

# Managerial Overconfidence and Financial Restatement

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**Abstract:** Financial restatement can lead to a misleading financial statement if the managers use it repeatedly to correct the prior annual reports. So it weakens the quality of being free from bias and consequently faithfully represents financial statements which is one of the fundamental qualitative characteristics of financial information stated by IASB. By using a behavioral approach, this paper examines the effect of a management behavioral bias, overconfidence, on financial restatements. Data from 48 firms listed in the Tehran Securities Exchange during 2006 – 2016 were obtained. To measure managerial overconfidence, we use two proxies including over-investment and liability-based proxies. The results of logistic regression analysis using the binary probit method show that managerial overconfidence has no significant effect on financial restatement. The findings support the partly failure of overconfidence literature on the explanation of the behavioral biases' effects on financial reporting.

**Keywords:** overconfidence, financial restatement, reliability, behavioral approach.

**JEL code:** M42.

## INTRODUCTION

One of the fundamental qualitative characteristics of financial information which is stated by the Conceptual Framework for Financial Reporting of IASB (2018), is faithful representation that makes information useful for all users, and it is also stated that to be faithful, information must be complete, neutral and free from error. Free from error means that information has no errors or omissions in the description of the phenomenon and the process of producing financial information. Of course it does not mean that no inaccuracies can arise, particularly in making estimates. So being free from error is an important attribute for financial information and any phenomena that weaken this qualitative characteristic is seemed to be unfavorable and misleading for users. Financial restatement is one of these phenomena which can lead to a misleading financial statement if the managers use it repeatedly to correct the prior annual reports.

Recent researches, however, have shown a high rate of annual adjustments among the listed companies at the Tehran Stock Exchange. These adjustments have mostly taken in the form of correcting the prior period errors (Rafiee, 2012), so the faithful representation of the financial statements of these companies can be falsified, in terms of the user's perception.

Reporting of financial restatement has a lot of unfavorable consequences because it is reflecting the prior period problems in financial information, as well as signaling future problems in financial statements' faithful representation and reliability of manager's assertions. So as a final consequence it makes investors unconfident about the managers who make repeatedly adjustments in their company's report (Aghaei et al., 2013). It also resulted in the creation of an atmosphere of distrust in the capital market and raising an imagination that financial statements of companies are not

reliable, so they try to access their required information out of the market sources (Kordestani et al., 2010). As you see, With such consequences in mind, it is very important to understand the causes and incentives for financial restatement.

Many studies have been conducted with the purpose of identifying the factors affecting the financial restatement. They have mostly been carried out based on the rational economic man assumption, which is rooted in the neoclassical economy. Based on this assumption, managers make decisions taking into account three characteristics of perfect personal interests, perfect rationality and decision-making based on perfect information (Pompian, 2006). The rational economic man assumption was challenged as the fields of psychology and sociology entered the economic, finance and accounting literature. Using the concept of “normal economic man”, the behavioral approach tries to present a more reliable behavior of actors in the economic realm. A major part of behavioral research’s concern is identifying and investigating the effects of people’s irrational behaviors. Each rational behavior of a person which does not conform to the decision-making model of the rational economic man called bias (Baker & Wurgler, 2013; Pompian, 2006). One of the most important behavioral biases is overconfidence.

According to most studies in this area, an overconfident manager is one who continuously overestimates the future returns of the company’s projects or the probability and effect of the favorable events on the company’s cash flows, or underestimates the probability and effect of negative and unfavorable events on the company’s cash flows (Heaton, 2002; Malmendier and Tate, 2005). Over the past decade and following the introduction of archival measures of overconfidence, many finance and accounting studies have been carried out on the effects of this bias. Many recent studies have shown that overconfidence has a significant impact on financial reporting (Hillary & Hsu, 2011; Schrand & Zechman, 2012; Ahmed & Duellman, 2013; Persley & Abbott, 2013; Bowman, 2014; Chen et al., 2014; Hribar & Yang, 2016; Foroghi & Nokhbeh Fallah, 2014; Rameshe & Mollanazari, 2014; Bouloo and Hasani Algar, 2015). That’s why it matters to be aware of the managerial overconfidence’s effects on the financial and accounting policies. It can lead to reducing the usefulness of information for users, especially for external users who have less access to various kind of information and reports. According to behavioral literature, overconfident managers overestimate the results of their projects, consider them very likely to achieve the forecasted results, and take advantage of fewer information sources with regard to their overconfidence (Presley and Abbott, 2013; Chen et al., 2014). Therefore, overconfidence leads to estimates not much consistent with the actual results. With regard to this feature of such managers’ estimations, it is expected that errors based on previous optimizations will occur in the future financial reports of these managers. Since an overconfident manager does not seek the roots of his previous errors, his/her errors will grow over time and become important (Persley and Abbott, 2013). Therefore, overconfidence is expected to increase the likelihood of annual adjustment reports. This causal path should be tested empirically and the present study seeks to test this probable relationship in the Tehran Stock Exchange by investigating the effect of overconfidence on the financial restatement.

The contribution of this research to the literature is important from three following dimension: First, it tries to identify one of the most likely causes of the financial restatement as an important factor affecting the faithful representation of financial reporting. Second, with increasing use of behavioral approach to explain the causes of financial restatement in previous studies, this study presents a new perspective for analyzing the financial restatement on the Tehran Stock Exchange as an emerging market by using the behavioral theory and emphasizing the psychological characteristics of managers. Third, by examining one of the effects of overconfidence, the present study investigates the importance of considering managers’ personality characteristics by users for the analysis of the information provided by them.

The remainder of the paper is organized as follows. We provide a literature review of the research. Then, the research hypotheses will be formulated and the research method used to test the hypotheses will be described. The results of the statistical analysis of the data will be provided in the next section, and finally we provide our conclusions

## **LITERATURE REVIEW**

### **Overconfidence**

In recent decades, since the introduction of the archival measures of overconfidence, accounting researchers have begun

investigating the effects of this bias on the reporting system. Two pioneers in this field were Schrand and Zechman (2012) who demonstrated that managerial overconfidence would lead to financial misreporting. Ahmed & Duellman (2013), conducted a study on U.S. firms during the period of 1993 to 2009 and showed that managerial uncertainty negatively affects both the conditional and unconditional types of accounting conservatism. They also showed that strong external oversight would not reduce the relationship between overconfidence and conservatism.

Presley and Abbott (2013) investigated the impact of managers' overconfidence on the financial restatement. To this end, they set a sample from 75 US companies which had experienced the financial restatement in comparison with a sample of 75 US companies with no annual adjustments. Their research showed a significant positive relationship between overconfidence and financial restatement.

Berg et al. (2014) investigated the effect of overconfidence on big bath accounting phenomenon. After CEO is changed, a lot of expenses are reported by the new CEO in the profit and loss statement of the first year of taking this position, and this profit will be reduced in order to achieve more profits in the coming years, which is referred to as big bath earnings management (Berg et al., 2014). From the behavioral point of view, overconfident managers overestimate the future return on company's projects and their ability to influence the outcomes of activities. Accordingly, Berg et al. (2014) concluded that overconfident managers are less likely to use the big bath accounting technique to manipulate the earnings. Their research showed that big bath accounting has a positive relationship with the appointment of non-overconfident CEOs in American firms.

Van Berlo (2014) investigated the influence of CEO and CFO overconfidence on earnings management. They showed that overconfidence influences earnings management. Their findings also showed that overconfident CEOs mainly use real earnings management, which is less likely to be detected by auditors and user groups. In contrast, overconfident CFOs often use accrual earnings management due to their engagement in the financial reporting process.

Hsieh et al. (2014) investigated the influence of managerial overconfidence on earnings management and the impact of the enactment of the Sarbanes–Oxley Act of 2002 in the United States. They found that overconfident managers engaged both accrual and real earnings management before the enactment of the Sarbanes–Oxley Act and tried to achieve earnings forecasted by analysts. After the enactment and enforcement of the SOX, non-overconfident managers used more real earnings management instead of accrual earnings management to achieve the earnings forecasted by analysts. However, overconfident managers continued using real and accrual earnings management. These findings showed how managers' behavioral bias will stand against the regulators' efforts to mitigate earnings management. Barry Stolzel et al. (2018) investigated the effect of managerial overconfidence on earnings management among the U.S. companies active in the insurance industry. This research showed that overconfidence results in the reduced identification of the potential losses of the insured's claims, thereby increasing the earnings of the period.

In general, the literature of managerial overconfidence in the United States supports the negative impacts of managerial overconfidence on the quality of financial reporting. Many of these studies have been tested on the Tehran Stock Exchange. Although some findings are inconsistent with those in the United States, the results of the studies conducted on the Iranian capital market generally support the negative effects of overconfidence on the quality indicators of financial reporting.

Many studies have been conducted with the aim of identifying the effects of overconfidence in the financial reporting process in the companies listed at Tehran Stock Exchange, including the studies performed by Rameshe and Mollanazari (2014), Foroghi and Nokhbeh Fallah (2015), Khodamipour et al. (2015) and Nikravesheh (2016) on the effect of overconfidence on accounting conservatism, the study carried out by Bouloo & Hasani Algar (2015) about the effects of overconfidence on profit smoothing; and studies performed by Hasas Yeganeh et al. (2015) and Rahimian & Hasani Algar (2015) about the effects of overconfidence on audit fees and the use of industry expert auditors. These studies showed that overconfidence has a significant effect on the qualitative characteristics of financial reports and leads to biased behaviors in reporting, thereby reducing the quality of financial reporting, resulting in phenomena such as profit smoothing, and limiting auditors' checks to detect these cases.

## **Financial Restatement**

As mentioned in the introduction section, the financial restatement financial restatement is a common phenomenon in the Tehran Stock Exchange. This is why many studies have been conducted to investigate the causes and effects of this phenomenon. Many Iranian research have attempted to identify the factors influencing the financial restatement, some of which are mentioned below. Rafiee (2012) identified the factors influencing the financial restatement in her doctoral dissertation. Having reviewed the literature and conducted structured interviews about the identified factors influencing the financial restatement financial restatement, he determined 9 factors as the potentially effective factors in this regard. In the next stage, he used the statistical data of 202 companies during the period of 2005-2010 and made a statistical analysis of them. He showed that 79% of the companies had annual adjustments, and none of the companies had restatement due to accounting procedure changes. Moreover, the average of the annual adjustments of the observations was 3.2% of the sales, which is a significant figure. Finally, their logistic regression analysis showed that 6 factors including return on assets, debt ratio, average length of CEO's tenure, CEO's change, auditor size and auditor change had a significant effect on annual adjustment.

Hasas Yeganehh and Taghizadeh (2013) investigated the nature of the financial restatements in the companies admitted at the Tehran Stock Exchange according to the U.S. Government Accountability Office (GAO) classification, according to which they classified annual adjustments into 9 general categories. The results of their analysis of annual adjustments of 48 companies, which had the highest adjustment rates, showed that inaccurate identification of costs, taking into account the incorrect tax recognition, made up 5.73% of the financial restatements financial restatement, while it made up 7.56% of the financial restatements financial restatement without considering a restatement of tax rates.

Aghaei et al. (2013) explored the role of independent auditors in mandatory restatement (based on the auditor's suggestion) or optional financial restatements financial restatement, and its impact on the earnings quality before and after the restatement. Their sample consisted of 62 with only one time of restatement during the period of 2001-2011. The results of the regression analysis showed that mandatory restatements increased the accrual earnings quality after rather than before the restatements. The results also showed that an improvement in the corporate governance status increased the accrual earnings quality in companies with a mandatory restatement.

Hasas Yeganehh and Taghizadeh (2015) investigated the impact of corporate and financial governance mechanisms on the financial restatement in the companies listed at the Tehran Stock Exchange. Their gathered their required data from 48 companies with highest rate of financial restatement and 46 companies with lowest rate of financial restatement during the period of 2007-2011. The logistic regression analysis showed that many governance mechanisms do not significantly affect the restatements, while the CEO's duality duties and the size of the board of directors have a significant positive effect on the financial restatement. The debt ratio was also shown to have a significant positive effect on the financial restatement.

## **Hypotheses**

From Presley and Abbott's (2013) perspective, managerial overconfidence will lead to error reporting or bias and consequently to annual adjustments in two ways; first, overconfidence makes a manager provide inaccurate reports unintentionally, because from his/her view, the estimates and assumptions required to provide financial statements are reasonable. From this perspective, the "better than average" component of overconfidence can be taken into consideration. The better-than-average effect is one of the components of positive illusions in overconfident individuals (Taylor and Brown, 1988; Scala, 2008). In the definition of this bias, Parisi (2013) suggests that the better-than-average effect causes people to overestimate their positive qualities and underestimate their defects. Accordingly, an overconfident manager believes that he/she knows the conditions and assumptions necessary for proper financial reporting better than do others.

From the second viewpoint, an overconfident manager makes intentional misstatement, in which case he/she knows about the inaccuracy of the current financial statements, but justifies it because he/she believes that the future performance

of the company will cover it (Presley and Abbott, 2013). In either case, the financial statement will eventually be recognized as misleading and will be disclosed in the form of restatement, or the misleading rate of the next financial statement will increase in order to cover the previous errors. So by financial reporting errors, managerial overconfidence leads to lower faithful representation. As a result, the research hypothesis is formulated as follows:

**Hypothesis:** Managerial overconfidence has a significant positive effect on the financial restatement.

## METHODOLOGY

This is a descriptive study, and it is an empirical study as it examines the causal relationship between the variables. The historical data of the companies were used to test the research hypotheses, so it can be considered an ex post facto study in terms of time. The research was conducted on the companies listed at the Tehran Stock Exchange during the 11-year period of 2006-2016. The study sample consists of companies with all of the following conditions:

1. Having been admitted at the Tehran Stock Exchange before 2005,
2. Their fiscal year end having been March 20th (the end of year in Iranian Jalali Calendar),
3. Not having been a member of investment and multidisciplinary industries, banks, insurance companies and financial intermediaries, because these companies have classifications and items of financial statements fundamentally different from those of other industries,
4. Having had a minimum of 50 trading days in each year, because the calculation of some of the variables requires the reliable annual return data and stock prices at the end of the year,
5. Having had access to all research data,
6. A minimum of 3 companies having remained in the industry after fulfillment of all of the above conditions, because regression fit has been made to measure some of the variables, for which more than 2 observations are required.

Finally, the study sample consisted of 40 companies and the statistical analyses were made based on 440 firm-year observations. The research data were extracted using the Rahavard Novin software and the websites related to the Tehran Stock Exchange. The Minitab software version 17 and Microsoft Excel 2013 were used in this research for calculating the variables and the Eviews Software Version 9 was used for analyzing the data and testing the hypothesis.

The logistic regression analysis with the binary probit model was used to test the hypotheses. The logistic regression method should be used when the dependent variable is nominal and has two values of zero or 1 (Momeni and Faal Ghayoumi, 2011). Equation (1) is regressed to test the research hypothesis:

Equation (1):

Where RE represents the restatement of financial statements in company  $i$  in the fiscal year  $t$ , which is the dependent variable of the equation, and it has the numerical value of 1 if the company has reported annual adjustments during that year, otherwise 0. OC is the overconfidence of company  $i$  for the fiscal year  $t$ , which is measured by the two proxies of overinvestment and debt-based financing. Lev is the ratio of total debt to total assets of company  $i$  at the end of the fiscal year  $t$ ; Agrowth is the growth of assets of company  $i$  during the fiscal year  $t$  relative to the assets in the year  $t-1$ ; ROA is the net profit of company  $i$  in the fiscal year  $t$  to the total assets at the end of the year; Bsize is the number of the director board members of the company  $i$  in the fiscal year  $t$ ; and Bind is the ratio of the number of the non-executive members of the board of directors of company  $i$  in the fiscal year  $t$  to the total number of members of the director board members. Based on the research hypothesis,  $\beta_1$  is expected to be positive and significant.

The following two proxies have been used to measure the OC variable:



- 1) **The investment Proxy:** Ben David et al. (2013) showed empirically that overconfident managers invest more than required as they overestimate the cash flows of investment projects. In order to measure this proxy of overconfidence, a cross-sectional regression is first fitted between the growth of assets (the dependent variable) and the growth of sales (the independent variable) for each industry per year, and the error of each company is obtained. If the error exceeds the median error of the member firms of that industry in that year, the company manager is considered overconfident (Sherand & Zechman, 2012). The value of 1 will be considered for this variable if the manager is considered overconfident, otherwise the zero number will be considered for it. This operational definition has previously been used by Iranian researchers such as Rameshe & Mollanazari (2014), Foroghi & Nokhbeh Fallah (2015), Khodamipour et al. (2015), and Nikravesht (2016).
- 2) **The financing Proxy:** Ben David et al. (2013) showed that overconfident managers follow stronger corporate financial policies and prefer financing through debt (Schrand & Zechman, 2012; Ben David et al., 2013), because they believe that the market underestimates the risky bonds of their companies (Heaton, 2002). As a result, they prefer to use the internal resources to finance investment projects and, if these resources are not sufficient, they will use the external resources. Among the external resources, the overconfident managers prefer to finance the risk-free debts, then the low-risk bonds including the convertible bonds and, ultimately, the stock bonds (Heaton, 2002). Therefore, the ratio of debts to the stock market value is expected to be higher in these companies than other companies. In this research, if this ratio exceeds the median of the industry in that year, the company’s manager is considered an overconfident manager. This operational definition has previously been used by Iranian researchers such as Khodamipour et al. (2015) and Nikravesht (2016).

## DATA ANALYSIS

Table 1 shows the descriptive statistics of the variables. The median value of the RE is 1, which shows that more than half of the observations have restatements. Moreover, the mean of the RE variable is 0.759, shows that about 76% of the observations (334 observations) have annual adjustments. The median and mean values of the RE show a wide range of adjustments and restatements of financial statements in the sample firms. The median and mean values of the OC variable in the both proxies are 1 and 0.5 respectively. Based on the definition of overconfidence in terms of the indicators used, it was expected to divide the sample into two almost equal groups of overconfident managers and others.. Also, the average number of the board director members is 5, 0.6 of whom (about 3 managers) are non-executive members.

**Table 1: Descriptive statistics**

Variable	Lowest value	Highest value	Median	Mean	Standard Deviation
RE	0	1	1	0.759	0.428
OC (Overinvestment)	0	1	0	0.475	0.5
OC (Debt-based financing)	0	1	0	0.475	0.5
Lev	0.066	1.648	0.594	0.577	0.206
Agrowth	-0.895	14.522	0.162	0.216	0.732
ROA	-0.269	0.639	0.108	0.125	0.129
Bsize	4	7	5	5.039	0.288
Bind	0	1	0.6	0.590	0.206

Table 2 shows the result of the regression fitting of Equation (1) based on the binary probit model. The values of the LR statistic for overinvestment-based models and debt-based financing models are 21.075 and 22.842 respectively, which are significant at the 95% significance level. Accordingly, the fitted models have good fit. The McFadden R-Squared of the models are 0.043 (for the overinvestment-based model) and 0.047 (for the debt-driven financing model), which shows that the independent and control variables account for about 4% of the changes of the dependent variable. A review of the

regression coefficients of the variables shows that the coefficients of the OC variable, by considering the overinvestment and debt-based financing proxies, are -0.114 and 0.262 respectively, which cannot be said to have a significant effect on the RE variable at the significance level of 95% with regard to the significance level of these coefficients (0.406 and 0.118 respectively). As a result, considering the two proxies of managerial overconfidence, we reject the research hypothesis. Among the control variables, the ROA variable has a significant negative effect on the RE at a significance level of 95%.

**Table 2: Results of Regression Analyses**

	OC: Overinvestment		OC: Debt-based financing	
	Coefficient	Significance	Coefficient	Significance
Fixed value	-2.654	0.317	-2.545	0.360
OC	-0.114	0.406	0.262	0.118
Lev	0.234	0.582	-0.107	0.821
Agrowth	-0.036	0.698	-0.056	0.518
ROA	-1.608	0.013	-1.534	0.0175
Bsize	0.727	0.166	0.711	0.196
Bind	-0.234	0.493	-0.250	0.464
R <sup>2</sup> McFadden	0.043		0.047	
LR statistic	21.075		22.842	
Significance of the statistic	0.002		0.001	

## CONCLUSION

This research examined the effect of managerial overconfidence on the financial restatement. Based on the literature of managerial overconfidence, it was expected that this bias would generally mitigate the quality of financial reporting, one indicator of which is the prevalence of annual adjustments and the financial restatement. Using the data of the firms listed at Tehran Stock Exchange during an 11-year period, logistic analyses showed managerial overconfidence has no significant effect on the financial restatement. This finding is explicitly inconsistent with the findings of previous studies having been conducted on the effects of overconfidence on the financial restatement (Presley and Abbott, 2013), and is implicitly inconsistent with the studies having been conducted about the effects of overconfidence on other aspects of the financial reporting quality such as financial misreporting ( Schrand & Zechman, 2012), conservatism (Ahmed & Duellman, 2013), earnings management (Berg et al., 2014; Van Berlo, 2014; Hsieh et al., 2014), and profit smoothing (Bowman, 2014).

One possible reason for the inconsistency of the findings of this study with those of other studies relates to the managerial overconfidence assessment method. Managerial overconfidence has many different dimensions, components and indicators (Scala, 2008) and each set of indicators assess this bias on a different theoretical basis. As a result, there is a wide range of indicators for the assessment of this bias in the literature, each of which relates to a certain aspect of overconfidence. So in many U.S. based research, researchers used several proxies. However, the executive considerations of the research as well as the unique conditions of Iranian capital market make it difficult and in some cases impossible to use other indicators. Therefore, this, which is one of the research limitations, can affect the findings of the research and its generalization. Another reason for the inconsistency of the findings of this research with those of other studies may relates to the little research conducted in this regard about determining the year in which the restatement occurs. For example, correcting the error of the past two years can lead to the financial restatement in the current year, while the studies have investigated the overconfidence of one period merely with the restatement in the future period.

Other findings of the research show that the financial restatement is a common practice among the firms listed at Tehran Stock Exchange, so that about 76% of the observations have had annual adjustments. This finding is consistent

with the finding of Rafiee's (2012) study. This study also showed that, among the control variables, the return on assets has a significant negative effect on the financial restatement. This finding is consistent with the findings of other studies conducted by Rafiee, (2012) and Presley and Abbott (2013). However, other control variables have been shown to have no significant effect on the financial restatement. This finding is not consistent with the findings of some previous studies (such as the significant effect of the number of director board members on restatement in studies conducted by Persley and Abbot, 2013, and Hasas Yeganehh and Taghizadeh, (2015), but consistent with the some other findings (such as the insignificance of the effect of the ratio of non-executive director board members on restatement shown in studies such as the one conducted by Hasas Yeganehh and Taghizadeh (2015).

In general, the findings \ showed that managerial overconfidence does not affect the financial restatement. The evidence of this study does not support the literature of overconfidence and its effects on the financial restatement. However, we suggest performing three types of research in order to arrive at a more profound conclusion about overconfidence and its effects on financial reporting:

1. Conducting studies on the effects of managers' other behavioral biases on financial reporting;
2. Performing studies on the comprehensive assessment of overconfidence: Since overconfidence is a multi-dimensional concept, it is necessary to consider a set of reliable indicators for overconfidence measurement in the form of an integrated model. Although there are multiple indicators of overconfidence measurement in the literature, little research has dealt to place of these elements among the dimensions and components of this bias, their instances in different operating areas, and achievement of a single score of overconfidence. Such studies can help us properly assess the validity of the findings of previous studies and the managers' overconfidence.
3. Conducting similar studies using other indicators of overconfidence: As stated above, overconfidence is a multi-dimensional concept and there are multiple indicators for measuring it. Conducting similar studies using other indicators will examine the validity of the current study and previous studies and will enrich the literature further.

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