The Relationship between Managers' Overconfidence and Financing Decisions with Special Focus on Ownership Structure

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Abstract

Overconfidence is one of the critical concepts of modern behavioral finance highly interested in financial theories and psychology. The main objective of the present research is to study the relationship between managers' overconfidence and financing decisions (capital structure) concentrated on ownership structure in Tehran Stock Exchange. Research time span is from 2011 to 2015 (a 5-year period). Results of testing research hypotheses of 146 firms revealed that overconfidence and ownership type have no significant effect on financial decisions. In addition, ownership type and institutional owner ration showed no significant effect on the relationship between overconfidence and financial decisions. Whereas, according to the obtained results, institutional owner ratio significantly influences financial decisions.

Keywords: Managers' overconfidence, Capital structure, Ownership structure, Institutional owner ratio.

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Introduction

Overconfidence is of critical modern financial concepts especially interested in psychological and financial theories. Therefore, it is important to analyze the effect of managers' overconfidence on corporate procedures including accounting procedures. Overconfidence leads human to overestimate its knowledge and expertise and underestimate risks; he feels control and dominance over events; while, it may otherwise in reality. Since managers as liable to prepare financial statements with full knowledge of firm's financial status and more awareness level than financial statements' users, potentially try to represent a desired image of business unit, it may exaggerate business unit properties and capital which may lead to wrong future decision and impose excessive costs on the firm through distorted appropriate investment, financing, or accounting policies.

On the other hand, capital structure is of overconfidence effective factors. No one may overlook the central role of capital in the present business world. Providing required financial resources is of the most important economic activity prerequisite. Certainly, various ways of financing and utilizing proper financial tools aid management in adopting more appropriate decisions and acquiring more resources. Capital structure is an effective managerial tool to manage the cost of capital (Asadi et al, 2014).

Capital structure i.e. firm financing influences firm value; in other word, the relationship between capital structure constituents composing of bonds and stocks for financing may significantly affect firms' performance (Pourzamani et al, 2010). Further, it is introduced as the critical effective factors of firm valuation and orientation in capital market (Etemadi and Montazeri, 2013).

On the other side, joint-stock companies are featured with the variety of ownership structure. Some part of the ownership is available to minor investors and real persons relying upon financial statements released by firm to monitor management performance and own decisions. While, the other part belongs to professional major shareholders provided valuable internal information on future perspective, business strategies, and firm long-term investments through direct communication to firm directors unlike the first group shareholders. A glance at the composition of corporate ownership uncovers bold presence of institutional investors as major (main) and influential shareholder. Institutional investors significantly contribute in monitoring managers' decisions and impact on corporate performance due to possession of a significant percentage of firms' shares as well as being professional investors. Therefore, it is expected that the presence of the owners in ownership may influence corporate performance and decisions adopted by managers (Pakdelzade et al, 2011). Since the factors influence management decisions, the present paper intends to study the relationship between manager's overconfidence and firm's financial decisions (capital structure) focused on the role of ownership structure.

Some financial authors view accounting as an information system; some others believe that accounting main purpose is to provide useful information for decision-making. Therefore, the authors are obliged to provide the information so that decision makers are

enabled to adopt proper decisions. The present research tried to meet the aforementioned objective.

Statement of the problem

Finance decisions are the critical decisions business unit managers must make. Financing is one of the essential components of any business unit operations. Adopting financing policies by managers significantly contributes in risk and wealth creation for shareholders. Nonetheless, identifying effective factors of managers' financing decisions is much more important. Many factors influence business unit manager's financing decisions, which are divided into two classes: the first is the factors relevant to corporate structure such as agency issues, firm size, and financial distress; and the second class factors are associated to managers' behavioral features like conservatism and overconfidence. The present research intends to analyze the effect of a psychological factor (overconfidence) on business unit managers' financing decisions (Chavoshi et al, 2015).

Overconfidence is considered as one of the most important psychological findings in the field of judgment and decision. Researchers found out people overestimate their individual capabilities including predictive power, intelligence perception, and knowledge. In a better word, they too much trust on their abilities and knowledge; however, they may not express the inner feeling or even they are unaware of (Mashayekh and Behzadpour, 2014).

In fact, individuals overestimate the ability to do jobs well, and the overestimation is intensified by the jobs' significance. Moreover, psychologists concluded that people give higher weigh to outstanding information while making decision and judging. Individuals trust on the news sound true and make reliable conclusion regardless of the source authenticity. They give more weight to future prediction, they are proud to be aware of the future supporting their beliefs, and remove the future notification irrelevant to the beliefs (Rameshe and Mollanazari, 2014). Overconfidence and keeping on it results from learning that individuals are only responsible to their achievements and attribute the failures to others (Mashayekh et al, 2014).

Overconfidence or excessive self-reliance, in general, may be summarized as an unfounded belief in individual's cognitive abilities, judgments, and intuitive reasoning. Overconfidence is of managers' critical personality traits effecting risk-taking (Hasas yegane et al, 2015).

Overconfidence concept, examined in a broad collection of cognitive psychological tests and experiments, demonstrates that individuals overestimate their information predictability and preciseness. Furthermore, they poorly perform in probability estimations such that the certain events are often occurred with the probability of much less than 100%. In short, individuals view themselves much smarter than they really are and believe that they access to better information. To invest on a particular corporation, for instance, most ignore expected loss; then, if the corporation poorly performs, they are surprised or discontented (Bavalou and Hassani, 2015).

Overconfident managers overestimate the probability and effect of desirable events on corporate cash flows and underestimate it for negative events. Overconfidence among managers may influence determining loss and profit, assets book value, and debts. Overconfident managers overvalue corporate future return on investment projects. Therefore, it may delay loss detection and optimistically valuate current or long-term assets (Hasas yegane et al, 2015).

On the other hand, capital structure decisions play an effective role in corporate efficiency and creditability before financing institutions; thus, capital structure theory perception may enable management to attain desired capital structure in order to maximize shareholder wealth (Pourzamani et al, 2010).

Making decision on the relationship between capital structure and empirical analysis and selecting from debt and equity depends on the institution specific characteristics; it is difficult to recognize that capital structure theory may enable managers to achieve desired capital structure in order to maximize shareholders' wealth (Pourzamani et al, 2010).

Corporate ownership structure is considered from several dimensions. At first, it is defined based on two variables including internal shareholders or shares available to internal (domestic) shareholders, and external shareholders. In this regard, the shares available to institutional shareholders and government are of main components of corporate external ownership. Shares available to domestic shareholders indicate that stock percentage available to the shareholders is owned by firm's directors and employees. Shares owned by institutional shareholders refer to the stock percent under the ownership of legal and institutional investors (like investment corporations, insurance companies, and banks). Such investors are in the possession of large percentage of corporate shares (main shareholders), which may lead to ownership concentration, and ultimately, governance concentration for institutional shareholders differently influencing corporations and stock markets (Asgari et al, 2012).

Some studies, carried out in the area of ownership type, show performance improvements of the institutions have already changed ownership type, or initiated privatization. Differences in managerial and regulatory motivations, political objectives, as well as social obligations of governmental units largely lead to expected lower performance of the aforementioned units than other similar institutions. On the other side, institutional and corporate owners may perform better for stronger incentives to profit and larger access to information. Besides, the institutions administered and controlled by family foundations must be more efficient than governmental firms as they pay lower representation expenses (Mohamamdi et al, 2009).

Many conducted studies show that corporate ownership structure significantly influences corporate management (style). For instance, several studies established that institutional ownership firms considerably influence corporate managers about payment conditions, dividends, investments, inventories, corporate value, and performance (Setayesh and Rezaei, 2014). According to theoretical basics, the present research seeks to investigate the relationship between managers' overconfidence and financing decisions (capital structure) focused on ownership structure.

Recognition of determining factors of capital structure in Iran's market, given several variables and different conditions, may aid managers properly decide on capital structure and provide useful information. The other side, in any economic activity, the participants may require information for optimum decision making in order to, at least, minimize the losses. Firm directors look for how to finance and maximize firm stock market value; or in other word, to maximize shareholders' wealth. Common shareholders try to get maximum returns, at the end of the year, from initial investment; corporate lenders also expect to redeem loan principal and profit at maturity date. Hence, financing and corporate capital structures are particularly important to all individuals and everybody wants a company to supply the best financing and capital structure (Ahmadpour et al,).

On the other hand, overconfidence is of the effective factors of financial issues and decision-making. According to Hyde, two definitions of overconfidence are introduced in psychology. First, they overestimate the abilities. Second, individuals see the events more objectively than what it really is (Chavoshi et al, 2015). Thus, due to the significance of subject in financial decisions, the present research analyzes the effect of managers' overconfidence, as a financing factor, on financial decisions.

Research background

Alinezhad saroukolaei and Sobhi (2016) studied the "effect of managers' overconfidence on capital structure". The results indicated that overconfidence, as an interdisciplinary concept, is associated with ranking and judgment probability in psychology. Overconfident managers can be explained as anomaly managers. In financial sense, it is elucidated as an estimation and or interpretation of knowledge level or private information. The research investigated the effect of managers' overconfidence on capital structure book value and market value. Hence, 26 listed companies in Tehran Stock Exchange were selected through purposive sampling method. Research hypotheses were tested by multivariate regression method and generalized method of moments. Research results reveal that managers' overconfidence has no effect on capital structure book value; whereas, overconfidence influenced capital structure market value.

Shirgholami et al (2016), in a paper entitled "studying the relationship between capital structure and corporate performance", declared that financial decisions and capital structure optimal composition, on one hand; and optimal use of financial resources, debt repayment ability, and trying to enhance business unit, on the other hand, are of critical management decision-making issues. It tried to examine the relationship between capital structure and corporate performance using data of 11 listed companies in Tehran Stock Exchange within 2007-2012. Data were extracted through financial statement databases like Tadbir Pardaz software. Research hypotheses were tested through multivariate regression models; research hypothesis test results uncover that there is seen a negative significant relationship between capital structure and corporate performance in low performance companies.

Karabi (2016) tested "managers' overconfidence, profitability, and stock price crash risk". Research findings showed that mangers' overconfidence may be described as unfounded belief about cognitive abilities, individual judgments, and intuitive arguments.

Overconfidence is of managers' critical personality traits influencing risk-taking. The research was carried out within 5 successive years from 2010 to 2014; research statistical sample included 86 listed companies in Tehran Stock Exchange. Research hypotheses were tested using panel data method through Eviews software. The results illustrated that managers' overconfidence significantly influences profitability and stock price crash risk.

Afshar zeidabadi et al (2015) scrutinized "the effect of capital structure on the relationship between managers' overconfidence and cost adhesion". Therefore, 103 listed companies in Tehran Stock Exchange were tested. Manager's overconfidence is research independent variable by panel / pooled regression analysis through Eviews. Cost adhesion is research dependent variable in terms of public, and administrative cost, and sale ratio to sales revenue. Research control variables included asset turnover and financial leverage; institutional ownership and managerial ownership were moderators. Research findings demonstrated the positive significant effect of manager's overconfidence on cost adhesion. The effect of managerial ownership on the relationship between managers' overconfidence and cost adhesion was positive and significant; while, institutional ownership showed a negative significant effect on the relationship between managers' overconfidence and cost adhesion. Other results also indicated a negative significant effect of control variables (asset returns and financial leverage) at confidence level 90%; further, asset turnover showed a positive significant effect on cost adhesion.

Valipour et al (2015) conducted a study, named "the effect of managers' overconfidence on corporate performance", on 76 companies listed in Tehran Stock Exchange. Research test results denoted that managers' overconfidence influenced corporate financial performance within 2009-2013.

Mashayekh and Behzadpour (2014) exhibited that there is a negative significant relationship between managers' overconfidence and corporate dividend so that overconfident managers have smaller dividend. They also proved that increased operational cash flows make overconfident managers overestimate future operational cash flows and pay higher dividend. Other side, with higher growth opportunities, the manager, regardless of overconfident or rational, pays smaller dividend.

Perzoli and Abot (2013) studied the relationship between managers' overconfidence and restatement of financial statements. Results of examining 75 companies showed a positive significant relationship between CEO's overconfidence and restatement of financial statements.

Balachandran et al (2013), inspecting the effect of overconfidence on dividend policy, deduced that there is a direct relationship between managers' overconfidence and dividend decision-making; further, dividend level and adjustment rate of target profit levels may increase when mangers are overconfident. However, the effect may also depend on the level of managers' overconfidence.

Kramer and Liao (2012), in a study examining the effect of manager's overconfidence on analysts' perspectives using Mill Mender overconfidence measurement scale

respecting to manager's transaction authority, viewed firms with overconfident managers optimistically.

Magaritis and Psillaki (2010), in a paper, examined the relationship between ownership and capital structure with French corporate performances using nonparametric data analysis approach in order to compare corporate performance with considered optimal boundary. Results displayed that more concentrated ownership is followed by higher debt in capital structure; while, there was seen no significant relationship between ownership type and leverage type.

Mendasi and Gamas (2010), in a study entitled "ownership concentration, managerial ownership, and corporate performance: evidences from Turkey", concluded that ownership is largely centralized in Turkey, which positively and significantly influences corporate value and profitability.

Leev and Tafler (2009) probed the effect of management overconfidence on corporate performance. Assuming that overconfidence negatively affects corporate performance, they examined the firm within 1993-2005. Research results maintained the hypothesis.

Kouki and Guizani (2009), in a study entitling "ownership structure and dividend policy", examined the effect of shareholders' identity on dividend policy in some Tunisian affiliates. They inferred that high-centralized Tunisian firms benefit larger dividend distribution. Moreover, it also demonstrated a negative relationship between institutional ownership and profit distribution level; whereas, there was a positive relationship observed between governmental ownership and dividend distribution level.

Najar and Taylor (2008) surveyed the relationship between ownership structure and capital structure in sample companies listed in Jordan Stock Exchange. The results signified that there is no significant negative relationship seen between capital structure and institutional investors. They claimed emergence of institutional investors as capital owners as one of corporate governance effective external control mechanisms. Institutional investors implicitly and explicitly observe (monitor) firm through data collection and management decisions' pricing, and through corporate operation administration, respectively. In addition, according to the findings, asset structure, size, and liquidity are positively and significantly correlated to debt of Jordanian companies; whereas, it shows a negative significant relationship with profitability. Hasan et al (2009) also uncovered that board size and institutional shareholders are considerably negatively related to debt to equity ratio.

Nicolas (2007), studying Greece market, applied panel data and concluded a negative relationship between capital structure and interest coverage with expected growth and immediate ratio; whereas, capital structure, and firm size are positively related.

Kapopoulos and Lazaretou (2007) considered the effect of ownership structure on corporate performance using data of 175 Greek firms and found out that more centralized ownership structure is positively related to higher corporate profitability i.e. higher profitability requires lower dispersed (distributed) ownership.

Research hypotheses

According to theoretical basics and research background, research hypotheses are as follows:

1.   There is a significant relationship between management overconfidence and corporate financial decisions.

2.   There is a significant relationship between ownership type and corporate financial decisions.

3.   There is a significant relationship between institutional ownerships and corporate financial decisions.

4.   Ownership type has a significant effect on the relationship between management overconfidence and corporate financial decisions.

5.   Institutional ownerships have a significant effect on the relationship between management overconfidence and corporate financial decisions.

Research models and variables

$$LEV_{it}=\alpha_0+\alpha_1 OVERCON_{it}+\alpha_2 SIZE_{it}+\alpha_3 ROA_{it}+\varepsilon_{it}$$

$$LEV_{it}=\alpha_0+\alpha_1 GOV_{it}+\alpha_2 SIZE_{it}+\alpha_3 ROA_{it}+\varepsilon_{it}$$

$$LEV_{it}=\alpha_0+\alpha_1 IO_{it}+\alpha_2 SIZE_{it}+\alpha_3 ROA_{it}+\varepsilon_{it}$$

$$LEV_{it}=\alpha_0+\alpha_1 OVERCON_{it}+\alpha_2 OVERCON_{it}\times GOV_{it}+\alpha_3 SIZE_{it}+\alpha_4 ROA_{it}+\varepsilon_{it}$$

$$LEV_{it}=\alpha_0+\alpha_1 OVERCON_{it}+\alpha_2 OVERCON_{it}\times IO_{it}+\alpha_3 SIZE_{it}+\alpha_4 ROA_{it}+\varepsilon_{it}$$

Table 1: Research variables

Variable	Variable sign	Variable type	Credit
Financial decisions (capital structure)	LEV	Dependent	Extracted from stock information banks
Management overconfidence	Overconfidence	Independent	Extracted from stock information banks
Ownership type	Gov	Independent/ intervener	Extracted from stock information banks
Institutional ownership ratio	IO	Independent/ intervener	Extracted from stock information banks
Firm size	Size	Control	Extracted from stock information banks
Return on assets	Roa	Control	Extracted from stock information banks

Capital structure

Debt ratio to total assets

Mangers' overconfidence

Following Sheran and Zcheman (2011), the index represents surplus investment on assets obtained by total asset growth regression residual to sale measured per industry/ year. If regression residual is larger than zero, the index equals one; otherwise, zero. The index relies upon that in companies where asset growth rate is larger than sale rate; managers invest more than the counterparts.

$$Asset.Gr_{j,t} = \beta_0 + \beta_1 \times Sale.Gr_{j,t} + \varepsilon_{j,t}$$

Ownership type

If it is a governmental company, dummy variable 1 is used; otherwise, zero.

Institutional ownership ratio

According to clause 27, article 1 of securities market law, banks, corporations, and any legal or real person holding more than 5% of the issued shares are considered institutional ownerships.

Return on assets

Net profit to total assets ratio

Firm size

Natural log of book value to total assets

Research statistical population and sample

The present research statistical population included all companies listed in Tehran Stock Exchange for a 5-year time period. Inclusion criteria are as follows:

1. There is no change in financial period over understudied time period.

2. Investment companies are not of financial intermediaries, bank, and leasing.

3. Required data are available (accessible).

4. The companies, which were active within understudied period.

Finally, given to the limitations, 146 firms over 2011-2014 were selected to test research hypotheses.

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Statistical analysis

In general, the methods that formulate and summarize collected data are called descriptive statistics. In a better word, descriptive statistics are a set of methods processing data. Since data are analyzed through measuring summarized statistics like mean, standard deviation, median, minimum, and maximum, etc.; thus, descriptive and explanatory statistics of research dependent variables are represented in Table 2, for primary data analysis, to offer a general schematic of the research analyzed data.

Table 2: Descriptive statistic of understudied quantitative variables

Characteristic / Variable	Mean	Median	Min	Max	Standard deviation	Skewness	Kurtosis
Financial decisions	0.673	0.624	0.090	4.055	0.356	3.441	20.861
Institutional ownership ratio	74.063	77.285	0.000	100.000	17.480	-1.124	1.602
Firm size	5.988	5.939	4.415	8.298	0.622	0.725	1.266
Return on assets (ROA)	0.096	0.087	-0.586	0.627	0.155	-0.013	1.965

Table 3: Descriptive statistics of understudied qualitative variables

Characteristics / Variable	Number	%
Management over confidence No Yes	425 305	58.2 41.8
Ownership type Non-governmental Governmental	530 200	72.6 27.4

White test (collinearity between control and independent variables)

Variance inflation factor evaluates multicollinearity in ordinary least squares regression analysis. Indeed, a factor is introduced indicating that to what extent estimated coefficient modification is increased by collinearity. To investigate collinearity between research control and independent variables, variance inflation factor and tolerance were utilized. Collinearity of independent variables causes validity of the model to be questioned despite high coefficient of determination. As seen in table 4, variance inflation factor of all research independent and control variables is 5 indicating non-collinearity of research independent variables.

Table 4: Collinearity between control and independent variables

Variable	Tolerance	Variance inflation factor
Overconfidence	0.964	1.038
Ownership type	0.928	1.077
Institutional ownership ratio	0.950	1.053
Firm size	0.953	1.050
ROA	0.957	1.045

Correlation coefficient

Correlation coefficient is a statistical measure of determining the type and strength of a relationship between two quantitative variables i.e. it is used to determine correlation of the two variables. Correlation coefficient denotes the strength and direction (positive or negative) of the relationship. It ranges 1 to -1; it equals zero, if no relationship exists between the two variables.

Correlation of the two random variables X and Y is as follows:

$$r = \frac{\sum(X-\overline{X})(Y-\overline{Y})}{\sqrt{\sum(X-\overline{X})^2}\sqrt{(Y-\overline{Y})^2}}$$

Table 5: Correlation coefficient test

Variable	Overconfidence	Ownership type	Institutional ownership ratio	Firm size	ROA
Overconfidence	1.000				
Ownership type	-0.022	1.000			
Institutional ownership ratio	0.025	0.219	1.000		
Firm size	0.136	0.131	0.046	1.000	
ROA	0.137	0.108	0.063	0.134	1.000

According to the aforementioned, correlation of independent variables is not as much as to be considered as solid correlation. Thus, it may be ignored and the proposed model for all variables is estimated.

Unit root test reliability

Table 6: Unit root test results of research variables

Variable	Difference	Statistics	Probability level
Financial decisions	Level	-8.859	<0.001
Overconfidence	Level	-15.161	<0.001
Ownership type	Level	-	-
Institutional ownership ratio	Level	-19.272	<0.001
Firm size	Level	-17.065	<0.001
ROA	Level	-161.096	<0.001

As seen in Table 6 and according to Levin method, research null hypothesis of unit root is rejected for all variables; therefore, research variables are at consistent level.

Heteroscedasticity test

Table 7: Test results of Heteroscedasticity

Regression model	White statistics	Probability	Test result
$LEV_{it}=\alpha_0+\alpha_1 OVERCON_{it}+\alpha_2 SIZE_{it}+\alpha_3 ROA_{it}+\varepsilon_{it}$	0.020	0.125	Homoscedasticity
$LEV_{it}=\alpha_0+\alpha_1 GOV_{it}+\alpha_2 SIZE_{it}+\alpha_3 ROA_{it}+\varepsilon_{it}$	1.829	0.178	Homoscedasticity
$LEV_{it}=\alpha_0+\alpha_1 IO_{it}+\alpha_2 SIZE_{it}+\alpha_3 ROA_{it}+\varepsilon_{it}$	1.184	0.278	Homoscedasticity
$LEV_{it}=\alpha_0+\alpha_1 OVERCON_{it}+\alpha_2 OVERCON_{it}\times GOV_{it}+\alpha_3 SIZE_{it}+\alpha_4 ROA_{it}+\varepsilon_{it}$	1.184	0.278	Homoscedasticity
$LEV_{it}=\alpha_0+\alpha_1 OVERCON_{it}+\alpha_2 OVERCON_{it}\times IO_{it}+\alpha_3 SIZE_{it}+\alpha_4 ROA_{it}+\varepsilon_{it}$	1.175	0.288	Homoscedasticity

Table 7 illustrates White test results (F statistics) larger than 0.05; hence, the aforementioned models are homoscedastic.

Proper model estimation

According to the research literature and given research nature, the present study used pooled data. To find a proper model to test research hypotheses, Chow tests (F Limer test) were applied. Further, research hypotheses were tested through two regression models.

F Limer test

F-Limer test results are shown in Table 8.

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Table 8: F-Limer test

Regression model	F statistics	Probability	Test result
$LEV_{it}=\alpha_0+\alpha_1 OVERCONit+\alpha_2 SIZEit+\alpha_3 ROAit+\varepsilon it$	7.389	<0.001	Panel
$LEV_{it}=\alpha_0+\alpha_1 GOVit+\alpha_2 SIZEit+\alpha_3 ROAit+\varepsilon it$	-	-	Panel
$LEV_{it}=\alpha_0+\alpha_1 IOit+\alpha_2 SIZEit+\alpha_3 ROAit+\varepsilon it$	7.205	<0.001	Panel
$LEV_{it}=\alpha_0+\alpha_1 OVERCONit+\alpha_2 OVERCONit\times GOVit+\alpha_3 SIZEit+\alpha_4 ROAit+\varepsilon it$	7.289	<0.001	Panel
$LEV_{it}=\alpha_0+\alpha_1 OVERCON_{it}+\alpha_2 OVERCON_{it}\times IO_{it}+\alpha_3 SIZE_{it}+\alpha_4 ROA_{it}+\varepsilon_{it}$	7.267	<0.001	Panel

Above table exhibits Limer test results. Since the probability measured for research hypotheses was less than 0.05; thus, research null hypothesis of pooled data model is rejected and panel model is prioritized.

Fixed and random effect model

As earlier noted, Limer test results demonstrated that panel model is prioritized to pooled data model. In the following, it is examined that which one of the fixed or random effect model is prioritized using Hausman test.

Hausman Test

Table 9 represents Hausman test results for the present research regression model.

Table 9: Hausman Test

Regression model	F statistics	Probability	Test result
$LEV_{it}=\alpha_0+\alpha_1 OVERCONit+\alpha_2 SIZEit+\alpha_3 ROAit+\varepsilon it$	56.060	<0.001	Fixed
$LEV_{it}=\alpha_0+\alpha_1 GOVit+\alpha_2 SIZEit+\alpha_3 ROAit+\varepsilon it$	56.009	<0.001	Fixed
$LEV_{it}=\alpha_0+\alpha_1 IOit+\alpha_2 SIZEit+\alpha_3 ROAit+\varepsilon it$	56.905	<0.001	Fixed
$LEV_{it}=\alpha_0+\alpha_1 OVERCONit+\alpha_2 OVERCONit\times GOVit+\alpha_3 SIZEit+\alpha_4 ROAit+\varepsilon it$	57.616	<0.001	Fixed
$LEV_{it}=\alpha_0+\alpha_1 OVERCON_{it}+\alpha_2 OVERCON_{it}\times IO_{it}+\alpha_3 SIZE_{it}+\alpha_4 ROA_{it}+\varepsilon_{it}$	60.751	<0.001	Fixed

The above table depicts Hausman test results. Since the probability level for research models is larger than 0.05; thus, model null hypothesis of random effects is rejected i.e. fixed effect model is prioritized to the random effect model.

Research models

According to research model tests and heteroscedasticity, this section estimates model and tests the hypotheses.

Table 10: First model estimation results

$$LEV_{it}=\alpha_0+\alpha_1 OVERCON_{it}+\alpha_2 SIZE_{it}+\alpha_3 ROA_{it}+\varepsilon_{it}$$

Variable	Variable coefficient	Standard deviation	T statistics	Significance level
Interception	2.499	0.306	8.159	<0.001
False overconfidence	0.019	0.016	1.211	0.227
Firm size	-0.299	0.051	-5.676	<0.001
ROA	-0.889	0.076	-11.659	<0.001
Coefficient of determination	0.794			
Modified coefficient of determination	0.741			
Test statistics	15.108			
Probability value	<0.001			
Durbin-Watson statistics	1.530			

Research first model result

The first model of false overconfidence effect on financial decisions was significant (P<0.001). Given the probability value of overconfidence coefficient was larger than 0.05, it was turned out that overconfidence has no significant effect on financial decisions (P=0.227). Coefficient of determination and modified coefficient of determination were 0.794 and 0.741, respectively. Durbin-Watson statistics of 1.530 revealed lack of autocorrelation among model constituents.

Table 11: Second model estimation results

$$LEV_{it}=\alpha_0+\alpha_1 GOV_{it}+\alpha_2 SIZE_{it}+\alpha_3 ROA_{it}+\varepsilon_{it}$$

Variable	Variable coefficient	Standard deviation	T statistics	Significance level
Ownership type	1.136	2.280	0.498	0.619
Firm size	-0.386	0.070	-5.487	<0.001
ROA	-0.647	0.060	-10.838	<0.001
First order interrupt vector	1.006	0.003	369.259	<0.001
Coefficient of determination	0.800			
Modified coefficient of determination	0.799			
Likelihood log	228.046			
Durbin-Watson statistics	1.909			

Research second model result

The second model considered the significant effect of ownership type on financial decisions (P<0.001). According to the probability value of ownership type coefficient, which was larger than 0.05, it was cleared that ownership type has no significant effect on financial decisions (P=0.619). Coefficient of determination and Modified coefficient of determination were 0.800 and 0.799, respectively. Durbin-Watson statistics showing improper value was improved by adding first order interruption vector to the model; 1.909 indicates lack of autocorrelation in model constituents.

Table 12: Third model estimation results

$$LEV_{it}=\alpha_0+\alpha_1IO_{it}+\alpha_2SIZE_{it}+\alpha_3ROA_{it}+\varepsilon_{it}$$

Variable	Variable coefficient	Standard deviation	T statistics	Significance level
Interception	3.404	0.476	7.148	<0.001
Institutional ownership ratio	0.001	0.001	2.031	0.043
Firm size	-0.451	0.077	-5.868	<0.001
ROA	-0.652	0.064	-10.272	<0.001
First order interruption vector	0.622	0.042	14.657	<0.001
Coefficient of determination	0.890			
Modified coefficient of determination	0.852			
Test statistics	23.596			
Probability value	<0.001			
Durbin-Watson statistics	2.478			

Research third model result

The third model referred to the significant effect of institutional ownership ratio on financial decisions (P<0.001). Given the probability value of institutional ownership smaller than 0.05, it was observed that institutional ownership ratio significantly influenced financial decisions (P=0.043) so that financial decisions increase 0.001 units per each unit increase of institutional ownership ratio. Coefficient of determination and Modified coefficient of determination obtained 0.890 and 0.852, respectively. Durbin-Watson statistics was an improper value, which improved adding first order interruption vector; the value of 2.478 demonstrated lack of model autocorrelation.

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Table 13: Fourth model estimation results

$$LEV_{it}=\alpha_0+\alpha_1 OVERCON_{it}+\alpha_2 OVERCON_{it}\times GOV_{it}+\alpha_3 SIZE_{it}+\alpha_4 ROA_{it}+\varepsilon_{it}$$

Variable	Variable coefficient	Standard deviation	T statistics	Significance level
Interception	4.111	0.542	7.583	<0.001
Overconfidence	0.022	0.014	1.571	0.117
Overconfidence × ownership type	0.026	0.023	1.102	0.271
Firm size	-0.555	0.089	-6.260	<0.001
ROA	-0.642	0.063	-10.127	<0.001
First order interruption vector	0.625	0.042	14.791	<0.001
Coefficient of determination	0.891			
Modified coefficient of determination	0.853			
Test statistics	23.602			
Probability value	<0.001			
Durbin-Watson statistics	2.472			

Research fourth model result

The fourth model implied the significant effect of ownership type on the relationship between overconfidence and financial decisions (P<0.001). According to the p-value of overconfidence × ownership type, which was larger than 0.05; hence, it was uncovered that ownership type has no significant effect on the relationship between overconfidence and financial decisions (P=0.271). Coefficient of determination and Modified coefficient of determination were measured 0.891 and 0.853, respectively. The improper value of Durbin-Watson statistics was improved through adding first order interruption vector; the value of 2.472 showed lack of model autocorrelation.

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Table 14: Fifth model estimation results

$$LEV_{it}=\alpha_0+\alpha_1 OVERCON_{it}+\alpha_2 OVERCON_{it}\times IO_{it}+\alpha_3 SIZE_{it}+\alpha_4 ROA_{it}+\varepsilon_{it}$$

Variable	Variable coefficient	Standard deviation	T statistics	Significance level
Interception	4.223	0.543	7.783	<0.001
Overconfidence	0.067	0.047	1.434	0.152
Overconfidence × institutional ownership ratio	0.000	0.001	-0.810	0.418
Firm size	-0.573	0.089	-6.464	<0.001
ROA	-0.639	0.063	-10.073	<0.001
First order interruption vector	0.630	0.042	14.968	<0.001
Coefficient of determination	0.891			
Modified coefficient of determination	0.853			
Test statistics	23.568			
Probability value	<0.001			
Durbin-Watson statistics	2.474			

Research fifth model result

Research fifth model points out to the significant effect of institutional ownership ratio on the relationship between overconfidence and financial decisions (P<0.001). Since p-value of overconfidence × institutional ownership ratio was larger than 0.05, it was shown that institutional ownership ratio has no significant effect on the relationship between overconfidence and financial decisions (P=0.418). Coefficient of determination and Modified coefficient of determination were obtained 0.891 and 0.853, respectively. Improper value 2.474 of Durbin-Watson statistics, which was improved by adding first order interruption vector, demonstrated that there is no autocorrelation in the model.

Discussion and conclusion

Overconfidence is of critical financial and behavioral modern concepts largely interested in financial theories and psychology. The main objective of the present research is to study the relationship between managers' overconfidence and financing decisions (capital structure) focused on ownership structure in Tehran Stock Exchange. Research statistical population were selected within a 5-year time period (from 2011-2014). Results of research hypotheses of 146 sample companies are as follows:

Testing the first hypothesis revealed that overconfidence has no significant effect on financial decisions. While it was assumed that overconfident managers overestimate the business unit precision rate; and thus, the profits, and future cash flows as they believe that they are provided especial studies (that others lack), and have a positive perspective of the future risk and return. In other words, research showed that (Ramesheh and

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Molanazari, 2014; Malmendir and Tit, 2005; Heathen, 2002) overconfident managers overestimate future return of corporate investment projects; therefore, they may postpone loss identification and provide optimistic appraisals of current or long-term asset value, which is inconsistent with Duellman et al (2012), Ben-David et al (2012), and Ishikawa and Takashi (2010).

Testing second hypothesis proved that ownership type has no significant effect on financial decisions, which was inconsistent to Yari and Abdi (2016). They represented that various dimensions of ownership structure significantly influence corporate financial decisions. However, third hypothesis test result cleared that ratio of institutional ownership has a significant effect on financial decisions since institutional ownerships critically contribute in corporate governance of equity. Corporate owners (investors) have different rights including the right of board assignment working as corporate governance performance representatives. On the other hand, major shareholders play a considerable role in transferring information to the shareholders. They acquire private information from management and transfer to others; then, they may affect corporate adopted financial decisions.

Results of the fourth hypothesis showed that ownership type has no significant effect on the relationship between overconfidence and financial decisions. While, empirical researchers claim that sometime decision makers are supposed to behave irrationally to respond to financial dilemmas. To say it differently, managers' personality traits are also accounted for critical factors of decision-making. In fact, overconfidence may lead to decisions ruining corporate value, which is consistent to Chavoshi et al (2015); while, the inference is inconsistent with Bovalou and Hasani alghar (2015).

Testing research fifth hypothesis illustrated that institutional ownership ratio has no significant effect on the relationship between overconfidence and financial decisions. The significant relationship between ownership structure and capital structure may lead to decreased representative expenses. The research revealed that the relationship between overconfidence and financial decisions are not under the influence of institutional ownership. Given the effect of institutional investment on financial decisions, it is recommended that firms pay large attention to stocks holding by institutional investors as institutional shareholders may largely influence corporate investment policies and financial decisions. They may impact corporate operational decisions through management governance and cause improved project selection, investment level, and reduced loss of resources. Indeed, institutional investors implicitly and explicitly govern corporate through data collection and pricing management decisions, and corporate performance, respectively.

References

Abdoli, M.R., and Gholami, M. (2016). The effect of managers' overconfidence on cost adhesion. Quarterly of management accounting, 9 (29), summer 2016.

Alinezhad saroukolaei, M., and Bahreyni, M. (2012). The effect of institutional investors and ownership concentration on investment opportunities in companies listed in Tehran Stock Exchange. Research quarterly of financial accounting, 5 (19).

Al-Najjar, Basil. Taylor, Peter (2008). ''The relationship between capital structure and ownership structure:New evidence from Jordanian panel data''. Managerial Finance. Vol. 34 No. 12, 2008. pp. 919-933.

Antoniou, A, Y. Guney, and K. Paudyal. (2002). Determinants of Corporate Capital Structure: Evidence from European Countries. Working Paper, Department of Economics and Finance, Durham University, England.

Arabsalehi, M., Amiri, H., and Kazemi nouri, S. (2014). Studying the effect of senior managers' overconfidence on investment sensitivity of cash flows. Financial accounting studies, 20. Pp. 115-128.

Asadi, Gh.H. , and Baghdar, B. (2015). The effect of optimal level of holding cash flows on values of companies listed in Tehran Stock Exchange. Auditing knowledge, 61. Pp. 27-42.

Asadi, Gh.H., Bayat, M., and Naghdi, S. (2014). Financial and non-financial effective factors of capital structure related decisions. Accounting empirical research, 4 (14). Pp. 187-203.

Asadi, Gh.H., Bayat, M., and Naghdi, S.(2014). Effective financial and non-financial factors of capital structure related decisions. Accounting empirical studies, 4 (14). Pp. 187-203.

Asadi, Gh.H., Mohammadi, Sh., and Khoram, E. (2011). The relationship between capital structure and ownership structure. Accounting knowledge, 2 (4), spring 2011. Pp. 29-48.

Asadi, Gh.H., Mohammadi, Sh., and Khoram, E. 2011. The relationship between capital structure and ownership structure. Journal of accounting knowledge, 2 (4).

Asgari, M.R., Lashgari, Z., and Gorzin, A. (2012). The effect of institutional ownership on determining cash flow levels in companies listed in Tehran Stock Exchange.

Baghoumiyan, R., Azizzade moghadam, K. (2014). The relationship between corporate features and capital structure. Quarterly of financial accounting empirical studies, 11 (34). Pp. 111-133.

Bouwman, C. (2014). Managerial Optimism and Earnings Smoothing. Journal of Banking & Finance, 41: 283-303 .

Bovalou, Gh., and Hassani alghar, M. (2015). Studying the effect of management overconfidence on income smoothing in listed companies of Tehran stock exchange. Journal of Accounting Knowledge, 21. Pp. 31-53.

Bovalu, Gh., Hasani alghar, M. (2015). Studying the effect of management overconfidence on income smoothing in companies listed in Tehran Stock Exchange. Accounting knowledge, 21. Pp. 31-53.

Campbell, T.C., Gallmeyer, M., Johnson, S.A., Rutherford, J. & Stanley, B. W. (2011). CEO optimism and forced turnover. Journal of Financial Economics, 101 (3): 695-712.

Chavoshi, K., Rastgar, M., and Mirzaei, M. (2016). Studying the relationship between managers' overconfidence and financing policies in companies listed in Tehran Stock Exchange. Journal of Financial knowledge of security analysis, 8 (25).

Chen, C. X., Gores, T., Nasev, J. (2013). Managerial Overconfidence and Cost Stickiness Working Paper, Available at SSRN: http://ssrn.com/abstract= 2208622.

Chen, S. , Lai, S. , Liu, C. , McVay, S. (2014). Overconfident Managers and Internal Controls Working paper, National Taiwan University and University of Washington

Cordeiro, L. .(2009). Managerial Overconfidence and Dividend Policy. Working Paper, London Business School

Deshmukh, S. , Goel, A. and Howe, K. (2013). CEO overconfidence and dividend policy. Journal of Finance Intermediation, 22 (3) , 440-463 .

Dimitris Magaritis, Maria psillaki, 2010, Capital structure ownership and firm performance, Journal of Banaking and Finance 34(621-632

Douglas, V.S (2009). "Capital structure and the control of management". The Financial Review, vol 44, 151-17

Duellman, S. , Hurwitz, H. & Sun, Y. (2015). Managerial Overconfidence and Audit Fees. Journal of Contemporary Accounting & Economics, 11 (2) : 148-165 .

Etemadi, H., Montazeri, J. (20130. Studying effective factors of capital structure in companies listed in Tehran Stock Exchange focused on market production competition. Accounting and Auditing Research, 20 (3). Pp. 1-26.

Firooz, M., Abdeli, M.R., and Amri, O. (2016). The effect of managers' overconfidence on the relationship between accounting conservatism and stock returns. 4th international conference of management and accounting applied research.

Frank, M. Z, Goyal, V. K (2003). "Testing the Pecking Order Theory of Capital Structure". Journal of Financial Economics, 67: 217-248.

Frydenberg, S. (2004). Theory of Capital Structure – A Review. Working Paper, Department of Business Administration, Sor-Trondelag University College, Trondheim, Norway.

Ghasemi shams, M. (2014). The effect of managerial overconfidence on corporate financial performance. 13th management conference.

Hasas yegane, Y., Hasani alghar, M., and Marfou, M. (2015). Management overconfidence and auditing fees. 22 (3). Pp. 363-384.

Hilary, G. & Hsu, C. (2011). Endogenous overconfidence in managerial forecasts. Journal of Accounting and Economics, 51 (???): 300-313.

Hirshleifer, D., Low, A. & Teoh, S. H. (2012). Are overconfident CEOs better innovators? The Journal of Finance, 67 (4): 1457-1498.

Hribar, P. & Yang, H. (2011). CEO overconfidence and management forecasting CEO overconfidence and management forecasting. Working Paper, University of Iowa. http://www.daedalustrust.org.uk/2011/11/ceooverconfidence   -and-management-forecasting-2011.

Huang, G & F. M Song, (2009), "The Determinants of Capital Structure: Evidence from China", China Economic Review, 17, PP. 14-36.

Ishikawa, M., & Takahashi, H. (2010)."Overconfident Managers and External Financing Choice", Review of Behavioral Finance, 2, 37–58.

Ishikawa,M. , & Takahashi, H. (2010). "Overconfident Managers and External Financing Choice", Review of Behavioral Finance, 2, 37–58

Jensen M.C., and W.H. Meckling (1976), "Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure", Journal of Financial Economics, 3 (4);

Kapopoulos, P. and S. Lazaretou (2007), corporate ownership structure and firm performance: evidence from greek firms, corporate governance: an international review. vol. 15, no. 2, pp.144-158.

Karabi, M. (2015). Managers' overconfidence, profitability, and risk of stock price fall. M.A. thesis.

Karami, Gh.R., BAzrafshan, A., and Mohammadi, A. (2011). Studying the relationship between auditor's tenure and profit management. Accounting knowledge, 2 (4).

Khaleghimogahdam, H., and Baghoumiyan, R. (2006). Viewing capital structure theories. Peyke Noor, 5 (4).

Kramer, L. A and Liao, C. M. (2012). The Cost of False Bravado: Management Overcon_dence and its Impact on Analysts' Views. North American Finance Conference .

Kramer, L.A and Liao, C.M. (2012). The Cost of False Bravado: Management Overcon_dence and its Impact on Analysts' Views. North American Finance Conference.

Libby, R. & Rennekamp, K. (2012). Self Q Serving Attribution Bias Overconfidence, and the Issuance of Management Forecasts. Journal of Accounting Research, 50 (1): 197-231.

Liu, Y., Taffler, R. (2008). Damned Out of Their Own Mouth: CEO Overconfidence in M&A Decision-Making and Its Impact on Firm Performance. Working paper, University of Edinburgh

Malmendier, U. Tate, G. & Yan, J. (2011). Overconfidence and early-life experiences: The effect of managerial traits on corporate financial policies. The Journal of Finance, 66 (5) , 1687-1733 .

Malmendier, U. Tate, G. & Yan, J. (2011). Overconfidence and early-life experiences: The effect of managerial traits on corporate financial policies. The Journal of Finance, 66(5), 1687-1733.

Mandaci, P., Gumus.G.(2010). "Ownership Concentration. Managerial ownership and firm performance:" Evidence form trkey. Dol: 102478/v10033-010-0005-4.

Mashayekh, Sh., and Behzadpour, S. (2014). The effect of overconfidence on dividend policy of companies listed in Tehran Stock Exchange. Accounting and auditing research, 21. Pp. 458-504.

Modares sabzevari, A., and Abdolahzade, F. (1999). Financial management. 2nd volume, Tehran, Bazargani publication.

Mohammadi, Sh., Ghalibaf asl, H., and Meshki, M. (2009). Studying the effect of ownership structure on return and value of companies listed in Tehran Stock Exchange. Financial studies, 11(28), fall and winter 2009. Pp. 69-88.

Myers S.C. (2001), "Capital Structure", Journal of Economic Perspectives, 15 (2);

Myers S.C., and N.S. Majluf (1984), "Corporate Financing and Investment Decisions When Firms Have Information that Investors Do Not Have", Journal of Financial Economics, 13 (2);

Namazi, M., and Kermani, E. (2008). The effect of ownership structure on companies listed in Tehran Stock Exchange. Accounting and Auditing research, 15 (53).

Nicholaos E., V. Dimitrios, and Z. Ventoura-Neokosmidi. (2007). How Firm Characteristics Affect Capital Structure: An Empirical Study. The Journal of Financial Research, 33(5): 321-331.

Pourzamani, Z., and Poyanrad, M. (2010). Studying the relationship between profit management and financial distress in companies listed in Tehran Stock Exchange. M.A. thesis of Islamic Azad University, Central Tehran.

Pourzamani, Z., Jahanshad, A., Nemati, A., and Farhoodi zare, P. (2010). Studying effective factors of corporate capital structures.

Presley, T., Abbott. L. (2013). AIA submission: CEO overconfidence and the incidence of financial restatement. Advances in Accounting, incorporating Advances in International Accounting. 29, 74–84.

Sadeghi, H., Rahimi, P. (2012). Studying the relationship between ownership structure and performance of companies listed in stock exchange using simultaneous equation system. Journal of financial accounting research, 4 (4).

Setayesh, M.H., Rezaei, Gh.R., and Hosseini rad, D. (2014). Studying the effect of ownership structure on cash flow management and inventories of listed companies in Tehran stock exchange. Journal of Accounting development, University of Shiraz, 6 (1); spring and winter 2014. Pp. 29-62.

TAlebniya, Gh., Ahmadi, M., and Bayat, M. (2015). Studying the relationship between accrual quality and non-systematic risk. Financial accounting research, 2. Pp. 33-52.