EFFECT OF MANAGERIAL OVERCONFIDENCE ON THE INFORMATION ASYMMETRY OF COMPANIES LISTED IN TEHRAN STOCK EXCHANGE

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Abstract.Managerial overconfidence causes them to show better performance while they terminate project whose net present value is negative and postpone bad news. In this regard, present value is to assess the effect of managerial overconfidence on the information asymmetry in 84 companies listed in Tehran Stock Exchange from 2009 to 2014. Therefore, extracted information is tested and analyzed by means of descriptive statistics and pattern of data panel. The achieved results suggest that managerial overconfidence causes information asymmetry to increase in investment market.

Key Words: managerial overconfidence, information asymmetry, earnings per share (EPS)

1 Introduction

The most important phenomenon that is discussed among executives about self-deception is overconfidence. There are many evidences, showing that many people trust their knowledge and capabilities more than what they have. Usually prediction of probability is too extravagant; in addition, the ability of prediction is low, or evidence and document are not clear. Managers and specialists have overconfidence than ordinary people, so the overconfidence causes managers to seek many ways in order to justify the results of their decisions, accordingly managers can gain appreciation and respect of other people. The managerial overconfidence causes them either to terminate project whose net present value is negative or to postpone bad news in order to show their good performance (Malmendier et al., 2011). Overconfidence is based on the theory of self-deception. This theory deals with a mechanism in which people try to gain respect by means of justifying the past decision (Khoshtinat & Nadighomi, 2009). The researches show that executives with high overconfidence put companies at risk of collapse more than managers with low overconfidence (Bonkim et al, 2013). The financial success and past imagery decision increase the confidence of manager and lead them to evaluate the conception and prediction, while the losses do not decrease the managerial overconfidence; because managers are inclined to attribute their failure to bad luck (Adam et al., 2012). The base of participants' decisions in securities markets is information that is published by stock exchange, securities issuers and active intermediaries in this market. Effective utilization of such information or accurate decision in securities market is possible when given information is proper (timely), relevant, important, complete, and intelligible. On the other hand, how and which information must be achieved are very important. If information is transferred among people asymmetrically and unequally,   it can result in different outcomes about single subject. Asymmetric market is important subject, whose importance continuingly increases by complexity of product and trading mechanism, needs more attention and presentation of new solution by market players including sellers, buyers, managers, creditors, and government. Information asymmetry has undesirable outcomes such as reduction of market efficiency, increase of market cost, weakness of market, low liquidity, and finally reduction of profit from transaction of investment market (Khadamipoor & Ghadiri,1389). Main role of accounting information is to provide necessary field for optimal resource allocation. After recent financial scandals, investors trust to and rely on the system of financial report and quality of profit emerges as main factor to determine the validity and

reliability of reported figures. Therefore, investors, managers, legislatures and accounting standards steering committee are interested in determination of accounting information quality and its results (Rahimian et al., 2009). Inappropriate selection is first information asymmetry that occurs when one or more parties have more competitive information than other parties. This issue gives policymakers and lenders necessary information to pay attention to information integration applied among users of financial statements. "Moral hazard" is second factor of information asymmetry according to which each of parties in actual or potential trade can see their performance in implementing or violating terms and conditions while one party cannot see other party's performance (Ghorbani and Adili, 2012). One of effective factors in making decision is to have appropriate information relevant to subject of decision. If the necessary information is distributed asymmetrically among people, this can cause different results to be raised. When information asymmetry about stock of company increases, its intrinsic value is different from value that investors recognize for intended stock in investment market. Consequently, actual value of company's stock is different from expected value of shareholders (Ghaemi & Vatanparast, 2005). Concept of biased beliefs about information asymmetry may depend on structure of market itself. The introduction of overconfident agents overturns fundamental relationships between observable variables in perfect-competition asymmetric information insurance models. In models of monopolistic insurance with asymmetric information, in contrast, the introduction of overconfident agents may be observationally equivalent to changes in the composition of risk in the economy. (Sandroni & Squintani, 2012).

This research studies effect of managerial overconfidence on the information asymmetry in companies listed in Tehran Stock Exchange. The previous findings show that managers' overconfidence has direct effect on the performance of securities market. When the overconfidence increases among mangers, the company's stock market performance decreases. If board of directors controls the managers, then the quality of and efficiency of information published by manager increase. Improving the quality of corporate financial disclosure causes the information asymmetry to decrease. Decreasing managerial information asymmetry has less profit. Therefore, present study answers this question: Does managerial overconfidence have effect on the information asymmetry of companies listed in Tehran Stock Exchange?

2 Research Background

2.1 Theoretical Background

One of effective factors in decision -making is the proper information relevant to subject. If necessary information is distributed asymmetrically (i.e., information is transferred unequally), it can cause different results to be raised. Therefore, before the information becomes important for decision makers, the quality of information distribution should be evaluated accurately. When information asymmetry about the company's stock increases, its intrinsic value becomes different from value that is recognized by investors in investment market. Therefore, actual value of company's stock is different from expected value of shareholders. What attracts attention in investment market is that many people who invest are ordinary people who gain information published by company. One kind of announcements in which proposed share is predicted and announced to public by company is declaration of the profit of every share. If among investors working in the investment market are people who has better conditions in terms of information, for example, they can affect market supply and demand by announcement declared about profit; on the other hand, they can create price spread. Its main reason is information asymmetry in investment market according to which people having information about profit (or any important news) get better condition for decision making

than other. One of important points that are raised about investment market especially stock exchange is "efficiency of market" according to which all information available in the market reflects its effect on the share price. "Efficient-market hypothesis", maintains information asymmetry of accounting in which one of parties has more information than other. This is raised due to intrinsic information and quality of trading. Even if share price of stock exchange completely reflects the information, it may be possible that in-house people have more information than people outside the organization, and they can achieve profit due to this information. Here, one of subcategories of information asymmetry called "adverse selection" emerges. "Adverse selection" refers to a situation where sellers have information that buyers do not, or vice versa, about some aspect of product quality. This situation occurs before transaction, when traders know about unknowledgeable people in market, the issue of "adverse selection" increases. In this state, increase of information asymmetry is shown through expanding bid- ask spread of stock and market makers exploit the increase of this spread to compensate risk of selection. On the other hand, presence of unknowledgeable people in investment market may cause professional investors to get more rate of return. When new information about company's condition is released, analyzers, investors, and other users analyze the information; then they decide to buy or sell the share according to this information. This information and reaction toward them have effect on the users' behavior especially actual and potential shareholders and causes price and volume of transaction to be increased or decreased, because people's attitude toward the new information results in price volatility. Therefore, if information is released asymmetrically or secretly, we witness different reaction from investors due to information asymmetry in investment market. This causes incorrect and misleading analysis of current condition of market. Above matter can show the importance of information asymmetry and undeniable effect on the economic decision (Sandroni & Squintani, 2013).

Duellman et al., (2015), thinks of behavioral finance as simply "open-minded finance." He states, "in order to find solution to an empirical puzzle, it is necessary to entertain the possibility that some of agents in economy behave less than fully rationally some of times." Behavioral finance does not try to define 'rational' behavior or label decision making as biased or faulty. However, it seeks to understand and predict systematic financial market implications of psychological decision processes. Furthermore, overconfidence is one of modern financial concepts that have especial place in psychological and financial theories. Overconfidence causes man to overestimate his knowledge and to underestimate the risk, so the man thinks of his control over the problems, while it is not as he think (Fallah-shams Layalestani et al, 2010).

Assessing effect of managerial overconfidence on the company's procedure consists of main accounting procedures. Overconfidence can result in incorrect decision and imposes heavy cost on the company through distortion of investment, finance or accounting policies. However, managerial overconfidence can have profit in some conditions. For example, stimulation of overconfident managers for risks is cheaper than other managers. Overconfident managers overestimate the future returns from the invested projects of company. Therefore, they may delay the recognition of loss and have optimistic estimation in determining long term or present value of asset; thus, managerial overconfidence can result in lower level of conditioned and unconditioned accounting conservatism (Ramsheh & Molanazari, 2014).

Managers are inclined to overvalue the asset and undervalue the debt. For example, overconfident manager is inclined to overestimate the collection of accounts receivable and underestimate bad debt reserve. Accordingly, they overestimate net accounts receivable. Similarly, overconfident manger is inclined to overestimate long-term residual value and assets' useful life; so the value of asset is overestimated. Such overestimation results in aggressive report of assets and unconditioned conservatism (Ahmed & Duellman, 2013; Ahmed & Duellman,2012)

2.2 Experimental Background

Hurwitz and Sun (2015) assess relationship between managerial overconfidence and audit wages. The results of study show that company with overconfident manager pays less wage to auditors. In addition, overconfident manager is less likely to apply industry specialist auditor.

Chyz et al (2015) assess the effect of managerial overconfidence on the tax avoidance in a study entitled "effect of managerial overconfidence on the tax avoidance." The results of study show that managerial overconfidence has significantly positive effect on the tax avoidance. Furthermore, they find managerial overconfidence decreases cash effective tax rate (CETR) by 6.6 % and increases differences between accounting profit and taxable profit by 1.5%.

Chen et al (2014) in a study assess the effect of managerial overconfidence on the internal control. They conclude the possibility to preserve ineffective internal control is more among company's managerial overconfidence. In addition, the possibility to preserve effective internal control is more in companies with overconfident managers and strong corporate governance structure.

Chen et al (2013) in a research entitled "managerial overconfidence and cost stickiness" show that when the sale reduces, managerial overconfidence causes cost stickiness to increase.

Presley and Abbott (2013) in their research entitled "manager's overconfidence and representation of financial statements" conclude that there is significant relation between representation of financial report and manager's overconfidence. They show that there is significant difference between overconfident managers in firms with representation and firms without representation.

In a study entitled "CEO overconfidence and dividend policy" Deshmukh et al (2013) conclude that positive stock reaction to announcement of increased profit is often seen in firms that do not trust manager's overconfidence.

Peng He et al (2013) in a study entitled "information asymmetry and cost of equity capital" conclude that there is positive and significant relation between information asymmetry and cost of equity; this result is significant for financial sectors, health care, oil and gas. Furthermore, it shows that information asymmetry increases the cost of company's capital.

Sandroni and Squintani (2013) study "overconfidence and asymmetric information about insurance" and conclude that overconfidence changes quantitative prediction in market of asymmetric information and may depend on the market structure. Overconfidence may overturn fundamental relations between observable variables in perfect-competition asymmetric information insurance markets. In monopolistic insurance markets, in contrast, they find that overconfidence may be observationally equivalent to variations in the risk composition of the economy.

In a study entitled "relationship of managers' overconfidence and selection of financing policy in companies listed in Tehran stock exchange" Chavoshi et al (2015) show lack of relationship between overconfidence and financial decision. In addition to it, the result suggests that the relationships among growth opportunities, profitability, firm size and distress risk with financial decision are significant.

Arabsalehi et al (2014) assess effect of manager's overconfidence on the sensitivity of investment – cash flow and concludes that senior managers' overconfidence causes sensitivity of investment- cash flow to increase.

Malakian et al (2013) in their study entitled "assessment of relationship between mangers' overconfidence and conservatism in companies listed in Tehran Stock Exchange" conclude that there is significant relationship between managers' overconfidence and conservatism in all companies under study.

Rahimian et al (2012) in their study entitled "relationship between profit quality and information asymmetry in companies listed in Tehran Stock Exchange" conclude that there is significant relationship between quality of profit and lack of information asymmetry; and then reduced quality of profit causes information asymmetry to increase.

Khani and Ghajavand (2012) in their studies entitled "effect of market competitive spectrum on the relationship between information asymmetry and the cost of capital in Tehran Stock Market" conclude that at level of competition there is no significant relationship between measurement criteria of information asymmetry and cost of capital. Furthermore, imperfect market competition as an effective factor on the relationship between information asymmetry and cost of capital will be ordinary.

Fadaeenezhad and Khoramnia (2012) study "information content of corporate profit disclosure and its effect on liquidity and information asymmetry in Tehran Stock Exchange" and conclude that three hypotheses of study – indicating the worthiness of information, reduced information asymmetry and increased market liquidity - are confirmed at 95% confidence level in case of bad news released by company, whereas only one hypothesis – concerning increased market liquidity – was confirmed in the case of good news.

Khadamipoor and Ghadiri (2010) in their study entitled "assessing relationship between accruals and information asymmetry in Tehran Stock Exchange" conclude that there is positive and significant relationship between abnormal accrual item and information asymmetry; so that, information asymmetry increase with increase of abnormal accruals.

Rahimian et al (2009) in their study entitled "relationship between some corporate governance mechanisms and information asymmetry in companies listed in the Tehran Stock Exchange", conclude that there is not significant relationship among internal audit unit and the ratio of outside directors of the board and criteria of information asymmetry. However, there is negative relationship between percentage of institutional ownership and information asymmetry.

Islami and Tehrani (2007) in their research entitled "studying the relationship between individual investors' overconfidence and volume of transaction in Tehran Stock Exchange" conclude that overconfidence theory is one of theories raised in financial and behavioral field; it is employed to explain the behavior of investors and market incongruent with traditional financial theory. According to this theory, the more the investors trust, the more the volume of transaction.

Ghaemi and Vatanparast (2005) in their research study "role of accounting information in decreasing information asymmetry in Tehran Stock Exchange", and conclude that there is information asymmetry among investors in Tehran Stock Exchange. This problem is greater before profit announcement compared to the time following profit announcement. In addition, they recognized that information asymmetry was related to level of transactions and share price in such a way that before profit announcement, volume of transactions increases and the share price fluctuates.

2.3 Research Hypothesis

Present study examines the relationship between manager's overconfidence and information asymmetry. Therefore regarding theoretical foundations and goal of research, the following hypothesis is raised:

Managers' overconfidence has effect on the information asymmetry of companies listed in Tehran Stock Exchange.

3 Methodology

Data of this study is collected from financial statements of companies listed in Tehran Stock Exchange, database of stock exchange and Rahavard -Novin software. Gathered data are prepared by the Excel software. Then they are analyzed by Stata and Eviews. Since it is not possible to measure serial correlation and heteroskedasticity by Eviews software in state of panel data, so Stata software is used for both tests.

Time domain of the research is considered a period of 10 years according to financial statement from 2009 to 2014.

Research sample of those companies listed in Tehran Stock Exchange has the following properties:

1. The company whose fiscal year ends in Esfand.
2. The company listed in Tehran Stock Exchange before fiscal year of 2009
3. The company that does not have financial changes between 2009 to 2014
4. The company that is not among financial institute, Investment company and banks due to their different nature.
5. Required financial information is delivered to perform research during period of research.

With regard to performed research, 84 companies that have above- mentioned conditions are selected for statistical sample from 2009 to 2014.

4 Research Variables

Operational definition of research variables is as table1:

Table1. Operational definition of research variables

Name of variable	Kind of variable	Symbol of variable	Manner of calculation
Information asymmetry	Dependent	Asymmetric information	$SPREAD_{it} = \dfrac{AP - BP}{(AP + BP)/2} * 100$
Manager's overconfidence	Independent	Overconfidence CEO	Three criteria, i.e. investment expenditures, regression residual error and earning per share (EPS) are used to measure it
Financial leverage	Control	Leverage	It is ratio of long term debt to the book value of assets
Size	Control	Size	Natural logarithm of total asset is used to measure the size of company

4.1.Independent Variable

With regard to above-mentioned matter, independent variable of this study is mangers' overconfidence and earning per share (EPS) is used to measure it.

4.2 Earnings Per Share (EPS)

Earnings per share is a main statistic that attracts attention of investor and financial analyzer. After corporation tax deductions, EPS is calculated by dividing earnings. It indicates profit that company get per share during a period. In this study, if actual EPS is more than predicted EPS in company, it gets 0 (zero). This indicates lack of mangers' overconfidence in the company. If actual EPS is less than predicted EPS, it indicates managers' overconfidence and gets 1.

4.3 Dependent Variable: information Asymmetry

Given that proposed price fluctuates at any moment, in this study best price is used to calculate information asymmetry in bid and best ask prices during a day. To determine the price range of 1986 in Tehran Stock Exchange, the following model is used. This model is applied by Chiang and Venkatesh in proposed year for bid and ask prices of shares. Then other people use this model in their research. Given model is as follows:

$$\sum_{i-1}^{N} SPREAD_{it}$$

$$SPREAD_{it} = \frac{AP - BP}{(AP + BP)/2} * 100 \quad (1)$$

where,
t= period under study
i= sample under study
spread= difference between the bid and ask prices
AP (ask price)= proposed average sale price for shares of a company i in period t
BP (bid price)= proposed average purchase price for shares of a company i in period t.

For calculation, first best bid and ask prices of shares are extracted for 21 days before and after announcement of estimated EPS. After calculation of bid and ask spread, the average figures are gotten for every sample before and after announcement. If spread (difference) between bid and ask prices of share is zero, it indicates the information asymmetry toward profit announcement; otherwise, it indicates lack of information asymmetry.

4.4 Research Model

Asymmetric information=β_0+β_1 OverconfidenceCEO+β_2 Leverage+β_4 Size+ €

5 Research Findings

5.1 Descriptive Statistics

The results achieved from analysis of descriptive data are shown in table 2. As observed average, number, minimum, maximum, standard deviation of research are shown in the following table. With regard to achieved amounts, the second column presents the available variables and total number of variables are 504 during 6 years. Fifth and sixth columns show minimum and maximum amounts of variables respectively. For example, variable of average financial leverage is .04950. The fourth column is standard deviation (SD). Standard deviation, for example, is 1.70 for size of company.

Table 2. Descriptive statistics of variables

Variable	Number	Average	SD	Minimum	Maximum
Mangers' overconfidence	504	0/4484	0/4970	0	1
Financial leverage	504	0/4950	0/2332	0/01	0/9967
Size of company	504	13/91	1/708	9/65	19/06
Information asymmetry	504	0/1342	0/2289	0/009	1/73

Since the criteria of overconfidence variable are in qualitative state (0 or 1), so instead of descriptive statistics of table, frequency distribution is presented.

Table 3. Frequency distribution of overconfidence variable with criteria of EPS

		Frequency	Percent	Valid percent	The cumulative percent
Amount	0	270	55/16	55/16	55/16
	1	226	44/84	44/84	100
	Total	504	100	100	

With regard to table 3, the number of companies with managers' overconfidence is 226 that is 44%.

5.2 Hypothesis Testing

Table 4 shows the results achieved from estimation of model relevant to hypothesis (EPS as criterion of manager's overconfidence) by means of panel data model with fixed effects.

Table 4. Estimation of model by use of panel data model with fixed effect

Model	Unstandardized Coefficient		T statistic	Level of significance
	B	Std.Error		
Manager's overconfidence	01030.	00380.	67.2	00790.
Financial leverage	00580.	00970.	60110.	54810.
Size of company	00390.-	0330.	15.1-	24680.
Intercept	01070.-	05630.	19070.-	84880.

R^2	44 percent		
Adjusted R^2	33 percent		
Durbin Watson	2.1		
F Limer	0.000		
Hausman	0.000		
Normality of residuals	0.4606		
Co-integration test	0.000		
Wooldridge test	0.5182		
Adjusted Wald test	0.000		

As shown in table 4, adjusted coefficient is 33 percent, indicating that it is dependent variable of 33 percent dependent on the available variables in the model and 67 percent of it is related to other variables that is not considered in the model. Furthermore, amount of Durbin-Watson statistic is between 1.5 and 2.5 and it indicates lack of correlation. Probability level of F-Limer test is less than 5 percent, and then the data is panel data. Significance level of Hausman test indicates that effect of intercept is fixed. Then regression model is estimated by panel data method with fixed effect. In addition, significance level of Jarque-Bera test for residuals is more than 5 percent; it indicates normality of model's residuals, and there is no need to stationarity of individual variables. In addition, co-integration test (Chen et al., 2010) has significance level less than 5 percent for residuals and indicates stationarity of residuals. This indicates that there is no need to stationarity of individual variables. Furthermore, significance level of recognizing Wooldridge's serial correlation test is more than 5 percent for the model. It indicates lack of serial correlation in the model, and this is approved according to Durbin Watson statistic. The results of Adjusted Wald test indicates heteroskedasticity in residuals. This problem is obviated in the final estimation of model.

Variable of manager's overconfidence has positive coefficient. This indicates that managers' overconfidence has direct relationship with information asymmetry. Since the significance level of this variable is less than 5%, so it can be said that this direct relationship is statistically significant with 95% confident level. So research hypothesis is approved. Control variables of research has significance level more than 5 percent and does not have significant relationship with information asymmetry.

6. Conclusion

Overconfidence is defined as "overestimation of one's abilities and results related to personal situation." Managers' overconfidence has direct relationship on the performance of securities market; accordingly, its increase among mangers results in decreased stock market performance of company in the future. Investors and owner of company are concerned about discovery of companies' operational and financial problems. Given that in an environment with obscure information, investors are able to recognize and discover profitless projects; this causes negative return of such projects to be continued and accumulated. Overconfidence in managers is new subject in behavioral finance. The subject raised in mangers' overconfidence is that psychological prejudices and illusions in executives of company especially among senior managers causes them to trust their own abilities too much so they are reluctant to disclose and complete the profitless project. Since they trust themselves, so they believe that their weakness is covered by better performance in future. Hence, they overvalue the company and maximize the profit of shareholder. Many psychologists state that being overconfident in ability is related to information processing. They present two rational interpretations in this field. First, subjects do not use deductive methods sufficiently. They utilize their informational experience to approve the probable answers. When the answer of a question is discovered, they look for experiences to approve or reject. In this time, subject can get information to approve the primary results while using memory retrieval processes. Perhaps subjects believe that stored

information in memory is enough to select answer and there is no need to deduction process. If financial traders present bid price in the same way, this price arises from their last experience about similar cases. In this case, they search information to justify higher or lower price (Adam et al., 2010).

The main purpose of the study is to assess the effect of staff's overconfidence on the information asymmetry. We use criteria of EPS to determine the managers' overconfidence. Financial specialists pay less attention to social psychology. Financial theorists assess the effect of information on the share price and volume of transaction, but they perform less research about social interaction between people in the stock market. People are inclined to be in congruent with other's decision- making and judgments. Most of investors emotionally react in the market atmosphere; in other words, even when information signals say to people which purchase and sale patterns are correct. To answer the question which behavioral pattern is dominant in the market is dependent on the condition and context of information. The results achieved from estimation of criteria regression (EPS) indicate significant effect of overconfidence on the information asymmetry. This means that managers' overconfidence causes information asymmetry to be raised among users of accounting information. The result of study is in line with findings of Sandroni et al in 2012. It is suggested that investors and analyzers in their prediction should consider the behavioral factor of managers' overconfidence that is effective factor on the information asymmetry. Furthermore, it is proposed that future researches apply other criteria to determine managers 'overconfidence and information asymmetry. In addition, future researches can assess the hypothesis of the project in different industries and determine the effect of managerial overconfidence on information asymmetry in different industries.

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