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Studying the relationship between voluntary disclosure, decision-making styles, and information asymmetry in Tehran Stock Exchange

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Abstractл

Disclosure of financial information in annual reports is considered as a key topic of research. This study set to check methods of investor's decisions and the relationship between the level of voluntary disclosure and information asymmetry on a listed company on Tehran Stock Exchange. In this regard, a research has been done on the methods of investors' decisions to test these hypotheses. In terms of subject, this study is in the field of research related to the Brunswik leans model in accounting treatment. This research is a field study and the purpose of this study is to take research sample from among masters, professors and PhD students in accounting and financial management. For purposes of this study, Sample members were divided into two groups (experimental and control) and four decision style inventory; Directive Style, Analytical Style, Conceptual Style, and Behavioral Style.

As an addition, investors are divided according to their brains' dominant style of decision-making and cognitive complexity so that uncertainties about the tolerance level are classified. Evidence shows that those who have their left brain as more dominant are likely to use more items, on average, to process information. The results of study show that the different styles of decision-making have significant differences in terms of volume and processing time. Also there is no significant difference was observed in terms of the accuracy of decision making between different styles of decision. It is expected to voluntary disclosure reduce the level of information asymmetry in the market.

Key words: voluntary disclosure, decision-making styles, the leans processing model, information asymmetry

1. Introduction.

In this section, to study when and how information overload can occur for different people by disclose information, decision-making styles may be a key factor. The theory of decision making styles has studied on collection patterns, and how to use classified information by individuals when they are in a position to make decisions (Driver, M., Svensson, K., Amato, R., Pate, L.,1996).

In this study, the behavioral model of Ulmann (1985) was used to determine the effective factors on the level of voluntary disclosure. In terms of subject, this study is in the field of research related to the Brunswik leans model in accounting treatment. Brunswick lens model as an analytical framework of the accounting treatment used in research. Through the lens and by using a series of basic data, we can predict the future based on that forecast.

In terms of subject, this study is in the field of research related to the Brunswik leans model in accounting treatment. Brunswick lens model as an analytical framework of the accounting treatment used in research. Through the lens and by using a series of basic data, we can predict the future based on that forecast. In this model a person's decision is on the one hand and on the other hand it is decided. In the middle of the model is also based information that helps decision-makers to use that information to decide the issue (Nikoo maram and Banimahd, 1388).

In this study the behavior of investors will be checked in the voluntary information disclosed by taking different decision-making styles. For this purpose, data for decision making styles was collected by decision style inventory Questionnaire (DSI) which is a standard questionnaire. It was developed by Alan J. Row (1983) with the aim of providing a way to evaluate and compare the preferences of people during the encounter of different decision-making positions.

2. Literature Review.

Uyar and Klich (2012) investigated the ability to create value by paying voluntary disclosure. They produced 129 companies listed on the Istanbul stock market for the 2010 fiscal year examined. The results showed that capital market participants to react voluntary disclosure by companies. In other words, companies that offer more voluntary disclosure, investors with more value, and this will increase the company's value.

Payne (2010) investigates the professional and amateur styles of investment decision and compares them. His evidence shows that significant differences between professional and amateur styles investment decision on the selection of investment options there.

Al Tamimi (2006), say that the analytical and perceptual decision making styles spend more time to process information before making a decision themselves. Investors do not have enough time to analyze all the investment options so they restrict them search to stocks that have attracted their attention. This could be a good or bad image in the minds of investors make. However, the coefficient on the annual report score is significantly negative.

Rowe & Boulgarides (1983) defined a cognitive and behavioural model which indicates four decision styles, which are determined by classification into two dimensions: high cognitive complexity (thinking) or low cognitive complexity (action) and brain hemisphere dominance (either task or people orientation). Cognitive complexity measures a person's capacity to cope with information. Cognitive complexity has also been equated to tolerance for ambiguity because these individuals are able to deal with information that is not sorted or structured. The other dimension in decision style according to this model is the brain dominance or the side of the brain with which people process the information. Brain dominance research helps towards the understanding of the dimension of decision-making style. The left side of the brain is the logical hemisphere. It focuses on the more technical aspects of the world. Conversely, the right side of the brain concentrates on the spatial, visual, or social aspects of our environment (Figure1).

Figure 1. The Cognitive-Contingency Decision Style Model

		Left Brain	Right Brain
Cognitive Complexity	Tolerance for Ambiguity	**Analytic** logical, abstract thinker	**Conceptual** broad, spatial creative thinker
	Need for Structure	**Directive** focused, rapid results	**Behavioural** support, empathy, listens
		Technical	Social
		Environmental Values	

Rowe & Boulgarides (1983)

3. Research Methodology.

3.1. Te decision making styles Assessment Questionnaire.

This research is the study of the behavior of investors in the territory subject under the company examines the impact of the disclosure. To achieve the study goals, the "decision making styles Assessment Questionnaire (DSI)" was used.

The samples tested in this study were divided into two groups. For the conventional treatment group financial statements and summary of accounting data samples over 3 years was compulsory. Then the respondents were asked on the basis of this information between two fixed amount X Rials of investment options or bonds with a guaranteed %16 profit (return on risk-free) and invest in a portfolio form. It also asked investors based on the information that is given to their company's stock price after a period of six months to purchase and maintain estimate. He must predict price for the company in six months (minimum price, maximum price possible). The triangular pattern is one of the most common forms of stock pricing. The average of these prices was calculated to be just an average price calculated for each investor. It was assumed that the company is divided into profit this year will be equal to last year's dividend. But in the control group, in addition to financial information related to financial reporting forced on to investors, a summary of important information voluntarily disclosed to investors samples were also (23 items of financial and non-financial reporting of Experimental Corporation (SAIPA Co.). Information on Saipa Co. contains 16 items about voluntary discloser and 7 items about financial statements). All the above instructions for the control group as well as groups standing .They are given the opportunity to view each piece of information as long as they like and return to a piece as many times as they like.

Information asymmetry in decision-making style is the dispersion (SD) estimated prices that style of decision-making by investors.

Several statistical methods parametric and nonparametric test was used to compare the mean of the two communities, including them the techniques, single-factor analysis of variance (ANOVA), the test compares the variances of two populations (Levin test) test, LSD, and so on.

3.2. Variables Measuring

Information Asymmetry Index: applied a fuzzy model

Information asymmetry of one decision-making style is an Average dispersion prices estimated by decision-makers. A fuzzy sets approach is used to estimate Information asymmetry index (Ahlers, David M., and Vithala R. Rao, 1977, 1976, and 1975). Therefore, each investor is asked on estimated three prices: high (H), mod (M), and low (L). So we will have:

$$F(z)=\begin{cases}\left[\frac{2}{H-L}\right]\left[\frac{Z-L}{M-L}\right] & ; \quad L \le Z \le M \\ \left[\frac{2}{H-L}\right]\left[\frac{H-Z}{H-M}\right] & ; \quad M \le Z \le H\end{cases}$$ All for H-L ≥ 2

$$\text{Average} = \frac{H+M+L}{3}$$

$$\text{Variance} = \frac{L^2+M^2+H^2-LH-MH-ML}{8}$$

3.3. Decision Styles.

In measuring a person's decision style, DSI is used. The instrument determines one's preferences when responding to a series of 20 statements. Each question of the DSI instrument has four possible answers. The answers are most like you, moderately like you, slightly like you, or least like you. The questions are weighted exponentially. The most like you answer is weighted 8, the moderately like you answer is weighted 4, the slightly like you answer is weighted 2, and finally the least like you answer is weighted 1. Each answer can only be used once. The responses are ordered by decision style. The first response is the directive, the second is the analytic, the third is the conceptual and, finally, the fourth is behavioural. The responses are put in columns and summed to obtain the level of dominance of each style. The total for each question is 15 (sum of 8, 4, 2,1) and the total for the whole instrument is 300 (20 times 15). The maximum possible score for any one style is 160 (20 times 8) and the minimum is 20 (20 times 1) (Rowe & Boulgarides, 1983).

4. Experimental results.

Experimental research on voluntary disclosure is a long history, with research Cerf (1961) started and continued with the next wave of studies.

The introduction of lens model and policy capturing research in the mid 1970's has been a significant contribution to the auditing literature. This line of research has introduced new research techniques and methodologies to the literature and played a major role in the acceleration of the behavioural research in auditing.

The literature has shown that the more complex decision styles (Analytic and Conceptual)are less likely to suffer from information overload than the less complex decision styles (Directive and Behavioural). Rowe and Mason (1987) find that the left brain dominant styles (Analytic and Directive) focus on the task in a decision environment. Therefore, they perform better in the area of finance than the right brain dominant styles (Conceptual and Behavioural) so these styles process more firm voluntary disclosure than others.

This premise tested in an investing environment should answer the question as to how many information pieces an investor will view before making a decision. Therefore, it is hypothesized as follows:

H1: There is a significant relationship between investor's dominant styles and mean number of firm's voluntary disclosure items viewed**.**

Hypothesis H1 is subtracted to three sub-hypothesis H1a, H1b, and H1c:

H1a: Analytic and Directive (Left Brain) decision styles will have a higher mean number of firm's voluntary disclosure items viewed than Conceptual and Behavioural (Right Brain) styles**.**

H1b: Analytic and Conceptual (More Complex**)** decision styles will have a higher mean number of firm's voluntary disclosure items viewed than Directive and Behavioural (Less Complex) styles**.**

Hypothesis H1a is tested using two methods. First, it is tested by comparing the mean number of items viewed by each of the two groups.

$$\begin{cases}H_0: \mu_{left} \le \mu_{right} \\ H_1: \mu_{left} > \mu_{right}\end{cases}$$

Before the mean compared measurer, the "Levin" test is done and Fisher's statistic is reviewed.

$$\begin{cases}H_0: \sigma^2_{left} = \sigma^2_{right} \\ H_1: \sigma^2_{left} \ne \sigma^2_{right}\end{cases}$$

Hypothesises H1a and H1b are tested using two methods. First, it is tested by comparing the mean number of items viewed by each member of the two groups. The respondents are grouped according to their brain dominance as determined by their DSI scores. An independent sample t-test, with the number of items viewed as the test variable and brain dominance as the grouping variable (Left or Right Brain), is run. The results reveal that from the 23 (16 items for voluntary disclosure) items available, the left brain dominant styles actually view more items than their right brain dominant counterparts. Therefore, H1a is supported and it should be noted that the difference between the two means is statistically significant, which is at 0.05.

Also, for testing H1b, cognitive complexity as the grouping variable (more or less complex), is run. The results reveal that from the 23 (16 items for voluntary disclosure) items available, the more complex styles actually do not view more items than their less complex counterparts. Therefore, H1B is not supported. However, it should be noted that the difference between the two means is not statistically significant, which is at 0.05 .

Additionally, a one-way ANOVA test, with number of items viewed as the dependent variable as well as decision style (directive, analytical, conceptual, and behavioural) as the factor, is run. The results reveal no significant difference between the decision style groups (sig=0.251). This lack of variance in use of information among the four decision styles fails to support hypothesis H1.

Multiple Comparisons in amount of Voluntary Disclosure processed by different Decision Styles shows the results of a LSD test, which compares each style to the other three. There are no significant differences between most of groups but we have a significant difference between behavioural styles and directive and analytical styles.

Since the number of observations in behavioural style test is less than 30 cases, Therefore, Kruskal-Wallis test (test H) is used to test for significant mean differences. Kruskal-Wallis test results also confirm the statistical findings of the one-way ANOVA test. Because χ^2 and sig of this test are 3.970 and 0.265 respectively, the evidence to reject H0, which is based on the equal to average amount of information processed by the different styles, cannot be provided.

H2: There is significant difference in terms of the accuracy of decision between different styles.

This hypothesis has two sub-hypotheses. To test these two hypotheses, there should be a sub-test of equality of variance tests ("Levin") between the experimental group and control group using Fisher's F statistic. It is noted that the accuracy of one decision-making style is an Average dispersion prices estimated by decision makers. For example, information asymmetry theory is used to compare the style I and j group, which is designed as follows:

$$\begin{cases} H_0 : \sigma_{i,j}^2 \geq \sigma_{i,j}^2 \\ H_1 : \sigma_{i,j}^2 < \sigma_{i,j}^2 \end{cases}$$

H2a: Analytic and Directive (Left Brain) decision styles will have a higher accuracy than Conceptual and Behavioural (Right Brain) styles in decisions**.**

H2b: Analytic and Conceptual (More Complex**)** decision styles will have a higher accuracy than Directive and Behavioural (Less Complex) styles in decisions**.**

The results of t-test and Descriptive Statistics before Voluntary Disclosure processed shows Sig "Levin" test for both hypotheses. Because this figure is smaller than the %5 significance level, variance equality (H0) is not rejected. The Levine test results do not provide sufficient evidence to support the tests on H1.

Furthermore, in 95% confidence level, the claim hypothesis is not accepted. Therefore, there is no significant difference between different styles about information asymmetry.

H3: Voluntary disclosure of information by companies has increasingly valuable content for the accuracy of decision making between different decision-making styles.

Accuracy of decision making (variance of estimated prices by investors) is used between the experimental and control group. This hypothesis has four sub-hypotheses. To test these hypotheses, there should be a sub-test of equality of variance tests ("Levin") between the experimental group and control group using the Fisher's F statistic. It is noted that the information asymmetry of one decision-making style is an Average dispersion prices estimated by decision-makers. For example, information asymmetry theory is used to compare the style I and j group, which is designed as follows:

$$\begin{cases} H_0 : \mu_{exper} = \mu_{control} \\ H_1 : \mu_{exper} \neq \mu_{control} \end{cases}$$

H3a: After voluntary disclosure by firms, Analytic and Directive (Left Brain decision styles) will have a higher accuracy of decision making.

H3b: After voluntary disclosure by firms, Conceptual and Behavioural (Right Brain decision styles) will have a higher accuracy of decision making.

H3c: After voluntary disclosure by firms, Analytic and Conceptual (More Complex decision styles) will have a higher accuracy of decision making.

H3d: After voluntary disclosure by firms, Directive and Behavioural (Less Complex decision styles) will have a higher accuracy of decision making.

The results of asymmetry t-test and Descriptive Statistics in after and before Voluntary Disclosure processed show Sig "Levin" test for all of the above hypotheses are 0.124, 0.012, 0.095 and 0.020 respectively. Because these figures are smaller than the 5% significance level, variance equality (H1) is rejected. The Levine test results provide sufficient evidence to support the H0 tests.

Furthermore, in 95% confidence level, the claim hypothesis is accepted. Therefore, there is a slight difference among the different styles on accuracy of decision making ex-anti voluntary disclosure by firms.

Results of First Hypothesis

The more complex decision styles (Analytic and Conceptual) and Left Brain dominant styles (Analytic and Directive) are less likely to suffer from information overload than the less complex decision styles (Directive and Behavioural). The left brain dominant styles (Analytic and Directive) focus on the task in a decision

environment. Therefore, they perform better in the area of finance than the right brain dominant styles (Conceptual and Behavioural) so these styles process more firm voluntary disclosure than others. Based on what said, when the decision environment is less complex and rapid processing is needed, less complex decision styles will outperform more complex styles. If cognitive complexity is a learnt characteristic, then, an individual's cognitive abilities should increase over time. These findings are consistent with other related research findings, such as Liang et al. (2006) as well as Payne (2010).

Results of second Hypothesis

It shown Analytic and Directive (Left Brain) decision styles have a higher accuracy in decisions than Conceptual and Behavioural (Right Brain) styles. However, there is no significant difference in terms of the accuracy of decision between more Complex decision styles (Analytic and Conceptual|) and less Complex decision styles (Directive and Behavioural). These results are consistent with other related research findings, such as Rowe & Mason (1987), Payne (2010) and Markham & Harty (2008).

Results of third Hypothesis

There is no evidence to confirming the voluntary disclosure of information by companies has increasingly valuable content for the accuracy of decision making between different decision-making styles (Left Brain or Right Brain and also More Complex and Less Complex). Although, previous researches has shown that by voluntary disclosure of information, more complex decision styles averages have been taken more accurate decisions (Gelb & Zarowin, (2002), Lundholm, & Myers (2002), Hope (2003)). But results of this research show that voluntary disclosure of information in decision-making all decision styles have been ineffective.

4. Conclusion.

Information asymmetry occurs when one or more investors possess private information about a firm's value. Asymmetry creates an adverse selection problem in the market as informed investors' trade on the basis of their private information. These trading activities manifest themselves as unusually large imbalances in the observed order flow; therefore, the extent of information asymmetry among investors can be characterized as the probability that a particular buy or sell order comes from an investor with private information. In this section, how a firm's choice of disclosure quality potentially influences the level of information asymmetry is discussed.

This premise tested in an investing environment should answer the question as to how many information pieces an investor will view before making a decision. In this study the behavior of investors will be checked in the voluntary information disclosed by taking different decision-making styles. For this purpose, data for decision making styles was collected by decision style inventory Questionnaire (DSI) which is a standard questionnaire. It was developed by Alan J. Row (1983) with the aim of providing a way to evaluate and compare the preferences of people during the encounter of different decision-making positions.

Evidence shows that people with dominant left side of the brain use more items, on average, to process information. In addition, Behavioural decision-making style uses the lowest items to process information. Indeed, the results show that all styles in the Experimental group have less information asymmetry than the control group. These findings support the voluntary disclosure of information by companies to reduce the level of information asymmetry the market offers.

References:

Ahlers, David M.,and Vithala R. Rao, (1976), The Triangular Distribution: A Valuable Tool for Management Decision Making, unpublished manuscript.

Ahlers, David M., (1975), An Investment Decision Making System, Interfaces, The University of Michigan, Institute of Management Sciences, pp.72-90.

Ahlers, David M., (1977), A New Look At Portfolio Management, Volume 5, The University of California, JA Press.

Al-Tamimi, Hussein A. (Summer, 2006), Factors influencing individual investor behavior: An empirical study of the UAE financial market, The Business Review, Cambridge, 5(2), pp.225-232.

Cerf, A. R. (1961), Corporate Reporting and Investment Decisions,Berkely, The University of California Press.

Driver, M., Svensson, K., Amato, R. & Pate, L. (1996), A human information processing approach to strategic change, International Studies of Management & Organization, 26(1), 41-58.

Gelb, D. S., and P. Zarowin, (2002), Corporate disclosure policy and the informativeness of stock prices, Review of Accounting Studies, 7, 33–52.

Hope, O-K, (2003), Disclosure practices, enforcement of accounting standards, and analysts' forecast accuracy: An international study, Journal of accounting Research, Vol.41, No.2, pp.235-272.

Liang, T, Lai, H., & Ku Y. (2006), Personalized content recommendation and user satisfaction: Theoretical synthesis and empirical findings, Journal of Management Information Systems, 23(3), 45-70.

Lundholm, R., and P. Myers, (2002), Bringing the future forward: the effect of disclosure on the returns-earnings relation, Journal of Accounting Research, 40, pp.809–839.

Markham, J. & Harty, D. (2008),For whom the bell tolls: The demise of the exchange trading floors and the growth of ECNs, The Journal of Corporation Law, 33(4), 865-939.

Nikoomaram, H. and B. Banimahd (1388), Theory of Accounting (Introduction to descriptive theories), Islamic Azad University, Science and Research Branch of Tehran, Tehran.

Payne, C., S., (2010),Are investees able to effectively use vast amounts of information available on publicly traded companies?, A decision theory approach to investor information analysis, Nova University Publishers.

Rowe, A & Boulgarides, J. (1983), Decision Styles - A Perspective, Leadership &Organization Development Journal, 4(4), pp.3.

Rowe, A. & Mason, R. (1987), Managing with style: A guide to understanding, assessing, and improving decision making, San Fransisco, CA: Jossey-Bass Inc., Publishers.

Ulmann A. (1985), Datain search of a theory: A critical examination of the relationships among social performance, social disclosure, and economic performance of US firms, Academy of management Review, 10, pp. 540-57.

Uyar, A., and M. Kiliç (2012), Value relevance of voluntary disclosure: evidence from Turkish firms, Journal of Intellectual Capital, Vol. 13, Iss: 3, pp. 363 - 376.

Verrecchia, R. (1983). Discretionary disclosure. Journal of Accounting & Economics, 5(3), 179-94.

Investigating the effect of volatilities in cash flow on investment due to financial constraints

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Abstract: One of the factors that affects investment on the firm's investment decisions is cash flow and how it flows in the firm and in particular its volatilities. The aim of this study was to investigate the relationship between volatilities in cash flow and investment in firms with financial constraints. Assumptions of the study was collected based on information from 144 companies listed on Tehran Stock Exchange during the years 2001 to 2012 and were analyzed using regression analysis. The results show that there are no significant relation between the volatility of cash flow and investment.

Key words: investment, cash flow volatility, financial constraints.

1. Introduction.

In this paper, we address two questions. First, what is the dynamic relationship, if any, between investment and cash flow volatility? Second, is the relationship asymmetric relative to the effect of positive and negative cash flow growth realizations? For each question, we investigate the possible differential impact of financial constraints. Despite existing discussion on the dynamic link between investment and cash flow volatility in real option literature, to our knowledge these questions have not been explicitly addressed in the empirical literature. Previous studies have evaluated the impact of cash flow volatilities on investments as a symmetrical impact. But it seems that perhaps creditors would have a favorable and hopeful look to achieve positive growth in cash flow and an undesirable and despair look at negative growth in cash flow. From this perspective, achieving the positive growth in cash flow reduces the financial constraints, while the realization of negative growth in cash flow increases the financial constraints. So, we can say that in companies experiencing financial constraints where the growth of cash flow is negative (positive), a reverse (direct) relationship is established between the past volatility of cash flow and investment. From the perspective of real options, companies that are not experiencing the financial constraints, will not face a deficit of cash flows in future and therefore, cash flow volatility which doesn't create an incentive for additional investment, is an issue that is expected for companies with financial constraints. In addition, Boyl and Gadri (2003) suggested that high volatility in cash flow makes companies that are not experiencing financial constraints to delay investment in order to strengthen the inverse relationship between volatility in cash flows and the current investment. Based on the arguments above, it seems that there is a close relationship between conditional volatility of cash flows, current investment and future investment. Now, given the particular circumstances of the Iran's capital market and the differences that it has compared to large and old markets of the world, researchers are looking for validity of these arguments among the companies listed on the Iran Stock Exchange, that it is an issue which needs experimental test. Therefore, in this study, the relationship between the mentioned variables will be examined.

This paper proceeds as follows: Section 2 develops our hypotheses. Section 3 reviews the data set, constructs the variables, and examines variable properties. Section 4 tests our hypotheses. Section 5 discusses our results and conducts several robustness checks. Section 6 provides concluding remarks.

2. Development of hypotheses.

Does the relationship between investment and cash flow volatility differ between financially constrained and unconstrained firms? A financially constrained firm has limited access to external capital, and hence their ability to undertake investment is restricted. Moyen (2004) suggests

financially constrained firms that face possible future cash shortfalls have increased cash flow sensitivity, and hence they build cash stocks rather than fund investments. At the extreme, Minton and Schrand (1999) note that firms facing increasing financial constraints may choose to forgo current investment. Under these conditions, financial constraints amplify the negative relationship between cash flow volatility and investment.

Prior literature has treated the effect of volatility on investment as symmetric; however, lenders are likely to favourably view positive realisations of cash flow growth and poorly view negative realisations of cash flow growth. From this perspective, positive cash flow growth realisations relax financial constraints while negative realisations magnify financial constraints.

Hypothesis 1. Within financially constrained firms with negative cash flow growth realisations, there is a negative relationship between prior cash flow volatility and investment.

Hypothesis 2. Within financially constrained firms with positive cash flow growth realisations, there is a positive relationship between prior cash flow volatility and investment.

3. Data and Empirical Methods.

Is the identified relationship between volatility and investment asymmetric? To address this question, we focus on the effect of lagged variables using:

$$\begin{aligned}\mathrm{LnCAPXtoAsts}_{i,t} = {} & \alpha_0 + \alpha_1 \mathrm{CFV}^{high}_{i,t-1} + \alpha_2 \mathrm{CONS}_{i,t} + \alpha_3 \mathrm{CFRel}^{+}_{i,t-1} \\ & + \alpha_4 \left(\mathrm{CFV}^{high}_{i,t-1} * \mathrm{CONS}_{i,t}\right) + \alpha_5 \left(\mathrm{CFV}^{high}_{i,t-1} * \mathrm{CFRel}^{+}_{i,t-1}\right) \\ & + \alpha_6 \left(\mathrm{CONS}_{i,t} * \mathrm{CFRel}^{+}_{i,t-1}\right) \\ & + \alpha_7 \left(\mathrm{CFV}^{high}_{i,t-1} * \mathrm{CONS}_{i,t} * \mathrm{CFRel}^{+}_{i,t-1}\right) + \mathrm{CONTROLS}_{i,t} \\ & + \varepsilon_{i,t}\end{aligned}$$

where:

$\mathrm{LnCAPXtoAsts}_{i,t}$: Investment company

$$\mathrm{LnCAPXtoAsts}_{i,t} = \mathrm{Ln}\left[\left(\mathrm{CAPX}_{i,t}/\mathrm{Assets}_{i,t}\right) + 1\right]$$

$\mathrm{CAPX}_{i,t}$: That is, the Amounts capital expenditures buy fixed assets, intangible assets and other long-term assets annually

$\mathrm{Assets}_{i,t}$: Total assets

$\mathrm{CFV}^{high}_{i,t-1}$: SD cash flows over the past three years.

$\mathrm{CONS}_{i,t}$: To calculate the index, introduced by Hdlak and Pierce (2010) is used

$$\begin{aligned}\mathrm{SA\ Index}_{i,t} = {} & -0.737 * \mathrm{Firm\ Size}_{i,t} + 0.043 \\ & * (\mathrm{Firm\ Size}_{i,t})^2 - 0.040 * \mathrm{Firm\ Age}_{i,t}.\end{aligned}$$

$\mathrm{Firm\ Size}_{i,t}$: It is the natural logarithm of total assets.

$\mathrm{Firm\ Age}_{i,t}$. : The number of years the company's activity.

$\mathrm{CFRel}^{+}_{i,t-1}$: The positive growth of the company's cash flow. To calculate the cash flow growth from the following formula is used

$$(\mathrm{OCF}_{i,t-1} - \mathrm{OCF}_{i,t-2})/\mathrm{OCF}_{i,t-2}$$

OCF: Operating cash flow.

$\mathrm{CONTROLS}_{i,t}$: includes $\mathrm{Size}_{i,t}$,

$\mathrm{Sales\ Growth}_{i,t}$,$\mathrm{Assets\ Return}_{i,t}$,$\mathrm{OCF\ to\ Assets}_{i,t}$,$\mathrm{Leverage}_{i,t}$,

$\mathrm{G\&A\ Costs\ to\ Assets}_{i,t}$

The considered sample was studied during the period of 2000 to 2012 and in a 12-years period and included 144 companies on the companies listed in Tehran Stock Exchange.. In this section, mean, median (central criteria), standard deviation, maximum and minimum (scattering parameters) variables used are calculated and presented in Table1.

Before the study of Table1 It worth's to be noted that most of the final key variables used in this study were dummy variables (zero and one) and for this reason, in order to provide clear information in the section of descriptive statistics, the data on the basis of false information provided above are discussed. Meanwhile, although the primary firm-year value was 1872, but it faced a reduction after sorting and removal of outliers.

Table 1: Summary statistics

Variable	Number	Mean	Middle	Std Dev	Min	Max
$LnCAPXtoAsts_{i,t}$	1500	0/047	0/03	0/055	0/483	$4/24*10^{-6}$
$CFV^{high}_{i,t-1}$	1358	/28 88789	/63 19745	/9 323315	422134 9	191/51
$CONS_{i,t}$	1762	-3/49	-3/43	0/371	-2/64	-4/82
$Sales\ Growth_{i,t}$	1519	0/196	0/15	0/458	7/68	-0/85
$Assets\ Return_{i,t}$	1706	0/872	0/759	0/9	12/474	0/02
$OCF\ to\ Assets_{i,t}$	1497	0/05	0/03	0/063	0/622	$4/24*10^{-6}$
$Size_{i,t}$	1762	5/686	5/65	0/566	8/01	4/26
$Leverage_{i,t}$	1756	0/709	0/69	0/283	3/34	0/13
$G\&A\ Costs\ to\ Assets_{i,t}$	944	0/057	0/05	0/0522	0/5	0/01

Summary statistics including the number of observations, mean, Middle, standard deviation, minimum, maximum, are reported for variables. For all variables there are 1872 observations.

Table 2: Testing Hypothesis 1 and 2

Variable	Coefficients	SE	Stat. t	Sig. level
Constant	0/004	0/002	77 1/7	0 0/75
$CFV^{high}_{i,t-1}$	0/0001	/0004 0	/24 0	8 0/09
$CONS_{i,t}$	0/0006	/0007 0	93 0/9	3 0/47
$CFRel^{+}_{i,t-1}$	-0/0002	/0004 0	50 -0/9	6 0/1
$CFV^{high}_{i,t-1} * CONS_{i,t}$	-0/0005	/0001 0	0/4 -	6 0/88
$CFV^{high}_{i,t-1} * CFRel^{+}_{i,t-1}$	8/3*10-5	/0005 0	14 0/3	8 0/85
$CONS_{i,t} * CFRel^{+}_{i,t-1}$	0/001	/0008 0	17 1/3	2 0/41
$CFV^{high}_{i,t-1} * CONS_{i,t} * CFRel^{+}_{i,t-1}$	-0/0009	0/001	/51 -0	6 0/1
$Sales\ Growth_{i,t}$	0/0005	/0002 0	98 1/1	0 0/47
$Assets\ Return_{i,t}$	0/0001	/0002 0	47 0/8	6 0/32
$OCF\ to\ Assets_{i,t}$	0/867	0/002	/78 383	0 0/00
$Size_{i,t}$	-2/93*10-5	/0004 0	06 -0/9	9 0/44
$Leverage_{i,t}$	-0/001	/0005 0	45 -2/6	0 0/14
$G\&A\ Costs\ to\ Assets_{i,t}$	0/001	0/004	30 0/3	7 0/61
coefficient of determination	9 0/94	Statistics F		
coefficient of modified determination	0/994		/51 11652	
Durbin - Watson statistic	5 1/98	Chancestatistics F		0/000

The results of model test showed that there is no significant relation between the volatility in cash flow and investment. The meaning of volatility of cash flow is the moderating effect of financial constraints and positive growth in cash flow on this relation. Therefore, the first and second research hypothesis are not acceptable. This is while the variables of sales growth and operating-cash-flow-to-assets ratio, have a positive and significant effect on the Company's investments of the current year and the financial leverage had a reverse effect on previous investment of the company.

4. Conclusion.

Identifying the effect of cash flow volatility on investment can give a better and more complete perspective to the managers and capital market participants in decision making and it causes the optimal allocation of sources and eventually, economic growth. In this research, the relation between volatility of cash flow and investment has been examined in companies listed on Tehran Stock Exchange according to the financial constraints.

As it was evident in the results, the results of statistical tests showed that the firm's investment doesn't have a significant relation with volatility of cash flow and in the other words, cash flow volatility of the firm can't be effective on investment. According to rejection of the impact of volatility cash flow on the firm's investment, estimated moderating effect based on the previous researches were also rejected and in general, the proposed hypotheses in this study were rejected based on the results of experimental tests.

Comparing this result with the suggested arguments in previous studies, in all conditions implies the incompatibility of results. Kif and Tate (2013) considered the impact of cash flow volatility in investment in a research entitled " Is the relation between investment and conditional cash flow volatilities ambiguous, asymmetric or both? Their empirical evidence showed that firms with financial constraints reduce their investment when: (1) they experience an intense and continuous volatility of cash flow ; (2) they experience high volatility and the realization of negative growth in cash flow ; and (3) they have low levels of cash flow and experience the realization of negative growth in cash flow . in firms without financial constraints,the above impacts haven't been seen or they were economically nonsignificant. As can be seen, none of the research results is in accordance with the current study results.

It's necessary to mention that the operating-cash-flow-to-assets-ratio variable has a positive and significant impact on the firms' investments of the current year.

References:

1. Almeida, H., M. Campello, and M. S. Weisbach, 2004, “The Cash Flow Sensitivity of Cash,” The Journal of Finance, 59(4), 1777–1804.

2. Bates, T. W., K. M. Kahle, and R. M. Stulz, 2009, “Why Do U.S. Firms Hold So Much More Cash than They Used To?,” Journal of Finance, 64(5), 1985–2021.

3. Boyle, G. W., and G. A. Guthrie, 2003, “Investment, Uncertainty, and Liquidity,” The Journal of Finance, 58(5), 2143–2166.

4. Hadlock, C. J., and J. R. Pierce, 2010, “New Evidence on Measuring Financial Constraints: Moving Beyond the KZ Index,” Review of Financial Studies, 23(5), 1909–1940.

5. Kife, M.O. and J,Tate,2013,“Is the relationship between investment and conditional cash flow volatility ambiguous, asymmetric or both?” Victoria University of Wellington, School of Economics and Finance, SSRN Working Paper.

6. Minton, B. A., and C. Schrand, 1999, “The impact of cash flow volatility on discretionary investment and the costs of debt and equity financing,” Journal of Financial Economics, 54(3), 423–460.

7. Tavan, N, 2015, “The relationship between investment and cash flow volatility conditional on the companies listed in Tehran Stock Exchange”Institute of Golestan .

The relationship between the cost leadership strategy and product differentiation strategy with effective tax rate for long-term cash

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Abstract.
Business strategy show the company competition in the company choice. The company can be used set policies and activities which could achieve to one sustainable competitive advantage in the market of choice for the strengthen business strategy. The company was formed strategy for the willingness of companies for the risk and uncertainty. The company strategy can affect the level of tax avoidance. Thus, in this paper checked the relationship between the business strategy and level of tax avoidance. In this study were collected information 169 firm during years 2010- 2014 and the research hypotheses were tested at the level of 5%. The results show that there is a negative correlation between leadership strategy and effective tax rate for long term cash. And, there is a direct correlation between product differentiation strategy and effective tax rate for long term cash.

Key words: cost leadership strategy, product differentiation strategy, effective tax rate for long-term cash.

1. Introduction

The companies balance profits and Final costs due management of tax costs for signification own activities of tax avoidance. One of profits of tax avoidance Is increasing of pecuniary progresses. On the other hand of costs , and governmental punishment,for tax avoidance costs. Porter (1985) has expanded a frame that companies may choose a commercial strategy for increasing function of company. He has argued that the company should choose one of these cases: 1- reducing cost of a product in an industry (craft) that its called as cost management strategy .Or one particular product quality, physical or giving services it is called product distinguish strategy literary content it is seen why relation between financial crow and function of company is related to choose a Commercial strategy.

2. The importance and necessity of research.

Tax and catching it and avoiding from tax avoidance in companies which are written as a member of big financial payers,are important for government and especially for tax department. Companies can change the amount of tax with different politics .There are some elements which lead to tax avoidance or change the level of tax avoidance of companies .Checking these elements helps us to understand tax planning of companies, and it helps to tax department analyzes tax activities of companies and identifies the ways of tax avoidance .

This research can help to tax orgoni cation department by checking commercial strategy of companies and its influence tax avoidance by determination of companies strategies And then prevents the companies decrease their taxes,by suitable codification . more over it can help to research proceed which checkers balances in activities of fiscal avoidance .On the other band. Companies can uphold their commercial strategy with vindicative activities (such as fiscal planning), so they get an abiding competitive profit.

3. Theoretical principles of research.

3.1. The meaning of tax avoidance.

As for there are some different views about meaning of tax avoidance,frit we discuss a bout definition of tax avoidance for decreasing disorders in meanings. Tax avoidance is totally defined legal and clear decreasing in paying taxes.

This definition is adopted obtained from die ring and co-workers research (2008) and includes all transactions which influence on tax debts.

3.2. The measurement scales of tax avoidance.

The researchers has not enforced on a single scale for measurement of tax avoidance,because they believe every scale has own special limitation, but some of them better than the others. Totally, many of scales are used in literature if tax avoidance matter, and researchers should choose own measurement scales by noticing to the question and the goals of research. according to die ring and co-workers, in this research we use the scale of long-run cash ETR for measuring tax avoidance, so it is necessary to explain this scale.

3.3. Long-run cash ETR.

Using one annual rate for testing tax avoidance of company could lead to a false deduction from long-Run manner of companies. Hence long-run cash ETR is used witch equals division total taxes during 5 or 10 years on sum of tax profit in same term.(die ring and co-workers 2008).

4. The cost management strategy.

The goal of cost management strategy is the company should be a producer with little cost. The cost management strategy proves to be true by experiment, investment in facilities of vastly production, economizing, and careful supervision on total operating costs (by programs such as decreasing measures and control of quality .(porter 1985).

If the companies witch use cost management strategy have high performance with supervision of scrivener. They will be gained by using financial crow.supervision by scrivener limits the managers opportunistic manners by decreasing available resources for provisory costs. Hence, the duty of checking the debts is more important for the companies which attempt to high performance. Also, in cost management strategy. The company should control the basic costs and avoid increasing invitational marketing costs.(same resource).

5. The product distinguishing strategy.

This strategy needs development of goods or particular services with reliance on customers troth to the commercial mark (brand). A company can produce higher quality, better function, or particular property for justifying higher price. In product distinguish strategy, the companies like to fund for companies in creases. More over in product distinguish strategy, companies faces, unreliability It means that excessive emphasis on invention draws on companies face to risky activities. (Bigod back 1979,Jremice 2008).

Cost management strategy: It is obtained division of total sale on total capital.

The product distinguish strategy: It is obtained division of development and research saving and voluntary saving on total sale.

6. Research methodology.

6.1. Research method.

Thence this research checks relation between Function of companies and tax avoidance as for their strategies, the method of research is correlation and correlation measure between absolute variable, and any bound variable is deter minded by coefficient of correlation test and then by noticing meaningful level. It is characterized by using of probability value (p-value) that is there any relationship between absolute and bound variables not. And for hypothesis test companies which recorded in bourse organization site. and Novin Rahavard software.

6.2. The theories of research.

The companies balance their profits and Final costs for determination of activities measure of tax avoidance. But this balance some deal is related to the goals of the companies, for example : the companies which like to decrease their costs profit more than the risky companies in increasing economy of taxation .

But the cost of development and implementation of taxation strategies is more than profit of economy of taxation.

First theory: there is a meaningful relation between cost management strategy and long-run cash ETR

Second theory: there is a meaningful relation between product distinguish strategy and long-run cash ETR.

6.3. Test course, society and statistical sample model.

Statistical sample model of this research is formed consist of all companies which win in bond bourse of Tehran, during 2010-2013. Thence, the information of t-1 research samples, the information of 1388 is collected, too. In this research we will study the companies which have following qualifications:

For comparing the information, the Financial year should terminate on Esfand 29 th.

During research, they don't change their Fiscal year.

During research, transactions of company share shouldn't be stopped more than there months in Tehran bond bourse.

Necessary data's for performance of research should be available.

It isn't a member of Fiscal broker companies, such as (banks, investment and……)

During research, its profit should be reported.

By noticing above qualifications and limitations we chose 76 companies from winner companies in Tehran bond bourse.

6.4. The research variables

Bound variable

As it is said bound variable is tax avoidance in this research. The valuated research s to tax avoidance give different scales for measuring tax avoidance. As a scale (standard) we use 5 year old long-run cash ETR for Fiscal activities of company (Diering and co-workers 2008)

Long-run cash ETR is computed by following formula:

Long-run cash ETRI,T=$x = \frac{\text{PAID TAX}}{\text{TAX PROFIT}}$

in above formula long-run cash ETR of I company could be computed in T year .

Absolute free variable

Cost management strategy : It is obtained division of total sale on total sale on total capital.

Product distinguish strategy: It is obtained division of development and research store on total sale.

6.5. Test of theories:

First theory test:

First theory: thieve is meaningful rotation between cost management strategy and long-Run cash ETR.

In this theory we test cost management strategy and long-Run cash ETR by GRSION AND CORRELATION FACTOR METHOD.

Before doing this test, we tested the data's if they are normal or not . by (Q-Q) chart, we recognize outlives and delete them. And use logarithm conversion for making normal the data's. So the number of data's diminish from 220 to 169 for all companies in First theory test. And after doing necessary calculation, relation between cost management strategy as an absolute variable and long-Run cash ETR as a bound variable is evaluated (tested)

Second theory test

Second theory: there are meaningful relation between product distinguish strategy and Long-Run cash ETR.

Before doing this test, we tested the data's if they are normal or not . by (Q-Q) chart, we recognize outlives and delete them. And use logarithm conversion for making normal the data's. So the number of data's diminish from 220 to 169 for all companies in First theory test. And after doing necessary calculation, relation between cost management strategy as an absolute variable and long-Run cash ETR as a bound variable is evaluated (tested)

7. Conclusion.

The relationship between business strategy and the level of tax avoidance in companies listed on the Tehran Stock Exchange has reviewed and analyzed. On this basis, taking into account the 169 companies in the period 1389 to 1393 were analyzed hypotheses. Bread hypothesis test results that the factors affecting tax avoidance include: business strategy, profitability ratios, debt ratio and the ratio of fixed assets. Based on the results of the first hypothesis, the negative relationship between the company and the effective tax rate cash cost leadership strategy Myatt there long.

In other words, companies that are looking to minimize costs, compared to companies that are looking for strategic growth opportunities and innovation in production, are lower than tax avoidance.

References:

Bhuiyan, M., Zahid Hossain (2012 Tax evasion and avoidance practices in some selected corporate firms of Bangladesh, World journal of social sciences, vol.2, no .7pp.150-156

Chen, S., Chen, X., Cheng, Q., Shevlin, T. (2010) Are family firms more tax aggressive than non – family firms ?" journal of financial economics 95,pp.41-61

Hanlon, M. and Zheitzman, S. (2010)," A review of tax research," journal of accounting and economics. Vol,50 .pp .127-178

Higgins,d,t.c. omer,and j.d.phiggips .(2011). "Does a firms business strategy influence its level of tax avoidance?" working paper.university of Connecticut .available at URL;Http:/www.ssrn.com

Robinson, J., S. Sikes, and C. Weaver.(2010). "The impact of evaluating the tax department as a profit center on effective tax rates ". The accounting review. forthcoming

Thompson, A. and A. Strickland (2008) Strategic management; concepts and cases. 12th edition, new York; McGraw-Hill

Kholbadalov,Utkir,(2012);"The relationship of corporate tax avoidance, cost of debt and institutional ownership: evidence from Malaysia," Atlantic review of Economics, 2nd volume.

Badertscher, B. and Katz,S. Rego S. (2013) The separation of ownership and control and corporate tax avoidance. Journal of accounting and economics . Vol 56, pp. 228-250.

Badertscher . B. and Katz, S. (2013)."The separation of ownership and control and corporate tax avoidance" journal of accounting and economics, Vol 56, pp.228-250.

Kholbadalov, Utkir, (2012) Relationship of corporate tax avoidance, cost of debt and institutional ownership: evidence from Malaysia. Atlantic review of Economics,2st volume.

Bhuiyan, M., Zahid Hossain (2012) Tax Evasion and avoidance practices in some selected corporate firms of Bangladesh, World journal of Social sciences, Vol.2, No.7.pp.150-156.

Improving Profitability Forecasts with Information on Earnings Quality in Listed Companies of Tehran Stock Exchange

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Abstract.
The purpose of this paper is improving profitability forecasts with information on Earnings quality in listed companies of Tehran stock exchange. We use 125 firm during years 2010 until 2014. Also, we use regression model by Eviews and statistical techniques panel data compilation. The results show that Information on earnings quality in accounting forecast models does not provide additional explanatory power about firms' future profitability. But, the usefulness of accounting information for predicting future profitability does improve after the adjustment for earnings quality. Therefore, financial analysts do not incorporate information about earnings quality in their decision making process. And, profitability forecasts, adjusted for earnings quality, do not deliver additional information about future market returns.

Keywords: anticipated profitability, profitability, quality of earnings, future market returns

1. Introduction.

Research on financial statement analysis (FSA) documents the usefulness of accounting information predicting firms' future profitability (Ou and Penman [1989]; Ou [1990]; Abarbanell and Bushee [1997]; Fairfield and Yohn [2001]; Fairfield et al. [2003]). Research on earnings quality concludes that accounting information is dependent on firm's fundamental performance and its accounting system (Ball and Shivakumar [2005]; Dechow et al. [2010]). While prior work separately emphasizes the importance of FSA and earnings quality for informing external recipients of financial statements about firms' financial and operational performance, considerably less is known how earnings quality impacts the accuracy of FSA models.

In predicting future performance, textbooks and research suggest a variety of parsimonious variables that improve the predictability of future performance. Fairfield and Yohn [2001] and Soliman [2008] present evidence that ratio analysis, that systematically breaks down profitability (RNOA) into more specific ratios according to the DuPont disaggregation, provides incremental information on accounting signals studied in prior research. Despite the popular appeal of such forecast models, prior research overlooks that accounting information flowing into forecast models might be exposed to changes in firms' earnings quality. This shift could bias profitability ratios and consequently impair the accuracy of forecasts. My study probes the extent to which the accuracy of FSA forecast models can be explained by the quality of reported earnings. In other words, I unite distinct findings of two previously separate literature streams to investigate whether joint consideration improves predictions of firms' profitability.

So, this research is trying to answer the following question: Is there a significant relationship between Improving Profitability Forecasts with Information on Earnings Quality?

2. Development of hypotheses.

According to high content, we consider four hypotheses:

H1: Information on earnings quality in accounting forecast models does not provide additional explanatory power about firms' future profitability.

H2: The usefulness of accounting information for predicting future profitability does not improve after the adjustment for earnings quality.

H3: Financial analysts do not incorporate information about earnings quality in their decision making process.

H4: Profitability forecasts, adjusted for earnings quality, do not deliver additional information about future market returns.

3. Methodology.

In this study, change in return on net operating assets (RNOA) is independent variable. Also, accounting forecast is dependent variable. Also,Statistical population this review is all listed in companies in Tehran (IRAN) stock exchange during the period of 5 years (2010-2014). We use the method to remove systematic for sample selection. In this research to collect data of Tehran Securities Exchange Technology Management Company website and the Tehran Stock Exchange website. However, study sample shall be made with respect to following limitations: (Table 1 shows these limitations)

Table 1
Limitations and Sample selection

Sample selection	number
The total number of listed companies in Tehran Stock Exchange at the end of 2014 (Firm)	366
Limitations:	
The companies that aren't leading to the end of the year	(67)
Non-financial corporations	(29)
Enterprise that changed the financial year	(11)
Companies with incomplete disclosure	(9)
Holding companies and Bank	(66)
Final	**184**

Then, after limited restrictions remaining 184 firms. So, we used the Cochran formula. Finally, the research sample 125 companies. Also, the following 2 models used to test the hypotheses.

$$\Delta RNOA_{t+1,(i)} = \alpha_i + \beta_1 RNOA_{t,(i)} + \beta_2 \Delta ATO_{t,(i)} + \beta_3 \Delta PM_{t,(i)} + \beta_4 \Delta INT_{t,(i)} + \beta_5 \Delta NOA_{t,(i)} + \varepsilon_{t+1,(i)}$$

$$\Delta RNOA_{t+1,(i)} = \alpha_i + \beta_1 RNOA_{t,(i)} + \beta_2 \Delta ATO_{t,(i)} + \beta_3 \Delta PM_{t,(i)} + \beta_4 \Delta INT_{t,(i)} + \beta_5 \Delta ATO_{t,(i)} * \gamma_{t,(i)} + \beta_6 \Delta ATO_{t,(i)} * k_{t,(i)} + \beta_7 \Delta ATO_{t,(i)} * \pi_{t,(i)} + \beta_8 \Delta PM_{t,(i)} * \gamma_{t,(i)} + \beta_9 \Delta PM_{t,(i)} * k_{t,(i)} + \beta_{10} \Delta PM_{t,(i)} * \pi_{t,(i)} + \beta_{11} \Delta NOA_{t,(i)} + \varepsilon_{t+1,(i)}$$

The method of measuring the variables of this model includes:
Δ*RNOA t* Change in return on net operating assets *(RNOA t - RNOA -1) / RNOA*
RNOA t Return on net operating assets NOI t / ANOA t
Δ ATOt Change in asset turnover ((ATOt - ATOt-1) / ATOt-1) x PMt-1
Δ PMt Change in profit margin ((PMt - PMt-1) / PMt-1) x ATOt-1
Δ INT t Interaction between change in asset turnover.
Δ NOA t Change in net operating assets (NOA t - NOA t-1) / NOA t-1
$\varepsilon_{i,t}$: Error regression model.

4. Empirical results.

Table 2 shows the descriptive statistics data 125 Firm. The results show that average –RNOA is -0.00 and median is -0.00 and average RNOA is 0.14 and median is 0.12. Also, average ATO is -126812 and median is 75352 and average –ATO is 2220 and median is 12444 and average PM is 0.11 and median is –PM and average –INT is 20331 and median is 457.33 . furthermore, average C-Score is 0.040 and median is 0.028 and average Q-Score is 0.004 and median is -0.001.

Table 2 Descriptive Statistics

N	*STd*	*Min*	*Max*	*Median*	*Average*	*Varabel*
625	*0.08*	*-0.47*	*0.53*	*-0.00*	*-0.00*	*-RNOA*
625	*0.13*	*-0.32*	*0.63*	*0.12*	*0.14*	*RNOA*
625	*2762458*	*-32884662*	*13349069*	*75352*	*-126812*	*ATO*
625	*161335*	*-15828648*	*998810*	*12444*	*2220*	*-ATO*
625	*0.13*	*-0.33*	*0.63*	*0.096*	*0.11*	*PM*
625	*0.32*	*-2.02*	*6.34*	*-0.00*	*0.011*	*-PM*
625	*29383*	*-2030398*	*3618147*	*457.33*	*20331*	*-INT*
625	*0.05*	*0.000*	*0.822*	*0.028*	*0.040*	*C-Score*
625	*0.067*	*-0.81*	*0.754*	*-0.001*	*0.004*	*Q-Score*
625	*0.262*	*-0.03*	*0.864*	*0.415*	*0.416*	*ENUE*
625	*0.845*	*-1.035*	*1.863*	*0.442*	*0.442*	*NINGS*

Chow test applied to panel data set or combination. The results show that (Table 3) in H1 F-statistic is 2.093 and probe is 0.000, then, the null hypothesis is rejected and data is pooled. Also, in H2 F-statistic is 3.707 and probe is 0.000, then, the null hypothesis is rejected and data is pooled. Furthermore. In H3 F-statistic is 3.534 and probe is 0.000, then, the null hypothesis is rejected and data is pooled. Finally, in H4 F-statistic is 2.092 and probe is 0.000, then, the null hypothesis is rejected and data is pooled.

Table 3Chow- Test

H_0	Model	F-statistic	Prob	Result
Pooled data	H1	2.093	0.000	*Rejected*
Pooled data	H2	3.707	0.000	*Rejected*
Pooled data	H3	3.534	0.000	*Rejected*
Pooled data	H4	2.092	0.000	*Rejected*

Hausman test will determine use of the fixed effects model or random effect. According to the probability of less than 5%. So the hypothesis H0 (fixed effects model) is rejected. Table 4 shows H1 p-value is 0.000 and x^2 is 214.91 and H2 p-value is 0.000 and X2 is 98.986. Also, P-value in H3 is 0.000 and X2 is 117.053. And, p-value is H4 is 0.000 and X2 is 215.909. So, the null hypothesis is rejected and we accepted random effects model.

Table 4 Husmuns Test

H_0	Model	p-value	X^2	Result
Random effects model	H1	0.000	214.92	*Rejected*
Random effects model	H2	0.000	98.986	*Rejected*
Random effects model	H3	0.000	117.053	*Rejected*
Random effects model	H4	0.000	215.909	*Rejected*

Results Table 5 shows results model. R^2 represents the explanatory power of the model. This coefficient shows how many percent of the dependent variable explained by the independent variable. F statistic shows the significance of the regression model used.

Table 5 Results H1

variable	BM			EQ		
	Coefficient	F-statistic	Sig	Coefficient	F-statistic	Sig

C	0.143322	19.28178	0.0000	0.146883	19.52579	0.0000
RNOA	-0.943350	-19.46220	0.0000	-0.974601	-20.15254	0.0000
ΔATO	7.43E-10	0.256574	0.7977	-1.99E-10	-0.036560	0.9709
ΔPM	0.013921	1.411501	0.1589	-0.005084	-0.175440	0.8608
ΔINT	1.19E-08	0.718156	0.4731	6.62E-09	0.255191	0.7987
ΔATO*GAMMA	-	-	-	-1.59E-08	-0.795439	0.4269
ΔATO*K	-	-	-	2.58E-08	0.462227	0.6442
ΔATO*PI	-	-	-	4.84E-09	1.073739	0.2837
ΔPM*GAMMA	-	-	-	0.116340	2.378838	0.0179
ΔPM*K	-	-	-	0.352181	1.555658	0.1207
ΔPM*PI	-	-	-	0.001626	0.063657	0.9493
ΔNOA	6.08E-10	0.479137	0.6321	1.21E-09	0.919656	0.3584
R-squared	0.416			0.470		
Durbin Watson	2.07			2.064		
Sig	0.215			0.786		

The estimated coefficient for RNOA variable is negative. So, there is a significant negative correlation with BM and EQ. Also, table 5 shows R2 in model in BM is 0.416 and sing is 0.000. So, 41 percent of the dependent variable depends on the following variables and hypothetically accepted. Thus, there is a significant relationship between RNOA and BM and EQ. Also, there isn't a significant relationship between the other variables.

Table 6 Results H2

variable	Average test		Mean Test	
	BM	EQ	BM	EQ
Average	8.88E-19	1.92E-18	-	-
Meain	-	-	0.000840	0.000104
F Statistic	-2.40E-16		0.003613	
Sig	0.9999		0.9971	

The Result Table 6 shows significant in average test are 0.9999. So, accepted the remaining amounts model. Also, Results mean test show that significant is 0.9971. Then, the sing of greater than 5% and the hypothesis H1 is rejected. So, the second hypothesis of this study is rejected.

Table 7 Results H3

	BM			EQ		
variable	Coefficient	F-statistic	Sig	Coefficient	F-statistic	Sig
C	0.008166	1.931897	0.0539	0.071023	2.340517	0.0049
RNOA	0.073483	1.6523 74	0.0991	0.098653	2.764241	0.0035
R-squared	0.103			0.236		
Durbin Watson	2.043			2.012		
Sig	0.000			0.000		

The estimated coefficient for RNOA variable is positive. So, there is a significant positive correlation with BM and EQ. Also, table 7 shows R2 in model in BM is 0.103 and sing is 0.000. So, 10 percent of the dependent variable depends on the following variables and hypothetically accepted. Thus, there is a significant relationship between RNOA and BM. And shows R2 in model in EQ is 0.236 and sing is 0.000. So, 23 percent of the dependent variable depends on the following variables and hypothetically accepted. Thus, there is a significant relationship between RNOA and EQ.

Furthermore, table 8 show results Hypothesis 4. R_2 in model in BM is 0.508 and sing is 0.000. So, 50 percent of the dependent variable depends on the following variables and hypothetically accepted. Thus, there is a significant relationship between RNOA and BM. And shows R2 in model in EQ is 0.524and sing is 0.000. So, 52 percent of the dependent variable depends on the following variables and hypothetically accepted. Thus, there is a significant relationship between RNOA and EQ.

Table 8 Results H4

	BM			EQ		
variable	Coefficient	F-statistic	Sig	Coefficient	F-statistic	Sig
C	0.116333	16.07429	0.0000	0.112106	9.263160	0.0000
RNOA	-0.961808	-21.56799	0.0000	-0.757842	-11.46304	0.0000
ΔATO	5.99E-10	0.166473	0.8679	8.00E-09	2.359980	0.0191
ΔPM	0.000843	0.055701	0.9556	0.045769	1.965421	0.0505
ΔINT	5.91E-09	0.337478	0.7360	-9.33E-09	-0.192627	0.8474
PERSISTENCE_REVENUE	0.003058	0.513635	0.6078	-0.01004	-1.244371	0.2146
PERSISTENCE_EARNINGS	0.003001	1.657720	0.0982	0.002915	1.159716	0.2473
C_SCORE	0.743402	8.989179	0.0000	0.066305	0.326540	0.7443
Q_SCORE	-0.582935	-8.532833	0.0000	0.051318	0.269539	0.7877
ΔNOA	1.01E-09	0.765533	0.4444	-5.03E-10	-0.554739	0.5796
SIZE	2.534651	2.568725	0.0032	0.146883	19.52579	0.0000
LEVERAGE	-4.356261	-4.206257	0.0000	-0.352181	-1.555658	0.1207
LOSS	-0.346564	-1.061156	0.1035	-4.84E-09	-1.073739	0.2837
R-squared	0.508			0.524		
Durbin Watson	2.069			2.061		
Sig	0.000			0.000		

5. Conclusion.

In this study mentioned improving profitability forecasts with information on Earnings quality in listed companies of Tehran stock exchange during years 2010 until 2014. Today, predicting the future is a necessity in life. One of the most important areas is the financial sector and the economy. In this study investigated 125 financial information firms. The results show that Information on earnings quality in accounting forecast models does not provide additional explanatory power about firms' future profitability. But, the usefulness of accounting information for predicting future profitability does improve after the adjustment for earnings quality. Therefore, financial analysts do not incorporate information about earnings quality in their decision making process. And, profitability forecasts, adjusted for earnings quality, do not deliver additional information about future market returns.

One of the important limitations in this study was lack of the related variable. Furthermore, another limitation was limited population.

At the last the following suggestions are addressed for the future studies:

1. Effect of different industries and industry effect.
2. The effect of moderating features of the board of directors and auditor in relationship between variables.
3. The effect of earning quality on future stock returns.

References

1. Alipoup, R. G. (1995). "Do Stock Prices Fully Reflect Information in Accruals and Cash Flows About Future Earnings?" The Accounting Review. No. 71.
2. Anderson, M. C, Banker R, Janakiraman S.,(2113), "Are Selling, General and Administrative Costs Sticky? ". Journal of Accounting Research; 41(1): 47- 63.
3. Ball and P. Brown, "An empirucal evaluation of accounting income numbers," Journal of Accounting Research, vol. 6, pp.159–178, 1968.
4. Banker R, Chen L. (2116),"Predicting Earnings Using a Model Based on Cost Variability and Cost Stickiness", The Accounting Review; 81(2): 285-317.
5. Barva, R,.(2117), "Cost Stickiness and Core Competency: A Note Working Paper", The University of Iowa 2117.

6. Chan, c., chan, l.,. (2116). Earnings management and the effect of earnings quality in relation to stress level and bankruptcy level of Chinese listed firms. Corporate Ownership and Control, 3 (1) , 366 -331
7. Decisions." Journal of Accounting & Economics. No. 7, pp. 85-117.

Shareholders motives and corporate tax avoidance: a literature study

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Abstract.

There are many studies have been done to formulate models that are useful for shareholders and stakeholders to detect fraud or manipulation of published financial statements. Some of them are Beneish mathematical model and Dechow F score model . Similarly, there are also many studies have been done in purpose to find the model in detecting tax avoidance. Some of them are Book-tax gap (differences) analysis, Long run Cash Effective tax rate analysis and Tax-gap Analysis. On the contrary, there are very few studies that investigate the relationship between management and shareholder motive and corporate tax avoidance. In this paper, I perform a literature study to explore There are many studies have been done to formulate models that are useful for shareholders and stakeholders to detect fraud or manipulation of published financial statements. Some of them are Beneish mathematical model and Dechow F score model . Similarly, there are also many studies have been done in purpose to find the model in detecting tax avoidance. Some of them are Book-tax gap (differences) analysis, Long run Cash Effective tax rate analysis and Tax-gap Analysis. On the contrary, there are very few studies that investigate the relationship between management and shareholder motive and corporate tax avoidance. In this paper, I perform a literature study to explore the possibility of employing such existing models and analysis to investigate the relationship between shareholder's motive and corporate tax avoidance within the Agency Theory framework .

Keywords: earning management, tax avoidance, shareholders motive, agency theory

1. Introduction

Avoidance to pay the tax means the legal exploitation of the companies from the tax system in their own interest which lead to the reduction of the legal payable amount to the government. One of the result of self-determined tax system is the tax non-compliance .It is believed that this is the main factor in reducing the tax earnings of one country. The beginning of the tax avoidance is when the tax payer does not desire to pay some parts of his income to the government as the tax. There are various ways and methods which the companies and institutes can use in order to decrease their tax liabilities including the report of the income less than the real amount and using different tax tricks due to different tax rates. The tax avoidance can be considered as the measures which encounter the tax system of the company with problem which resulted in non-payment of the tax liabilities to the government (Fouest and Raidel, 2009).The company's tax tricks change to the considerable tools for reducing the tax load of many companies (Wilson,2007).

The noteworthy point is that there is a common view between the shareholders and tax authorities on the financial operation of the companies since both parties try to company can achieve the higher profit level. According to the shareholders' view, the earned profit is a safe criteria for describing their investments in order to increase their wealth and predicting of the future cash flows. Meanwhile, according to the tax authorities' view, with the increase of the profit of the companies, the more taxes will be earned for the government's expenses.

The mangers of those companies who refuse to pay the real amount of tax, may take the measures in the profit management individually or together with the shareholders in order to achieve to their expected profit level. Although some of this proceedings lead to pay more taxes but according to the previous studies, there are

many of these proceedings which do not need to pay more taxes necessarily. Therefore, in the recent years, the accuracy and reliability of the companies' financial statements have been questioned. The users of the financial statements believe that the manipulation of the management in financial statements may cause the low quality of the financial reports.

The necessary factor for investigating the reliability of the financial statements is the model or analysis of the deception discovery. The researchers attempt to perform more comprehensive researches in this field and present some models for discovering the deception, manipulation, profit management and companies tax avoidance, assist the tax system in order to receive the taxes according to the tax laws and regulations. There are many studies in investigating the deception in financial statements which submitted by the companies. Also, there are many studies in investigating the tax avoidance of the companies based on the models of "analysis of the difference between the office revenue and taxable income", "analysis of the effective long term rates of taxes" and "analysis of the tax gap". In addition, there are some studies for approving the relationship between the taxable income and the future income of the company and the relationship between the motivations of the managements and tax avoidance. But in previous studies, the relationship between the motivations of the managers, shareholders and tax avoidance has not been investigated based on the agency theory, therefore in this present study, it has been tried to remove the gap in this field.

2. Managers' motivations for tax avoidance and some discussions in ownership theory.

Tax avoidance not only helps the cash flow of the company but also improves the liquidity situation of the management of the company and shareholders. When we talk about the tax non-compliance, we cannot ignore the submission of the artificial financial statements which presented with the tax purposes by the management since the mentioned financial statements are different with the submitted financial statements in the capital market. Basically, the method of preparation of these two financial statements is not different but the difference is in the motivation of the management in preparing them. Despite of the company's economic advantages of tax avoidance, it can cause some risks in company. The management of the company is responsible for preparing the financial statements and the consequences of the probable non-accordance of financial statements with the financial laws and regulations. Sometimes, the managers avoid to pay the tax individually and without the agreement of the shareholders and just consider their own economic interests but sometimes this action is performed by the managers and the agreement of the shareholders. In this case both groups are concerned. From the traditional point of view, the partnership in tax avoidance defiantly lead to increase the profit after the reduction of the tax of shareholders, therefore, they have enough motivation for doing that but in this case the managers just receive their given salaries and certainly they are not encouraged to perform that action. Thus, if the mentioned action needs a few attempt, the managers prefer to avoid that. But motivating the managers by paying them whether in reward or bonus shares can encourage them for cooperating in tax avoidance and this lead to increase the profits of the shareholders. The relationship between the shareholder and the manager of the company is the base of formation the relationship between owner and agent in the agency theory. The agency theory is a contract in which a group of owners select a person or a group as the steward or agent (Nikoomaram and Bani Mohammad). Yensen and Macling believe that according to the contractual relationship, one or more persons (owner(s)) employ another person (agent) for performing some services and granted him some part of decision making power of the company. If both parties of the relationship seek his maximum profit, therefore, it is possible that the agent does not attempt in the direction of owner's profits. In contrary, the owner can create the necessary motivation for the agent and pays the monitoring expenditures from his own profits in order to be assured from the non-diversion of the agent from the intended purposes. In addition, sometimes the owner pay the expenses called "bonding expenditures" in order to be assured that there is no action against his interests. Dipken and his colleagues used the advertisement expenditure criteria of the company in order to determine and measure the bonding expenditures. They increased the advertisements, shareholders and other active factors of the market in order to precise investigation of the company's activities with the purpose of decreasing the risk of manipulation in financial statements.

The unwillingness of the managers for cooperating in the tax avoidance can be interpreted based on the agency theory as problem between the owner and the agent which cause the non-avoidance to pay the taxes since the agents are not interested in performing action in order to promote the interests of the shareholders. Therefore, the owners should pay some expenses of the agents in order to achieve their intended purposes. In most of the agency relationship, the owner and the agent pay some expenses for monitoring and monetary and non-monetary bonding but still there are a few difference between the decisions of the agent and the decisions which lead to maximum welfare of the owner. This difference causes the reduction of the owner's welfare and considered as one of the expense of the agency relationship which called residual loss. Generally, Yensen and Macling define the expense of agency as a combination of the following factors:

A-Monitoring expenditures paid by owner

B-Bonding expenditures paid by agent

C- Residual loss

3. Effective steps in determining the tax avoidance.

According to the mentioned discussions, the investigation of the shareholders' motivation and companies' tax avoidance should be performed in 3 phases based on the investigated analyses and models. The first step includes the distributed financial statements by the company with the purpose of discovering any deception and manipulation. Second step includes the investigation of the distributed financial statements by the company with the purpose of discovering the tax avoidance. Third step includes the investigation of the relationship between shareholders' motivation and tax avoidance based on the agency theory.

The first step should be performed due to high correlation between the deceptive financial statements and tax avoidance. Some of the researchers believe that usage of the taxable income is appropriate and useful for measuring the stability and reliability of the financial statements and predicting the future profits. Therefore, according to this argument, the deception in the financial statements can be used for determining the tax avoidance by the companies. The analytical model of Spatis which includes the ratios of inventory to sale, debt to total asset, net profit to total asset, working capital to total asset and z-score can be used for clarifying the probable deception in financial statements. Another models such as Beneish and Indicator models (F-score) can be used for investigations in this field.

The second step relates to ensuring the willingness of the company to tax avoidance. The result of this step forms the third step. In ideal conditions, the investigation of the tax avoidance can be performed by the comparison between published financial statements by the company and the tax return in order to find the difference between the real income and taxable income. Also, the comparison between the tax debts before and after auditing can be used for finding the tax gap. According to the confidentiality of the tax returns and other tax information under the authority of the tax authorities, therefore, only accessible data for investigation of this step is the amount of mentioned tax in the financial statements. In investigating the difference between the office income and taxable income, the source of this difference should be considered in order to find whether the difference resulted from the time difference or temporary difference which is not illegal or it resulted from the different conclusions from the tax regulations or probable deception. In order to improve and enrich the analyses in this step, the analysis of the effective long term rates of taxes which introduced by Daireng can be used.

After justifiability investigation in the second step and assuring of the willingness of the company to tax avoidance, the third step will be performed. In this step the relationship between the shareholders' motivations and tax avoidance will be investigated based on the agency theory. In this step, some of the variables such as the relationship of the shareholder and manger, ratio of shareholder's ownership, position of the shareholder in the Board of Directors, rewards and payments alternatively according to the change of management can be used as some indicators.

4. Management or income smoothing.

Management of the profit is one of the important factor in the discussion of the tax avoidance of the management. The companies are obliged in order to present the annual financial reports to the external users. The annual financial statements may be prepared and delivered based on the purposes and motivations of the management. In the other hand, the management of the companies may apply their subjective purposes and opinions in financial statements which delivered to the outside users. Asfer (2005) believes that in the ideal situation, the management uses its own knowledge of the current situation of the company and the conditions of the business for presenting the financial statements which considered as the useful information source for investors, lenders, government authorities, customers, suppliers and employees in order to make the decision about the investment, tax and etc.

There are many reasons for justifying the profit manipulation by the management. Some of them include the achievement of the income purposes, reward, motivational programs of the management, higher salary, awards, increasing the capital through the public presentation, attempt to reduction of the tax and distribution the income fluctuations between different periods for stabilization the profit. The motivation of the management of the company for reducing the income fluctuations or in other word the profit management is that based on the opinion of the managers, the unstable income with high fluctuations result in reduction the market value of the company. Some of the researchers believe that the profit management is legal totally and it is different with the deception since it is performed based on the acceptable standards of the accountancy. But another researchers believe that there is a little boundary between the income management and deception and consider that as an illegal action which needs the investigation of the independent accountants. The most prevalent methods and techniques for profit manipulation can be categorized in three groups including the changes in accountancy methods, reliance on to management estimations and transmission of the expenses and incomes of (a) period (s) to another period (s). Pikasovich believes that the common methods for unreal improvement of financial statements include the artificial presentation of the prices through consideration of the future expected sales and less presentation of real expenses through the consideration of the operation expenses as investment, increasing the net value of the assets based on the intentional usage of appropriate time scheduling for depreciation and hiding some commitments in the balance sheet of the company and wrong disclosure of the structured financial transactions.

Another alternative method for deception in financial statements is the reparative reserve accountancy method. In this method, the company announces its income for the period less than real one and save the remainder as the reserve for the future periods which may have the weaker performance. According to Magarat and Vold, the common methods for presenting the artificial and spurious incomes are as follows: reparative reserve accountancy, misuse of accountancy principals, registration of the non-achieved incomes and accountancy of creative ownership.

Despite of the identification of the management's motivation for deception, many of researchers attempt to discover some models and formulas as the warning deception indicators based on the elements of the financial statements. Therefore, according to the obtained information from the financial statement of a company, the probable deceptive manipulation of the numbers and figures of the financial statements can be justified.

5. Deception discovery models in financial statements.

5.1. Spatis Model.

Spatis (2002) suggested a model for identification of the signs of a correct financial statement by using the logistic regression and 10 financial ratios obtained from the financial statement. In this model, he represented some of the variables as the indicators of the artificial financial statements: ratio of the inventory to sale, ratio of the total debt to total asset, ratio of working capital to total asset, ratio of the net profit to total asset and the indicator of the financial distress (z-score). He concluded that according to the results of logistic regression, those companies with high ratio of the inventory to sale, high ratio of debt to asset, low ratio of the net profit to total asset, low ratio of the working capital to total asst and low level of the z-score indicator, have more probability for representing the wrong financial statements. Analysis of the comparative ratio permits the analysts, accountants and shareholders in order to identify the differences in the financial statements of the company.

5.2. Beneish Model.

Misood Beneish suggested a model (Beneish Model) for identifying the probability of the deception and manipulation in financial statements. In this model, 8 ratios have been calculated and investigated. These ratios include total committed items to total asset (TATA), general and sale administrative expenditures (SGAI), sale growth (SGI), daily sales in received accounts (DSRI),quality of the asset (AQI) ,depreciation (DEPI), gross profit margin (GMI) and levers(LVGI). Beneish used the samples of the deceptive financial statements from 1982 until 1988 in order to introduce a model for identifying the deception in profit. According to the evidences of his research, the probability of deception will be increased by (1) abnormal increase in received accounts (2) inappropriate gross profit margin (3) reduction the quality of the asset (4) sale growth and increase the committed items. the equation of the Beneish Model is a follows:

$$M=-4.84+(0.92*DSRI)+(0.528*GMI)+(0.404*AQI)+(0.892*SGI)+(0.115*DEPI)-(0.172*SGAI)+(4.679*TATA)-(0.327*LVGI)$$

The fixed number of the model is -4.84 which the coefficients of these 8 indicators are manifold to the fixed number.When the obtained result of the model be more than -2.22, the probability of the manipulation in financial statements will be increased.

5.3. F Score Model.

Decho and his colleagues studied the identification of the predictable factors of deception. They investigated 2191 deception cases between 1982 until 2005 published in the accountancy and auditing magazine. They identified those periods which manipulations were discovered in them and suggested one prediction model for probability of the deception with the factor of F-score. If the F-score indicator shows the number more than one, that company should be investigated precisely. The F-score test can be considered as the first phase in investigating the probability of the fraud and deception.

6. Identification and discovery of the tax avoidance from the accountancy income.

6.1. False or fraud tax return.

The taxes are described as the undesired payments which effect on financial and investment decisions. The tax information mentioned in financial statements give some information about the profit quality. In addition, Hanloon (2005) believed that the high difference between the office income and taxable income is the indication of low reliability of the profit. This difference or gap resulted from the difference between the reported incomes to the investment market and reported income to the tax administration. Measurement of the tax avoidance is very difficult, however, Manzon and Pelesco (2002) and Dosai (2003) used the difference between office income and taxable income as an indirect method for measuring the amount of tax avoidance. But there are two main problems. At the first, the tax information are confidential, therefore, the mentioned difference cannot be investigated by the researchers and investors. At the second, it is probable that the difference between two reported incomes be due to another factor except tax avoidance.

6.2. Applied methodology in the studies of the Kordom Palao and Karjio Rejoos.

According to the previous studies, the difference between the mentioned income in tax return and reported income to the investment market, does not mean the tax avoidance necessarily. Therefore, another researchers tried in order to suggest another methods in this direction. Kordom Palao and Karjio Rejoos (2011) estimated the amount of tax avoidance of the companies based on the data of the tax auditing of the accepted companies in the stock exchange of Athens. Firstly, the amount of tax reduction will be estimated by comparison between the determined tax of one financial year and the reported tax mentioned in tax auditing report. The second amount will be identified when the tax auditing be finished. The difference between the mentioned amounts is called tax gap and is calculated as follows:

Tax gap=tax after auditing- tax before auditing=(additional diagnostic tax+ reported tax)-reported tax= additional diagnostic tax (including taxes and fines)

The second method is used for estimating the tax compliance according to the ratio of the reported tax to real tax:

% tax compliance =(tax after auditing/ tax before auditing)*100%=(reported tax/(reported tax+ additional diagnostic tax)*100%

It is evident that in the second method, the amount of tax avoidance will be calculated as follows:

% tax avoidance =%100-% tax compliance

7. Conclusion.

Tax avoidance changes the competitive ability of the economic factors in favor of those who did not pay the tax. If there be no solution for preventing the tax avoidance, there is a possibility that other people be encouraged to perform this action in order to increase their financial ability. Also due to the effect of social behavior of people on each other and despite of the abstinence of some people, it is possible that the tax avoidance be extended and accepted at the public (Jahromi and colleagues, 2009).The expression of the “tax avoidance” is not a new concept. Many of Iranian companies avoid to pay the tax with different motivations. According to the discussion related to the agency theory and analyses of the relationship between owners and management, the companies are reluctant to pay the taxes to the governments. The tax officials and authorities who access to the most needed data for mentioned analytical models can investigate the available models and identify the appropriate models for early determination the signs of tax avoidances by companies. Therefore, the presented models in this article can be practical and useful in determining the manipulations in financial information of the companies which performed with the purpose of tax avoidance.

References:

1) Nikoomaram,Hashem, Banimahd,Bahman,” theory-e-hesabdari moghadamei bar theorihaie tosifi)”, publication: Islamic Azad University.

2)Mosavi Jahromi, Yeganeh, Tahmasebi Boldaji, Farhad, Khaki , Narges, “Farar-e-maliati dar nezam-e-maliati dar nezam maliat bar arzesh afzodeh, iek modele-e- nazari”, professional journal of tax , 2009.

3) Craig A. Depken, Giao X. Nguyen, Salil K. Sarkar "Agency Costs,Executive Compensation, Bonding and Monitoring: A Stochastic Frontier Approach". Working paper

4)Suryo Utomo, Mohd Rizal Palil, Romlah Jaffar, Rosiati Ramli "RELATIONSHIP BETWEEN SHARHOLDERS MOTIVES AND CORPORATE TAX AVOIDANCE: A LITERATURE STUDY" International Journal of Business, Economics and Law 2012, vol.1

5) Utkir Kholbadalov " The relationship of corporate tax avoidance, cost of debt and institutional ownership: evidence from Malaysia"Atlantic Review of Economics 2st Volume - 2012

A comparative study of Activity-based costing system and costing system of traditional: Evidence of Iranian banks

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Abstract

The main activity of banks, buy and sell funds and banks funds in the form of deposit in the form of facilities put at the disposal of natural and legal persons. Therefore, the resources and banking facilities should be managed in the best way possible. This process is only possible if management successfully manage the detailed information of the cost and benefits of this process are. The most significant bank debt items, various kinds of deposits by sectors ranging from institutional and private and public have been deposited. The aim of the present study to calculate and compare cost of loan savings deposits and short-term investment deposits under traditional costing systems, which are common in Iranian banks, and activity-based costing system. For this purpose, first using a model developed by the doctor Arab Mazar Yazdi and Nazareth (2003), deposits of bank branches which includes 11 branches, over the course of fiscal 2014 were costing. T test was used to test research hypotheses. The results show that the cost of the loan savings deposits and short-term investments in traditional ABC method was significantly different from each other.

Keywords: costing, traditional costing systems, Activity Based Costing, banking industry, bank deposits.

1. Introduction.

Activity-based costing (ABC) has emerged as a novel and increasingly popular costing methodology over the last decade. Its growth may be attributed to the refinements which it brings to the costing of final outputs and to its facilitation of important aspects of cost management. The former benefit derives from its enhancement of conventional overhead costing practice. This has traditionally involved the attaching of overhead cost to each unit of output in proportion to a time-based work measure such as labour or machine hours. The underlying assumption of this approach is that overhead resources are consumed on a time basis, that is, the longer an item is worked on the greater should be its share of overhead. As labour and machine hours will vary closely with output levels, this approach can be viewed as being primarily volume-based (Cooper, 1994)

Also in banking industry, electronic banking and banking industry development forces us to modify our country's traditional systems in all banks of the country as it was done in most banks in Europe and America. Using activity-based costing method helps the banks and financial entities to achieve a better knowledge of different services and different sections. Activity-based costing method is one of new costing methods in which the cost data from one hand and differentiation of valuable activities from invalid activities on the other hand are considered valuable in cost management process.

Activity-based costing system helps to calculate the cost of units and sections and deposits of the banks exactly and correctly and creates more efficiency and effectiveness. Using this system forces the financial entities to achieve an exact view of the profitability of the sections and their different services. Although costing system is developed in production industries, the need for this system is felt more in banking industries because the products and services of the banks are more varied and they become complicated more and more every day. Also, the overhead cost is increasing everyday in a way that half of the costs in Iranian banks are due to the overhead cost.

Several researches have been done about implementing activity-based costing in different industries and also in banking industry in different countries and some of them will be briefly outlined in this paper. Anvari and Rezayat (2007) studied the comparative assessment of Islamic Contraction bank facilities' profitability using

activity-based costing method in Toseye-Saderat bank in 2007 in a paper entitled: "The comparative assessment of Islamic Contraction bank facilities' profitability using activity-based costing method and traditional costing method: A case study of Tosey-eSaderat bank". They concluded that in traditional method the cost of non-profit deposits is less than civil participation and credit sales while civil participation and credit sales have been equal in cost and also using activity-based costing helps to calculate the exact costs of each one of the activities (studying, approving, paying, supervising and liquidating activities) which help the improvement of organizational activities' efficiency.

Lee et al. (2010) presented their article entitled: "The influence of change agents' behavioral intention on the usage of the activity based costing management system and firm performance", the positive effect of change representatives on the performance of ABC/M systems" in the year 2010. This paper discusses about the unified theory of acceptance and use of UTAUT technology to study the behavioral ideas of change agents in implementing activity-based costing system/management (ABC/M). ABC/M is an important managing system which emphasizes on the appropriation of overhead costs based on the price stimulants in order to supply suitable information to improve decision-making. Usually, the top management and most of administrative managers play the role of implementing the change. Behavioral ideas are identified as an act or an innovative viewpoint to enhance ABC/M. Since using ABC/M and the fostering conditions for the amount of ABC/M systems' application has been less evident, the questionnaires were distributed regarding the Information Technology (IT) perspective. Also, the goal of this research has been to verify the usefulness of using ABC/M system to improve the performance. The experimental results gained from 100 certified responses collected show that performance expectation and social effect has a direct effect on the agents' behavior. Change agents' behaviors and fostering conditions are important structures which affect the application of ABC/M systems. Also, the amount of ABC/M application has a meaningful relationship with financial and non-financial performance. The results approve that UTAUT model is applicable in measuring change agents' behavioral expectations in implementing of the current ABC/M systems. Also, this research reveals the positive effect of change agents on the performance of ABC/M systems (Lee, 2010).

Pike et al. (2011) presented a paper entitled: "Activity – based costing user satisfaction and type of system: A research note". This paper examines user perception of activity-based costing performance for three different types of system in a major information and communication provider in South East Asia. Few prior ABC studies have considered the effect of system type on ABC performance. The study draws on a survey of 54 developers and 181 users of 16 different ABC systems within the organization to produce five performance constructs (cost accuracy, cost-benefit trade-off, ABC impact, information use, and decision action). The results show that both the development inputs and user performance perceptions varied with the type of system (embedded, stand alone, ad-hoc). While embedded systems enjoyed far stronger inputs (for example, top management support, rewards and recognition, task significance) and greater development team cohesion than stand-alone systems, they were perceived by users to perform significantly less well. These findings suggest that system type is an important factor in assessing ABC performance (Pike et al., 2011).

2. Research Methodology.

The present research is an applied research, regarding the goal and a descriptive research regarding data collection and it is a case study. The aim of the present study to calculate and compare cost of loan savings deposits and short-term investment deposits under traditional costing systems, which are common in Iranian banks, and activity-based costing system. For this purpose, first using a model developed by the doctor Arab Mazar Yazdi and Nazareth (2003), deposits of bank branches which includes 11 branches, over the course of fiscal 2014 were costing. T test and SPSS software was used to test research hypotheses.

H1: There is a meaningful difference between the cost calculated using activity-based costing method and cost calculated using volume based costing system (traditional) for saving deposits.

H2: There is a meaningful difference between the cost calculated using activity-based costing method and cost calculated using volume based costing system (traditional) for short term deposits.

3. Different types of cost.

Each of bank deposits which are defined as a financial supply resource and the continuation of the bank life depend on it and this deserves costs as follows:

a. Direct cost: direct cost in a bank is the one which is traceable to a deposit and banking services and include profits paid to short-term deposit owners and rewards conferred to saving non-profit deposits.

b. Indirect cost: it is not the cost which is directly traceable to a service or bank deposit and includes all bank costs except the profit paid to short-term deposit owners and the rewards conferred to nonprofit saving deposits and they are considered to be overhead (indirect) costs.

Calculate the cost price of loan savings deposits

$$R_{t,SD} = R_{SD} + R'_{SD}$$

where,

$R_{t,SD}$: saving bank deposits' cost,

R_{SD}: saving deposits' direct cost,

$R\dot{\circ}_{SD}$: saving deposits indirect' cost.

Non-operating expenses rate is calculated as follows:

$$R_{SD} = \frac{[(C_a \times r_{SD}) + (C_v \times \frac{\bar{V}_{SD}}{\bar{V}_t})] - (\bar{V}_{SD} \times S_{SD} \times r_s)}{\bar{V}_{SD}[1 - (S_{SD} + L_{SD})]}$$

where,

C_a: Non-operating expenses of the employees' activities,

r_{SD}: Rate allocating «C_a» deposits interest-free savings,

C_v: Non-operating costs' dependent on size of deposits,

V_{SD}: Average interest-free deposits Savings, v_t: Total average deposits,

S_{SD}: The required reserve ratio for deposits in interest-free savings, r_s: The required reserve rate,

L_{SD}: Retention Ratio of loan savings deposits for liquidity.

4. Calculate the cost of short-term investment deposits.

$$R_{t,SHD} = R_{SHD} + R'_{SHD}$$

where,

$R_{t,SHD}$: Short-term deposit investment rates,

R_{SHD}: Short-term deposit investment rate of non-operational cost,

$R\dot{\circ}_{SHD}$: Operating cost rate of short-term investment deposits.

Non-operating expense ratio is obtained from the following formula:

$$R_{SHD} = \frac{[(C_a \times r_{SHD}) + (C_v \times \frac{\bar{V}_{SHD}}{\bar{V}_t})] - (\bar{V}_{SHD} \times S_{SHD} \times r_s)}{\bar{V}_{SHD}[1 - (S_{SHD} + L_{SHD})]}$$

where,

r_{SHD}: Rate allocating «C_a» to deposit short-term investment,

V_{SHD}: The average short-term investment deposits,

S_{SHD}: The required reserve ratio for deposits' short-term investments, L_{SHD}: Retention Ratio of short-term investment deposits for liquidity.

5. Research findings.

5.1. Results Kolmogorov - Smirnov to identify variables distribution

In order to select appropriate statistical tests to analyze the data collected, The distribution of variables must be evaluated. In this context, the study is designed to achieve this goal, the Kolmogorov-Smirnov test was used.

Table 1. Kolmogorov-Smirnov test for normality of variables

Variable	The test statistic	The significance level
Loan savings deposits	1/072	0/201
Short-term investment deposits	0/687	0/733

As can be seen significant levels according to the test and compare the results with 0/05 permissible error can be concluded with 95% confidence, The distribution of data related to loan savings deposits and short-term investment deposits follow a normal distribution. In order to examine the assumptions that have been calculated using these data should we use parametric tests such as t test.

5.2. The results of data analysis and test hypotheses.

To test the hypotheses, the cost of deposits and short-term savings on both traditional costing and activity based costing t-test were analyzed. Test results indicate that the 99% confidence level can be concluded that the average cost of bank deposits to traditional costing methods and practices ABC there was no significant

difference. This is due to the significance of the difference between the study does not costing all banking services. For example, the cost of bank loans, service fees, foreign exchange facilities, opening of letters of credit and …. has not been calculated. If all services were costing banks, in terms of the total cost of an organization in both traditional and activity based costing is the same and the only way to assign the goods and services are different, Arbitration significant difference between the average cost of services costing methods would not exist.

Table 2. Statistical results hypotheses

Hypothesis	Cost calculation system	Average	The standard deviation	The test statistic T	The significance level
The first hypothesis	Activity-based costing systems	35/5615	23/8039	4/867	0/001
	Traditional costing systems	0/6005	1/0253		
The second hypothesis	Activity-based costing systems	11/7521	6/5236	-5/115	0
	Traditional costing systems	23/252	3/6121		

6. Conclusion.

Given that banks deposit the loan savings deposits are considered free, or without cost, However, according to the results of the calculation of the cost of deposits in the bank observed activity-based costing considerable cost of this type of deposit And even the cost of deposits is even more short-term investment, The minimum deposit is related to deposits, short-term investments.

Regarding the fact that ABC system identifies the cost of deposits more exactly compared with the traditional system, changing the interest rate of deposits and the facilities conferred and careful identification of bank service's commission especially for different types of vouchers, issuing different types of bank cheques, cheque fax, drafts, issuing card, … seems to be absolutely necessary in These bank.

References:

Al Nasser، A. and Li W. (2008).Why Did ABC Fail at the Bank of China?، Management Accounting Quarterly، Spring، Vol. 9، No. 3، PP.7-14.

Alinezhad sarokolaei ,M. Ebrati ,M. Taghizadeh Khanghah , V. Ebrati ,M (2012) , "A comparative study of activity-based costing system and the traditional system: A case study of Refah Bank" , African Journal of Business Management Vol.6 (45).

Anderson, S. (1995). "A Framework for Assessing Cost Management System Changes: the Case of Activity-Based Costing Implementation at General Motors1986–93", Journal of Management Accounting Research, 7, PP.1–51.

Bahnub, B. (2010). Activity Based Costing for Financial Institutions, Wiley Publishing. First Edition.

Carenys، J. and Sales، X. (2008). Costing the Banking Services: A Management Accounting Approach، Journal of Money، Investment and banking، Iss. 6، PP. 35-53.

Fuster، J. (2007). Management Accounting in Spanish Saving Banks: An Empirical Investigation، Journal of Performance Management، Vol. 20 ، No. 1، PP.33-65.

Hao, S., and R. Ding (2008). "Design of Activity Based Model Based on the Reciprocal Cost Sharing", International Workshop of Modeling, Simulation and Optimization.

Kaplan, R. S. (1987). American Banks. Harvard Business Cases, June.

Kaplan, R.S. & Anderson, S. (2007). Time Driven Activity Based Costing: A Simpler and More Powerful Path to Higher Profits. Harvard Business School Press, 1st Ed.

Lee, Y., Yang, F., Liang, L., & Z., Hua (2009). Allocating the Fixed Cost as a Complement of Other Cost Inputs: A DEA Approach. European Journal of Operational Research, 197, 389-401.

Moore, D. H. (1998). A Comparative Evaluation of Financial and Activity Based Cost Accounting Systems in a Private University. PhD Thesis, Texas Tech University.

Rezaee، Z.(2005). The Relevance of Managerial Accounting Concepts in the Banking Industry ،Journal of Performance Management ،Vol. 18. ،No. 2. ،PP. 3-16.

Vieira ،R. and Hoskin ،R. (2004). Management Accounting Change in the Financial Services Sector: The Implementation of Activity Based Costing in a Portuguese Bank ،Working Paper presented at the Fourth Asian Pacific Interdisciplinary Research in Accounting Conference.

The relationship between auditor change and auditor tenure on the auditor's opinion in listed companies in Tehran Stock Exchange

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Abstract.
The purpose of this paper is to examine the relationship between auditor change and auditor tenure on the auditor's opinion in listed companies in Tehran Stock Exchange. On the one hand auditor change affect modified audit report on the performance audit profession and its reliability, on the other hand effect on capital flows in the financial markets research shows that many factors effect on change in auditor's report one of the most important factors is change of auditor. In this study used a sample of 235 companies in the years 2010 until 2014. The results show that there is a significant relationship between the change auditor and the auditor's opinion. Also, there isn't a significant relationship between the auditor tenure and auditor's report.

Keywords: auditor change, auditor tenure, auditor's report.

1. Introduction.

In recent years, the audit profession to be private. Change of auditor following that change report was common in stock exchange. This issue affects the power and independent of the auditor and can effect undesirable. Furthermore, can prevent proper flow, effective and efficient investment in the securities market and increase the cost of financing. Thus, On the one hand auditor change affect modified audit report on the performance audit profession and its reliability, on the other hand effect on capital flows in the financial markets research shows that many factors effect on change in auditor's report one of the most important factors is change of auditor.

The audit report is the document where the auditor issues his/her opinion on the financial demonstrations of the enterprise audited, such that this opinion is regarded by society as having a public character. The audit report is often regarded as a "barometer" for the enterprise's financial situation and not only as a document that reveals reliability on the financial demonstrations (Arens and Loebbecke,1996), such that the audit report is the climax of the audit process through which the auditor issues his/her opinion on the audited financial demonstrations or the reasons not to issue them.

Furthermore, Auditor changes (or auditor switches) and opinion shopping have been the subject of considerable concern from investors, regulators and researchers. The extant research has identified several reasons for companies to change auditors, including the desire to decrease audit fees, improve the credibility of annual reports, improve audit quality, lower agency costs, obtain a more favorable audit opinion, etc. (Firth, 1999).

Recent research shows that auditors with shorter tenure are associated with lower earnings quality than auditors with longer tenure (e.g. Johnson et al. 2002; Myers et al. 2003; Ghosh and Moon 2005). Auditor tenure is defined as the number of years an auditor is retained by the firm (Myers et al. 2003). Three different explanations have been provided for this relationship. The first is based on the argument that short-tenured auditors lack client-specific knowledge that is necessary to conduct a high quality audit. In addition, the accounting profession argues that short tenure may involve higher risk for audit failures, because incoming auditors with insufficient client-specific knowledge will have to rely more heavily on the estimates and representations made by client firms (e.g. Pricewaterhouse Coopers 2002; Gul et al. 2007). So, this research is trying to answer the following question: Is there a significant relationship between auditor change and effects on the auditor's opinion and the role of reporting quality?

2. Development of hypotheses and methodology.

According to high content, we consider two hypotheses:

H1. There is a significant relationship between the change auditor and the auditor's opinion.

H2. There is a significant relationship between the auditor tenure and auditor's report.

In this study auditor's opinion (AOC) is dependent variable. Also, change auditor and Auditor tenure are independent variables. Furthermore, control variables are: size, leverage, WNER and ROA. SIZE variable is defined as the natural logarithm of sales revenue and LEVERAGE variable is total debt divided by the total assets, and ROA is Net profit divided by total assets. Also, Statistical population this review is all listed in

companies in Tehran (IRAN) stock exchange during the period of 5 years (2010-2014). We use the method to remove systematic for sample selection. In this research to collect data of Tehran Securities Exchange Technology Management Company website and the Tehran Stock Exchange website. However, study sample shall be made with respect to following limitations: (Table 1 shows these limitations)

Table 1
Limitations and Sample selection

Sample selection	number
The total number of listed companies in Tehran Stock Exchange at the end of 2008 (Firm)	478
Limitations:	
The companies that aren't leading to the end of the year	(57)
Companies that have been interruptions in the check period	(52)
Enterprise that changed the financial year	(81)
Companies that have losses	(53)
Final Sample	**235**

After restrictions remaining 235 companies. Also, the following model is used to test the hypotheses.

$$AOC_{it}=\beta_0+\beta_1 AUDITOR\ CHANGE_{it}+\beta_2 TENURE_{it}+\beta_3 LEV_{it}+\beta_4 SIZE_{it}+\beta_5 AGE_{it}+\beta_6 OWNER_{it}+\beta_7 ROA_{it}+e_{it} \quad (1)$$

The method of measuring the variables of this model includes:

AOC_{it}: Auditor's opinion firm i in year t,

$AUDITOR\ CHANGEit_{it}$: Auditor change firm i in year t,

$TENURE_{it}$: Tenure firm i in year t,

$SIZE_{it}$: Natural logarithm of sales revenue firm i in year t-1,

$LEV_{i,t}$: Total debt to total assets in firm i in year t,

ROA_{it} : Net profit in firm i divided by total assets in firm i in year t,

$\varepsilon_{i,t}$: Error regression model.

3. Emprical results.

Table 2 shows the descriptive statistics data 235 Firm. The results show that average AOC is 0.0587 and median is 0.000 and average auditor change is 0.2621 and median is 0.000. Also, average Tenure is 6.9821 and median is 3. Average firm size is 6.05 and median is 5.660 and average leverage is 0.6401 and median is 0.6500 and average ROA is 0.142 and median is 0.110.

Table 2
Descriptive Statistics

N	*STd*	*Min*	*Max*	*Median*	*Average*	*Varabel*
1175	0.2352	0.0000	1.0000	0.0000	0.0587	)AOC(
1175	0.4400	0.0000	1.0000	0.0000	0.2621	)AUDITOR CHANGE(
1175	9.3026	1.0000	27.0000	3.0000	6.9821	)TENURE(
1175	0.1625	0.0500	1.7800	0.6500	0.6401	)LEV(
1175	2.7196	4.4300	30.8200	5.6600	6.0530	SIZE(
1175	0.4824	0.0000	1.0000	0.0000	0.3677	)OWNER(
1175	0.1244	-0.1800	0.6200	0.1100	0.1423	)ROA(

Chow test applied to panel data set or combination. The results show that (Table 3) in model 1 F-statistic is 3.7071 and probe is 0.000, then, the null hypothesis is rejected and data is pooled.

Table 3
Chow- Test

H_0	Model	F-statistic	Prob	Result
Pooled data	Model 1	3.7071	0.000	*Rejected*

Hausman test will determine use of the fixed effects model or random effect. According to the probability of less than 5%. So the hypothesis H0 (fixed effects model) is rejected. Table 4 shows model 1 p-value is 0.000 and x^2 is 98.986. So, the null hypothesis is rejected.

Table 4
Husmuns Test

H_0	Model	p-value	X^2	Result
Random effects model	Model 1	0.000	98.986	*Rejected*

Results Table 5 shows results model. R^2 represents the explanatory power of the model. This coefficient shows how many percent of the dependent variable explained by the independent variable. F statistic shows the significance of the regression model used.

Table 5
Results model

variable	Coefficient	Standard deviation	F-statistic	Sig
C	-4.1660	0.8780	-4.7449	0.0000
Reporting quality	-0.2078	2.3836	-0.0872	0.9305
(AUDITOR CHANGE× REPORTING CHANGE)	-0.6569	3.9428	-0.1666	0.8677
TENURE×REPORTING CHANGE)	-0.0140	0.1577	-0.0889	0.9292
LEV	0.3461	0.7434	0.4656	0.6415
SIZE	0.0773	0.0283	2.7341	0.0063
OWNER	0.1735	0.2614	0.6640	0.5067
ROA	1.7132	0.9766	1.7543	0.0794
R-squared	0.2174			
F-statistic	9.128			
Sig	0.0200			

The estimated coefficient for Auditor change variable is positive. So, there is a significant positive correlation with AOC. Also, table 5 shows R2 in model is 0.2174 and F-statistic is 9.128. So, 21 percent of the dependent variable depends on the following variables and hypothetically accepted. Thus, there is a significant relationship between the change auditor and the auditor's opinion. Also, there isn't a significant relationship between the auditor tenure and auditor's report.

4. Conclusion.

In this study mentioned relationship between auditor change and auditor tenure on the auditor's opinion in listed companies in Tehran Stock Exchange during the years 2010- 2014. The results show that there is a significant relationship between the change auditor and the auditor's opinion. Also, there isn't a significant relationship between the auditor tenure and auditor's report. According to the results, it is argued that change the auditor of the company without pay attention to the type of auditor. Furthermore, the privatization of the audit profession can increase competition. But, this problem can the reason for choose report. Choose report is case in which the client according to ability changes auditor. One of the important limitations in this study lack of access to audit fees. At the last the following suggestions are addressed for the future studies:

Repeat this research with other quality criteria.

Check the determining factors in the auditor's opinion

References:

Change, W. and Choy, H., (2010). Audit partner characteristics and going concern opinions. Working paper, www.ssrn.com.

Chen, C.J.P. and XIJIA, S., XI, W. (2010). Auditor changes following a big 4 merger with a local Chinese firm: a case study, Auditing: A Journal of Practice & Theory, 29 (1): 32-41.

Chena, C., Lung G., and Fu-Hsing, C. (2009).Strategic auditor switch and financial distress prediction, empirical findings from the TSE-listed firms, Applied Financial Economics. 19: 59–72.

Lennox, C.S. (2002) .Opinion shopping, audit firm dismissals, and audit committees. www.ssrn.com.

Almutairi, A. R., Dunn, K. A. and Skantz, T., (2009), "Auditor tenure, auditor specialization and information asymmetry", Managerial Auditing Journal, Vol. 24, No. 7, PP. 600-23.

Balsam, S., Krishnan, J. and Yang, J. S., (2003), "Auditor industry specialization and earnings quality", Auditing: a Journal of Practice & Theory, Vol. 22, PP. 71-97.

Investigate the Relationship between Audit opinion and Information Asymmetry in Listed Firms of Tehran Stock Exchange

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Abstract.
The main objective of financial reporting is to provide useful financial information for decision-making concerning investment, credit and other questions related to the allocation of resource (IASB, 2011). As a consequence, high-quality accounting information is a pre-requisite for the correct functioning of the capital markets and the economy and can be considered as a means of reducing information asymmetry and agency conflicts. The aim of this paper is to investigate the Relationship between Audit opinion and Information Asymmetry in Listed Firms of Tehran Stock Exchange. The research period is from 2009-2014 and research sample consists of 65 firms that are listed at Tehran Stock Exchange (TSE).The results indicate that the relationship between information asymmetry and audit opinion is significant. Also results show that firms with audit qualifications show higher information asymmetry than those with unqualified opinions. Also firms with non-quantified qualifications show higher information asymmetry than firms with quantified qualifications. In contrast, there is no significant difference between quantified qualification and non-quantified qualifications in relation to information asymmetry.

Keywords: Audit opinions; Financial reporting quality; Information asymmetry; Tehran Stock Exchange

1. Introduction.

The main objective of financial reporting is to provide useful financial information for decision-making concerning investment, credit and other questions related to the allocation of resources (IASB, 2011). As a consequence, high-quality accounting information is a pre-requisite for the correct functioning of the capital markets and the economy and can be considered as a means of reducing information asymmetry and agency conflicts. To this end, since the accounting scandals of the early 2000s, researchers, practitioners and regulators have focused considerable attention on financial reporting quality in general, and the role played by auditors in particular An important issue within this framework is the effectiveness of auditors and intermediaries who intervene in the process of assessing and communicating the reliability of financial information to enhance the credibility of financial reporting (Healy and Palepu, 2001). Effectively, because management is responsible for preparing financial reports, accounting users, such as market participants, expect an objective third party to provide assurance that the information reported is accurate. The audit report presents the auditor's opinion regarding whether a firm's financial statements conform to generally accepted accounting principles (GAAP). In other words, the external auditor assesses the validity and reliability of publicly reported financial information. In this sense, through a non-qualified audit report, the auditors express that, in their opinion, all accounting standards have been properly observed by the company, thus enhancing the credibility of the financial statements. By contrast, a qualified audit opinion is the auditors' way of communicating with outside investors their concerns or reservations about the quality of the firm's financial statements or their inability to gather sufficient and appropriate information. Hence, the audit opinion is likely to affect the interpretation of financial information by stock market participants as it is through audit qualifications that auditors signal that earnings numbers generated by the firm are noisier or less credible than in unqualified reports (Choi and Jeter, 1992). In this study, we focus on the effectiveness of audit reports to enhance the credibility of financial statements.

2. Related literature and hypotheses.

Previous theoretical research has shown that more and better firm disclosure reduces information asymmetry between the firm and its stakeholders or among traders in the stock market. Higher disclosure quality should reduce information asymmetry by reducing private information search incentives (Diamond, 1985; Diamond and Verrecchia, 1991; Easley and O'Hara, 2004), and the relative amount of informed trading (Fishman and Hagerty, 1989; Merton, 1987). The evidence shows that higher quality disclosure is negatively associated with effective bid–ask spreads (Welker, 1995; Healy et al., 1999), adverse selection spread components (Heflin et al., 2005) and the average level of information asymmetry measured by PIN (Brown and Hillegeist, 2007). From an earnings quality perspective, Bhattacharya et al. (2013) find that higher reporting quality, proxy by measures of accrual-based earnings management, leads to higher liquidity and lower trading costs. Our study differs from this stream of literature in that it is focused on the role played by the audit report in enhancing the credibility of financial information reported by firms. Financial information may reduce investors' assessed information risk in the market if investors perceive financial information to be credible (Hope et al., 2011). In this sense, auditors contribute to assess the reliability of financial information, with the audit opinion representing a crucial piece of information for financial statement users (Butler et al., 2004). Studies such as Firth (1978), Dodd et al. (1984) and Pucheta Mart_ınezet al. (2004) show that qualified opinions do not provide investors with new information, in part because they can be anticipated. On the other hand, other studies such as Dopuch et al. (1986), Chen et al. (2000) and Soltani (2000) report significant negative price revisions to qualified audit reports, suggesting that qualified audit opinions convey adverse information to the market. Choi and Jeter (1992) examine another insight into the capital market effects of audit opinions and, for a sample of 'subject to' and consistency qualifications, find a reduction in the earnings response coefficient after the issuances of qualified audit opinions.

We hypothesise that qualified audit opinions affect the investors' perception of earnings uncertainty or quality, but our study differs from previous research in that we are not interested in the reaction of stock prices around the date of the audit report announcement. We examine how audit opinions are related to the average level of information asymmetry among market participants. Therefore, we examine the audit opinion information asymmetry relation in an association study context. In this sense, a branch of literature which is more related to our study design is one which analyses the effect of audit opinions on contracting in the private debt market (Niemi and Sundgren, 2012; Chen et al., 2014).1 Moreover, this type of analysis will help both to ascertain whether audit opinions provide the market with useful information, avoiding the weaknesses of traditional event studies, and to look deeper into the directional association between audit qualification opinions and information asymmetry. Our first hypothesis can be stated as follows:

H_1: Firms with qualified audit reports will show higher information asymmetry in the stock market than those with unqualified opinions.

Audit qualifications can be of different types and it is expected that their market effects depend on the information conveyed in the audit report to investors. Following classifications used in previous research (Melumad and Ziv, 1997; Pucheta Mart_ınez et al., 2004), we group audit qualifications into those that quantify

their repercussions on financial statements—for example qualifications for asset realization, timing of revenue recognition and GAAP compliance—and those that cannot be quantified—uncertainties and scope limitations. We analyze whether either category of qualification reveals differences in information asymmetry in the market when compared to unqualified opinions. We expect that those qualifications that involve higher uncertainty and which, as a consequence, are less easily adjusted by market participants will be associated with higher information asymmetry than those that are easily adjusted. So our second hypothesis is the following:

H_2: Firms with non-quantified audit qualifications will show higher information asymmetry in the stock market than those with quantified qualifications.

3. Model specification.

To examine the association between the audit opinion and different proxies for information asymmetry, we use the following regression model:

$$ASY_{i,t} = \beta_0 + \beta_1 QAO_{i,t-1} + \beta_2 Size_{i,t} + \beta_3 Turnover_{i,t} + \beta_4 Volat_{i,t} + \beta_5 BIG1_{i,t-1} + \beta_6 Zscore_{i,t} + \sum \beta_t Year + \sum \beta_j Ind + \varepsilon_{i,t}$$

where ASY is our proxy for information asymmetry, and QAO corresponds to the different types of qualified audit opinions. QAO is lagged by 1 year relative to ASY because the audit report released each year refers to annual financial statements for the previous one. As control variables, we include Size, Turnover, Volat, BigN and Zscore. The microstructure literature shows that firm size, trading volume and stock volatility are important determinants of stock liquidity and the information asymmetry level. In particular, prior studies provide empirical evidence of big, frequently traded and less volatile firms being more liquid and suffering lower information asymmetry problems (Easley et al, 1996; Stoll, 2000). Size is measured as the logarithm of the total assets at the end of the fiscal year. Turnover is the logarithm of the average daily trading volume in euros scaled by the market value of the firm's equity at the end of the year. Volat is a proxy for stock return volatility calculated as the daily squared close-to-open mid-quote return. We expect $b2 < 0$, $b3 < 0$ and $b4 > 0$. The variable BigN is a proxy for audit quality, which takes value 1 if the firm is audited by a Big N auditor and 0 otherwise. Clinch et al. (2012) find that employing a Big N auditor is associated with lower information asymmetry between traders ($b5 < 0$ is expected). Zscore represents firms' financial strength measured with the re-estimated Altman Z-score by Begley et al. (1996).

We compute ASY as follows:

$$ASY = \frac{2 * |Pt - Qt|}{Qt}$$

where pt is the marginal price of trade t. $Qt = (at + bt)/2$ is the quoted midpoint in t, commonly used as a proxy for the efficient price; at and bt correspond to the ask and the bid quotes in t.

We define QAO as a dummy variable that takes the value 1 in the case of a qualified opinion, and zero in the case of an unqualified opinion. Non-quantified (NQAO) is a dummy variable that takes the value 1 in the case of non-quantified audit opinions (going concern, scope limitations and uncertainties), and zero in the case of unqualified audit opinions.

4. Data and sample.

This study analyses the relationship between the content of the audit reports and information asymmetry levels in the stock market for a sample of Iranian firms. The research period is from 2011-2015 and research sample consists of 77 firms that are listed at Tehran Stock Exchange (TSE).

Table 1 reports descriptive statistics for the variables of our sample. Panel A reports the mean value, the median, the standard deviation and the min and max for continuous variables. The mean of the ASY is 0.020 and standard deviation is 0.029. also min and max are 0.000 and 0.241, respectively. The statistical distributions of the above measures show that there are clear differences in the degree of asymmetric information among the firms included in our sample. Finally, market control variables (size, turnover and volatility) show a significant level of dispersion in their values reflecting the heterogeneity of our firm-year sample. Panel B shows the frequencies of dummy variables for audit opinions: 68 percent of the audit report observations present qualifications, whereas 32 percent are unqualified. Qualifications are distributed into uncertainties, going concern and scope limitations (40 percent), and quantified (60 percent). Percent of audit reports are issued by Big N auditors is 30 percent.

5. Results.

Table 2 reports the results for the information asymmetry used as dependent variables. Consistent with our first hypothesis, we find that the coefficient on QAO is positive and statistically significant (5 percent level), suggesting that qualified audit reports are significantly associated with higher levels of information asymmetry once we control for other variables. In addition, the signs of the coefficients on control variables are as expected according to prior literature, and all of them, except turnover and Zscore are statistically significant.

Table 1

Sample variables descriptive statistics
Panel A: Continuous variables

	MEAN	MEDIAN	SD	MIN	MAX
ASY	0.020	0.007	0.029	0.000	0.241
TURNOVER	5.794	5.713	0.588	4.493	7.734
VOLATI	0.038	0.029	0.028	0.006	0.231
SIZE	13.727	13.519	1.343	11.341	17.977
ZSCORE	0.305	0.281	0.184	-0.070	0.972
Panel B: Dummy variables					
No. obs	0 (%)		1 (%)		
QAO	120 (32%)		265 (68%)		
NQAO	159 (60%)		106 (40%)		
BigN	270 (70%)		115(30%)		

our next step is to test whether this relationship depends on the type of qualified opinion issued by the auditor. Table 6 reports the estimated coefficients for the regression of the composite index of information asymmetry (ASY_f) on each of type of qualified opinion and control variables. We observe that the coefficient on Non-quantified audit qualifications is positive and significant (at the 1 percent level), which means that non-quantified audit reports generate more information asymmetry than unqualified reports.

6. Conclusions.

This study analyses the role of the audit report in enhancing the credibility of financial information in the stock market. find that firms with audit qualifications show higher information asymmetry than those with unqualified opinions. In a subsequent analysis, we investigate the relation between the type of audit qualification and information asymmetry, and find that firms with non-quantified qualifications show higher information asymmetry than firms with unqualified opinions. these findings indicate that higher levels of information asymmetry in qualified opinions are generated by those qualifications that include unquantifiable uncertainties and going concern qualifications

Table2

variable	(1)	(2)
QAO	0.0034**	
NQAO		0.0007***
TURNOVER	0.0039	0.0046
VOLATI	0.1527***	0.1530***
SIZE	-0.0074*	-0.0062**
BIG	-0.0010**	-0.0009***
ZSCORE	-0.0037	-0.0026
Intercept	-0.1069***	-0.0966**
Year dummies	Yes	Yes
Industry dummies	Yes	Yes
R^2	0.587	0.581
No.obs	384	384

*, ** and *** represent significance levels of two-tailed tests at 10, 5 and 1 percent, respectively.

Furthermore, we also find that both uncertainties, scope limitations and going concern qualifications, on the other, present higher information asymmetry than unqualified opinions. These findings are consistent with the hypothesis that audit qualifications are a signal of low accounting quality, thus increasing the uncertainty of earnings and reducing the credibility of firms' financial reporting. Nevertheless, whereas earnings in firms whose qualifications are quantified can be adjusted by market participants and thus are not associated with information asymmetry, the earnings numbers of firms whose qualifications are non-quantified are noisier and more difficult to interpret by market participants and, as a consequence, create information asymmetry in the market. An alternative explanation of these results is that information asymmetry is caused by the underlying economic environment or reporting characteristics of firms, which could also lead to qualified audit opinions, or even that there is an endogenous relation between information asymmetry and audit opinions.

References:

Begley, K., B. Ming, and R. Watts, 1996, Bankruptcy classification errors in 1980s: an empirical analysis of Altman's and Ohlson's models, Review of Accounting Studies 1, 267–284.

Bhattacharya, N., H. Desai, and K. Venkataraman, 2013, Does earnings quality affect information asymmetry? Evidence from trading costs, Contemporary Accounting Research 30, 482–516.

Brown, S., and S. A. Hillegeist, 2007, How disclosure quality affects the level of information asymmetry, Review of Accounting Studies 12, 443–477.

Butler, M., A. J. Leone, and M. Willenborg, 2004, An empirical analysis of auditor reporting and its association with abnormal accruals, Journal of Accounting and Economics 37, 139–165.

Chen, C., X. Su, and R. Zhao, 2000, An emerging market's reaction to initial modified audit opinions: evidence from the Shanghai stock exchange, Contemporary Accounting Research 17, 429–455.

Chen, P. T., S. He, Z. Ma, and D. Stice, 2014, The information role of audit opinions in debt contracting, Working paper (Hong Kong University of Science and Technology).

Choi, S. K., and D. C. Jeter, 1992, The effects of qualified audit opinions on earnings response coefficients, Journal of Accounting and Economics 15, 229–247.

Clinch, G., D. Stokes, and T. Zhu, 2012, Audit quality and information asymmetry between traders, Accounting and Finance 52, 743–765.

Diamond, M., 1985, Optimal releases of information by firms, The Journal of Finance 40, 1071–1094.

Diamond, M., and R. Verrecchia, 1991, Disclosure, liquidity, and the cost of capital, The Journal of Finance 46, 1325–1359.

Dodd, P., N. Dopuch, R. W. Holthausen, and R. W. Leftwich, 1984, Qualified audit opinions and stock prices, Journal of Accounting and Economics 6, 1–97.

Dopuch, N., R. W. Holthausen, and R. W. Leftwich, 1987, Predicting audit qualifications with financial and market variables, The Accounting Review 62, 431–454.

Easley, D., and M. O'Hara, 2004, Information and the cost of capital, The Journal of Finance 59, 1553–1583.

Easley, D., N. Kiefer, M. O'Hara, and J. B. Paperman, 1996, Liquidity, information, and infrequently traded stocks, The Journal of Finance 51, 1405–1436.

Fishman, M. J., and K. M. Hagerty, 1989, Disclosure decisions by firms and the competition for price efficiency, The Journal of Finance 44, 633–646.

Healy, P., and K. Palepu, 2001, Information asymmetry, corporate disclosure, and the capital markets: a review of the empirical disclosure literature, Journal of Accounting and Economics 31, 405–440.

Healy, P., A. Hutton, and K. Palepu, 1999, Stock performance and intermediation changes surrounding sustained increases in disclosures, Contemporary Accounting Research 16, 485–520.

Heflin, F., K. W. Shaw, and J. J. Wild, 2005, Disclosure quality and market liquidity, Contemporary Accounting Research 22, 829–865.

Hope, O.-K., W. Thomas, and D. Vyas, 2011, Financial credibility, ownership, and financing constraints in private firms, Journal of International Business Studies 42, 935–957.

International Accountings Standards Board (IASB), 2011, The Conceptual Framework for Financial Reporting (IFRS Foundation, London).

Lambert, R. E., C. Leuz, and R. E. Verrecchia, 2012, Information precision, information asymmetry, and the cost of capital, Review of Finance 16, 1–29.

Melumad, N. D., and A. Ziv, 1997, A theoretical examination of the market reaction to auditors' qualifications, Journal of Accounting Research 35, 239–256.

Merton, R. C., 1987, A simple model of capital market equilibrium with incomplete information, The Journal of Finance 42, 483–510.

Niemi, L., and S. Sundgren, 2012, Are modified audit opinions related to the availability of credit? Evidence from Finnish SMEs, European Accounting Review 21, 767–796.

Pucheta Mart_ınez, M. C., A. Vico Mart_ınez, and M. A. Garc_ıa Benau, 2004, Reactions of the Spanish capital market to qualified audit reports, European Accounting Review 13, 689–711.

Soltani, B., 2000, Some empirical evidence to support the relationship between audit reports and stock prices—the French case, International Journal of Auditing 4, 269–291.

Stoll, H. R., 2000, Friction, The Journal of Finance 55, 1479–1514.

Welker, M., 1995, Disclosure policy, information asymmetry, and liquidity in equity markets, Contemporary Accounting Research 11, 801–827.

Opportunities and Challenges in the lifecycle Bank: Virtual Banking

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Abstract.
Today, identify new markets is one of the needs of each professional. Modern business requires the right tools and infrastructure for economic development process. Banks are the most important indicator in trade. The aim of this paper is identifies oopportunities' and challenges in the lifecycle Bank by Virtual Banking. Technology is in progress in today's world and we can see the presence of electronic services in all financial marketplaces, such as banks. Bank's features in every society caused development in economic and social sectors; hence, it's obvious that banking industry plays an important role in the development of countries. Keeping money, fund transfer, collection and distribution funds, converting currency, and giving facilities are some of the tasks that a bank can do. This paper introduces a new strategy for the life cycle Bank by the Virtual banking and offers valuable solutions for business sustainability and based on fact.

Key words: life cycle, banking system, virtual Banking.

1. Introduction.

Over the past three decades, the proliferation of new information and communication technologies within the financial industry has impacted the way banks service their customers. In particular, self-service technologies have enabled banks to pursue an electronically mediated multi-channel strategy. (Black et al, 2002). From the consumer's perspective these new technologies provide new modes of data access, analysis and decision-making regarding one's financial management (Hartmu et al, 2012). Using electronic systems in banks and financial institutions is growing rapidly in the world, and the number of users that benefit from electronic services are increasing. Banking operations, related to customers of traditional banking, are all done manually and there are many factors that impact the operations which are depend on human factors and mistakes. Whereas banking operations for other customers can be done via communication channels, in every hour a day and without the need for the physical presence of them in the bank building. Among the advantages of electronic banking we can point to the reduction of the customer's presence in the bank, reduction of bank's physical development, reduction of customer's activity time, increment in the banking operations and customer's convenience, reduction in human mistakes and so on. (Hosseini and Mohammadi, 2012).

The rapid expansion of information and communication technologies has had a tremendous impact on all areas of human life (Schneider, 2006). A widely studied area of technological transformation is in retail financial services. The Internet has sparked an IT-based revolution in the financial services sector that has radically altered the way that banking services are delivered. This development, referred to as Internet banking (IB), has enabled busy people to complete their financial activities in a cost-effective and efficient manner at any time of the day, regardless of their physical location (Makris et al., 2009).

IB also allows bank customers to engage in a vast array of financial services such as paying bills, checking account information, transferring funds, and utilizing investment and check services through bank websites (Tan and Teo, 2000). Due to these advantages, for reducing costs, accelerating the processes and increasing the quality of customer services in addition to elimination of time and place restrictions and expansion of banking activities, the necessity for transforming traditional banking to electronic banking is obvious. Nevertheless, the most important proposed issue related to electronic banking operations, is providing the security of electronic transactions. The most important asset in a bank is its customers, so banks should provide a high level of security by securing the transactions, to gain the trust of customers. In other word, security of banking operations impacts the adoption of electronic banking by customers. (Hosseini and Mohammadi, 2012).

2. What is Virtual Banking?

The bank was established in October 1995 in the US and has since then attracted much attention and speculation in both the financial and information technology communities. In fact, some even asserted that ‘‘virtual banking got started with the Automatic teller machine (ATM). Others describe telephone banking and home banking as other forms of virtual banking. A virtual bank can then be defined as a ‘‘non-branch bank’’, while the virtual banking is the provision of banking services through electronic media such as ATM, telephone, personal computers and/or Internet. Virtual banking so depend has been with us for some time. Previous studies have shown that the use of IT has helped banking organizations. For instance, a recent study on the US retail banking sector shows that the transaction cost of telephone banking is only 40% of the cost through physical branch. However, there are other important issues that need to be tackled. For instance, to what extent will the retail bank customers adopt new forms of banking? What are the factors that affect customer's adoption intention? (Liao et al, 1999).

This service means that banking services such as services introduction, loan application, account balance inquiry, fund transfer and so on are provided by a bank through the internet. Based on the literature review, the research framework was formulated. Some of researchers believed it is possible to study acceptance from the attitude of the process of consumer decision-making (Karjaluoto et al., 2002; Gan et al, 2006). Individuals always make decisions on consumption related information search, brand choice, and product usage. These decisions are sometimes difficult to make because there are too many alternatives or limited time. The variables individuals’ use to evaluate service alternatives come in many forms. (Nikghadam Hojjati and Rabi, 2013).

A study on the Internet users, conducted by Internet and Mobile ssociation of India (IAMAI), found that about 23% of the online users prefer IB as the banking channel in India, second to ATM which is preferred by 53%. Out of the 6356 Internet user sampled, 35% use on line banking channels in India. This shows that a significant number of online users do not use IB, and hence there is a need to unders tand the reasons for not using it (Geetika et al, 2008). Until the advent of ATMs, people were unaware and / or not directly affected by the technological revolutions happening in the banking sector. ATMs become the major revolution for customers, since it offered the facility to avoid long queues in front of the ashiers in banks. It also provided them the flexibility of withdrawing money - anytime, anywhere (Sharma, 2009). In the study by IAMAI, it was found that the people are not doing financial transactions on the bank Internet sites in India because of reasons such as security concerns (43%), preference for face to face transactions (39%), lack of knowledge about transferring online (22%), lack of user friendliness (10%), or lack of facility in the current bank (2%). (Jamaluddin, 2013).

3. Opportunities in the Virtual Banking.

As the Internet and Web revolution moves into full swing, commercial banks not only stand only on bricks-and-mortar services, but also clicks-and mortar activities. E-banking is another medium to achieve the marketing objective, especially to reach more customers. A study by Sulaiman, Lim and Wee (2005) shows that the E-banking adopters' perceptions of E-banking appear to be very favourable. On the whole, it can be seen that the adopters perceived E-banking to be useful, easy and better way to conduct banking transactions than more conventional means. (Goi, 2015).

Using internet as a service provision platform by internet banking leads to expand target market and improves bank customers' base. Considering many people's access to internet and provider of internet banking through internet and web sites, a trust on commercial brands is created. Internet banking platform is a service that can be accessed from anywhere and at any time and changes the social behavior of the people. Service innovations in internet banking will be increased and new and innovative software will be provided by internet banking industries. All transactions and user visits from bank websites will be stored. Using this stored information, users' behaviors can be underhanded and forecasted easily. Using this understanding, new or changed product or services will be presented in order to improve service quality and convenience. Provided services by internet banking will cause new customer's experience and more customers' cooperation in internet banking services. (Hosseini and Fathi Kiadehi, 2014).

4. Challenges in the Virtual Banking.

With the growth of the internet, the possibilities for money laundering have changed and transformed significantly at each of the traditional stages of money laundering. For example, digital networks allow passing the placement stage because the stolen money already exists online or, as in the case of the illegal trade in digital currencies, money has already been pre-laundered, because they are placed in the legal financial institutions without placement stage. The internet, with different services and payment systems and with the ability to split money quickly into small sums and then merge the small sums into the large amount on the later stages of money laundering, gives criminals countless number of options to create complicated schemes using different ways to transfer money at the layering stage. At the integration stage, e-commerce models can be borrowed from the legitimate sector for the establishment of companies, like e-traders or online casinos, which will integrate criminal wealth and make it appear legitimate. (Tropina, 2014).

Facing extremely severe competition from non-banking sector, the banking industry has adopted a more aggressive approach in the development of new e-banking services. For instance, some large banks have started to install advanced software to process all consumer loan applications online, a new paperless e-loan process. And interestingly, the signatures will be created from images collected by special electronic signatures (e-signature), which has been available and legal since 2000. In UK, banks now view e-banking from new distribution channel before to new business models in which e - banking service is considered together with banks' strategic planning, business process, and product/service package offering. (Li, 2002; Brown et al, 2004; Bahl, 2012).

Non face to face transactions make it possible to hide one's identity or to stay anonymous and to use different accounts at the same time, which make it difficult to implement know-you-customer techniques or monitor the behavioral patterns of the customers if they want to mask their identity. While the traditional financial system is usually based on a long-term relationship between the customer and the financial institution, in the age of online payments this relationship can be very occasional and can include the transfer of a very small amount of money. Furthermore, the system gets more complicated because many intermediaries allow transfers from one service provider to another, some platforms permit peer to peer transfers, and a number of payment systems are connected to the traditional banking system and allow credit accounts with bank cards. Thus, implementation of the traditional techniques to monitor suspicious transactions by the payment providers can be undermined by the lack of the implementation of these tools by other intermediaries or by the insufficiency of the information about client behavior. Tropina , 2014).

The reliance on new technology to provide services makes security and system availability the central operational risk of electronic banking. Security threats can come from inside or outside the system, so banking regulators and supervisors must ensure that banks have appropriate practices in place to guarantee the confidentiality of data , as well as the integrity of the system and the data. Banks' security practices should be regularly tested and reviewed by outside experts to analyze network vulnerabilities and recovery preparedness. Capacity planning to address increasing transaction volumes and new technological developments should take account of the budgetary impact of new investments, the ability to attract staff with the necessary expertise, and potential dependence on external service providers. Managing heightened operational risks needs to become an integral part of banks' overall management of risk, and supervisors need to include operational risks in their safety and soundness evaluations. (Bahl, 2012)

5. Conclusion.

In this study mentioned the opportunities and challenges in the lifecycle Bank: Virtual Banking and explained the strategic aspects of banking. This paper show internet and its applications caused a revolution in service provision in financial sector. This revolution in financial services caused changes in banking service provision leading to internet banking. Using cost effective and helpful solution, internet banking caused a decrease in the time required for financial activities. This technology resulted in bank customers' cooperation in banking activities such as payments, statements, account information review, money transfer and etc. Without having any physical locations (Hosseini and Fathi Kiadehi, 2014). This powerful tool is can make a very significant impact. So, Attention to these concepts is effective in life cycle banking.

References:

Bahl, S. E- Banking: Challenges & Policy Implications, International Journal of Computing & Business Research, 2012.

Brown, A., Remenyi, D. and Bajomo, A. E-banking for SMEs: a case study of Fortis BankUK, International Journal of Electronic Business, Vol 2, No 4, 366-382, 2004.

Gan, C., Clemens, M., Limsombunchai, V. and Weng, A. A logit analysis of electronic banking in New Zealand, International Journal of Bank Marketing, Vol 24, No 6, 360-83, 2006.

Geetika, Nandan, T. Upadhyay, AK. Internet Banking in India: Issues and Prospects, "The Icfai Journal of Bank Management, Vol 7, No2, 47-61, 2008.

Goi, C. H. E-Banking in Malaysia: Opportunity and Challenges, Curtin University of Technology, Malaysia, 2015.

Hartmut, H. Scornavacca, E. Huff, S., Three decades of research on consumer adoption and utilization of electronic banking channels: A literature analysis, Decision Support Systems, Vol 54, 122-132, 2012.

Hosseini and Fathi Kiadehi, Internet Banking, Cloud Computing: Opportunities, Threats, Journal of Information Systems and Telecommunication, Vol 2, No 2, 71- 84, 2014.

Hosseini, S. S., Mohammadi, SH. Review Banking on Biometric in the World's Banks and Introducing a Biometric Model for Iran's Banking System, Journal of Basic and Applied Scientific Research, Vol 2, 9, 9152-9160, 2012.

Jamaluddin, N. E Banking: Challenges and Opportunities in India, Proceedings of 23rd International Business Research Conferenc, 1-15, 2013.

Karjaluoto, H. Selection criteria for a mode of bill payment: empirical investigation among Finnish bank customers, International Journal of Retail and Distribution Management, Vol 30, No 6, 331-9, 2000.

Li, F. Internet banking: from new distribution channel to new business models, International Journal of Business Performance Management, Vol 4, No 2, 136- 160, 2002.

Liao, Sh. Shao, Y. Wang, H. Chen, A. The adoption of virtual banking: an empirical study, International Journal of Information Management, Vol 19, 63-74, 1999.

Makris, M., Koumaras, V., Koumaras, H., Konstantopoulou, A., Konidis, S., Kostakis, S. Quantifying factors influencing the adoption of Internet banking services in Greece. Int. Journal E-Adoption, Vol 1, 1, 20–32, 2009.

Markis, M. Koumaras, H. Koumaras, A. Konstantopoulou, S. Konidis and S. Kostakis, Qualifying factors influencing the adoption of internet banking service in Greece, International journal of e-adoption, Vol 1, 20- 32, 2009.

N.J. Black, et al., Modelling consumer choice of distribution channels: an illustration from financial services, International Journal of Bank Marketing, No 20, Vol 4, 161–173, 2002.

Nikghadam Hojjati, S. Rabi, A., R. Effects of Iranian online behavior on the acceptance of internet banking, Journal of Asia Business Studie, Vol 7, No 2, 123-139, 2013.

P. Hanafizadeh, B. W. Keating, H. R. Khedmatgozar, A. systematic review of internet banking adoption, Telematics and informatics, 2013.

Schneider, G. Business Strategies. Andy Pickering, Boston, Thomson Course Technology, 2006.

Sharma, D. India's Leapfrogging steps from Bricks and Mortar to Virtual Banking: Prospect and Perils, "The IUP Journal of Management Research,Vol 8, No. 3, 45- 61, 2009.

Tan, M., Teo, T.S.H., 2000. Factors influencing the adoption of Internet banking. J. Assoc. Inf. Syst. 1, 5, 1–42, 2000.

Tropina, T. Fighting money laundering in the age of online banking, virtual currencies and internet gambling, ERA Forum, Vol 5, 69 – 84, 2014.

Studying the effect of the board characteristics on the timeliness financial reporting of listed companies in Tehran Stock Exchange

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Abstract.
Timeliness is a critical factor that users consider the effect on the usefulness of the information that is available to external users .The duration of the audit process, has influence very strongly on the timeliness of financial reporting .The timeliness of financial reporting is measured by calculating the number of days between the end of the financial year and the date of independent auditors' reports. This study examines the effect of the characteristics of the board on the timeliness financial reporting of listed companies in Tehran Stock Exchange. The samples include 107 member companies of Tehran Stock Exchange from 2010 to 2014.The independent variables included: board independence, board size, as well as the dependent variable, including the timeliness of financial reporting. The results indicate that Board independence and board size has a positive and significant relationship with the timeliness of financial reporting.

Keywords: timeliness, financial reporting, board characteristics, Tehran Stock Exchange

1. Introduction.

Timeliness of financial reports is one of the qualitative characteristics of financial reporting because determines the relevancy of the information and influences the decisions made by the users and beneficiaries of financial reports. Information of the financial reports, however, is required to be made available within a short period of time; otherwise, it loses some of its economic value (Al-Ajmi, 2008). Financial information in annual reports of companies is more important than other sources of information, for example, releases in media, news conferences and forecasts by financial analysts.Timeliness provides a platform for market integrity and efficiency to ensure fairness, efficiency, transparency, protect investors and reduce risk, which will in turn improve financial reporting quality (Hakansson, 1977; Ahmed, 2003; Al-Ajmi, 2008; Türel, 2010). Given that the timeliness of financial reporting is one of the major determinants of quality financial reports, the greater the number of days a company takes to announce its annual report, the lower would be the quality of the report. On the other hand, the lesser number of days will signify a higher quality of the reports (Al-Ajmi, 2008) Board characteristics are important factors for the timeliness of a company‘s annual report (McGee & Yuan2012; Abdelsalam & Street, 2007; Chiang, 2005; Wu, Wu, & Liu., 2008). Previous studies have shown that an effective practice of corporate governance system would ensure the behavior of corporate managers. It reduces the likelihood of mismanagement and misreporting (Dimitropoulos & Asteriou, 2010; Shukeri & Nelson, 2011; Afify, 2009). Shukeria and Nelson (2011) show that agency conflicts may be caused by the agency relationship among managers and shareholders. Effective corporate governance is presumed to reduce such problems. The existence of corporate governance mechanisms may reduce the audit labor and time required to complete the audit. Therefore, this study focuses on board independence and board size as the important aspects of the corporate governance system.

2. Literature Review.

Al Dawood et al (2014) looked at 114 companies listed in Amman Stock Exchange in 2012 They found that between profitability and the type of audit opinion with Timeliness of financial reporting and there is a significant positive relationship And between board size and timeliness of financial reporting a negative and significant relationship There is And Negative relationship between board independence and timeliness of financial reporting there**.**

Apadore & Mohd Noor(2013) by examining the factors influencing the delay in the issuance of the audit report and corporate governance stated that The size of the Audit Committee, concentration of ownership, size of the organization And profitability is in relation with delay in the issuance of the audit report .The results of the

research showed that by increasing the number Audit committee members will increase the delay in the issuance of the audit report . Also, by increasing the number of shareholders above 5% ownership (ownership concentration) delay in the issuance of audit reports due to increased demand for higher quality audit, will increase. The size of the organization And profitability With the delay in the issuance of audit reports there is an inverse relationship**.**

Kennedy et al(2012**(** In a study to investigate the relationship between audit delay with a number of features companies in Nigeria Included .Asset size, the ratio of debt to equity, profit being subsidiaries of multinational companies, size auditor, audit fees and the company's complex operations.The purpose of the study was the measurement of the audit delay is due to the effect characteristics of companies surveyed.With the ratio of debt to equity, profitable and The complexity of company operations A significant relationship An Audit delay For anyone of the companies at least 30 days and a maximum of 276 days**.**

Habib and Bhuiyan (2011) The relationship between auditor expertise in industry And the delay in the audit report on companies listed on the New Zealand Stock Exchange examined.The results of multiple regression analysis showed That delay in the audit report Is shorter For companies that have been audited By Industry expert auditor, And the adoption of international standards to prolong the delay for all auditors other than the auditors are industry professionals. Also,Results of this study indicate that the controlled variable Type Industry, Being Loss, Complexity, short-term tenure Concentration of ownership With The delay is a positive and significant relationship And firm size is positively correlated with a delay.

AL-GHANEM & HEGAZY(2011)To the study (149 Companies In 2006 And 177 companies in 2007) At Kuwait Stock Exchange Paid And showed that liquidity, leverage and Type of audit reverse affect on audit delay**.**

Habib& Bhaiyan(2011) In his research Found that Audit delay Is shorter For companies audited by industry specialists in addition to They concluded That Optional observance IFRS requirements More delays audit report.

Wu & Liu (2008)to investigate the effect of Board characteristics on accelerating financial reporting in Taiwan In this regard surveyed 218 companies during 2002 -2007 The results showed that among Characteristics Board Board size, board independence and Ownership percent of board members Accelerate the annual report and the midterm.

Kross & Schroeder (1984) studied relationship between stock returns and schedule announcement Mid-term profit .This study was conducted using 564 Reporting quarterly profit of companies listed on the New York Stock Exchange In 1968 -1980 .The results show that the abnormal returns of companies that early (late) announced earnings Higher (lower) than the returns companies that are late (early) announced earnings.

Chambers & Penman (1984)), were studied using a sample of 100 companies listed on the New York Stock Exchange timeliness of financial reports for the period 1970 to 1976 mid-term.The results show that The Company's reporting sample time intervals is Regular and predictable And Most of the mid-term Reporting Are published, between three and four weeks after The end of the middle period**.** Also, there is an inverse relationship between firm size and time reporting and reports good news, earlier To be released than Reports bad news**.**

3. Hypothesis Development.

3.1. Board Independence.

Board independence refers to the participation of outside directors (Yunos, 2011). The more independent the board is the more effective it will be in monitoring the management's behavior (Fama & Jensen, 1983; Chen & Jaggi, 2000; Afify, 2009). Moreover, board independence is effective in resolving agency problems due to its effectiveness in monitoring management (Johnson, Daily, & Ellstrang, 1996).

Previous studies suggest that independent members on the board have a positive and significant influence on the timeliness of financial reporting. Afify (2009) provides evidence on the significant relationship between the independence of board members and audit report lag. The study implies that the monitoring role of the more independent board could have a positive influence on the timeliness of financial reports, through more effective and efficient audit, thus reducing the audit report lag. Abdelsalam and El-Masry (2008) claim that directors

independence is positively related to the timeliness of financial internet reports. This is because outside directors usually have little to take advantage from delayed or selective disclosures (Abdelsalam & Street, 2007).

Moreover, the independence of a board is related to a high quality of auditors as boards with a high percentage of independent directors employ specialized auditors than the less independent boards. Therefore, a more timely financial reporting can be achieved (Beasley & Petroni, 2001). In contrast, Wu et al. (2008) believe that the existence of independent directors is associated with a longer financial reports lag. This finding may be due to the directors' monitoring role, as they must spend more time to verify a firm's events.

H1: There is a positive relationship between board independence and the timeliness of financial reporting.

3. 2. Board Size.

larger boards are more effective in monitoring firms than smaller boards (Fauzi & Locke, 2012). A large board provides better exchange of skills and knowledge, but there will be a greater risk of a decrease in

coordination among members (Lipto n & Lorsch, 1992; Jensen, 1993). From another view, the supervision, communication and participation of the board of directors have an important effect on the timeliness of financial reports. As a result, the timeliness of financial reports is affected if one or more of these factors become(s) a problem by increasing members of the board. For instance, the timeliness of financial reporting is increased by the big number of directors who would take a lot of time communicating with the external auditor (Zaitul, 2010).

According to Klai and Omri (2010), a large board is associated with a high quality financial report. He finds that firms with large boards are associated with lower levels of earnings management. Similarly, Wu et al. (2008) argue that a large board will not delay its financial reporting since there are no weaknesses in the coordination of the board. In contrast, some researchers, such as Zaitul (2010) suggests that large boards contribute to increased audit report lag, while the small boards shorten audit report lag. He also shows that a small board may be more effective and capable of presenting better financial reports that will improve the timeliness of financial reports. This study expects the relationship between the timeliness of financial reports and board size to be negative,

H2: There is a negative relationship between board size and the timeliness of financial reporting

4. Methods.

This study uses a multiple regression analysis to investigate the association between the independent variables (board independence, board size) and the timeliness of financial reports. We use audit report lag (ARL) to measure the timeliness of financial reporting equation of the model is**:**

$ARL=\beta 0+\beta 1BIND+\beta 2BSIZE+\varepsilon$

Where:

ARL = Audit report lags, measured by the number of days from the financial year end to the date of signing of

the audit report,

BIND = Board independence, measured by ratio of non-executive directors to the total number of directors on

the board,

BSIZE = Board size, measured by the total number of board members,

ε = the error term.

In this study,Statistical population Is consisted of all companies listed on the Tehran Stock Exchange during the years 2010-2014 That in this period have maintained their membership**.** The reason for selecting and evaluation stock companies Is Better access to financial information**.** The company and a more homogeneous information.

5. Results and Discussion.

In this study, sampling method is systematic elimination method. Among all listed companies**,** Companies that do not meet the following requirements have been removed and the companies were selected using Cochran formula**:**

•their fiscal year Is ending 29 March**.**

•During the period of study Fiscal year have not changed**.**

•companies during the study period to continue their activities**.**

•Companies are not investing Or financial intermediation and insurance and bank and leasing**.** Due to the limitations described in this study, 107 companies were selected as the sample studied

6. Analysis.

6.1. Descriptive Analysis.

The results of the analyzes presented in this chapter is based on research design.Using appropriate statistical techniques That With method and type of variables Compatible collected data Classification, analysis and the hypothesis is tested In order to determine the general characteristics of variables, also Model estimation and a detailed analysis of them,its necessary Introduction to descriptive statistics Regarding Variables. Descriptive Statistics Measure community Parameters And contains Central Indices and dispersion community. In Table 1 Descriptive statistics of variables, including mean, median, maximum, minimum, and standard deviation are ..... For example for board independence variable (BIND) the mean, median, maximum, minimum, and standard deviation are respectively 0.68, 0.80, 1.00, 0.20 and 0.21.

Table 1. Descriptive statistics of variables

	ARL (The timeliness of financial reporting)	BIND (Independence of the board)	BSIZE (Board size)
Average	74.31461	0.683296	5.041199
Middle	74.00000	0.800000	5.000000
the most	260.0000	1.000000	7.000000

Least	4.000000	0.200000	5.000000
Standard deviation	28.56654	0.209770	0.284343
Coefficient of skewness	0.436312	-0.479686	6.750295
Slenderness ratio	4.936551	2.788794	46.56649
observations	535	535	535

6.2 Correlation Analysis.

In the following table the correlation between variables Is shown At the level of (sig≤0.01) and (sig≤0.05) For example, Amount correlation coefficient (Board size) BSIZE And the timeliness of financial reporting (ARL) is -0.006 That Not significant at 0.01 level**..**

Table 2. Correlation matrix of variables

		ARL	BIND	BSIZE
ARL (The timeliness of financial reporting)	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	535		
BIND (Independence of the board)	Pearson Correlation	.018	1	
	Sig. (2-tailed)	.670		
	N	535	535	
BSIZE (Board size)	Pearson Correlation	-.006	.111*	1
	Sig. (2-tailed)	.886	.010	
	N	535	535	535

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

6.3 Regression Analysis.

Table 3. Regression Analysis

Significance level**)** sig**(**	Statistics t	Standard deviation	Coefficients	Variable
0.0458	2.0030	0.1312	0.2629	B0**)** intercept of**(**
0.0041	2.8873	0.0487	0.1405	BIND**)** Independence of the board**(**
0.0091	2.6188	0.0316	0.0828	BSIZE**)** Board size**(**
0.0000	F statistic significant level**.**		13.1004	F Fisher statistics
2.4246	Durbin Watson		0.7731	The coefficient of determination

Before the research hypothesis based on the results obtained, we must ensure the accuracy of the results. The F-test was used to determine the significance of the mode.l

Due to the meaningful level F statistic is calculated (0.0000), it can be argued that on our estimated regression model is significant. Due to the determine coefficient of the fitted model can be claimed, about 77 percent of the variation in the dependent variable (the timeliness of financial reporting), is explained by the independent variables.

7. The results of hypotheses:

7.1. The first hypothesis.

H0: between board independence and timeliness of financial reporting there is no significant relationship**.**

H1: between board independence and timeliness of financial reporting there is a significant relationship**.**

Estimated coefficient for independent variable BIND in the table above indicate a positive and significant relationship between board independence and timeliness of financial reporting is At the level of 0.01. Because Amount p-value calculated for the coefficient of the independent variable less than 0.01 Obtained .Therefore reject H0 and H1 is confirmed. So we can say Between Board independence and timeliness of financial reporting at 99% confidence level there is a significant positive relationship**.**

7.2. The second hypothesis:

H0: between the size of the board and there is no significant relationship to the timeliness of financial reporting**.**

H1: between board size and timeliness of financial reporting there is a significant relationship**.**

Estimated coefficient for independent variable BSIZE in the table above indicate a positive and significant relationship between board size and timeliness of financial reporting is At the level of 0.01. Because Amount p-value calculated for the coefficient of the independent variable obtained less than 0.01. Therefore reject H0 and H1 confirmed. So we can say that between The size the board and the timeliness of financial reporting at 99% confidence level there is a significant positive relationship

8. Conclusion.

In this study, we examined the effect of board characteristics on the timeliness of financial reporting of listed companies in Tehran Stock Exchange According to surveys conducted Board independence and board size has a positive and significant relationship with the timeliness of financial reporting

Our results are not consistent with previous results Al David and his colleagues That studied 114 companies listed in Amman Stock Exchange In 2012.

According to research Al Davood and colleagues Between profitability and also Audit opinion

There is a significant positive relationship With timeliness of financial reporting And Between size of the board With the timeliness of financial reporting There is Negative and significant relationship

(Wu and Li, 2010) examined the effect of board characteristics on accelerating financial reporting in Taiwan In this regard, 218 companies during 2002 and 2007 were examined The results showed that among the characteristics of the board of directors, board size, board independence and ownership percentage of board members be accelerated in the midterm and annual reporting The results of this study, according to our research results Therefore, financial reporting, more timely if Board size And the number of non-executive board members are more. As a result, the economic value Information and reporting quality will be higher If financial reporting is a little delay will be more relevant financial information and financial data will have a significant impact on decision making by users. Investors could according this topic And taking into account other factors, take the right investment decisions.

References:

Abdelsalam , O. H., & Street, D. L. (2007). Corporate governance and the timeliness of corporate internet reporting by UK listed companies. Journal of International Accounting, Auditing and Taxation, 16(2), 111-130. http://dx.doi.org/10.1016/j.intaccaudtax.2007.06.001

Abdelsalam, O., & El-Masry, A. (2008). The impact of board independence and ownership structure on the timeliness of corporate internet reporting of Irish- listed companies. Managerial Finance, 34(12), 907-918 http://dx.doi.org/10.1108/03074350810915842.

Abdullatif, M., & Al Khadash, H. A. (2010). Putting audit approaches in context: The case of business risk audits in Jordan. International Journal of Auditing, 14(1), 1-24. http://dx.doi.org/10.1111/j.1099-1123.

2009.00400.x

Abed, S., Al-Badainah, J., & Serdaneh, J. A. (2012). The Level of Conservatism in Accounting Policies and Its

Effect on Earnings Management. International Journal of Economics and Finance, 4(6), 78.

http://dx.doi.org/10.5539/ijef.v4n6p78

Afify, H. A. E. (2009). Determinants of audit report lag: Does implementing corporate governance have any impact? Empirical evidence from Egypt. Journal of Applied Accounting Research, 10(1), 56-86.

Ahmed, K. (2003). The timeliness of corporate reporting: A comparative study of South Asia. Advances in International Accounting, 16, 17-44. http://dx.doi.org/10.1016/S0897-3660(03)16002-3

Al-Ajmi, J. (2008). Audit and reporting delays: Evidence from an emerging market. Advances in Accounting, 24(2), 217-226. http://dx.doi.org/10.1016/j.adiac.2008.08.002

Al-Hija, M. A, & Al-Hayek A. (2012). Characteristics of Audit Committees and their Impact on the Audit Report Lag: An Empirical Study on the Jordanian public companies. Journal of the Islamic University of Economics Studies and Management, 20(2), 439-463.

Al-Tahat, S. S. Y. (2010). The Timeliness and Extent of Disclosure of Corporate Interim Financial reporting in Jordan (Doctoral dissertation). College of Business, Universiti Utara Malaysia.

ASE. (2007). Amman Stock Exchange. Retrieved from http://www.ase.com.jo/pages.php?menu_id=119&local_

type=0&local_id=0&locadetails=0

Ashton, R. H., Graul, P. R., & Newton, J. D. (1989). Audit delay and the timeliness of corporate reporting.

3846.1989.tb00732.x Contemporary Accounting Research, 5(2), 657-673. http://dx.doi.org/10.1111/j.1911-

Ashton, R. H., Willingham, J. J., & Elliott, R. K. (1987). An empirical analysis of audit delay. Journal of Accounting Research, 25(2), 275-292. http://dx.doi.org/10.2307/2491018

Assessment, C. G. C., & Annexes, V. (2004). Report on the Observance of Standards and Codes (ROSC). Corporate Governance Country Assessment Jordan

Azman, H., & Kamaluddin, A. (2012). Corporate Governance Mechanisms and Intellectual Capital Disclosure In Malaysian Glcs. 3rd International Conference On Business And Economic Research. Proceeding, Sbn: 978-967-5705-05-2. Retrieved from http://www.Internationalconference.Com.My.

Baker, C. R., & Owsen, D. M. (2002). Increasing the role of auditing in corporate governance. Critical Perspectives on Accounting, 13, 783-779. http://dx.doi.org/10.1006/cpac.2002.0566

Beasley, M. S., & Petroni, K. R. (2001). Board independence and audit-firm type. Auditing: A Journal of Practice & Theory, 20(1), 97-114.

Çelik, M. D. E. C. O. (2007). Is Timing of Financial Reporting Related to Firm Performance? An Examination on Ise Listed Companies. International Research Journal of Finance and Economics.

Chen, C. J., & Jaggi, B. (2000). Association between independent non-executive directors, family control and financial disclosures in Hong Kong. Journal of Accounting and Public Policy, 19(4), 285-310. http://dx.doi.org/10.1016/S0278-4254(00)00015-6

Chiang, H. T., & Chia, F. (2005). An empirical study of corporate governance and corporate performance. Journal of American Academy of Business, 6(1), 95-101.

Dimitropoulos, P. E., & Asteriou, D. (2010). The effect of board composition on the informativeness and quality of annual earnings: Empirical evidence from Greece. Research in International Business and Finance, 24(2), 773-784. http://dx.doi.org/10.1016/j.ribaf.2009.12.001

Dogan, M., Coskun, E., & Celik, O. (2007). Is Timing of Financial Reporting Related to Firm Performance? An Examination on Ise Listed Companies. International Research Journal of Finance and Economics, 12, 220-233.

Dyer IV, J. C., & McHugh, A. J. (1975). The timeliness of the Australian annual report. Journal of Accounting Research, 204-219.

Errunza, V. R., & Losq, E. (1985). The behavior of stock prices on LDC markets. Journal of Banking & Finance, 9(4), 561-575. http://dx.doi.org/10.1016/0378-4266(85)90007-X

Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. Journal of law and economics, 26(2), 301-325. http://dx.doi.org/10.1086/467037

Fauzi, F., & Locke, S. (2012). Board Structure, Ownership Structure and Firm Performance: A Study of New Zealand Listed-Firms. Asian Academy 0f Management Journal of Accounting & Finance, 8(2).

Habbash, M. (2010). The effectiveness of corporate governance and external audit on constraining earnings management practice in the UK. School of Economics, Finance and Business. UK, Durham (Doctoral thesis). Retrieve University. d from http://etheses.dur.ac.uk/448/

Hair, J. F., Black, W. C., Babin, B. J., & Anderson. R. R. (2010). Multivariate Data Analysis (7th ed.). New Jersey: Pearson Education Inc.

Hakansson, N. (1977). Interim disclosure and public forecasts: An economic analysis and framework for choice. The Accounting Review, 396-416.

Hashim, U. J. B., & Rahman, R. B. A. (2010). Board independence, board diligence, board expertise and impact on audit report lag in Malaysian market. Finance and Corporate Governance Conference2011 Paper. Retrieved from http://ssrn.com/abstract=1717479

Hashim, U., & Rahman, R. (2011). Audit Report Lag and the Effectiveness of Audit Committee Among Malaysian Listed Companies. International Bulletin of Business Administration.

Iskandar, M. J., & Trisnawati, E. (2010). Faktor-Faktor yang Mempengaruhi Audit Report Lag pada Perusahaan yang Terdaftar di Bursa Efek Indonesia. Jurnal Bisnis dan Akuntansi, 12(3), 175-186.

Ismail, H., Mustapha, M., & Ming, C. O. (2012). Timeliness of Audited Financial Reports of Malaysian Listed Companies. International Journal of Business and Social Science, 3(22).

Jensen, M. (1993). The modern industrial revolution, exit and the failure of internal control systems. Journal of Finance, 48, 831-880. http://dx.doi.org/10.1111/j.1540-6261.1993.tb04022.x

Johnson, J. L., Daily, C. M., & Ellstrang, A. E. (1996). Boards of directors: A review and research agenda. Journal of Management, 22(3), 409-438. http://dx.doi.org/10.1177/014920639602200303

JSC. (2007). Jordan Securities Commission. Retrieved from http://www.jsc.gov.jo

Klai, N., & Omri, A. (2011). Corporate governance and financial reporting quality: The case of Tunisian firms. International Business Research, 4(1), 158-163.

Ku Ismail, K., & Chandler, R. (2004). The timeliness of quarterly financial reports of companies in Malaysia. Asian Review of Accounting, 12(1), 1-18.

Ku Ismail, K., & Chandler, R. (2007). Quarterly financial reporting: A survey of Malaysian users and preparers. Accounting, Banking and Corporate Financial Management in Emerging Economies. Research in Accounting in Emerging Economies, 7, 53-67. http://dx.doi.org/10.1016/S1479-3563(06)07004-6

Lai, K. W., & Cheuk, L. C. (2005). Audit Report Lag, Audit Partner Rotation And Audit Firm Rotation: Evidence From Australia. Retrieved August 15, 2005, from http://ssrn.com/abstract=783684

Leventis, S., Weetman, P., & Caramanis, C. (2005). Determinants of audit report lag: Some evidence from the Athens Stock Exchange. International Journal of Auditing, 9(1), 45-58. http://dx.doi.org/10.1111/j.1099-1123.2005.00101.x

Lipton, M., & Lorsch, J. (1992). A modest proposal for improved corporate governance. Business Lawyer, 1, 59-77.

McGee, R. W., & Yuan, X. (2012). Corporate governance and the timeliness of financial reporting: A comparative study of the People's Republic of China, the USA and the European. Union Journal of Asia Business Studies, 6(1), 5-16. http://dx.doi.org/10.1108/15587891211190679

Nour, A. N. I., & Al-Fadel, M. M. (2006). Analysis of the Importance of the Factors that Affected the Delay of Issuing Corporate Annual Reports: Comparison Study between Views of Corporate Managers and Auditors in Iraq and Jordan. Jordan Journal of Business Administration, (2), 33.

Shukeri, S. N., & Islam, M. A. (2012). The determinants of audit timeliness: Evidence from Malaysia. Journal of Applied Sciences Research, 8(7).

Shukeri, S. N., & Nelson, S. (2011). Timeliness of Annual Audit Report: Some Empirical Evidence from Malaysia. Paper presented at the Entrepreneurship and Management International Conference (EMIC 2) Kangar, Perlis Malaysia. Retrieved from http://ssrn.com/abstract=1967284

Soltani, B. (2002). Timeliness of corporate and audit reports: Some empirical evidence in the French context. The International Journal of Accounting, 37(2), 215-246. http://dx.doi.org/10.1016/S0020-7063(02)00152-8

Tabachnick, B. G., & Fidell, L. S. (2007). Using Multivariate Statistics (5th ed.). USA: Pearson Education Inc. Türel, A. (2010). Timeliness of financial reporting in emerging capital markets: Evidence from Turkey. Istanbul University Journal of the School of Business Administration, 39(2), 227-240.

Wallace, R. S. O. (1993). Development of accounting standards for developing and newly industrialised countries. Research in Accounting in Emerging Economies, 2, 121-165.

Wu, C. -H., Wu, C., & Liu, V. W. (2008). The release timing of annual reports and board characteristi. The international Journal of Business of Finance Research, 2(1).

Yunos, R. M. (2011). The effect of ownership concentration, board of directors, audit committee and ethnicity on conservative accounting: Malaysian evidence (Doctoral thesis). School of Accounting, Finance and Economics Faculty of Business and Law, Australia.

Zaitul. (2010). Board of Directors, audit committee, auditor characteristics and the timeliness of financial reportingin listed companies in Indonesia (Doctoral dissertation). College of business, University Utara Malaysia.

Investigation the relationship between accounting experts and independence of audit committee and financial reporting quality: Empirical result from Iran

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Abstract.
The credibility and relevance of financial reporting information is evaluated by the audit committee in collaboration with internal auditors and external auditors. The aim of this study is to investigate whether or not the accounting experts and independence of audit committee suggested in theory and required by law are associated with the financial reporting quality in Tehran Stock Exchange. Thus, data from 2013 and 2014 are used for 54 Iranian companies that have established an audit committee. This empirical study showed a positive and significant association between the proportion of audit committee members concurrently holding more than three directorships and financial statement quality. It also finds evidence that audit committee independence is significantly related to financial reporting quality.

Keywords: audit committee, corporate governance, accruals, financial reporting quality, Tehran Stock Exchange

1. Introduction.

In February 2005, the European Commission recommended the establishment of an audit committee for all listed firms. The European Parliament and the Council of the European Union developed this into legislation in December 2005 (European Parliament and the Council of the European Union 2006). The implementation of this recommendation by member states is occurring through changes to laws or through corporate governance codes based upon the 'comply or explain' principle. In the United States (US), compliance to the Sarbanes–Oxley Act is mandatory.1 The audit committee is empowered by the board of directors to gain expertise and resources that aim to enhance the quality of financial statements. The objective is to increase the visibility and credibility of the information released by companies, which has become an important issue in the aftermath of several well-known fraud scandals.

The credibility and relevance of financial statement information is evaluated by the audit committee in collaboration with both internal auditors (especially in large organizations) and external auditors (Piot and Janin 2007). The objective of this study is to investigate whether or not the audit committee characteristics suggested in theory, recommended in the Corporate Governance Code guidelines and required by law are associated with the financial statement quality of Irancompanies.

The Iran Corporate Governance Code was published in 2004 and updated in 2009 to provide standards of good practice. Belgium has reinforced corporate governance via the law of 17 December 2008 that requires each company's board of directors to establish an audit committee for all listed companies, including insurance, credit and investment companies (Moniteur Belge 2008). Companies are only exempted if they meet two of the three following criteria:

- 250 employees;
- 43,000,000 euros of total assets; or
- 50,000,000 euros of net earnings.

In these cases, the board of directors undertakes the audit committee's duties. The Iran Corporate Governance Code recommends that the audit committee is comprised primarily of independent directors. Additionally, the Code recommends that at least one member of the audit committee is competent in accounting and audit. Previous studies, such as those by Carcello et al. (2006) and Krishnan and Visvanathan (2008), find that members with expertise in accounting and audit are in a better position to monitor the quality of financial information. Furthermore, the Iran Corporate Governance Code recommends not appointing directors that have more than five directorships. Aside from the directors' profiles, there are two essential characteristics to study: the size of the audit committee and the number of committee meetings. The Code stipulates that the audit committee should have at least three members, whereas the law remains silent on this matter. The Code also recommends four meetings each year, while this is not covered by the law (Moniteur Belge 2008). This study

extends the existing literature by examining whether audit committee characteristics are related to financial statement quality in the Iran context. This context differs from that of prior research. Previous studies indicate that the Sarbanes–Oxley Act and continental European corporate governance mechanisms differ.

This means that the other half has created an audit committee either in the 6 years before the enactment of the corporate governance law, or immediately after it, which clearly shows the limited maturity of audit committees in Belgium. Given the predominance of young audit committees, in theory there is still room for improvement. Therefore, this study can be seen as forming the first objective evaluation of the added value of audit committees, which may be very helpful for those audit committees seeking to improve their composition and way of working.

In other words, the findings of this study are potentially relevant to both audit committees and policy-makers. These studies suggest that audit committees are able to reduce earnings management and therefore increase the quality of financial information. Audit committee members, in collaboration with external auditors and management, provide supervision of financial statement quality. The objective of the current study is to examine the characteristics of audit committees more closely in order to determine which of these influence the quality of financial statements. These characteristics can be divided into three categories:

1. The audit committee directors' profiles;
2. The audit committee's meeting frequency;
3. The size of the audit committee.

2. Literature review and development of hypotheses.

Previous studies focus on a similar association in different contexts. Cernat (2004) argues that there is no convergence in Europe because the European and Anglo–Saxon models of corporate governance are weakly compatible, and the European Commission is poorly equipped to propose a well-articulated governance model. The study by Collier and Zaman (2005) confirmed that in several countries—Belgium, Greece, Spain and Switzerland—the audit committee concept does not always conform to the Anglo–Saxon model. Later, Enriques (2006) reports that the European Commission, despite its ability to legislate incorporate law matters, has traditionally had a much lower impact on European companies' corporate governance than its US counterpart. To the researchers' knowledge, this is the first study on this topic in the Iran context. Audit committees are a relatively new phenomenon in Belgium, which makes this study unique, given that in most other studies audit committees have a longer history and may have already improved their way of working based on the findings of previous academic studies. A previous study on the drivers of voluntary audit committee adoption in Belgium by Willekens et al. (2004) has shown that at the start of this century (2001–2002), only half of all Iran listed companies had an audit committee despite the recommendations of the Brussels Stock Exchange. First, in a sample of state-owned Canadian firms, Bozec (2007) shows a reduction in earnings management when an audit committee is established. This outcome suggests that the creation of an audit committee diminishes intentional earnings management. Second, Piot and Janin (2007) investigate the same relationship in France from 1999 to 2001, and also find that the constitution of an audit committee is positively associated with the quality of financial statements. Third, Baxter and Cotter (2009) report a relationship between audit committees and improved earnings quality for a sample of Australian listed firms.

Three aspects of the profile of each director can be studied: independence, expertise and busyness.

Independent audit committee members and quality of financial statements Audit committee independence is considered crucial in monitoring financial statement quality. According to the Iran Corporate Governance Code (Corporate Governance Committee 2009), the audit committee should be composed of a majority of independent members. Iran law is less strict, and requires at least one independent member in the audit committee (Moniteur Belge 2008). In the US, all members are required to be independent. This attribute was studied by Klein (2002) in a sample of 687 US-listed companies. The results show a negative relationship with earnings management; in other words, a higher proportion of independent audit committee members seem to improve the quality of financial statements. The explanation that Klein (2002) provides is that independent members are more resistant to management pressure and are better able to maintain their objectivity.

Be´dard et al. (2004) examine whether a majority of independent members is associated with a reduction in earnings management. They found evidence that independence allows reduced earnings management only when the entire audit committee is composed of independent members, rather than only a majority of the committee (Be´dard et al. 2004). More recently, an Australian study by Kent et al. (2010) finds a significant negative association between independence and earnings management. The more independent members appointed to the audit committee, the less management is able to manipulate financial statements (Kent et al. 2010). Other studies, such as those of Xie et al. (2003), Piot and Janin (2007) and Baxter and Cotter (2009) do not report a significant relationship between independent audit committee members and earnings management. Therefore we hypothesise a negative relationship between independence and earnings management:

H1: There are relationship between independent audit committee members and the magnitude of earnings management.

Financial expertise of audit committee members and quality of financial statements The Iran Corporate Governance Code (Corporate Governance Committee 2009) and the Iran law (Moniteur Belge 2008) require that at least one audit committee member has a background in audit and accounting. In the US, the regulation requires the audit committee chair to have audit and accounting expertise. Be´dard et al. (2004) use a sample of US firms to determine whether there is an association between the audit and accounting expertise of audit committee members and financial statement quality. Baxter and Cotter (2009) examine the same relationship in an Australian setting. Carcello et al. (2006) find a relationship between audit committee accounting expertise and reduced earnings management. These three studies report a negative relationship between the audit and accounting expertise of audit committee members and measures of earnings management. DeFond et al. (2005) examine market reactions when new directors are appointed to the audit committee. They focus on 3 days of the abnormal returns of 850 companies that had appointed a new member to the audit committee between 1993 and 2002, and find that the market reacts positively only when a new nominated member has audit and accounting expertise. They explain this by the fact that these experts are supposed to be more effective in monitoring financial statement quality (DeFond et al. 2005). However, the study by He et al. (2008) shows that if all audit committee members have an audit and accounting background, the audit committee is less productive, as the audit committee members do not have a sufficiently broad range of competencies to achieve their goals. Since the results of these prior studies are mixed, we do not predict the sign of the relationship. This leads to the following hypothesis:

H2: There are relationship between audit and accounting experts in the audit committee and the magnitude of earnings management.

3. Research method.

The data analyzed in this study was collected from company annual reports from 2013 and 2014, and included 54 listed Iran firms that have an audit committee because they exceed the mandatory size thresholds for number of employees, total assets or net earnings. Financial institutions were excluded from the study. The audit committees' characteristics were found in their financial statements or were obtained directly via e-mail if this information was not publicly available. This empirical study demonstrates a positive and significant association between the proportion of independent audit committee members and financial statement quality. It also finds that the proportion of audit committee members concurrently holding more than three directorships is positively related to financial statement quality. The following model used in this paper:

$$DA = \alpha + \beta_1 ACind + \beta_2 ACacc + \beta_3 ACsize + \beta_4 SIZE + \beta_5 ROA + \beta_6 LEV + \varepsilon$$

where:

DA = discretionary accruals,
ACind = the proportion of independent directors in the audit committee,
ACacc = the proportion of audit and accounting experts in the audit committee,
ACsize = the number of directors in the audit committee,
SIZE = the natural logarithm of total assets,
ROA = return on assets,
LEV = total liabilities to total assets ratio,

4. Experimental result.

Table 1 presents descriptive statistics for the dependent and independent variables in the study.

Table 1. Descriptive statistics

	Mean	Median	SD	Min	Max
Valid Data	54	54	54	54	54
DA	-0.019	-0.004	0.077	-0.2	0.14
ACind	66%	66%	0.24	0 %	100 %
ACacc	39%	33%	0.24	0 %	100 %
ACsize	3.3	3	0.75	2	5
SIZE	15	13.68	1.9	12.39	18.66
ROA	4 %	5.5 %	1	-29.5 %	38.8 %

Table 2 shows the Pearson and Spearman correlation coefficients and their significance. Two significant correlations were found between the dependent variable and independent variables.

Table 2. Correlation matrix

	DA	ACind	ACacc	ACsize	SIZE	ROA

DA						
Pearson's corr	1					
Sig. (bilateral)						
ACind						
Pearson's corr	-0.29	1				
Sig. (bilateral)	0.016					
ACacc						
Pearson's corr	-0.121	-0.055	1			
Sig. (bilateral)	0.19	0.364				
ACsize						
Pearson's corr	-0.9	-0.228	0.231	1		
Sig. (bilateral)	0.238	0.5	0.064			
SIZE						
Pearson's corr	0.33	-0.19	0.255	-0.68	1	
Sig. (bilateral)	0.37	0.098	0.05	0.225		
ROA						
Pearson's corr	0.019	-0.161	0.156	0.233	0.44	1
Sig. (bilateral)	0.48	0.161	0.174	0.042	0.004	

5. Conclusions.

The credibility and relevance of financial reporting information is evaluated by the audit committee in collaboration with internal auditors and external auditors. The aim of this study is to investigate whether or not the accounting experts and independence of audit committee suggested in theory and required by law are associated with the financial reporting quality in Tehran Stock Exchange. This study investigates the relationship between audit committee characteristics and earnings manipulation, inspired by prior research. The time period for the study corresponds with the implementation of the Iran Corporate Governance Code and law (Moniteur Belge 2008). Piot and Janin (2007), Bozec (2007) and Baxter and Cotter (2009) have investigated this topic in France, Canada and Australia respectively. They find that the constitution of an audit committee improves the quality of financial statements.

Based on an analysis of 54 Iranian listed companies that are legally required to have an audit committee, two main conclusions can be drawn. First, evidence is found for a significant positive association between the proportion of independent audit committee members and the quality of financial statements released by companies. Independent directors seem to have a greater ability to resist management pressure and maintain objectivity. This finding is consistent with those of Klein (2002), Be´dard et al. (2004) and Kent et al. (2010). Second, support is found for a positive and significant relationship between the proportion of audit committee members concurrently holding more than three directorships and the quality of financial statements. This finding reveals an experience effect on the part of directors.

References:

Aljifri, K. (2007). Measurement and motivation of earning management: A critical perspective. Journal of Accounting Business and Management, 14, 75–95.

Aminul, I., Ruhani, A., & Zamri, A. (2011). Is modified Jones model effective in detecting earnings management? Evidence from a developing economy. International Journal of Economics and Finance, 3(2), 116–125.

Bartov, E., Gul, A., & Tsui, J. (2001). Discretionary-accruals models and audit qualifications. Journal of Accounting and Economics, 30, 421–452.

Baxter, P., & Cotter, J. (2009). Audit committees and earnings quality. Accounting and Finance, 49(2), 267–290.

Beasley, M., Carcello, J., Hermanson, D., & Neal, T. (2009). The audit committee oversight process. Contemporary Accounting Research, 26(1), 65–122.

DeFond, M., Hann, R., & Hu, X. (2005). Does the market value financial expertise on audit committees of boards of directors? Journal of Accounting Research, 43(2), 153–193.

Dhaliwal, D., Naiker, V., & Navissi, F. (2010). The association between accruals quality and the characteristics of accounting experts and mix of expertise on audit committees. Contemporary Accounting Research, 27(3), 787–827.

Eisenberg, T., Sundgren, S., & Martin, M. T. (1998). Larger board size and decreasing firm value in small firms. Journal of Financial Economics, 48(1), 35–54.

Enriques, L. (2006). EC company law directives and regulations: How trivial are they? University of Pennsylvania Journal of International Economic Law, 27, 1–78.

Pincus, M., & Rajgopal, S. (2002). The interaction of accrual management and hedging: Evidence from oil and gas firms. The Accounting Review, 71, 127–160.

Piot, C., & Janin, R. (2007). External auditors, audit committees and earnings management in France. European Accounting Review, 16(2), 429–454.

Sun, J., Liu, G., & Lan, G. (2011). Does female directorship on independent audit committees constrain earnings management? Journal of Business Ethics, 99, 369–382.

Teoh, S. H., Welch, I., & Wong, T. J. (1998). Earnings management and the underperformance of seasoned equity offerings. Journal of Financial Economics, 50, 63–99.

Van Tendeloo, B., & Vanderstraelen, A. (2003). Earnings management and audit quality in Europe: Evidence from the private client segment market. European Accounting Review, 17(3), 447–469.

Willekens, M., Vander Bauwhede, H., & Gaeremynck, A. (2004). Voluntary audit committee formation and practices among Belgian listed companies. International Journal of Auditing, 8(3), 207–222.

Xie, B., Davidson, W., & DaDalt, P. (2003). Earnings management and corporate governance: The roles of the board and the audit committee. Journal of Corporate Finance, 9, 295–316.

The effect of the free zones management policies on stock prices and liquidity indicators in post-sanction: Observation from Iran

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Abstract.
The purpose of this paper investigates the effect of the free zones management policies on stock prices and liquidity indicators in post-sanction. America and some countries consider sanctions for Iran They wanted to prevent the growth and development of the country. But Iran used a new strategy to overcome limitations. One solution was to create free zones for investment. Of course, the best solution is applied to Iran. Use professional management. In this study, we used a sample of companies in Iran free zones in year 2015 in sanction and past-sanction. The results show that the free zones management policies effective on stock price, turnover. But there isn't significant relationship between free zones management policies effective and the number of stock traders in post-sanction.

Key words: Free zones management, stock prices, liquidity indicators, post- sanction.

1. Introduction.

The sanctions debate is, once again, in full bloom. Thanks to Iran's budding nuclear program and the intransigence of Tehran thus far, policymakers and pundits are again pondering the utility of sanctions. Amid a flurry of sanctions activity at the U.S. Department of Treasury, in Congress, at the UN, and overseas, the question persists: "Do sanctions work?'' (O'Sollivan, 2010). In 1992, the US became concerned that Iran's development of military means could endanger American interests in the Persian Gulf. That led the US to take measures to prevent Iran from producing conventional arms, ballistic missiles, and nuclear bombs, chemical and biological weapons. Consequently, in May 1993, the US adopted the dual containment policy towards Iran and Iraq, which meant containing Iran and Iraq simultaneously by means of economic sanctions in order to protect US interests in the Persian Gulf (Lake, 1994). The American policy towards Iran, however, was not well received by the US allies.

In other hand create free zones thus achieving greater investment opportunities. The best profit opportunities when they are professional management. Over the past few decades, the effectiveness of management styles has emerged as a focus of attention in management studies. Empirical evidence supporting a contingent theory has long established that certain antecedents, such as management styles and organizational culture, have the capability to direct employee behavior (Luthans and Stajkovic, 1999). Walumbwa, Lawler, and Avolio (2007) reported that individuals exhibited stronger positive attitudes than under other management conditions, such as satisfaction with supervisors or organizational commitment, when management styles involved a cultural value orientation. This suggests that certain contextual factors may weaken or even possibly reverse the effects of management styles on subordinate performance and their development of professional skills. (Yu etal, 2016). So, this research is trying to answer the following question: Is there a significant relationship between effect free zones management policies on stock prices and liquidity indicators in post-sanction?

2. Review of literature.

The United States has increasingly used economic sanctions in recent years as a means to promote its foreign policy objectives. The US unilaterally, and/or through its influence at the United Nations' Security Council, has imposed economic sanctions on certain countries that have challenged its wishes. The US is concerned that possible access to nuclear, chemical and biological weapons by the so-called 'rogue states' may endanger its interests in some parts of the world (Huntington, 1999). The US regards preserving its domination over the Persian Gulf countries strategically very important due to the fact that these countries possess about two-thirds of the world oil and gas reserves. Since its inception in 1979, the Islamic Republic has challenged the US domination of the Persian Gulf region. In response, the US has used economic sanctions to force the Islamic regime to change its hostile behavior. The economic sanctions on Iran were originally started by President Jimmy Carter in 1979 and have been more or less in effect in various forms until the present time. On 30 April, 1995, President Clinton announced that the US would cut off all trade and investment ties with Iran, including purchase of Iranian oil. The new sanctions supplemented the previously imposed ones that had been in effect since 1984 and constituted a full embargo against Iran. (Torbat, 2005).

In June 2010 the United Nations approved a fourth round of sanctions against Iran, and a few weeks later several nations announced additional unilateral measures. There is now strong evidence to suggest that despite repeated denials by some Iranian leaders, these sanctions are imposing a heavy cost on the Iranian economy. Some of Iran's major trade partners, such as South Korea, are among the latest countries to have introduced unilateral trade sanctions against Iran. During the past two decades, imposition of the sanctions has evolved into a dynamic game between Iran and the United States: Every new round of sanctions by the U.S. or the international community has provoked a series of countermeasures by the Iranian government intended to neutralize them. (Habibi, 2010).

3. Development of hypothesis.

Based on the above study we consider the following hypotheses:

H1. The free zones management policies effective on stock price in post-sanction.

H2. The free zones management policies effective on turnover price in post-sanction.

H3. The free zones management policies effective on the number of stock traders in post-sanction

4. Methodology.

In terms of goal this research is applied and considering the nature is descriptive research. In this study independent variable is related to a period than two months (In the sanction and in post-sanction) and dependent variables are stock price, turnover price and number of stock traders. We use the method to remove systematic for sample selection. In this research to collect data of Tehran Securities Exchange Technology Management Company website and the Tehran Stock Exchange website. However, the study considered 2015/06/14 until 2015/07/14 for sanction period and 2015/07/15 until 2015/08/15 for post- sanction.

5. Empirical results.

Table 1 shows Descriptive Statistics for all variables. For example, descriptive statistics the price stock in sanction is 965 for minimum and 52174 maximum and average is 27459.85 and standard deviation is 8002.15.

Table 1. Descriptive Statistics

year	varaible	N	Minimum	Maximum	Average	Standard deviation
2015	Stock prices in sanction	80	965.00	52174.00	27549.85	8002.15
	Turnover in sanction	80	23674.00	459065779	31255404	351836.87
	the number of stock traders in sanction	80	5.00	727.00	1808.32	230.54
	Stock prices in post-sanction	80	1027.00	6645.00	762.59	1132.07
	Turnover in post-sanction	80	8.00	26502.00	2370.93	3705.22
	the number of stock traders in post-sanction	80	5.00	43.00	16.78	4.080

In this hypotheses, we use paired test this test compared two variables of a society. To test this claim we do this way:

$H_{0=}\ \mu_D = 0$

$H_{1=}\ \mu_D \neq 0$

Table 2. Paired samples test (Hypothesis 1)

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Stock prices In sanction Stock prices in Post-sanction	.06793	.14688	.01427	.03964	.09622	4.761	105	.000

Table 2 shown, in paired test in first hypothesis significant level was smaller of the quorum. Then, the null hypothesis is rejected, and the research hypothesis is accepted. So, there is a significant relationship between the free zones management policies effective and stock price in post-sanction. And table 3 shown, in paired test in second hypothesis significant level is smaller than 5%. So, the one hypothesis is accepted. Then, there is a significant relationship between free zones management policies effective and turnover price in post-sanction. Finally, table 4 shown, in paired test in last hypothesis, there isn't significant relationship between free zones management policies effective and the number of stock traders in post-sanction.

Table 3. Paired Samples Test (Hypothesis 2)

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Turnover in sanction Turnover in post-sanction	-.46099	1.53682	.14927	-.75696	-.16502	-3.088	105	.003

Table 4. Paired Samples Test (Hypothesis 3)

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	The number of shares traded In sanction The number of shares traded in post-sanction	-341.89623	1443.67841	140.22244	-619.93143	-63.86102	-2.438	105	.056

6. Conclusion.

In this study mentioned the effect of the free zones management policies on stock prices and liquidity indicators in post-sanction in year 2015. The results of this study suggest that the free zones management policies in post-sanction has been more successful. The result could be due to similarly with the dual policy of sanctions, the intelligence of manager's free zones and Strategic Successful Managers. The results show is a significant relationship between the free zones management policies effective and stock price in post-sanction and there is a significant relationship between the free zones management policies effective and turnover price in post-sanction. But, there isn't significant relationship between free zones management policies effective and the number of stock traders in post-sanction.

In this study not considered non-financial variables such as type of ownership, industry, product type. We hypothesized investors and capital markets use the stock price information and liquidity indicators. Due to limitations of the study the sample is low.

At the last the following suggestion is addressed for the future studies:

1.The effect post-sanction on other economic markets such as money market, foreign exchange market.

2. The effect of the seasons on stock price indices of liquidity in the Tehran Stock Exchange.

3. The effect of other special occasions and same period on price stock and liquidity indicators.

References:

O'Sullivan, Meghan, L, "IRAN and the Great Sanctions Debate", the Washington Quarterly, 2010.

Habibi, Nader. "The impact of Sanctions on Iran_GCC Economic Relations", Brandeis University, 2010.

Torbat, Akbar, "Impact of the US Trade and financial Sanctions on Iran", Blackwell publishing, 2005.

Huntington, S. "The Lonely Superpower", Foreign Affairs, 78, 2, 35–49, 1999.

Lake, A. "Confronting Backlash States", Foreign Affairs, 73, 2, 45–55, 1994.

Luthans, F., & Stajkovic, A. D. “Reinforce for performance: the need to go beyond pay and even rewards”. The Academy of Management Executive, Vol13, No 2, 49-57, 1999.

Yu, Pei-Li. Fang, Shin-Chieh, Wang, Yu-lin. “Improving IT professionals job skill development: The use of management styles and individual cultural value orientation”, Asia Pacific management Review, Vol 21, 63-73, 2016.

Studying the relationship between audit committee and earnings manipulation in Tehran Stock Exchange

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Abstract.
The aim of this paper is studying the relationship between audit committee and earnings manipulation in Tehran Stock Exchange. Corporate governance controls are vital for monitoring managers' behavior and providing transparent and reliable financial information to stakeholders. One of important controls in companies is audit committee that its characteristics has been reviewed in this study. This paper extends research on the corporate governance practices of transitional economies by examining whether the ability of the audit committee to constrain earnings manipulation is associated with the presence of government officials on the audit committee. Thus, research data from 2012 and 2014 are used for listed companies that have established an audit committee. This study find that the expertise and independence from characteristics of the audit committee are associated with lower abnormal accruals, our measure of earnings manipulation. Furthermore, we find a significant relationship between audit committee independence and experience and earnings manipulation when there are government officials on the audit committee.

Keywords: audit committee, earnings manipulation, governance, Tehran Stock Exchange

1. Introduction.

Iran is one of the growing economies in the world, even though its legal and financial system is not well developed (Firth et al. 2013; He et al. 2013). Over the last decade, the Tehran Stock Exchange (TSE) published a number of regulations and recommendations on corporate governance for Iranian listed firms. Following the regulations and recommendations issued by TSE, there is some evidence showing that Iranian firms are actively moving towards improving corporate governance practices, such as establishing independent boards and audit committees (Li et al. 2006; Cheung et al. 2008). Iran has made considerable attempts to improve accountability and transparency, moving from a rules-based and prescriptive accounting regime to the introduction of principles-based Iranian Accounting Standards.

Several studies have examined the effectiveness of audit committees in limiting earnings manipulation primarily in the world (Abbott et al. 2004; Be´dard et al. 2004; Klein 2002; Xie et al. 2003; Yang and Krishnan 2005). Researches also find that audit committees play a significant role in constraining earnings manipulation of Hong Kong firms (Jaggi and Leung 2007). Although the role of the board (Firth et al. 2007; Lai and Tam 2007; Liu and Lu 2007) and ownership concentration (Liu and Lu 2007; Ding et al. 2007; Firth et al. 2007) are identified as important determinants of earnings manipulation in Iranian listed firms, there is currently considerable debate about the effectiveness of the audit committee in constraining earnings manipulation (Lin et al. 2008).

Floating companies on a developed overseas market allows the government to generate higher privatization income. Before the 2008 global financial crisis, listing newly privatized shares on the HKEX was a common practice to raise capital. Further, the listing and governance rules of the foreign exchange may discipline management, motivating them to improve the quality of financial reporting. Conversely, this choice entails political and economic trade-offs. State ownership is diluted and voting power is decentralized as ownership becomes more diverse. By selling firms overseas, the State risks losing a powerful tool for profit redistribution, especially as the cross-listed firms are the pillars of corporate Iran. Therefore, in many cases,

government officials are placed on boards or committees for some political reason, even though government officials are claimed to be independent.

Another fiscal reform is the quota system of 1993–2000, which gave government officials considerable control rights and incentivised3 them to report favourable economic performance of firms in their region (Pistor and Xu 2005). Although the quota system has been formally abandoned, the practice has contributed to the incentive for politically connected managers (former government officials) to restrict the flow of negative information about their firms (Piotroski et al. 2011). The classification of government officials as independent directors is controversial due to their political connections to the controlling shareholders (the State). When the State is the major stockholder it may impose its socioeconomic objectives on the firm (Firth et al. 2012). Such preferences may cause government officials to sanction earnings management, even in the presence of cross-listing, because the marginal benefits of control are perceived by the government to exceed the marginal benefits of cross-listing. Placing a government official on the audit committee provides the opportunity for the government official to confer with the interests of the State rather than minority shareholders, which in turn can encourage earnings manipulation. Consequently, a government official on the audit committee has both the incentive and the opportunity to endorse earnings manipulation.

2. Literature review and hypothesis development.

The predictions of agency theory apply in public corporations when owners assign the daily operating power to managers, giving rise to concerns that managers may not act in the best interests of the owners. The underlying assumption of the principal-agent perspective is that all principals are homogenous in their aim of maximizing returns on investments. Such an assumption holds in the institutional setting of developed economics, where the institutional and minority investors have a primary goal for profit maximization. Once their goals diverge, the assumptions of the theory change. The aim of principals is different and the controlling principal may expropriate minority shareholders' funds due to the lack of legal protection. Many controlling shareholders directly participate in management and appoint their representatives to the board (Claessens et al. 2002).

Government officials may lack the necessary financial, accounting, and industry experience to monitor managers (Fan et al. 2007). They may have a successful political career and know how to deal with complicated relationships among different groups, but they may not have the related business background. As the government official's alliance is with the State or the controlling shareholders, these firms experience greater information asymmetry. The addition of government officials onto the audit committee to monitor earnings management will be compromised if the State places government officials on boards and committees to counteract the loss of control from cross-listing and privatization. Consequently, government officials on the audit committee have the incentive and opportunity to portray the earnings according to the State's political objectives. Therefore, we expect a change in the efficacy of the audit committee in monitoring earnings management when there is a government official on the audit committee. Consequently, the following hypothesis is developed:

Hypothesis: The negative association between audit committee efficacy and abnormal accruals is moderated by the presence of government officials on the audit committee.

3. Research method.

Research data from 2012 and 2014 are used for listed companies that have established an audit committee. The audit committee data is hand collected from the firm's annual financial reports while the financial data is collected from the Codal website for the firms listed in Tehran Stock Exchange.

Abnormal accruals can be manipulated by management by using professional judgment in their accounting choices. Therefore, abnormal accruals models are often used as a proxy for earnings management in the literature and we use the modified Jones model (Jones 1991) from Butler et al. (2004) as a proxy for earnings management. We also use variations of this model in testing the robustness of our results.

$$TA_{it} / AT_{it} = \alpha_0 + \alpha_1(DRev_{it} / AT_{it}) + \alpha_2(PPE_{it}/AT_{it}) + \varepsilon$$

where:

TA_{it} is total accruals calculated by adding earnings before extraordinary items and discontinued operations minus operating cash flows from continuing operations and then dividing by total assets at the beginning of the year.

AT_{it} is the total assets for firm i in the year t.

$DRev_{it}$ is the change in revenue firm i in the year

t. PPE_{it} is net property, plant and equipment firm i in year t.

Total accruals are separated into expected accruals and abnormal accruals. To determine committee member characteristics we analyze their biography in the firm's financial reports or searched for their curriculum vitae (CV) on the internet. Each audit committee member voluntarily provides a CV to the shareholders following their nomination from the board. If a member has past experience working in a government department serving as a public servant, they are classified as a government official. In many cases, the government officials are either retired or not incumbent when they commence their position on the committee. We also use this method to determine committee members' independence, expertise and work experience.

Recommendation for establishment of independent director system in Iranian listed firm's government officials met the requirements for an independent director. There is a theoretical argument that an audit committee with government officials will provide a company with a high level of access to various resources, particularly through their political connections. However, the independence role of government officials is controversial as they may act in the interests of the government, or may lack the necessary financial, accounting, and industry experience to monitor managers (Fan et al. 2007). They can have a successful political career and know how to deal with complicated relationships among different groups, but they may not have the related business background to detect earnings management. Therefore, we expect that the efficacy of the audit committee will be compromised in firms when there are government officials on the audit committee. We predict the coefficient for the interaction of AC efficacy and earnings management is positive in the presence of government officials on the AC. This result is expected due to the audit committee following the State's interests rather than minority shareholders' interests.

An effective audit committee fulfills its oversight role when it is independent of management, has a level of financial and industry experience to carry out its duties, and actively monitors internal controls and financial reporting (Carcello et al. 2006). Subsequently, this paper evaluates audit committee effectiveness from the perspective of the non-negotiable characteristic of independence and the experience that independent members bring to the committee.

Agency theory posits that outside members facilitate effective monitoring because they are independent of management and have reputational incentives to signal to the labor market that they are experts in decision control (Fama and Jensen 1983). Firms may voluntarily establish an audit committee with a majority of independent directors. The rules require firms to have an audit committee that consists of at least five independent non-executive directors. The rationale is that independent audit committee members are more likely to be free from management's influence, which ensures that financial information is conveyed to shareholders in an objective way. Thus there is less opportunity for earnings management.

Following preliminary analysis, we use principal component factor analysis to comprise a factor score for audit committee directors' experience. A factor score of independent audit committee members' accounting, financial and industry experience is created by using principal components' factor analysis. The three components collected from the information provided in the firm's annual reports are: the number of independent audit committee directors with accounting experience divided by the number of directors on the audit committee; the number of independent audit committee directors with financial experience divided by the number of directors on the audit committee; the number of independent audit committee directors with industry experience divided by the number of directors on the audit committee. Typically, research has only used one of these variables to measure expertise (e.g., Carcello et al. 2006; Dhaliwal et al. 2006; Lin et al. 2006). Subsequently, we used a factor score of these measures to test the combined influence of independent audit committee directors' experience.

Following model tests whether the association between audit committee efficacy and abnormal accruals is moderated by government officials on the audit committee. Dummy variables were used to test the interactions.

$$ABAC = \alpha_0 + \alpha_1 GOV + \alpha_2 ACIND + \alpha_3 ACEXP + \alpha_4 GOV_ACIND + \alpha_5 GOV_ACEXP + \alpha_6 MILLS + \alpha_7 STATE + \alpha_9 LEV + \alpha_{10} ROEDUM + \alpha_{11} MBVA + \alpha_{12} LNAT + \alpha_{13} YEAR + \alpha_{14} INDUSTRY + e$$

where:

ABAC Abnormal accruals are the residuals from running the regression of Eq.

GOV Dummy variable 1 if an audit committee includes government officials as independent members; 0: otherwise

ACIND Number of independent directors divided by total number of directors on the audit committee

ACEXP A factor score of independent audit committee members' accounting, financial and industry experience is created by using principal components' factor analysis and scaled by audit committee size

STATE Dummy variable 1 if the proportion of State shareholdings to total issued shares is greater than or equal to the median; 0 otherwise

LEV Leverage is (long-term debt? debt in current liabilities)/total assets

ROEDUM Dummy variable 1 for ROE less than zero; 0 otherwise

MBVA Book to market value is calculated as market capitalization divided by the book value of assets

LNAT Firm size is measured as total assets in million RMB. A natural logarithmic transformation is performed to normalize data

YEAR Dummy variable for each year 2012, 2013, and 2014

INDUSTRIAL Dummy variable 1 if firms in industrial sector; 0 otherwise

4. Experimental result.

Table 1 presents descriptive statistics for the dependent and independent variables in the study.

Table 1. Descriptive statistics

	Mean	Median	SD	Min	Max
Valid Data	76	76	76	76	76
ABAC	0.263	0.133	0.362	0.004	0.582
ACIND	0.544	0.754	0.289	-0.303	1.000
ACEXP	0.414	0.412	0.187	0000	1.000
STATE	0.327	0.512	0.302	0.000	0.826
LEV	8.8	2.24	8.12	-12.03	71.2
LNAT	0.52	8.37	0.784	4.4	11.3
GOV	0.21	0.73	0.433	0.000	1.000

The results of the regression analysis for the main hypotheses are reported in Table 2. This table reports the results of testing hypothesis; whether the association between the audit committee and abnormal accruals is moderated by the role of government officials.

Table 2. Testing impact of government officials on audit committee effectiveness

Variable	Panel
ABAC	0.143
GOV	0.042
ACIND	-0.201
ACEXP	-0.181
STATE	2.512
LEV	-0.079
LNAT	0.129
STATE	0.173
Year	Included
Adjusted R^2	0.071
F	3.211

We test the association between government officials on the audit committee of Iranian firms. We find a significant and positive association between a government official on the audit committee and abnormal accruals.

5. Conclusion.

The aim of this paper is studying the relationship between audit committee and earnings manipulation in Tehran Stock Exchange. Corporate governance controls are vital for monitoring managers' behavior and providing transparent and reliable financial information to stakeholders. One of important controls in companies is audit committee that its characteristics have been reviewed in this study. This paper extends research on the corporate governance practices of transitional economies by examining whether the ability of the audit committee to constrain earnings manipulation is associated with the presence of government officials on the audit committee.

Iran has outperformed other transition economies in terms of liquidity and ability to raise funds. This could be due to many factors. In this study we consider one factor, titled the influence of government officials. Although the Tehran Stock Exchange has initiated regulatory governance reforms for Iranian listed firms aimed at improving the quality of financial reports, our results suggest that the reforms have not been entirely successful. We find that initiatives that encourage cross-listing of Chinese firms are successful in improving financial reporting as we find that the independence and experience of audit committee members is negatively associated with abnormal accruals. In contrast, we find a marginally positive association between audit committee independence and earnings management for Iranian firms.

References:

Abbott, L. J., Parker, S., & Peters, G. F. (2004). Audit committee characteristics and restatements. Auditing: A Journal of Practice and Theory, 23(1), 69–87.

Allen, F., Qian, J., & Qian, M. (2005). Law, finance, and economic growth in China. Journal of Financial Economics, 77, 57–116.

Butler, M., Leone, A. J., & Willenborg, M. (2004). An empirical analysis of auditor reporting and its association with abnormal accruals. Journal of Accounting and Economics, 37(2), 139–165.

Chan, K. H., Lin, K. Z., & Wang, R. R. (2012). Government ownership, accounting-based regulations, and the pursuit of favorable audit opinions: Evidence from China. Auditing: A Journal of Practice & Theory, 31(4), 47–64.

Chen, X., Lee, C. W. J., & Li, J. (2008). Government assisted earnings management in China. Journal of Accounting and Public Policy, 27(3), 262–274.

DeZoort, F. T., Hermanson, D. R., Archambeault, D. S., & Reed, S. A. (2002). Audit committee effectiveness: A synthesis of the empirical audit committee literature. Journal of Accounting Literature, 21, 38–75.

Dhaliwal, D. S., Naiker, V., & Navissi, F. (2006). The association between accruals quality and the characteristics of accounting experts and mix of expertise on audit committees. Contemporary Accounting Research, 27(3), 787–827.

Gao, S., Gao, G., & Zhang, T. (2008). Corporate governance reform and firm performance: Evidence from China. In M. Tsamenyi & S. Uddin (Eds.), Corporate governance in less developed and emerging economies (pp. 189–209). Bingley: Emerald Group Publishing Limited, 8.

Gow, I. D., Ormazabal, G., & Taylor, D. J. (2010). Correcting for cross-sectional and time-series dependence in accounting research. The Accounting Review, 85(2), 483–512.

He, J., Mao, X., Rui, O. M., & Zha, X. (2013). Business groups in China. Journal of Corporate Finance, 22, 166–192.

Healy, P. M., & Wahlen, J. M. (1999). A review of the earnings management literature and its implications for standard setting. Accounting Horizons, 13(4), 365–383.

Jones, J. (1991). Earnings management during import relief investigations. Journal of Accounting Research, 29(2), 193–228.

Krishnan, G. V. (2003). Does Big 6 auditor industry expertise constrain earnings management? Accounting Horizons, 17, 1–16.

Krishnan, G. V., & Parsons, L. M. (2008). Getting to the bottom line: An exploration of gender and earnings quality. Journal of Business Ethics, 78(1–2), 65–76.

Liu, Q., & Lu, Z. (2007). Corporate governance and earnings management in Chinese listed companies: A tunneling perspective. Journal of Corporate Finance, 13(5), 881–906.

Liu, L., & Ma, X. (2008). Audit committee and audit quality: Empirical evidence from Chinese A-share market. Accounting Research (Chinese Version), 7, 84–90.

Smith, C. W., & Watts, R. L. (1992). The investment opportunity set and corporate financing, dividend, and compensation policies. Journal of Financial Economics, 32(3), 263–292.

Sweeney, A. P. (1994). Debt-covenant violations and managers' accounting responses. Journal of Accounting and Economics, 17(3), 281–308.

Yang, J. S., & Krishnan, J. (2005). Audit committees and quarterly earnings management. International Journal of Auditing, 9(3), 201–219.

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Corporate governance mechanism, earnings manipulation, and accounting standards: The study in Pharmaceutical industry

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Abstract.
The aim of this study is investigation of corporate governance, earnings manipulation, and local accounting standards in Iran. This research used 27 Tehran listed companies' data in Pharmaceutical industry from 2010 to 2015 to investigate how local accounting standards, state ownership, and board of directors (BOD) influence earnings manipulation. The result of study shows that there are relationships between study variables. We conclude that state ownership to an extent discourages earnings manipulation in the current environment of Iran. However, accounting standards implementation does not seem to deter earnings manipulation. When state-ownership is not the case, increasing the number of independent BOD seems to be a good practice to discourage earnings manipulation, although non-independent BOD does not make any difference.

Key words: corporate governance, earnings manipulation, and local accounting standards, pharmaceutical industry

1. Introduction

The main objectives of International Public Sector Accounting Standards (IPSAS) are the international accounting harmonization and comparability, as well as the improvement of the reliability and transparency of public accounts. According to the IASB, over 100 countries have adopted the international accounting standards officially known as International Financial Reporting Standards or IFRS. The United States is scheduled to decide sometime in 2011 about whether to incorporate

IFRS into the financial reporting system for U.S. issuers with the possibility of global adoption of IFRS imminent, this seems an opportune time to investigate the effects of IFRS on various issues. Several researchers have approached this topic from several different angles, e.g., IFRS's impact on earnings management; the relationship between IFRS and information asymmetry (Leuz, 2003); how IFRS affects the cost of equity capital (Daske, 2006; Lambert, Leuz, & Verrecchia, 2007); whether IFRS improves market liquidity (Daske, Hail, Leuz, & Verdi, 2008); and how IFRS affects Tobin's q, which measures effects beyond the cost of capital and market liquidity (Daske et al., 2008). This paper investigates the effect of state ownership, IFRS, and independent boards of directors on earnings management in Tehran Stock Exchange.

Earnings manipulation increases outsider uncertainty and potentially leads to information asymmetries among firm managers, resulting in decreasing investment efficiency. In prior studies, accounting conservatism was shown to reduce the adverse effects of existing information asymmetry between outside investors and managers by restricting managerial accounting manipulation (LaFond and Watts, 2008).

Bebchuk and Hamdani (2009) pointed out that good corporate governance practices at a publicly held firm will not necessarily be good practices at a publicly traded firm in which there is a controlling shareholder. This is because board independence, a key concept in structuring appropriate corporate governance practices, has a different meaning when a controlling shareholder is present. The research by Bebchuk and Hamdani (2009) inspired us to investigate the relationship between independent boards of directors and state ownership of Iranian companies. The significant change of accounting system starting 2007 also demands this research to evaluate IFRS effect on the interaction of independent board of directors, earnings management, and state ownership.

2. Literature review

Corporate governance has been a topic of research for decades. We herein review a few of recent studies regarding corporate governance. Li and Samsell (2009) suggest that economies vary in terms of their emphasis on formal rules versus informal relationships. In Anglo-American economies, the primary governance mechanism is the equity market (Saberwal & Smith, 2008). In China, the primary governance mechanism is the

state and informal networks (Shen & Chen, 2009). Judge (2010) gives a complete review of corporate governance around the world.

Li (2010) examined tunneling by controlling shareholders in Chinese public companies. Tunneling is the transfer of assets out of public companies for the benefit of controlling shareholders. Li (2010) concluded that tunneling is severe and that private controlling ownership significantly increases the severity of it. Li's (2010) research seems to support the conclusion by Shen and Chen (2009) that the primary governance mechanism in China is the state and informal networks. Recent study about ownership and corporate governance also includes Sueyoshi, Goto, and Omi (2010) research about Japanese firms. Their conclusion is that stable shareholding is an important aspect of traditional Japanese corporate governance, although stable shareholding enhances operational performance only when the ratio of shares held by stable shareholders is more than 61.21%.

However, Leuz, Nanda, and Wysocki (2003) finds that earnings management appears to be lower in economies with large stock markets, dispersed ownership, strong investor rights, and strong legal enforcement. This conclusion conflicts with research by Li (2010), Shen and Chen (2009), and Sueyoshi, Goto, and Omi (2010). These studies found that large/state shareholding was an important governance mechanism. Leuz et al. (2003) conclusions are based on data from 31 countries from 1990 to 1999. The countries include Asian countries such as Japan, Philippines, Indonesia, Korea, as well as the United States, United Kingdom, Belgium, etc. The dataset did not include China.

This paper investigates the effect on Chinese publicly traded companies of state ownership on corporate governance and earnings management. Extensive research has been done on the impact of outside directors as well. Musteen, Datta, and Kemmerer (2010) found that firms with a greater proportion of outside directors and those with larger boards exhibited better reputations than those with smaller boards and a higher proportion of insiders. The study sample involved companies included in the 2000 Fortune List of America's Most Admired Corporations. Duchin, Matsusaka, and Ozbas (2010) conclude that the effectiveness of outside directors depends on the cost of acquiring information about the firm. When the cost of information acquisition is low, performance increases when outsiders are added to the board. When the information acquisition cost is high, performance worsens when outsiders are added to the board. The data are from American firms over the period 2000–2005.

Shen and Chih (2007) examined the impacts of corporate governance on earnings management. They conclude that firms with good corporate governance tend to conduct less earnings management and large size firms are prone to conduct earnings smoothing. The paper used CLSA (Credit Lyonnais Securities Asia) corporate governance measures. CLSA calculated an index with corporate governance rankings for 495 firms across 25 emerging markets and 18 sectors. The paper examined the relationship between Leuz et al.'s (2003) earnings management proxies and corporate governance.

The topic of earnings management has grown to be a concern throughout the world (Islamet al., 2011). Earnings management occurs when managers use judgment in financial reporting in structuring transactions to alter financial reports, to either mislead some stakeholders about the underlying economic performance of the economy, or to influence contractual outcomes that depend on reported accounting numbers (Healy and Wahlen, 1999). Scott (2009) states that earnings management is the choice of accounting policies, or actions affecting earnings,made so as to achieve specificmanagerial objectives. Watts and Zimmerman (1990) find that earnings management occurs when managers implement their discretion over the accounting numbers with or without restrictions, and that such activities can be either firm value maximizing or opportunistic. Jorissen and Otley (2010) find that financial misrepresentation is broader than just earnings management and include the management of balance sheet numbers and disclosure management with other issues.

Dyreng et al. (2012) researched a sample of 2133 U.S. multinational firms from 1994–2009, showing that companies with foreign employments have more external earnings manipulation than do companies with subsidiaries in a country where the rule of law is strong. Ascioglu et al. (2012) investigated a sample of NYSE firms from 1996 to 2001 and found that earnings management improved the degree of information asymmetries between insiders and outsiders. They also found an association between greater earnings management and lower market liquidity.

Chekili (2012) examined 20 anonymous listed Tunisian firms from 2000 to 2009, and explored the effect of certain governance mechanisms on earnings management. The result demonstrated that the board size, the presence of exterior directors within the board, and the existence of a CEO have a strong effect on earnings manipulation.

Hazarika et al. (2012) examined whether managers with earnings manipulation increase the risk of losing their jobs. The result indicated that boards tend to punish managers who manipulate earnings aggressively before their management leads to costly external consequences. Managers have more incentive to manage earnings when companies are earning small profits or suffer an unexpected loss, misleading investors regarding the true firm value.

3. Research Methodology.

This research used 27 Tehran listed companies' data in Pharmaceutical industry from 2010 to 2015 to investigate how local accounting standards, state ownership, and board of directors (BOD) influence earnings manipulation. Earnings management is generally understood to mean attempts by company insiders to protect their positions and benefits by manipulating the financial information provided to outsiders. This often takes the form of income smoothing or income manipulation. We use the method defined by Leuz et al.'s (2003) to quantify earnings management. We first introduce accruals and cash flow. The operational definition of accruals is:

$$\text{Accruals} = (\Delta CA - \Delta Cash) - (\Delta CL - \Delta STD - \Delta TP) - Dep$$

where:

ΔCA change in total current asset;
ΔCash change in cash/cash equivalents;
ΔCL change in total current liabilities;
ΔSTD change in short-term debt included in current liabilities;
ΔTP change in income taxes payable;
Dep depreciation and amortization expense.

We then calculate cash flow from operations:

$$\text{Cash flow from operations} = \text{Operating earnings} - \text{Accruals}$$

$$EM = |\text{Accruals}|/|\text{Cash flow from operations}|$$

where: EM stands for earnings management. The larger EM is indicative of large-scale use of discretion to manipulate reported accounting earnings. (Leuz et al. (2003) identifies other measures of earnings management. Table 1 shows statistics.

Table 1. Central indexes, Diffusion indexes, and distribution indexes (Statistics)

	Profit management	Board structure	Ownership structure	Institutional investors
Valid Data	27	27	27	27
Average	2.648	0.423	0.273	0.385
Mean	3.3500	0.4200	0.2800	0.2710
Mode	-3.0	0.00	0.00	0.00
Standard Deviation	1.947	0.290	0.267	0.329
Variance	3.79	0.084	0.072	0.109
Skewness	-8.595	-0.051	0.472	0.382
the standard error of skewness coefficient	0.128	0.128	0.128	0.128

4. Experimental Results.

Table 2 represents the statistical data on profit management, size, leverage, firm history, the number of non-independent board, and the number of independent board. The data is divided into two groups: Group 1 shows observations related to the state ownership less than 20%. Group 2 shows observations related to at least 20 % of the state ownership.

Table 2. Data statistics

Variable	Profit management	Size	Leverage	Firm's age	Board	
					Independent	non-independent
Ownership group of State firms less than 20 %						
Average	18.70	19.10	1.8	120	0.26	0.12
Standard deviation	1201.78	1.98	13.28	49.21	0.6	0.03
Ownership group of State firms by at least 20 %						
Average	1.98	21.4	1.38	158.66	0.261	0.11
Standard deviation	14.33	0.85	22.65	46.12	0.18	0.065

Although the average of profit management criterion for group 1 is much more than that of group 2 which are 18.70 % and 1.98 % respectively, but t test didn't show any significant difference between criteria. The variances of the criteria at the level of $p < 0.0001$ have siginificant differernce. By evaluating the average of this criterion with standard variation of this criterion and also according to this point that the variances of this criterion for the two groups are completely different, we conclude that profit management criterion for

observations related to state ownership of less than 20 % is very different while it seems that observation related to state ownership of at least 20 % has lower changes.

Average, size, firm history, the number of non-independent board, and the number of independent board at the level of $p < 0.0001$ for these two groups have significant differences. The most important point is the number of independent board. The number of independent board in observations relate to state ownership of less than 20 % is significantly more than observations relate to state ownership of at least 20%.

Table 2 shows the regression results associated with profit management rank as the dependent variable. We executed this model separately for the two groups. The overall results of the model for both groups at the level of $0.0001 > p$ were significant. For both groups: the larger the size of firm, the less the profit management at the level of $p < 0.0001$ will be; the greater the firm history, the more profit management at the level of $p < 0.01$ will be. Leverage had little impact in state ownership group of less than 20% but it increased the profit management strongly at the level of $p < 0.01$ in state ownership group of more than 20 %. Independent board reduced the profit management related to state ownership group of less than 20% significantly at level of $p < 0.01$ while it didn't have any effects on profit management, when the state ownership was greater than or equal to 20%. Non-dependent board had no significant impact on the profit managements of the two groups.

Table 3. Correlation coefficient, determination coefficient and Durbin-Watson test

Model	Correlation coefficient	Determination coefficient	Adjusted determination coefficient	error of estimation benchmark	Durbin-Watson
1	0.185	0.034	0.032	3870	1.643

Table 4. Regression results

variable	Group 1 (state ownership less than 20 %)			Group 2 (state ownership of at least 20 %)		
Independent variable	estimation	T statistics	Pr> |t|	estimation	T statistics	Pr> |t|
intercept	6715.02	13.69	0.0001 >	19124.00	19.39	0.0001 >
size	-138.77	-4.17	0.0001 >	-387.40	-9.62	0.0001 >
leverage	-2.80	-0.78	0.3589	135.50	2.30	0.0014
Firm's age	4.00	5.62	0.0001 >	4.84	3.70	0.0001 >
Dummy IFRS	33.87	0.30	0.6292	-87.41	-0.19	0.8843
Non-independent	278.78	1.10	0.3416	48.0	0.61	0.8969
Independent BOD	-1485.52	-2.08	0.0015	941.38	0.88	0.4140

Table 5. Statistic data related to profit management rank

Profit management	Variable
State ownership group of less than 20 %	
Average	4581
Standard deviation	3007
State ownership group of at least 20 %	
Average	5313
Standard deviation	3064

Results didn't show any negative effect of IFRS implementation on profit management after considering state ownership levels. High state ownership significantly reduces the profit management. In the case of firms that are not owned by government, independent board significantly reduces the profit management while non-independent board doesn't have such effect. When a high state ownership exists, the board has no impact on profit management.

Organizational size is one of the factors preventing profit management. Profit management is reduced by increasing the size. Firms' history is one of the effective factors on profit management. Because the higher the history, the more profit management increases. The results of this study are consistent with the results of research by Yang Wang and Michael Campbell (2012). But it seems that the implementation of IFRS doesn't prevent profit management. When there is a state ownership, apparently increasing the number of independent board is a suitable way to prevent profit management. As a result, the requirement of the rules based on the matter that at least a part of the board members of directors from outside the organization appears to be effective for private firms.

5. Conclusion.

The aim of this study is investigation of corporate governance, earnings manipulation, and local accounting standards in Iran. This research used 27 Tehran listed companies' data in Pharmaceutical industry

from 2010 to 2015 to investigate how local accounting standards, state ownership, and board of directors (BOD) influence earnings manipulation.

As we mentioned in tables, significant state ownership significantly decreases earnings manipulation. For companies without significant state ownership, independent BOD significantly decreases earnings management, while non-independent BOD does not. When significant state ownership exists, BOD does not make a difference on earnings management. Size is a deterring factor of earnings management. Earnings management goes down with size. Age is an encouraging factor of earnings management. Earnings management goes up with age.

To sum up, in the current environment of Pharmaceutical industry in Tehran Stock Exchange, state-ownership to an extent discourages earnings management. This finding is consistent with Li (2010), Shen and Chen (2009) and Sueyoshi, Goto, and Omi (2010). However, IFRS implementation does not seem to deter earnings management. When state-ownership is not the case, increasing the number of independent BOD seems to be a good practice to discourage earnings management. Thus, the rules requiring at least 1/3 of the members of the BOD to be outside directors seem to be effective for private companies.

References:

Abaoub, E., & Ben Amar, A. (2009). L'effet de l'expertise, de l'inde´pendance et de l'activite´ du comite´ d'audit sur la gestion du re´sultat. Management Sciences Sociales, 7, 117–138.

Aljifri, K. (2007). Measurement and motivation of earning management: A critical perspective. Journal of Accounting Business and Management, 14, 75–95.

Aminul, I., Ruhani, A., & Zamri, A. (2011). Is modified Jones model effective in detecting earnings management? Evidence from a developing economy. International Journal of Economics and Finance, 3(2), 116–125.

Bebchuk, Lucian A., & Hamdani, Assaf (2009). The Elusive Quest for Global Governance Standards. University of Pennsylvania Law Review, 157, 1263–1317.

Daske, Holger (2006). Economic Benefits of adopting IFRS or US-GAAP-Have the expected cost of equity capital really decreased? Journal of Business Finance and Accounting, 33(3 and 4), 329–373.

Daske, Holger, Hail, Luzi, Leuz, Christian, & Verdi, Rodrigo (2008). Mandatory IFRS reporting around the world: Early Evidence on the Economic Consequences. Journal of Accounting Research, 46(5), 1085–1142.

Dechow, P., & Skinner, D. (2000). Earnings management: reconciling the views of accounting academics, practitioners, and regulators. Accounting Horizons, 14, 235–250.

Dechow, P., Sloan, R., & Sweeney, A. (1995). Detecting earnings management. The Accounting Review, 70, 193–225.

Duchin, Ran, Matsusaka, John G., & Ozbas, Oguzhan (2010). When are outside directors effective? Journal of Financial Economics, 96, 195–214.

Healy, P., & Wahlen, J. (1999). A review of earnings management literature and its implications for standard setting. Accounting Horizons, 13, 365–383.

Judge, William (2010). Corporate Governance Mechanisms throughout the world. Corporate Governance: An International Review, 18(3), 159–160.

Lambert, Richard, Leuz, Christian, & Verrecchia, Robert E. (2007). Accounting information, disclosure, and the cost of capital. Journal of Accounting Research, 45(2), 385–419.

Leuz, Christian (2003). IAS Versus U.S. GAAP: Information asymmetry-based evidence from Germany's new market. Journal of Accounting Research, 41(3), 445–472.

Leuz, Christian, Nanda, Dhananjay, & Wysocki, Peter D. (2003). Earnings management and investor protection: an international comparison. Journal of Financial Economics, 69, 505–527.

Musteen, Martina, Datta, Deepak K., & Kemmerer, Benedict (2010). Corporate reputation: Do board characteristics matter? British Journal of Management, 21, 498–510.

Saberwal, S., & Smith, S. (2008). Concentrated shareholders as substitutes for outside analysts. Corporate Governance: An International Review, 16, 562–577.

Shen, W., & Chen, Lin (2009). Firm profitability, state ownership, and top management turnover at the listed firms in China: A behavioral perspective. Corporate Governance: An International Review, 17, 443–456.

Sueyoshi, Toshiyuki, Goto, Mika, & Omi, Yusuke (2010). Corporate governance and firm performance: Evidence from Japanese manufacturing industries after the lost decade. European Journal of Operational Research, 203, 724–736.

Sercu, P., Vander Bauwhede, H., & Willekens, M. (2006). Earnings management and debt. Belgium: KU Leuven Department of Accounting.

Sun, J., Liu, G., & Lan, G. (2011). Does female directorship on independent audit committees constrain earnings management? Journal of Business Ethics, 99, 369–382.

Teoh, S. H., Welch, I., & Wong, T. J. (1998). Earnings management and the underperformance of seasoned equity offerings. Journal of Financial Economics, 50, 63–99.

Van Tendeloo, B., & Vanderstraelen, A. (2003). Earnings management and audit quality in Europe: Evidence from the private client segment market. European Accounting Review, 17(3), 447–469.

Willekens, M., Vander Bauwhede, H., & Gaeremynck, A. (2004). Voluntary audit committee formation and practices among Belgian listed companies. International Journal of Auditing, 8(3), 207–222.

Xie, B., Davidson, W., & DaDalt, P. (2003). Earnings management and corporate governance: The roles of the board and the audit committee. Journal of Corporate Finance, 9, 295–316.

Modeling non-life insurance claims

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Abstract: The aim of the paper is to analyse claims received by an Bulgarian insurance company and to model claim count per period and claim size.

Key words: insurance, claim size, claim count

1. Introduction.

In a general insurance context, the typical evolution of a claim may be divided into three parts. From the occurrence of the claim to its notification to the insurance company, the claim is said to be Incurred But Not Reported (IBNR). After notification, the claim is known by the company and there may be some time before the complete payment is made. We call this claim Reported But Not Settled (RBNS). Other acronyms are IBNFR (Incurred But Not Fully Reported), RBNFS (Reported But Not Fully Settled) etc.

Typically, several payments are done for one claim but to simplify the settings we allow only one payment.

With the introduction of Solvency 2 (in 2012) and IFRS 4 Phase 2 (in 2013), the evaluation of size and inter-arrival time of claims as well as of regulatory required solvency capital becomes more important and there are different trials to improve, adjust or extend current techniques for loss reserving.

Generally, these claims reserving techniques are based on aggregated data, conveniently summarized in a run-off triangle per accident year and per development year. The chain-ladder approach (Mack's model in Mack (1993) and Mack (1999)) is the most popular member of this category. A rich literature exists about those techniques and an overview can be found in England & Verrall (2002) or Wuthrich & Merz (2008). However, using aggregated data in combination with the chain-ladder approach gives rise to several issues which are enumerated in Antonio & Plat (2011). Many practical solutions have been proposed, but they have not been applied simultaneously.

A mathematical framework for the development of individual claims was formulated in the last decade of the 20th century by Arjas (1989), Norberg (1993), Haastrup & Arjas (1996) and Norberg (1999). More recently, a semi-parametric model (Zhao & Zhou & Wang (2009)) and a so-called micro-model (Antonio & Plat (2011)) have been introduced.

In this paper, the authors model the individual claim size and number of claims per period. The paper is organized as follows. The statistical model is introduced in Section 2. In Section 3, the data and the assumptions are presented. Results are presented in Sections 4. Finally, Section 5 concludes.

2. The Model.

The input of the model should be a database containing detailed information about the development of individual claims. More specifically, the model will use:

- the occurrence time of every claim;
- the declaration time of every claim;
- the time of payment done for every claim;
- the amount paid for every claim.

The data set is from a European insurance company and concerns a portfolio of general liability insurance policies for private individuals. More details on the data can be found in Section 3.

The Time Structure of the model includes:

- the random variables Q_i which are the reporting delay for claim i, i. e. the difference between the occurrence time of the claim and the time of its notification to the insurance company;
- the random variables T_i which are the payment delay for claim i, i. e. the difference between the notification time and the payment time.

The number of claims K_j for the occurrence period j is supposed to follow a Poisson process with occurrence measure λ_j.

The claim size Y_i for claim i, i. e. the amount paid by insurer for this claim, is supposed to have normal or skewed normal distribution.

3. The Data and the assumptions.

The Database include 9168 fully paid claims to a Bulgarian insurer originated from housing insurance between 2009 and 2015 year. So, the paper focuses on paid claims and not on incurred losses (paid losses plus case estimates) but incorporating information on incurred losses could be a topic for future research. No claim handling expenses are assumed in the data set since we had no information on expenses.

To estimate reserves, the payments should be discounted. However, attention is paid mainly on claim size and time parameters estimationin, so discounting and reserve estimation may be done as a following step of the research.

The distribution of the claims by years is presented in Table 1.

Table 1. Paid claims by years.

Year	Count of claims paid
2009	711
2010	831
2011	562
2012	1403
2013	1110
2014	2615
2015	1936
Total	9168

Occurrence of claims. The random variable K_j representing the number of claims with positive payment(s) for the occurrence period j is supposed to follow a Poisson distribution.

In the model presented in the current paper, the logarithm of the claim size, Y_i is supposed to follow a Univariate Skew Normal (USN) distribution which is introduced below.

The Univariate Skew Normal distribution has been fragmentarily introduced in Roberts & Geisser (1966), but the first formal definition and systematic study of its properties appeared in the seminal work of Azzalini (1985).

A random variable X with probability density function given by

$$f_X(x) = 2\phi(x)\Phi(\alpha x),$$

where $\phi(x) = \frac{1}{\sqrt{2\pi}} e^{-\frac{x^2}{2}}$ is the probability density function of standard normal distribution and $\Phi(x) = \int_{-\infty}^{x} \phi(t)dt$ is the cumulative distribution function of the standard normal distribution is called standard skewed normal distribution. The parameter α is a shape parameter usually called skewness. If $\alpha = 0,$ the distribution co-insides with the standard normal distribution. When $\alpha > 0,$ the distribution is right skewed. When $\alpha < 0,$ the distribution is left skewed.

In the general case, skewed normal distribution with three parameters: location $(\mu),$ scale (σ) and skewness $(\alpha).$ In this case, the probability density formula is

$$f_X(x) = 2\phi\left(\frac{x-\mu}{\sigma}\right)\Phi\left(\alpha\frac{x-\mu}{\sigma}\right).$$

Many extensions of the Univariate Skew Normal distribution to the multivariate case have been suggested by diferent authors (among others, see Azzalini (1985) and Azzalini & Dalla Valle (1996)).

4. The Results.

The parameter of the distribution of the random variable K_j (number of claims per period) observations are considered for each period where period can be either year or month. The graphical representation of the claims per year is given at Figure 1.

The histogram of claims per months is given at Figure 2.

The number of the claims per month for 2009 year is given in Table 2.

The number of the claims per month for 2010 year is given in Table 3.
The number of the claims per month for 2011 year is given in Table 4.

Figure 1. The graphical representation of the claims per year.

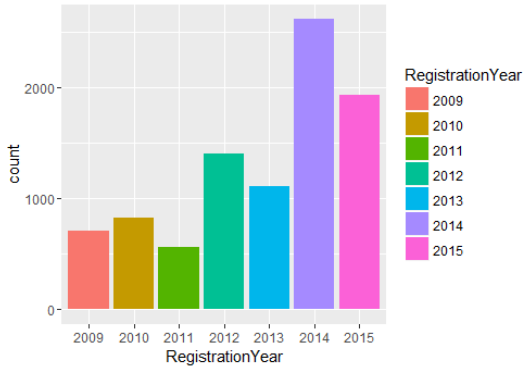


Figure 2. The histogram of the claims count per month for the period 2009-2015.

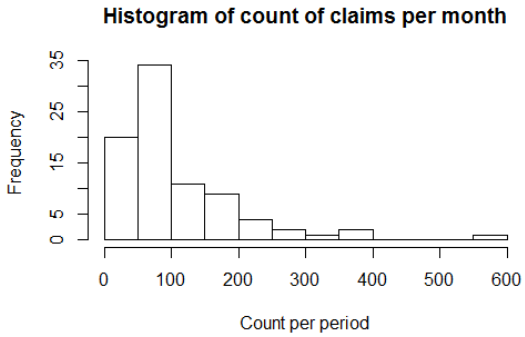


Table 2. Paid claims per month in 2009.

Month	Count of claims paid
1	65
2	62
3	62
4	48
5	33
6	81
7	109
8	70
9	48
10	43
11	38
12	52
Total	711

Table 3. Paid claims per month in 2010.

Month	Count of claims paid
1	41
2	138
3	75
4	44
5	93
6	53
7	90
8	47
9	33
10	106
11	54
12	57
Total	831

Table 4. Paid claims per month in 2011.

Month	Count of claims paid
1	24
2	26
3	42
4	41
5	36
6	48
7	79
8	64
9	31
10	98
11	36
12	37
Total	562

Table 5. Paid claims per month in 2012.

Month	Count of claims paid
1	41
2	227
3	147
4	67
5	365
6	193
7	83
8	67
9	35
10	60
11	59
12	59
Total	1403

Table 6. Paid claims per month in 2013.

Month	Count of claims paid

1	72
2	73
3	154
4	80
5	91
6	119
7	134
8	96
9	65
10	99
11	70
12	56
Total	1110

Table 7. Paid claims per month in 2014.

Month	Count of claims paid
1	86
2	95
3	97
4	144
5	314
6	382
7	571
8	254
9	203
10	202
11	114
12	153
Total	2615

Table 8. Paid claims per month in 2015.

Month	Count of claims paid
1	160
2	245
3	254
4	156
5	160
6	184
7	103
8	175
9	177
10	135
11	122
12	65
Total	1936

The number of the claims per month for 2012 year is given in Table 5.
The number of the claims per month for 2013 year is given in Table 6.
The number of the claims per month for 2014 year is given in Table 7.

The number of the claims per month for 2015 year is given in Table 8.
The density of claim count per month is presented at Figure 3.
The histogram of claim size for 2009 is presented at Figure 4.
The histogram of claim size for 2010 is presented at Figure 5.
The histogram of claim size for 2011 is presented at Figure 6.
The histogram of claim size for 2012 is presented at Figure 7.
The histogram of claim size for 2013 is presented at Figure 8.
The histogram of claim size for 2014 is presented at Figure 9.
The histogram of claim size for 2015 is presented at Figure 10.

Figure 3. The density of claim count per month

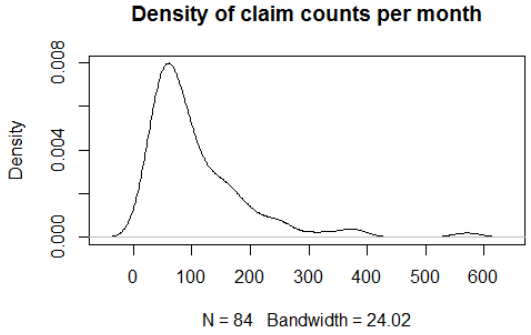


Figure 4. The histogram of claim size for 2009

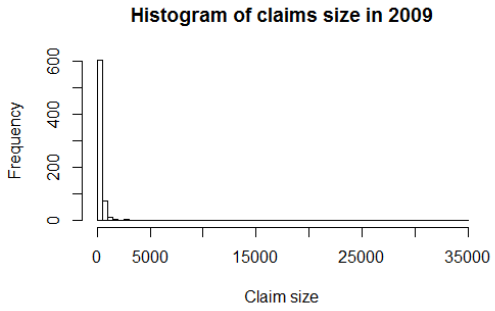


Figure 5. The histogram of claim size for 2010

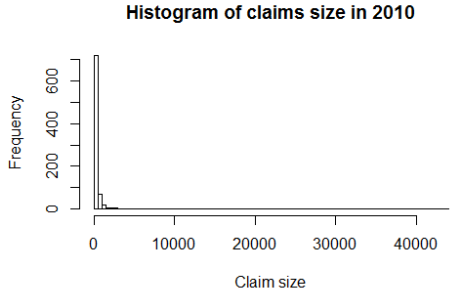


Figure 6. The histogram of claim size for 2011

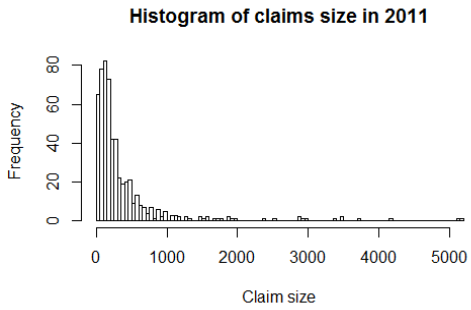


Figure 7. The histogram of claim size for 2012

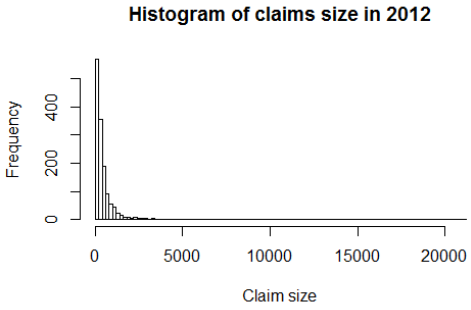


Figure 8. The histogram of claim size for 2013

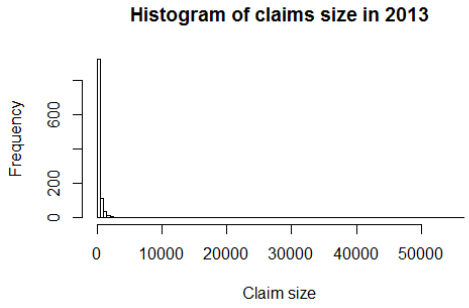


Figure 9. The histogram of claim size for 2014

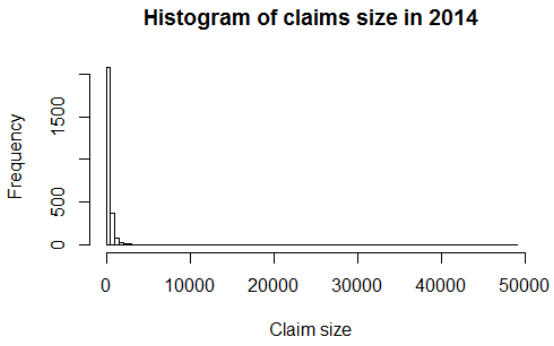
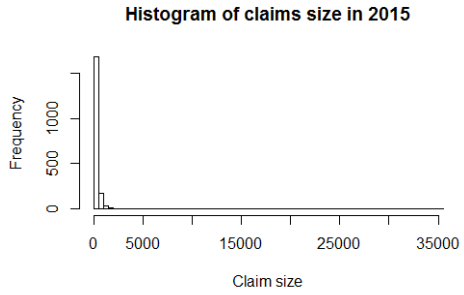
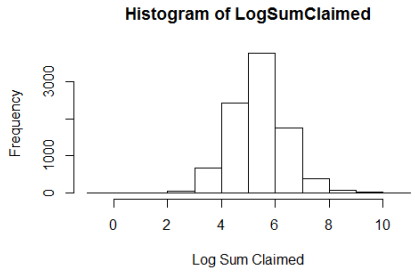


Figure 10. The histogram of claim size for 2015



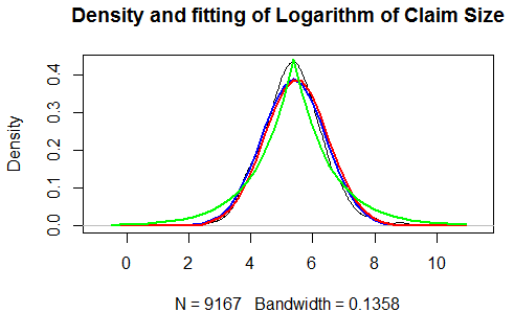
Histogram of logarithm of claim size is presented at Figure 11.

Figure 11. Histogram of logarithm of claim size



The density of the logarithm of the claim size and its fitting with univariate skewed normal distribution are presented at Figure 12.

Fig 12. Density of the logarithm of the claim size and its fitting with univariate skewed normal distribution.



It shows that non-skewed normal distribution gives a good fitting.

5. Conclusions

The study in this paper shows that logarithm of the claim size of house insuranse policies can be fitted by normal distribution without skewness, the number of claims per year or per month can be modeled by Poisson distribution and inter-arrival time between two consecutive claims can be modeled by exponential distribution.

References:

Antonio, K. and R. Plat, R. (2011) Micro-level stochastic loss reserving. Working paper.

Arjas, E. (1989). The claims reserving problem in non-life insurance: some structural ideas ASTIN Bulletin, vol. 19, No. 2, 139-152.

Azzalini, A. (1985). A class of distribution which includes the normal ones. Scandinavian Journal of Statistics, vol. 12, 171-178.

Azzalini, A. and Dalla Valle, A. (1996). The multivariate skew-normal distribution. Biometrika, vol. 83, 715-726.

England, P. D. and Verrall, R. J. (2002). Stochastic claims reserving in general insurance. British Actuarial Journal, vol. 8, 443-544.

Haastrup, S. and Arjas, E. (1996). Claims reserving in continuous time: a nonparametric Bayesian approach. ASTIN Bulletin, vol. 26, No. 2, 139-164.

Mack, T. (1993). Distribution-free calculation of the standard error of chain ladder reserve estimates. ASTIN Bulletin, vol. 23, 213-225.

Mack, T. (1999). The standard error of chain-ladder reserve estimates: recursive calculation and inclusion of a tail-factor. ASTIN Bulletin, vol. 29, 361-366.

Norberg, R. (1993). Prediction of outstanding liabilities in non-life insurance. ASTIN Bulletin, vol. 23, No. 1, 95-115.

Norberg, R. (1999). Prediction of outstanding liabilities II. Model variations and extensions. ASTIN Bulletin, vol. 29, No. 1, 5-25.

Roberts, C. and Geisser, S. (1966). A necessary and su_cient condition for the square of a random variable to be gamma. Biometrika, vol. 53, No. 1/2, 275-278.

Wuthrich, M. V. and Merz, M. (2008). Stochastic claims reserving methods in insurance. Wiley Finance.

Zhao, X. B. and Zhou, X. and Wang, J. L. (2009). Semiparametric model for prediction of individual claim loss reserving. Insurance: Mathematics and Economics, vol. 45, No. 1, 1-8