbi (2017): "Investigating the Relationship between Managerial Overconfidence and Financial Performance Evaluation and Risk." Presented at the First Conference on Accounting, Management, and Economics with a National Economic Dynamism Approach, Malayer, Islamic Azad University, Malayer Branch (Written in Persian).
- Bouteska A, Boutheina R. (2018). "Loss aversion, overconfidence of investors and their impact on market performance evidence from the US stock markets", Journal of Economics, Finance and Administrative Science, 25(50): 451-478
- Chen, H. & Chen, C. (2015). "Managerial Overconfidence and Bank Risk Taking: A Cross-Country Analysis". European Financial Management Association, 2015 Annual Meetings, 24-27.
- Chen, P. J., & Hsu, C. Y. (2022). "CEO optimism, CEO selection, compensation, and corporate investment decision: The case of CEOs who were rehired as CEOs by other firms after turnover". The North American Journal of Economics and Finance, 63: 101797.
- Choi, P. M. S., Chung, C. Y., Liu, C. (2018). "Self-attribution of overconfident CEOs and asymmetric investment-cash flow sensitivity", The North American Journal of Economics and Finance 46: 1-14.
- Chakraborty, N Gupta, J Mahakud .(2023). "Corporate governance and investment decisions of retail investors in equity: do group affiliation and firm age matter?". Managerial Auditing . emerald.com.
- Davoudi and Ghoforian Shaghardi (2019): "The Relationship Between CEO Confidence Overconfidence and Company Performance in Companies Listed on the Tehran Stock Exchange." Presented at the Seventeenth National Conference on Iranian Accounting, Qom (Written in Persian).
- Gholami Jamkarni, Mohammadi, and Seyyed Mosi (2018): "The Impact of Ownership Type on the Relationship Between Executive Managers' Characteristics and Investment Efficiency." Published in the journal Research in Financial Accounting and Auditing, Volume 40, Issue 10, pages 89-109
- Hamedi and Saraf (2017): "The Relationship Between Excessive Managerial Confidence and Financial and Economic Performance in Companies Listed on the Tehran Stock Exchange." Presented at the Third International Conference on Management, Accounting, and Economics with an Emphasis on Economic Resilience, Tehran, Allameh Majlesi University (Written in Persian).
- Hasani, Talebi, and Zirdast (2018): "The Impact of Inflation Rate Fluctuations on the Relationship Between Managerial Overconfidence and Overinvestment." Published in the Journal of Accounting and Management Perspectives, Volume 1, Issue 1 (Written in Persian).
- Hirshleifer, D., Low, A., Teoh, S. H (2012). "Are overconfidence CEOs better innovators?", Journal of Finance 67: 1457-1498.
- Itzhak Ben-David, John R. Graham, Campbell R. Harvey, Managerial Miscalibration*, The Quarterly Journal of Economics, Volume 128, Issue 4, November 2013, Pages 1547–1584
- Kennedy, J., Anderson, C., Moore, D. (2013). "When overconfidence is revealed to others: testing the status-enhancement theory of overconfidence". Organizational Behavior and Human Decision Processes 122: 266-279.
- Kim, D., & Na, H. (2016). "The forecast dispersion anomaly revisited: Time-series forecast dispersion and the cross-section of stock returns". Journal of Empirical Finance, 39: 37-53
- Khati Dizabadi and Gholinezhad Jamali (2020): "Examining the Relationship Between Excessive Confidence and Managerial Optimism with the Capital Structure of Companies Listed on the Tehran Stock Exchange." Presented at the Seventh International Conference on

Financial Affairs, Trade, Banking, Economics, and Accounting (Written in Persian).

- Kkoo Ho & Yang, Daecheon. (2018). "Managerial Overconfidence, Self-Attribution Bias, and Downwardly Sticky Investment: Evidence from Korea". Emerging Markets Finance and Trade, 54(1), 144-161.
- Lai, S., Li, X., Chan, K. C .(2021). "CEO overconfidence and labor investment efficiency", The North American Journal of Economics and Finance 55: 101319.
- Lu Xiaowei, Ya Sheng & Jiexiang Wang .(2020). "The influence of executivecompensation incentives on R&D investment: the moderating effect of executive overconfidence",Technology Analysis & Strategic Management, DOI: 10.1080.09537325.2020.1748184.
- Mohammadi Y., Mohammadi E., and Esmaili Kia G.(2019): "Overconfidence of Managers, Financial Provision Policies, and Investment Efficiency." Published in the Biannual Journal of Iranian Economic Issues, Issue 2, pages 1-171 (Written in Persian).
- Moradi M. and Jafarnejad Z. (2016): "Investigating the Relationship Between False Managerial Confidence and Performance of Companies Listed on the Tehran Stock Exchange." Master's thesis, Islamic Azad University - Shahroud Branch - Faculty of Economics and Accounting (Written in Persian).
- Qaemmaghami S. M. (2017): "Examining the Impact of Managerial Optimism on High Valuation of Stocks in Selected Companies on the Tehran Stock Exchange." Presented at the First National Conference on Innovative Research in Iran and World Management, Economics, Accounting, and Humanities in Shiraz (Written in Persian)
- Salehi, M., Afzal Aghaei Naeini, A., & Rouhi, S. (2020). "The relationship between managers' narcissism and overconfidence on corporate risk-taking". The TQM Journal, ahead-of-print(ahead-of-print). doi:10.1108.tqm-07-2020-0168.
- Shafieinejad I. (2022): "Investigating the Relationship between Excessive Managerial Self-Confidence, Domestic Financial Provision, and Investment Performance in the Tehran Stock Exchange." Presented at the Ninth International Conference on Innovative Research in Accounting, Management, and Humanities in the Third Millennium (Written in Persian).
- Studeh R., Zeinli Kermani A., Bakhshesh Tanyani H. (1400): "Excessive Managerial Self-Confidence and Its Impact on Internal Financial Provision and Investment Efficiency in Companies Listed on the Tehran Stock Exchange." Published in the Public Policy Quarterly in Management, Volume 44, Issue 2, pages 109-99
- Takada, T., & Muramiya, K. (2017). "Quality of Financial Inputs and Management Earnings Forecast Accuracy in Japan". Available at SSRN 2940578.
- Vaez, Seyyed Ali; Montazerhajat, Amirhossein; and Banaei Ghadim, Rahim (2018): "Investigating the Impact of Earnings Accuracy Dimensions on Board of Directors' Compensation in Companies Listed on the Tehran Stock Exchange." Published in the journal Public Policy Quarterly in Management, Volume 44, Issue 2, pages 109-99
- Vitanova, Ivana .(2019). "Nurturing overconfidence: The relationship between leader power, overconfidence and firm performance". The Leadership Quarterly, (2): 1-16.
- Zamani Khorasgani and Heydari (2022): "The Effect of Managerial Overconfidence on Corporate Social Responsibility Activities." Presented at the Eighteenth National Conference on Innovative Approaches in Management, Economics, and Accounting, Babol (Written in Persian).
- Zinali and Aghabigi (2019): "Investigating the Relationship Between CEO False Confidence and Company Performance and Profit Management in Companies Listed on the Tehran Stock Exchange." Published in the Journal of

Accounting and Management Perspectives, Volume 10, Issue 1(Written in Persian).

- Zinalli Kermani S., and Teyyani B. (2021): "Excessive Managerial Confidence and Internal Financing Efficiency in Companies Listed on the Tehran Stock Exchange." Presented at the Ninth International Conference on Innovative Research in Accounting, Management, and Economics.(Written in Persian)