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## **STUDYING THE RELATIONSHIP BETWEEN MANAGERS' OVERCONFIDENCE AND FINANCIAL REPORTING QUALITY EMPHASIZING ON INTERMEDIARY ROLE OF CORPORATE GOVERNANCE MECHANISMS**

**\*Mohammad Faraji-e-Benaei and Younes Badavar Nahandi**

*Department of Accounting, College of Management, Economics & Accounting, Tabriz Branch, Islamic Azad University, Tabriz, Iran*

*\*Author for Correspondence*

### **ABSTRACT**

The behavioral phenomenon of managers' over-confidence is derived from the moral emotions' theory posed by Smith (1975) and personal economic behavior in psychology. Undoubtedly due to the negative effects of this behavioral phenomenon that realizes in accruals, the quality of financial reporting by firms is affected. The present research we have tried to study the relationship between managers' overconfidence and financial reporting quality emphasizing on intermediary role of corporate governance mechanisms in firms enlisted in Tehran Stock Exchange. To identify overconfidence of managers we have used three criteria including capital expenditures, excessive investment on assets, and upward prediction of earnings by managers and we have used the financial information precision index in Barth's (2001) model in order to calculate financial reporting quality. The goal of this research was applied and the method was post incidental correlation type. By using systematic deletion method and by exerting some conditions on the population 83 firms were chosen as our sample during the time period between 2006 and 2012. Also pooled data method was used to test research hypotheses. Research results showed that there was not a meaningful relationship between managers' overconfidence and financial reporting quality. Also evidences showed that the presence of corporate governance mechanisms did not affect the relationship managers' overconfidence and financial reporting quality.

**Keywords:** *Financial Reporting Quality, Managers' Overconfidence, Financial Information Precision, Corporate Governance Mechanisms*

### **INTRODUCTION**

Financial reporting reflects income statement of a business unit in return to its resources and thus it supplies a basis to assess the duty of socialization by the management and making economic decisions (The Committee to devise accounting standards, 2009). Making proper and logical economic decisions by participants in capital market leads to economic development and improvement of public welfare (Bolu, 2007). But there is always the probability of incorrect information presented by a company. Thus, information risk is one of several risks regarding a company. This means that the information shown in financial statements presented by firms may be far from reality and fake (Arab & Talebian, 2009).

After the approval of bond bourse in Iran there have been several cases through which managers of companies have presented their complaints to the courts regarding information quality issue. This means that members of board of directors may have signed fake reports and financial statements due to lack of knowledge about requirements and standards in accounting and financial reporting and lack of consistence in internal control systems and this has caused some problems. On the other hand, financial information is also affected by current ambiguities because it involves estimates and the effects of exchanges among certain appropriated financial periods (The Committee to devise accounting standards, 2009). Most of these ambiguities resulted from management's deeds and decisions. Authority in utilizing accounting standards and using judgment in estimating and prediction are among other probable factors in causing ambiguity. Also regarding that managers deal with future unknowns such as demand, cash flows, competition, and ... in their estimates, these predictions may be affected by managers' overconfidence and entail manager's personal attitudes to some extent and cause a certain degree of error. This issue that

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is known as management's biases and is considered as one of earning prediction errors may affect managers' predictions negatively (Lotfi & Hajipour, 2010).

Results of researches carried out by Malmendier & Tate (2008), Kurdrivo (2009), Deshmukh & *et al.*, (2010), Malmendier & Tate (2011), and Hirshleifer & *et al.*, (2012) showed that managers' overconfidence has affected firm's investment, financing, and dividends policy (Ahmed & Duellman, 2013). Lotfi & Hajipour (2010) referred to the research by Hribar & Yang (2006) regarding that overconfidence increases the error resulted from optimism in the format of lack of access to predicted earnings and in the form of earnings management. They concluded that managers' overconfidence as psychological biases is considered as one of effective factors in earning management error.

In addition to this knowledge and the study of managers' overconfidence, regarding several studies carried out in this field have shown that there have been some effects on firm's financial decisions, earning prediction error, and fake earning management and regarding the desirable effects and economic outcomes of financial reporting quality, the present research is going to study the relationship between behavioral phenomenon of managers considering overconfidence and financial reporting quality and answer the question below: Is there a relationship between managers' overconfidence and financial reporting quality?

### **Theoretical Foundations and Research Literature:**

Daniel Conman received Nobel Prize in economics in 2002 due to his article entitled: “unifying perspectives of research in psychology and economics specifically regarding judgment and decision making by human beings under uncertainty and doubtfulness conditions”. He and many outstanding researchers carried out studies about presuppositions in economic standards and financial models that tend to be violated by real human behavior and that how these models are devised or why human beings act illogically in primary stages. Search into the description of economic behaviors by an individual is not a new issue in psychology and dates back to Smith's (1759) theory of ‘moral passions’. However, during the last 50 years some researchers such as Conman, Tversky, and Taler have differentiated between individual differences and have started to study about their effects on human behavior. Thus, psychology has gained a relatively higher value compared to economics and theory of limited logics has been changed into an important challenge for current economic models.

Those managers who systematically estimate the good performance of their companies higher than the real amounts and estimate the probability of weak performance less than reality are known as overconfident managers (Heaton, 2002).

The effects of managers' overconfidence on firm policies includes very important accounting issues because managers' overconfidence results in firm value reduction as a stimulating factor in making decisions by managers (Ahmed & Duellman, 2013). Also another consequence of managers' overconfidence is excessive optimism regarding internal firm controls that lead to legal claims created against those managers who have signed income statements. Thus, the recognition and study of managers' overconfidence on investment helps in making appropriate investment decisions. Heaton (2002) showed analytically that managers' optimism in the form of excessive valuation of projects by the firms and owners' equity and also investment in projects is realized with negative current net value which were incorrectly approved as positive current net value (Ahmed & Duellman, 2013). Ben *et al.*, (2007) and Deshmukh & *et al.*, (2009) concluded in a research about incorrect scaling of management that managers' overconfidence creates deviations in a set of firm's decisions including investment, financing, and dividends policies (Ahmed & Duellman, 2013).

Beaker & *et al.*, (2007) studied the financial behavior of firms and found that managers' overconfidence exerts great effects on firm investment, financing, and dividends policy. Kordiero (2009), and Deshmukh & *et al.*, (2010) found evidences regarding that overconfident managers tend to pay less stock earnings than other managers in a research about studying the relationship between managers' overconfidence and dividends policy. According to Heaton (2002) over-investment or under-investment entails a part in net current value projects which is ignored by positive thoughtful managers. The control mechanism of a company that deals with over-investment consumes the whole cash flows and in this case managers avoid

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investing on projects having negative current net value. Additionally, overconfidence affects firms' capital structure. Malmendier *et al.*, (2005) studied a relationship between financial decisions and managerial overconfidence and approved that overconfident managers barely use asset management.

Findings in many researches such as Betty & *et al.*, (2007), Bidel & Hillary (2007), Bidel & *et al.*, (2009), Francis & *et al.*, (2005), and Wordy (2006) emphasized that financial reporting quality reduces moral risks and incorrect selection through information asymmetry among creditors and investors and results in a reduction of measurement costs and finally risk reduction and reduction in financing costs (Saghafi & Arab, 2010). Also the amount and precision of financial information can affect capital cost. Usually higher quality and precision of information, results in capital reduction (Arab and Talebian, 2009). Also qualified financial reporting can have important economic outcomes such as an increase in investment efficiency. Hilly & *et al.*, (1999) believed that financial reporting quality improvement results in increasing stock's liquidation degree and stock performance enhancement (Nikoomaram & Badawar-e-Nahandi, 2009).

Nikoomaram & Badawar-e-Nahandi (2009) reasoned that studying the theoretical foundations and goals of financial reporting shows that one of the goals of financial reporting is to help investors and creditors to predict future cash flows. Some scholars and devisers of theoretical foundations and financial reporting goal organizers believe that by using accounting accruals' earnings we can predict future cash flows. Accounting profits based on accruals results in differentiation between operational earnings and net operational cash flows. Some of the most important factors in differentiation between accruals and cash flows are deferred items, items transferred to future periods and non-cash items. Barth & *et al.*, (2001) carried out a research about accruals and prediction of future cash flows based on Dicho & *et al.*'s (1981) model and posed a cash flows prediction model through accruals.

They studied about the role of accruals in future cash flows prediction. This model showed that the items in accruals reflect different information related to cash flows. Khajavi & Nazemi (2005) studied about the role of accruals in measuring firms' performance in a time series based on findings in Dicho & Dichew (2002). Since accrual figures need presuppositions and future cash flows prediction, the quality of accruals and earnings reduces by increasing prediction error amount of accruals and finally they concluded that characteristics of any firm can be used like the absolute amounts of accruals during operational cycle, criterion deviation from sales, cash flows of accruals, earnings, and firm size as tools to assess earnings quality. Therefore, based on the argument by Nikoomaram & Badawar-e-Nahandi (2009) and the model posed by Barth & *et al.*, (2001), this criterion is equated with financial information precision and is used as a criterion to measure financial reporting quality.

Sometimes decisions by managers can be affected by overconfidence (optimism) and cause a degree of error. Since the mistakes in investment decisions of managers realize in accruals, this result in impetuous financial reporting and it is considered as an effective factor in financial reporting quality. Cohen (2004) stated that financial information precision represents elements of accounting accruals' earnings when there is flexibility and authority in selection of accounting approaches to predict expected cash flows.

Thus, high precision and predictability of accruals elements' earnings is considered to be among indexes to identify information content and financial reporting quality. In other words, managers use optional accruals in applying their judgments to carry out estimates and predictions. Therefore, the more deferred items due to optimistic behavior of managers and derived through mental beliefs of managers' result in a reduction of accruals' quality through increasing accruals' prediction error.

Francis & *et al.*, (2006) studied the relationship between management's fame and earnings quality and concluded that the fame amount of top administrative management and earnings quality have a negative relationship. They believed that board of directors hires famous managers to manage complicated and changeable environments and the low quality of earnings in these companies is due to variable environments and other internal characteristics of them and not management's actions.

Schrand & Zechman (2011) concluded in a research about the effect of managers' overconfidence on incorrect financial reporting that the positive relationship between managers' overconfidence and the

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probability of fake actions in financial statements through corporate governance mechanisms does not decrease.

Hribar & Yang (2012) studied the effect of managers' overconfidence on predicted earnings by management and earning management and concluded that there is more probability that optimistic managers face with lack of success in achievement of predicted earnings. The result of their research showed that overconfidence increases the error resulted from optimism both in the form of a probability of lack of predicted earnings' achievement and earning management.

Ahmed & Duellman (2013) investigated the relationship between managers' overconfidence and conservative accounting and showed that there is a negative relationship between managers' overconfidence and conservatism. These findings showed that overconfident managers tend to defer the recognition of losses and use conservative accounting less. Also in this research there were no evidences found to show the effect of corporate governance mechanisms on overconfidence.

Presley & Abbott (2013) found out after studying the relationship between managers' overconfidence and re-presentation of financial statements that there has been a meaningful difference between overconfident managers in firms with re-presentation and firms without re-presentation.

Demerjian & *et al.*, (2013) concluded after a research about management's efficiency and earnings management that there is a positive relationship between management's efficiency and earnings management. In other words, earnings quality (the amount of relationship between accruals and cash flows) improves by increasing management's efficiency. Specifically, the efficiency of managers depends on accruals' consistency and high earnings, low errors in estimation of claims not collected, accruals' quality and next less re-presentation. In other words, results of their research showed that the quality of judgments and estimations used by managers affect the shape of earnings.

Baradaran & Rezaee (2008) carried out a research on the effect of the composition of stockholders on information content of earnings in firms enlisted in Tehran Stock Exchange and found out that there is not any relationship between institutional stockholders' ownership concentration amount and information content of accounting earnings (financial reporting quality).

Nikoomaram & Badawar-e-Nahandi (2009) concluded in a research about the identification and presentation of a pattern to determine and assess effective factors in financial reporting quality selection in Iran that financial reporting quality has a positive relationship with profitability margin, and firm management's efficiency and it has a negative relationship with competition in product market, management's conservatism, size, capital demand of the activity, operational cycle, and the complexity of activity environment of the company. However, there was not any relationship observed between financial reporting quality and growth opportunities, ownership concentration, structure of board of directors, board of directors' ownership, loyalty of management, and firm's leverage.

Malekian & *et al.*, (2013) studied the relationship between managers' overconfidence and conservatism in firms enlisted in Tehran Stock Exchange during the time period between 2006 and 2011. They considered managers' overconfidence as the dependent variable and conservatism as an independent variable.

Results showed that there has been a meaningful relationship between managers' overconfidence and conservatism in all firms under investigations.

Heidari (2014) investigated about the effect of behavioral factor of overconfidence of management on cost stickiness in firms enlisted in Tehran Stock Exchange during the years between 2002 and 2012. He utilized Anderson's generalized model in five states to test hypotheses. His findings showed that the behavioral factor of overconfidence on the part of management resulted in increasing costs' stickiness.

## Research Hypotheses:

**First Hypothesis:** there is a relationship between managers' overconfidence and financial reporting quality.

**Second Hypothesis:** in the presence of corporate governance mechanisms, the relationship between managers' overconfidence and financial reporting quality becomes weaker.

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### Research Methodology:

The goal of the present research is to study the relationship between managers' overconfidence and financial reporting quality in firms enlisted in Tehran Stock Exchange. The research method is correlation and it is post-incidental methodologically. Regarding the goal and since it is expected that the results of this research is going to be used by institutions and authorities and legislative forces and professionals, it is applied. To collect data to calculate variables and to do hypotheses' tests, we have used different resources in internet such as bourse website, Codal web, and rdis.ir website and we have used Excel to measure and calculate variables. In information analysis we have used pooled data method and tested the research hypotheses by using a logistic multiple variable regression model using Eviews7 software. The statistical population for this research entails all firms enlisted in Tehran Stock Exchange from 2006 to 2012.

The statistical sample was selected by considering the research variables and regarding the following limits and conditions using a systematic deletion method.

- 1) Firms should not have been enlisted in Tehran Stock Exchange before 2006.
- 2) Due to the differences in activities, the firms selected should not be from among financial intermediaries, holding, banks, and real estates.
- 3) In order to observe the same dates to report and to eliminate seasonal effects, the fiscal year should and at the end of Esfand (21<sup>st</sup> of March).
- 4) The firms should have had permanent activities during the study period and their stocks should have been exchanged. In other words, they should not have stopped or changed their fiscal year.
- 5) There should not be exchange stops for more than 6 months.
- 6) The required data should be accessible.

After applying the limitations and conditions mentioned above, 83 firms from among 18 industries during a 7 years period were selected as our statistical sample.

### Research Variables:

#### Dependent Variable

The dependent variable in this research was financial reporting quality. To calculate financial reporting quality we have used future cash flows prediction criterion by accrual elements of accounting earnings (financial information precision) in Barth's model.

Cohen (2004) stated that financial information precision represents elements accrual earnings in accounting in flexibility and authority conditions in selecting accounting approaches to predict expected cash flows. Thus, high precision and predictability of elements of accrual earnings is considered as indexes of identifying information content and financial reporting quality. To measure financial information precision experimentally, we used residuals of the future cash flows prediction regression equation by using the constituents of operational accounting earnings during the previous period (Barth & *et al.*, 2001).

$$CFO_{i,t} + CFO_{i,t+1} = \alpha + \beta_1 CFO_{i,t} + \beta_2 \Delta AR_{i,t} + \beta_3 \Delta INV_{i,t} + \beta_4 \Delta AP_{i,t} + \beta_5 DEPR_{i,t} + \beta_6 OTHER_{i,t} + \varepsilon_{i,t+1}$$

The variables used in this equation were defined as followings. It should be mentioned that all variables were converged through total assets at the start of the period.

$CFO_{i,t+1}$ : cash flow resulted from operations of firm i during the year t+1

$CFO_{i,t}$ : cash flow resulted from operations of firm i during the year t

$\Delta AR_{i,t}$ : change in accounts receivable of firm i during the year t

$\Delta INV_{i,t}$ : change in inventories of firm i during the year t

$DEPR_{i,t}$ : depreciation cost of tangible fixed assets of firm i during the year t

$\varepsilon_{i,t+1}$ : regression error amount of firm i during the year t+1

OTHER: net other accruals which are calculated as follows:

$$OTHER = OP - (CFO + \Delta AR + \Delta INV - \Delta AP - DEPR)$$

The experimental criterion to measure financial reporting quality was absolute amount of residuals. The smaller amount of residuals represented higher predictability and financial information precision and financial reporting quality. The median of residuals was considered as the differentiation point of



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information quality. This means that if equation residuals were equal to or less than absolute amounts of residuals, financial reporting will be qualified or else it would be considered as low quality.

### Independent Variable

In this research managers' overconfidence has been considered as the independent variable. Three criteria have been used to measure overconfidence and in the following section we will deal with explaining how to measure them.

### Measurement Criteria of Managers' Overconfidence:

#### Criteria Based on Investment Decisions

Malmendier & Tate (2005, 2008), David & *et al.*, Graham & Hiroy (2010) showed that investment decisions by companies are related with managers' overconfidence. They claimed that these decisions may contain information about the level of overconfidence. Thus, we have used 2 measurement criteria based on investment decisions of current firm managers as follows:

##### Capital Expenditures:

The first criterion based on investment decisions is capital expenditures. This criterion based on findings by David, Graham & Hiroy (2010) show that firms with overconfidence have higher capital expenditures and findings of Malmendier & Tate (2005) approves that overconfident managers tend towards over-investment in capital projects. Ahmed & Duellman (2013) used them in their research to measure managers' overconfidence. The measurement method of this criterion shows that if we divide capital expenditures into total assets in a certain year and it is more than the median amount of capital expenditures divided by total assets of the industry at the same year, this would be shown by number 1, and if not it would be represented as 0.

Capital expenditures used for this criterion were calculated through the following equation:

(Tangible and intangible fixed assets' excess – sales of tangible and intangible fixed assets) + Research & Development costs / total assets at the start of the period

##### Surplus Investment in Assets:

This criterion was posed by Schrand & Zechman (2012). Schrand & Zechman (2012) and Ahmed & Duellman (2013) used it in their researches. To measure this criterion the residual of growth regression of total assets is divided into growth of total sales for each year-firm, in a way that if the residual of the regression mentioned is more than 0, number 1 will be attributed, or else it would be represented by 0. In other words, if the rate of growth of assets is faster than sales' growth, overconfident managers have invested more compared to other similar firms and this shows managers' overconfidence in those companies. The regression model of this criterion is calculated through the following equation:

$$TAG_{i,t} = \beta_1 + \beta_2 SG_{i,t} + E_{i,t}$$

$TAG_{i,t}$ : total assets' growth of firm *i* during year *t*

$SG_{i,t}$ : total sales' growth of firm *i* during year *t*

$E_{i,t}$ : regression residual

### Upward Prediction by Managers

This criterion was posed by Lin & *et al.*, (2005). Hribar & Yang (2005) and Jing & *et al.*, (2008) used this criterion in their researches. They reasoned that overconfident managers tend upward prediction of earnings. The measurement of this criterion is as follows: if the number of upward predicted earnings (positively) equals or is more than the number of downward predicted earnings (negatively), managers have been overconfident (Park & Kim, 2009). To measure it we have used earning predicted per share and real earning for the periods of 3 months, 6 months (audited), 9 months, and 12 months (audited) to calculate the number of predicted positive and negative earnings.

### Control Variable

Control variables were chosen regarding the research patterns posed and based on previous studies by researchers such as Ahmed & Duellman (2013), Schrand & Zechman (2013), and Park & Kim (2009) as follows:

*Firm Size (SIZE)*: natural logarithm of total assets

*Leverage (LEV)*: the ratio of total liabilities to total assets

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**Sales Growth Percentage Annually (SG):** current year sales minus sales in previous year divided by sales in previous year

**Sales Standard Deviation (Stdv):** standard deviation for 4 years of sales converged by total assets

**Cash Flow Resulted from Operations (Cfo):** cash flow resulting from operations

**Growth Level (MTB):** the ratio of market value to book value of owners' equity

**Return on Assets (ROA):** the ratio of net income divided by total assets

### Adjustment Variable (CG)

The adjustment variable in this research was corporate governance mechanisms. Two corporate governance mechanisms of board independence and institutional ownership were utilized and their operational definitions are as follows:

**Board Independence (BIND):** the ratio of the number of managers not in charge divided by total board members

**Institutional Stockholders' Ownership Percentage (INSOWN):** the ratio of the number of stocks owned by institutional stockholders divided by total number of stocks

### Research Findings:

Table 1 show the descriptive statistics of the present research which shows that descriptive parameters for each variable have been represented in isolation. These parameters include information related to central tendency indexes such as average, mean, median, minimum, and maximum and also information related to dispersion such as standard deviation. In this table, the number of observations for each variable has been 581, as it can be seen in table 1. The average and median gained for board independence was equal to 0.629 and 0.600, respectively. This showed that the average amount of board members not in charge in firms investigated was %62 and this shows the high amount of corporate governance mechanism regarding board independence. The average and median of the percentage of institutional stockholders' ownership of the firms under investigations were calculated to be 0.732 and 0.757, respectively. This showed that the average institutional ownership of the firms investigated was equal to %73. It should be noted that due to the qualitative nature of the dependent and independent variables in Barth's financial information precision model, codes 1 and 0 were assigned to the imaginative variables in this research and it was impossible to analyze the descriptive statistics afterwards.

**Table 1: The descriptive statistics of research variables**

| Variable                                      | Symbol | Average | Median | Minimum | Maximum | Standard deviation |
|-----------------------------------------------|--------|---------|--------|---------|---------|--------------------|
| Board independence                            | BIND   | 0.629   | 0.600  | 0.000   | 1.000   | 0.204              |
| Institutional stockholders' ownership percent | INSOWN | 0.732   | 0.757  | 0.000   | 1.000   | 0.148              |
| Market value to book value ratio              | MTB    | 2.397   | 1.813  | 0.279   | 154.3   | 6.478              |
| Leverage                                      | LEV    | 0.616   | 0.627  | 0.085   | 0.978   | 0.189              |
| Firm size                                     | SIZE   | 13.65   | 13.65  | 9.821   | 18.45   | 1.409              |
| Annual sales growth                           | SG     | 0.179   | 0.153  | -0.8    | 1.728   | 0.313              |
| Cash flow resulting from operations           | CFO    | 1.685   | 0.111  | -9.1    | 197.4   | 10.79              |
| Sales standard deviation                      | STDVS  | 0.158   | 0.125  | 0.016   | 0.820   | 0.118              |
| Return on assets                              | ROA    | 0.142   | 0.114  | -0.3    | 0.801   | 0.321              |

### Testing Research Hypotheses:

#### Data Analysis

##### Testing First Hypothesis:

Three models have been utilized to analyze and test the first hypothesis, 'studying the managers' overconfidence and financial reporting quality', by using a logistic regression model due to the qualitative nature of the dependent variable.

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Results of table (2) in model (1) show that there has been a negative relationship between managers' overconfidence (capital expenditure criterion) and financial reporting quality (financial information precision criterion) in a meaningfulness level of %5. Since the meaningfulness level (P-Value = 0.039) is less than %5, we can claim that by increasing managers' overconfidence by using more capital expenditures compared to other similar firms, financial information precision (financial reporting quality) will decrease.

**Table 2: Results of testing first hypothesis**

FRQB it =  $\beta_0 + \beta_1$  OC it -1 +  $\beta_2$  MTB it +  $\beta_3$  Leverage it +  $\beta_4$  Firm size it +  $\beta_5$  Sales Growth it +  $\beta_6$  CFO it +  $\beta_7$  Revenue it +  $\beta_8$  ROA it +  $\epsilon$

| Symbol             | capital expenditures (1) |             |         | Surplus investment in assets (2) |             |         | Upward prediction by managers (3) |             |         |
|--------------------|--------------------------|-------------|---------|----------------------------------|-------------|---------|-----------------------------------|-------------|---------|
|                    | Beta Coefficient         | Z Statistic | P-value | Beta Coefficient                 | Z Statistic | P-value | Beta Coefficient                  | Z Statistic | P-value |
| C                  | -1.551                   | -1.504      | 0.133   | -2.521                           | 2.605       | 0.009   | -2.693                            | -2.673      | 0.008   |
| OC                 | -0.381                   | -2.067      | 0.039   | 0.4                              | 2.153       | 0.031   | 0.339                             | 1.227       | 0.22    |
| MTB                | -0.012                   | -0.478      | 0.633   | -0.015                           | 0.584       | 0.559   | -0.012                            | -0.526      | 0.599   |
| LEV                | -0.4                     | -0.633      | 0.527   | -0.385                           | 0.605       | 0.545   | -0.377                            | -0.593      | 0.553   |
| SIZE               | 0.144                    | 1.975       | 0.048   | 0.197                            | 2.817       | 0.005   | 0.193                             | 2.777       | 0.006   |
| SG                 | -0.357                   | -1.254      | 0.21    | -0.453                           | 1.575       | 0.115   | -0.394                            | -1.385      | 0.166   |
| CFO                | -0.171                   | -2.656      | 0.008   | -0.176                           | 2.774       | 0.006   | -0.181                            | -2.784      | 0.005   |
| STDVS              | 0.944                    | 1.251       | 0.211   | 0.862                            | 1.13        | 0.258   | 1.065                             | 1.416       | 0.157   |
| ROA                | 0.021                    | 0.061       | 0.951   | 0.008                            | 0.024       | 0.981   | 0.004                             | 0.012       | 0.991   |
| McFadden R-squared | 0.062                    |             |         | 0.062                            |             |         | 0.059                             |             |         |
| LR Statistic       |                          | 49.916      | 0       |                                  | 50.30       |         |                                   |             |         |
| H-L                |                          |             |         |                                  | 9           | 0       |                                   | 47.155      | 0       |
| Statistic          |                          | 13.119      | 0.108   |                                  | 12.12       |         |                                   |             |         |
| Andrews            |                          |             |         |                                  | 3           | 0.146   |                                   | 7.968       | 0.437   |
| Statistic          |                          | 26.646      | 0.003   |                                  | 20.22       |         |                                   |             |         |
|                    |                          |             |         |                                  | 2           | 0.027   |                                   | 12.553      | 0.25    |

Results of table (2) in model (2) show that there has been a positive relationship between managers' overconfidence (surplus investment in assets criterion) and financial reporting quality (financial information precision criterion) in a meaningfulness level of %5. Since the meaningfulness level (P-Value = 0.031) is less than %5, we can say that managers having over-investment decisions including surplus investments on assets have had higher financial information precision or reporting quality.

Results of table (2) in model (3) show that there has not been a relationship between managers' overconfidence (upward earning prediction criterion) and financial reporting quality (financial information precision criterion) in a meaningfulness level of %5. Since the meaningfulness level (P-Value = 0.220) is more than %5, firms having positive predicted earnings (compared to real earnings) have had an equal or more effects than firms having negative predicted earnings during 4 seasonal periods through which managers have used overconfidence. This issue did not have any relationship with financial information precision level as financial reporting quality index.



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On the whole the results in table 2 show a controversy in results of the 3 models under investigations. Thus, the first hypothesis of this research is not approved.

Mc Faden's identification coefficient of the models investigated and shown in table 2 is %6. This number shows that %6 of the changes in the dependent variable, financial reporting quality (financial information precisions criterion) could be described by the independent variable of managers' overconfidence (3 criteria mentioned) and control variables. Additionally, regarding that the probability of LR statistic is less than %5, we can say that in an assurance level of %95, this model has been meaningful and has had a high validity.

### **Testing Second Hypothesis**

The second hypothesis states that in the presence of corporate governance mechanisms, the relationship between managers' overconfidence and financial reporting quality becomes weaker. Therefore, due to the use of two corporate governance mechanisms and 3 measurement models for managers' overconfidence, this hypothesis would be studied and tested in two states.

#### **First State Test of the Second Hypothesis:**

In the presence of corporate governance mechanisms regarding the board independence, the relationship between managers' overconfidence (three criteria of capital expenditures, surplus investment on assets, and upwards predictions of earnings by managers) and financial reporting quality becomes weaker.

Results of table (3) in model (4) shows that in the presence of corporate governance mechanisms regarding the perspective of board independence, the relationship between managers' overconfidence (capital expenditures' criterion) and financial reporting quality (financial information precision criterion) become weaker. Since the relationship has been less than %5 due to the meaningfulness level in the table (P-Value = 0.002), and the coefficient of the variable is negative, there exists a negative relationship. After studying the effect of corporate governance mechanisms regarding the perspective of the independence of board, since the interactional variable has had a positive coefficient and the reported meaningfulness level (P-Value = 0.011) has been more than %5, the presence of board members not in charge has weakened the relationship between managers' overconfidence (capital expenditures' criterion) and financial reporting quality (financial information precision criterion).

Results of table (3) in model (5) shows that in the presence of corporate governance mechanisms regarding the perspective of board independence, the relationship between managers' overconfidence (surplus investment on assets' criterion) and financial reporting quality (financial information precision criterion) did not have any effect. Since the relationship has been more than %5 due to the meaningfulness level in the table (P-Value = 0.969), there has not been any relationship. After studying the effect of corporate governance mechanisms regarding the perspective of the independence of board, the reported meaningfulness level (P-Value = 0.465) has been more than %5.

Results of table (3) in model (6) shows that in the presence of corporate governance mechanisms regarding the perspective of board independence, the relationship between managers' overconfidence (upward earning prediction by managers' criterion) and financial reporting quality (financial information precision criterion) did not have any effect. Since the relationship has been more than %5 due to the meaningfulness level in the table (P-Value = 0.580), there has not been any relationship. After studying the effect of corporate governance mechanisms regarding the perspective of the independence of board, the reported meaningfulness level (P-Value = 0.847) has been more than %5.

On the whole, the results of table 3 shows that in the two models investigated in the presence of corporate governance mechanisms regarding the perspective of board independence, there has not been any effect on the relationship between managers' overconfidence and financial reporting quality. Thus, the second hypothesis is not approved in the first status.

Mc Faden's identification coefficient of the models investigated and shown in table 3 is %7. This number shows that %7 of the changes in the dependent variable, financial reporting quality (financial information precisions criterion) could be described by the independent variable of managers' overconfidence (upward earning prediction by managers' criterion) and control variables. Additionally, regarding that the

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probability of LR statistic is less than %5, we can say that in an assurance level of %95, this model has been meaningful and has had a high validity.

**Table 3: Results of Testing First state of the second hypothesis**

FRQB it =  $\beta_0 + \beta_1$  OC it -1 +  $\beta_2$  BIND it +  $\beta_3$  BIND it \* COC(CAPEX) it -1 +  $\beta_4$  MTB it +  $\beta_5$  Leverage it +  $\beta_6$  Firm size it +  $\beta_7$  Sales Growth it +  $\beta_8$  CFO it +  $\beta_9$  Revenue it +  $\beta_{10}$  ROA it +  $\epsilon$

| Symbol             | capital expenditures (4) |             |         | Surplus investment in assets (5) |             |         | Upward prediction by managers (6) |             |         |
|--------------------|--------------------------|-------------|---------|----------------------------------|-------------|---------|-----------------------------------|-------------|---------|
|                    | Beta Coefficient         | Z Statistic | P-value | Beta Coefficient                 | Z Statistic | P-value | Beta Coefficient                  | Z Statistic | P-value |
| C                  | 0.24                     | 0.211       | 0.833   | -1.314                           | -1.243      | 0.214   | -1.848                            | -1.364      | 0.172   |
| OC                 | -1.874                   | -3.061      | 0.002   | -0.023                           | -0.039      | 0.969   | 0.52                              | 0.553       | 0.58    |
| BIND               | -2.424                   | -3.89       | 0       | -1.586                           | -2.762      | 0.006   | -1.086                            | -0.81       | 0.418   |
| BIND*OC            | 2.295                    | 2.529       | 0.011   | 0.653                            | 0.731       | 0.465   | -0.273                            | -0.193      | 0.847   |
| MTB                | -0.014                   | -0.508      | 0.612   | -0.015                           | -0.52       | 0.603   | -0.011                            | -0.433      | 0.665   |
| LEV                | -0.222                   | -0.339      | 0.734   | -0.33                            | -0.511      | 0.61    | -0.315                            | -0.486      | 0.627   |
| SIZE               | 0.122                    | 1.653       | 0.098   | 0.181                            | 2.57        | 0.01    | 0.178                             | 2.548       | 0.011   |
| SG                 | -0.378                   | -1.294      | 0.196   | -0.455                           | -1.565      | 0.118   | -0.393                            | -1.367      | 0.172   |
| CFO                | -0.182                   | -2.736      | 0.006   | -0.203                           | -3.045      | 0.002   | -0.208                            | -3.057      | 0.002   |
| STDVS              | 0.844                    | 1.106       | 0.269   | 0.869                            | 1.133       | 0.257   | 1.113                             | 1.476       | 0.14    |
| ROA                | 0                        | 0.001       | 1       | 0.04                             | 0.103       | 0.918   | 0.031                             | 0.084       | 0.933   |
| McFadden R-squared | 0.083                    |             |         | 0.075                            |             |         | 0.071                             |             |         |
| LR Statistic       |                          | 66.538      | 0       |                                  | 60.193      | 0       |                                   | 56.909      | 0       |
| H-L Statistic      |                          | 6.209       | 0.6239  |                                  | 7.715       | 0.4618  |                                   | 16.72       | 0.0332  |
| Andrews Statistic  |                          | 11.857      | 0.2947  |                                  | 13.675      | 0.1883  |                                   | 30.649      | 0.0007  |

### Second State Test of the Second Hypothesis:

In the presence of corporate governance mechanisms regarding the institutional stockholders' ownership percentage, the relationship between managers' overconfidence (three criteria of capital expenditures, surplus investment on assets, and upwards predictions of earnings by managers) and financial reporting quality becomes weaker.

Results of table (4) in model (7) show that in the presence of corporate governance mechanisms regarding the perspective of institutional ownership, the relationship between managers' overconfidence (capital expenditures' criterion) and financial reporting quality (financial information precision criterion) was not affected. Since the meaningfulness level in the table is (P-Value = 0.265), there is not a relationship. After studying the effect of corporate governance mechanisms regarding the perspective of institutional ownership, the reported meaningfulness level (P-Value = 0.120) has been more than %5. Thus, regarding the results gained, the second hypothesis model (7) of this research is rejected. In other words, the presence of corporate governance mechanisms regarding the perspective of institutional ownership does not weaken the relationship between managers' overconfidence (capital expenditures' criterion) and financial reporting quality (financial information precision criterion).

Results of table (4) in model (8) shows that in the presence of corporate governance mechanisms regarding the perspective of institutional ownership, the relationship between managers' overconfidence

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(surplus investment on assets' criterion) and financial reporting quality (financial information precision criterion) did not have any effect. Since the relationship has been more than %5 due to the meaningfulness level in the table (P-Value = 0.160), there has not been any relationship. After studying the effect of corporate governance mechanisms regarding the perspective of institutional ownership, the reported meaningfulness level (P-Value = 0.309) has been more than %5. In other words, the presence of corporate governance mechanisms regarding the perspective of institutional ownership does not weaken the relationship between managers' overconfidence (capital expenditures' criterion) and financial reporting quality (financial information precision criterion).

Results of table (4) in model (8) shows that in the presence of corporate governance mechanisms regarding the perspective of institutional ownership, the relationship between managers' overconfidence (upward earning prediction by managers' criterion) and financial reporting quality (financial information precision criterion) did not have any effect. Since the relationship has been more than %5 due to the meaningfulness level in the table (P-Value = 0.927), there has not been any relationship. After studying the effect of corporate governance mechanisms regarding the perspective of institutional ownership, the reported meaningfulness level (P-Value = 0.927) has been more than %5. In other words, the presence of corporate governance mechanisms regarding the perspective of institutional ownership does not weaken the relationship between managers' overconfidence (upward earnings prediction by managers' criterion) and financial reporting quality (financial information precision criterion).

**Table 4: Results of testing second state of the second hypothesis**

FRQB it =  $\beta_0 + \beta_1 OC \text{ it} - 1 + \beta_2 INSOWN \text{ it} + \beta_3 INSOWN \text{ it} * OC \text{ it} - 1 + \beta_4 MTB \text{ it} + \beta_5 Leverage \text{ it} + \beta_6 Firm \text{ size it} + \beta_7 Sales \text{ Growth it} + \beta_8 CFO \text{ it} + \beta_9 \sigma Revenue \text{ it} + \beta_{10} ROA \text{ it} + \epsilon$

| Symbol             | capital expenditures (7) |             |         | Surplus investment in assets (8) |             |         | Upward prediction by managers (9) |             |         |
|--------------------|--------------------------|-------------|---------|----------------------------------|-------------|---------|-----------------------------------|-------------|---------|
|                    | Beta Coefficient         | Z Statistic | P-value | Beta Coefficient                 | Z Statistic | P-value | Beta Coefficient                  | Z Statistic | P-value |
| C                  | -2.11                    | -1.771      | 0.077   | -2.754                           | -2.486      | 0.013   | -2.055                            | -1.051      | 0.293   |
| OC                 | 1.039                    | 1.116       | 0.265   | 1.38                             | 1.406       | 0.16    | -0.161                            | -0.091      | 0.927   |
| INSOWN             | 0.733                    | 0.815       | 0.415   | 0.18                             | 0.234       | 0.815   | -0.931                            | -0.403      | 0.687   |
| INSOWN*OC          | -1.928                   | -1.556      | 0.12    | -1.329                           | -1.018      | 0.309   | 0.69                              | 0.29        | 0.772   |
| MTB                | -0.01                    | -0.438      | 0.661   | -0.014                           | -0.551      | 0.581   | -0.012                            | -0.525      | 0.6     |
| LEV                | -0.308                   | -0.474      | 0.636   | -0.32                            | -0.492      | 0.623   | -0.304                            | -0.465      | 0.642   |
| SIZE               | 0.139                    | 1.905       | 0.057   | 0.2                              | 2.858       | 0.004   | 0.192                             | 2.751       | 0.006   |
| SG                 | -0.375                   | -1.312      | 0.19    | -0.468                           | -1.621      | 0.105   | -0.394                            | -1.386      | 0.166   |
| CFO                | -0.179                   | -2.715      | 0.007   | -0.177                           | -2.806      | 0.005   | -0.177                            | -2.756      | 0.006   |
| STDVS              | 1.077                    | 1.408       | 0.159   | 0.876                            | 1.149       | 0.251   | 1.08                              | 1.435       | 0.151   |
| ROA                | -0.035                   | -0.099      | 0.921   | 0.022                            | 0.061       | 0.951   | -0.01                             | -0.029      | 0.977   |
| McFadden R-squared | 0.065                    |             |         | 0.064                            |             |         | 0.059                             |             |         |
| LR Statistic       |                          | 52.534      | 0       |                                  | 51.541      | 0       |                                   | 47.447      | 0       |
| H-L Statistic      |                          | 19.457      | 0.0126  |                                  | 11.68       | 0.1661  |                                   | 9.79        | 0.2801  |
| Andrews Statistic  |                          | 29.887      | 0.0009  |                                  | 21.467      | 0.0181  |                                   | 15.026      | 0.1311  |

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On the whole, the results of table 4 shows that in all three models investigated in the presence of corporate governance mechanisms regarding the perspective of institutional ownership, there has not been any effect on the relationship between managers' overconfidence and financial reporting quality. Thus, the second hypothesis is not approved in the second status.

Mc Faden's identification coefficient of the models investigated and shown in table 4 is %6. This number shows that %6 of the changes in the dependent variable, financial reporting quality (financial information precisions criterion) could be described by the independent variable of managers' overconfidence and control variables. Additionally, regarding that the probability of LR statistic is less than %5, we can say that in an assurance level of %95, this model has been meaningful and has had a high valid.

## **CONCLUSION**

### **Conclusion and Suggestions:**

The goal of the present research has been to study the relationship between managers' overconfidence and financial reporting quality and also the intermediary role of corporate governance mechanisms on this relationship in firms enlisted in Tehran Stock Exchange. Capital expenditures' criteria, surplus investment on assets and upward earnings prediction by managers were used to measure managers' overconfidence and the index of financial information precision in Barth's model (2001) was used to measure financial reporting quality. Also corporate governance mechanisms were used as the intermediary in the relationship between the two variables in which the two important mechanisms including board independence and the percentage of institutional stockholders' ownership. Based on research hypotheses, the following results were emerged:

Based on the claim in first hypothesis, "there is a relationship between managers' overconfidence and financial reporting quality". But research results showed that there has not been any relationship between managers' overconfidence and financial reporting quality. These results do not accord with findings in Ahmed & Duellman (2013).

Regarding what was pointed out we can infer that the behavioral phenomenon of managers' overconfidence is not an effective factor and a stimulus for financial reporting quality. In other words, extreme investment decisions, upward earning prediction by managers and capital expenditures compared to other similar companies would not be as an index of managers' overconfidence as an effective factor on financial reporting quality in firms. In a more detailed interpretation of the effect of optimistic behaviors and performances of managers, the quality of accruals or accruals' prediction error would not be affected. Finally we can claim that optimistic managers do not harm firms through this route on accruals' quality (financial reporting quality).

Based on the claim in second hypothesis: "in the presence of corporate governance mechanisms, the relationship between managers' overconfidence and financial reporting quality, becomes weaker". But research results showed that the presence of corporate governance mechanisms did not have any effects on the relationship between managers' overconfidence and financial reporting quality. These results accord with findings in Ahmed & Duellman (2013).

We can say that this shows those board members not in charge and institutional owners do not act based on their controlling duties in order to control financial reporting quality and to avoid opportunistic behaviors of managers. The reasons can be attributed to inefficiency of the controlling role of board members not in charge, lack of incentives to improve financial reporting, and institutional owners due to the governmental structure of it. Regarding the research results saying that corporate governance mechanisms including board independence and institutional owners are inefficient, it is suggested to bourse organization to revise these mechanisms and make appropriate decisions. Also the controlling traits should be exerted on the performance and the controlling duties of independent board members not in charge and their duties in improving the financial reporting quality should be prepared by this organization. It can be suggested to investors that in order to make investment decisions and confer credits, the behavioral phenomenon of managers' overconfidence does not necessarily result in endangering financial reporting quality. Also we suggest board members not in charge and institutional

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owners to act more consciously and efficiently due to their controlling duties in controlling financial reporting quality and avoiding managers' opportunistic behaviors. This is so because the results of this research do not show positive effects of their presence on financial reporting quality.

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