# An Investigation of the Effect of Audit Quality on Accrual Reliability of Listed Companies on Tehran Stock Exchange

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#### Abstract

This study investigates the effect of audit quality on accrual reliability of listed companies on Tehran Stock Exchange. In order to determine audit quality has been used of two criteria of auditor level and auditor commission period and due to calculate accrual reliability in following of Richardson et al., (2005) model and of stability of accrual. The study covers 74 listed companies on Tehran Stock Exchange during 2005-2009 periods. Also, multiple linear regression models and data investigation method have been used sectional and annual investigation to test research hypotheses. Research findings indicate that audited firms with higher audit quality as compared by audited firms with lower quality have more accrual stability coefficient and finally, they have more accrual reliability.

Keywords: audit quality, auditor size, auditor tenure, and accrual reliability

JEL classification: G10, G12

#### Introduction

The demand for auditing arises from the auditor's monitoring role in the principal-agent relationship (Eilifsen and Messier, 2000; Salehi and Nanjegowda, 2006; Salehi, 2007). According to agency theory, an agency relationship is a contract under which one or more principals engage an agent to perform some service on the principals' behalf and delegate some decision-making authority to the agent (Jenson and Meckling, 1976). When there are conflicts between the interests of the principal and the agent, the agent may not act in the best of interests of the principal. In order to avoid or minimize such divergences from his or her interests, the principal can establish monitoring systems (Barzegar and Salehi, 2008). The financial statement audit is a monitoring mechanism that helps reduce information asymmetry and protect the interests of the principals, specifically, stockholders and potential stockholders, by providing reasonable assurance that management's financial statements are free from material misstatements (Watts and Zimmerman, 1986; Salehi, 2008).

The performance quality of this monitoring function may vary. Audit quality describes how well an audit detects and reports material misstatements of financial statements, reduces information asymmetry between management and stockholders and therefore helps protect the interests of stockholders (Salehi and Azary, 2008). High audit quality should be associated with high information quality of financial statements because financial statements audited by high quality auditors should be less likely to contain material misstatements (Salehi and Abedini, 2008). Reaching to this desired purpose is completely depended on audit institution properties and these properties can be related to audit quality in positive or negative.

According to Titman and Truman (1986), more qualitative audit improves precision of purposed information and allows to investors to obtain more accurate estimation of company value (Chambers & Payne, 2008 b). With respect to various purposed definitions of audit quality, audit quality frame can be presented such that: audit quality includes beauty fame of auditor and professional care of auditor, so subsequently beauty fame of auditor, authenticity of financial reports will be increased and as a result of monitoring and professional care of audit, the quality of financial reports will be increased (Salehi, Mansoury, and Pirayesh, 2008). The most important index of measuring auditor beauty fame is auditor size which these two have direct relation to each other as larger the auditor size, audit quality will be higher. One of the index of auditor professional care measurement and his supervision ability is auditor tenure.

Longer the auditor commission period, his knowledge of client and his specialty in particular industry will be increased and cause to increasing quality of audit.

In other hand, in realistic world, pecuniary receipt and payment occur in periods which are different from occurrence time of transactions and their father events and the same affair causes that use of accrual (same assumption of warranted accounting) for measuring performance results of commercial unit become well than pure measure of cash receipts.

However, problem is that accruals unlike crash items are accompanied with a degree of ambiguity which is resulting in their reliability reduction. Regarding to problem of benefits' confliction between ownership and management, purposed accruals can be manipulated by managers in financial reports and their reliability may be come to question. In respect to purposed problems above, the question which is made is that how can support investors against financial reports accrual manipulation.

One of the effective methods to control accrual manipulation by management and viewpoint applying for selecting accounting procedures is accounting process.

Now regarding to auditors control role and attest and existence of audit different size in one hand, existence of objectives and different problems in provision and presentation of information and financial reports by management in other hand, a problem which this study attempts to response it includes that what differences are there between accrual reliability of listed companies with higher audit quality compared with audited firms with lower audit quality?

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### Audit Quality: definition

One common definition of audit quality is provided by De Angelo (1981). She defines audit quality as "the market-assessed joint probability that a given auditor will both (a) discover a breach in the client's accounting system, and (b) report the breach." The probability that the auditor will report the detected misstatements is defined by De Angelo (1981) as auditor independence. Therefore, according to De Anglo's (1981) definition, audit quality is an increasing function of an auditor's ability to detect accounting misstatements and auditor independence as assessed by the market. De Angelo's (1981) definition refers to "market-assessed" or perceived audit quality. When applying this definition to actual audit quality, there is an underlying assumption that market perceived audit quality reflects actual audit quality. However, many studies (e.g., Krishnan, 2002) adopt this definition without addressing the distinction between these two different concepts.

Palmrose (1988) defines audit quality in terms of level of assurance. Since the purpose of an audit is to provide assurance on financial statements, audit quality is the probability that financial statements contain no material misstatements. In fact, this definition uses the results of the audit, that is, reliability of audited financial statements to reflect audit quality. This definition leads to the following question: "How do financial statement users assess the level of assurance and reliability of audited financial statements?" This is a post hoc audit quality definition because the assurance level cannot be assessed until the audit has been conducted. As a result, Palmrose's definition refers to actual audit quality.

Other researchers also have suggested definitions for audit quality. For example, Titman and Trueman (1986) define auditor quality in terms of the accuracy of information the auditor supplies to investors. Their definition is similar to the one provided by Palmrose (1988). Davidson and Neu (1993) provide an audit quality definition that is based on the auditor's ability to detect and eliminate material misstatements and manipulations in reported net income. Lam and Chang (1994) suggest that audit quality should be defined on an engagement-by-engagement rather than on a firm basis.

However, whether this size proxy captures both perceived audit quality and actual audit quality is unclear. Perceived audit quality is based on perceptions of financial statement users, while actual audit quality refers to the auditor's ability to detect and report accounting misstatements. Financial statement users lack access to the evidence gathered during the audit process and to the information audited, and thus cannot assess actual audit quality directly. Further, prior research has not clearly distinguished these concepts. DeAngelo (1981) defines audit quality as the market-assessed joint probability that a given auditor will both detect material misstatements. This is a definition of perceived audit quality since DeAngelo (1981) emphasizes the role of the market in assessing audit quality. The willingness to report discovered material misstatements is defined by DeAngelo (1981) as auditor independence. Therefore, according to DeAngelo's (1981)

definition, audit quality is a function of the auditor's ability to detect material misstatements (auditor competence) and auditor independence.

Since actual audit quality is unobservable before and when an audit is performed, a valid proxy is needed when investigating the relationships between actual audit quality and other factors. DeAngelo (1981) analytically demonstrates that auditor size has a positive relationship with audit quality, since a large audit firm has "more to lose" by failing to report a discovered material misstatement in a client's records. Following DeAngelo's study, many other studies empirically examine the relationship between auditor size and audit quality (e.g., Krishnan and Schauer, 2000; and Palmrose, 1988). Teoh and Wong (1993) test this relationship using earnings response coefficients to measure audit quality. However, the proxy used in Teoh and Wong's (1993) study may capture only perceived audit quality, an auditor's actual ability to detect and report accounting misstatements. Because actual audit quality is unobservable when audit service is provided, and some period of time must elapse before audit failures become apparent, it might be expedient for researchers to use a perceived audit quality measure. However, if perceived audit quality does not reflect actual audit quality, using financial statement users' perceived audit quality to test the relationship among audit quality and other variables is problematic. Financial statement users may not be able to assess actual audit quality accurately because they do not have access to the audit process. This study provides some insights in evaluating actual audit quality and the validity of the size proxy for audit quality in certain circumstances.

To measure audit quality, different indices such as auditor size, auditor tenure, and specialty in auditor industry, auditor authenticity risk and client legal claims, auditor independency and so on were presented and used to researchers. Regarding to importance of these indices in one hand, and also existence of some limitations to select suitable indices in the other hand (For instance, non-transparency of information about audit fees), in this research has employed two indices of auditor level and auditor tenure to measure audit quality (Salehi and Rostami, 2009).

The most important index of auditor beauty fame is size of audit institution. Larger audit institutions and more valid institutions compared with smaller and less valid institutions have more beauty fame and they ignore significant mistakes with less possibility.

An important issue regarding the definition of audit quality is whether to distinguish auditor quality from audit quality. Many studies do not make this distinction and even use the concepts interchangeably (e.g., Clarkson, 2000; Salehi, Mansouri, and Azary, 2009; Salehi, 2009 a; Salehi, 2009 b). Under certain conditions, auditor quality and audit quality might be used interchangeably. For instance, according to assumptions underlying DeAngelo's (1981) audit quality definition, when an auditor provides only one level of quality of audit service, auditor quality and audit quality can be used interchangeably. However, as stated earlier, this assumption may be problematic. Anecdotal evidence suggests that all of the largest audit firms have been associated with audit failures. Therefore,

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auditor quality should be defined as the overall audit service quality of a certain audit firm. Meanwhile, as Lam and Chang (1994) have pointed out, audit quality should be defined on a service-by service basis because an audit firm may not conduct all its audits with the same level of quality. In other words, auditor quality is a firm-based concept and audit quality is a service-by-service based concept. Therefore, it is important to distinguish these two concepts based on the purposes of different studies (Salehi and Moradi, 2010; Salehi, 2010). The current study focuses on the concept of audit quality rather than auditor quality. Perceived audit quality and actual audit quality appear to be different concepts.

Although it is more important to investigate actual audit quality issues because the goal is to better understand actual audit quality, it is usually difficult to measure it directly. Actual audit quality is unobservable and can be evaluated only after audits have been conducted. For example, Palmrose (1988) measures actual audit quality using auditors' litigation activities. Deis and Giroux (1992) analyze quality control reviews to get a measure of actual audit quality in the public sector. Krishnan and Schauer's (2000) measure of actual audit quality is based on how audited financial statements comply with eight specific GAAP reporting requirements. Deis and Giroux (1992) and Krishnan and Sauer (2000) both measure actual audit quality in the not-for-profit sector. These two studies benefit from the availability of quality measures because of their context, but might suffer from generalization problems.

### **Review of related literature**

Many studies test perceived audit quality due to the difficulty of measuring actual quality directly. DeAngelo (1981) analytically demonstrates that the larger the auditor, the less incentive the auditor has to behave opportunistically and the higher the perceived quality of the audit. Teoh and Wong (1993) test whether perceived audit quality is different between Big 8 and non-Big 8 accounting firms.

Moreland (1995) investigates how SEC enforcement actions against Big 8/6 accounting firms affect their market perceived audit quality. Hogan (1997) documents that the perception of higher audit quality is associated with less underpricing in the IPO market. Balsam, Krishnan, and Young (2000) examine whether industry specialization increases market perceived audit quality.

Prior audit quality research has adopted a variety of measures for audit quality Pany et al., (1980) discussed the effects of gift discounts and client size on the perceived auditor independence. The objective of this study was to report the results of an empirical investigation of factors, which influenced the actual and/or perceived auditor independence. In the study, three independent variables were manipulated: (i) the purchase discount or gift, (ii) the size of purchase discount or gift, and (iii) the client size. Their report suggested that gifts and discount of even a minimal amount significantly affected the users' perceptions of auditor independence, but the effects of the client size were not significant. This study also highlighted that less confidence in the auditor independence was expressed for the audits of large clients. Concerning the gifts, the larger the gift size, the less

independent, as the respondents believed for each of the levels surveyed including 'No gift, \$3, \$40, and \$125, the auditor was.

Lacy (1990) examined the effects of investment by the CPA partners and client principals on the perception of auditor independence. Specifically examined were the effects of a joint investment by a CPA partner and a client's Chief Financial Officer (CFO) in a limited partnership unrelated to the audit client, and a direct investment by a CPA in a client company. The results showed an inconsistency between the respondents' perception of risk of losing the independence and the AICPA independence rules. The respondents were more concerned about the certain joint investments, which were acceptable under the AICPA rules, than they were about small percentage, financially immaterial direct investments which were unacceptable under the AICPA rules. The CPAs perceived that the risk of losing the independence when there was a direct ownership of stock by a CPA was greater than that of any other group who perceived the risk to be.

Firth (1980), in his survey, distributed 750 questionnaires and received 369 completed questionnaires, the response rate being 52.00 per cent of the total. He examined 29 specific auditor-client relationships drawn from the ethical guidelines being proposed at the time. The participants were a random sample of chartered accountants (large-size firm of accountants working in other professional practices and those employed in commerce and industry), all major stockbrokers and investment managers (unit trusts, insurance companies, and merchant banks) in London and the loan officers of major banks and financial institutions. The provision of the NAS was ranked low as a threat factor for the three chartered accountant groups, but moderate for the other two user groups. The results showed that the lack of auditor independence was perceived to impair investment and lending decisions and this supported the 'traditional' view of the importance of auditor independence. It was also found that there were significant differences between the various groups of respondents regarding what constituted the independence and its importance.

Firth (1981) discussed the eight specific auditor-client relationships contained in the UK ethical guidelines of the time. He asked the bank lenders to make a loan decision based on the financial statements prepared in the context of one of these relationship situations. Two among the eight situations concerned the joint NAS provision: accounting services and consulting services. It was found that significantly lower loan responses were given than if there had been no joint service provision in both situations. Lindsay (1990) analyzed the impact of three contextual factors (audit firm size, competition, and NAS provision) on bankers' perceptions of auditors and their ability to resist the management pressure. A repeated measure design was used. The NAS provision, while highly significant, explained only 1.00 per cent of the variance in bankers' responses. This cast some doubt upon the practical significance of the joint provision on auditor independence perception.

Agacer and Doupnik (1991) made the first transnational study of auditor independence perceptions taking the US, Philippines and West Germany. Four

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variables were considered (the NAS provision and the members of the accounting profession). A full factorial, repeated measure design was used. It was found that significant differences existed between the three countries, with West German respondents indicating the greatest concern regarding the independence impairment and Philippine respondents indicating the least concern. These findings were explained in terms of cultural differences.

A survey was conducted by Abu Bakar et al., (2005) among 116 loan officers in Malaysia. The results showed that 75.60 per cent of the respondents indicated that the size of the audit firm did affect the auditor independence and 74.40 per cent of them mentioned that the level of competition in the audit service market influenced the auditor independence. Furthermore, the results indicated that the provision of MAS had a negative effect on the auditor independence in Malaysia.

Contrary to the concerns that fee dependency impairs auditor independence, Reynolds and Francis (2002) found evidence consistent with the auditors increasing their independence in response to greater financial dependence. Specifically, they found that relatively larger audit clients- those on whom the auditor was expected to have the greatest financial dependence- tended to report significantly lower discretionary accruals when compared with smaller clients. The authors maintained that this was because the reputation and litigation damages from the audit failure were likely to be greater for the larger clients, providing incentives to the auditors to be more conservative. In addition, they also found no evidence that auditors were more lenient in issuing going concern reports to larger clients. Thus Reynolds and Francis found no evidence indicating that financial dependency impaired the auditor independence.

This study also showed that market-based institutional incentives such as reputation loss and litigation costs promoted auditor independence and outweighed the economic dependency created by higher fees. They felt that the essence of auditing was verification. Hence a rich model for auditing should contain something to verify. In the absence of verification, management received incentives to misrepresent the financial condition of the firm. These incentives arose because the financial reports were used to evaluate management's performance, which was costly to observe directly. This study suggested that modeling auditing in a decision setting involved moral hazards, with agency theory providing a natural basis for the model. Agency theory models the contractual relationship between a principal and an agent, which in this case consists of the owner-principal and the manager-agent relationship. The authors assumed that the owner hires an auditor to produce information used in contracting with the manager. Thus the auditor was both an agent and a model as such.

Sajadi and Ebrahimimand (2005) elicited 98 Iranian Certified Public Accountants' viewpoints on the factors increasing auditors' independence. The objective of the study was to identify the factors which increased/would increase the auditors' independence. The results showed that the factors such as audit committee, client size, the size and experience of audit firms increased the auditors' independence, and other factors, namely, competition among the auditing firms decreased the auditors' independence.

A survey was carried out by Sajadi and Naseh (2003) in Iran regarding the effectiveness of certified auditing of financial statements among 51 managers. The conclusion was that independent auditors would be effective in the detection and reduction of illicit acts and offences as well as the exercise of precise appraisal of bases used in accounting estimates.

DeAngelo's (1981) argument that size of audit firms is positively associated with audit quality, many studies uses size (Big 8/6/5 vs. non-Big 8/6/5) as the audit quality proxy (Krishnan, 2002). Many audit quality studies indicate that, when accounting firm size is used as the indicator of audit quality, higher audit quality is associated with less information asymmetry and higher information quality. For example, using discretionary accruals as the measure for earnings management, Becker et al. (1998) find that audit quality is negatively related to income-increasing discretionary accruals, which indicates that high audit quality is associated with low information asymmetry. Teoh and Wong (1993) find that Big 8 clients are associated with higher earnings response coefficients (ERCs). The ERC is the coefficient on earnings resulting from regressing stock returns on reported earnings. It measures the extent to which the market responds to earnings. Results of performed studies by Carcello & Nagy (2004) indicate that being high auditor tenure, leads to increasing of auditor knowledge and specialty in industry of respective client.

In the other hand, more qualitative audit institutions can influence on management viewpoint applying to select account procedure and its incentives to manipulate on account accrual and also to perform profit management. Therefore, whatever amount of accounts such as receipt accounts, payment accounts and stocks (accounts corresponding to arbitrary accrual) is more; request for better monitoring and more qualitative audit will be increase. And generally an independent and skillful institution is able to identify incorrect presentation of account items and along with their modification and reporting reliable financial information be effective on its client.

To obtain this desired purpose is completely dependent on properties and condition of audit institutions' performance and these properties and condition of audit institutions' performance can be correlated to audit quality positively or negatively (Chambers & Payne, 2008 b).

Sloan (1996) in his studies concluded if we calculate part of current profits of accrual upon one year later profits, it will have less constancy than that of cash incomes. He knows these resulting of difference in reliability of accrual and reported cash incomes; and believes that reported accrual is result of estimates and many adjustments which might be incorrect. So, accrual compared to cash incomes may primarily contain of error in measurement. Sloan attributes accrual to accrual with low reliability which this subject has supported by many further studies.

For instance, Xie (2001) divided total of accruals using Jones' model (1991) into two normal sector (non-arbitrary) and abnormal (arbitrary); and showed that abnormal accrual can contain deliberate and non-deliberate sophistications.

Also, he found that abnormal accrual mainly has lower stability. Pincus, Rajgopal and Venkatachalam (2007) developed Xie's statements (2001) in other

countries so that obtained results, in general show stability of lower accrual for abnormal accrual (Chambers & Payne, 2008 a).

Richardson et al., (2005) represented relation between accrual reliability and accrual stability formally by providing an analytical model of present errors. Such as how measurement error in accrual made to diagonal toward down in regression coefficient of cash incomes and accrual stability. This diagonal negatively is related to accrual reliability.

High accrual reliability leads to reduction of diagonal toward zero and subsequently, leads to accrual being high. In other words, low accrual reliability is equal to law accrual stability.

Dechow & Dichew (2002) provided other evidences and documents from relation accrual reliability and stability. They obtained a positive strong correlation between their measurements from accrual quality.

Chambers & Payne (2008 b) in their study about audit quality and accrual capability concluded that being high audit quality and also using SOX Act result in increasing of accrual reliability. In other word, audit quality and using SOX Act have positive and significant relation with accrual reliability in financial lists of investigated firms.

Chambers and Payne (2008 a) in another study as term of audit quality and abnormal accrual concluded that the rate of operational efficiency related to abnormal accrual has negative relation with audit quality. In other words, low audit quality results in being higher abnormal accrual corresponding to operational efficiency.

Ferdinand et al., (2009) in an study by title of effect of auditor tenure and specialty in auditor industry on benefit quality concluded that when specialty in auditor industry is low, then relation between longer audit tenure and higher quality of profit will be strong and vice versa.

Lai (2009) in study by subject of whether is audit quality primarily significant for firms with investment opportunity? He concluded that firms with more investment opportunities rather than firms with less investment opportunity, by high probability use auditors of five large firms' member and have arbitrary.

Francis and Micheal (2005) in their study concluded that managers of companies having more accrual in order to ensure nonparticipation in opportunities of profit management intend to change employ qualified auditors and more likely auditors with larger size will be laid away from clients who intend to change accrual.

### **Research methodology**

The most important index of fame beauty of auditor is audit institution size. Larger and more valid audit institutions compared with smaller and less valid audit institutions guaranteed more fame beauty and less likely ignore significant mistakes or adventure of legal claim. In other hand, performing audit operations of client by an institution over prolonged years, because of audit team acquaintance with audit operations of client can be done more effectively. The role of auditor among other cases is safety evidence about reliability of financial reports. Finally, an independent and skillful audit institution (with high audit quality) is able to identify incorrect representation of accounting and be effective on its client to correct those incorrect representations (Chambers & Payne, 2008 b).

### **Research hypotheses**

According to the above mentioned literature the following hypotheses were postulated in the study:

H1: Accrual reliability of audited firms with larger auditor size compared to audited firms with smaller size is more.

H2: Accrual reliability of audited firms with longer auditor tenure compared to audited firms with shorter tenure is more.

Statistical society of the study includes all listed companies on Tehran Stock Exchange (TSE). Due to expansion of statistical society value and presence of inconsistency among society members, following conditions are located to select statistical sample hence, statistical sample has selected in systematical elimination method. Mentioned conditions include:

- 1 Financial year of firms leads to end of fiscal year.
- 2 Firms which have been listed on TSE until end to 2004.
- 3- Firms which haven't had activity stop during 2005-2009 and haven't changed their financial period.
- 4 Transaction of firms' stock has been performed constantly on TSE and transactional hasn't been occurred more than one month for mentioned stock.
- 5 Required information of the study is accessible.
- 6 Investment and brokers' firms are laid away.

Regarding to mentioned situations, statistical sample includes 74 firms which are listed on TSE. Since every firm during 2005-2009 has seven set of financial information derivational in financial lists, so number of total observations of the firm is 518 cases.

In the other hand, because to calculate some variants, calculation of their changes required and also in Richardson model's et al (2005) one- year- ahead earnings (at time t+1) are used, thus by selecting 2004 and 2009 as initial and end year, number of each firm observations has reached to 5 cases and total number of observations has reached to 370 cases.

To collect information about explaining literature of study subject, library method and documental studies and to obtain required information for processing research assumptions has utilized from present information in software firm and inspecting financial reports of listed companies on TSE by referring to formal site of Iran stock exchange.

In this phase after collecting data, in order to conclusion and required calculations Excel software has been used and obtained results from it, has inserted in SPSS, and have been finally analyzed to reach study objectives. The method of data investigation is sectional and year-by-year investigation.

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#### **Research method and related variables**

Since this study attempts to find significant relation between two information groups in a society namely, audit quality and accrual reliability, so this study is situated among correlation studies.

In other hand, present study, is as kind of post-event, i.e. is accomplished based on analysis of past information (financial lists of firms).

In present study, first we test correlation between study variables and in the case of correlation existence between study variables, we will proceed to estimate regression model, so that audit quality be regarded as independent variable and accrual reliability be considered as dependent-variable.

#### Statistical models and test methods

In this study accrual stability has used to calculate accrual reliability by following Richardson et al., (2005) model which is as follow:

Richardson and et al., (2005) model:

1)  $E_{t+1}^* = y E_t^* + \varepsilon_{t+1}$ 2)  $E_{t+1}^* = y C_t + y A_t^* + \varepsilon_{t+1}$ 3)  $A = A^* + e$ 4)  $E_{t+1} = y_c C_t + Y_A A_t + \omega_{t+1}, \omega_{t+1} = \varepsilon_{t+1} + e_{t+1} - ye_t$ 

Where:

- $E_{t+1}$ , is absolute profit before unexpected items that is identified in later period (time t+1).
- $E_t^*$  is absolute profit before unexpected items at current period and y, is a coefficient which is ranging between 0 and 1 (0<y<1).
- $\epsilon_{t+1}$ , is measurement error of absolute profit which is determined in next period (time t+1).
- $C_t$  is cash incomes in current period (time t) and  $A_t$ , is accrual in current period (time t).  $A^*$  is real accrual which is specified in next period. i.e., is accrual measurement error and  $\omega_{t+1}$  is sum of period measurement error.

To test each hypotheses of the study, two linear regression model has used as follow, so that once this regression model has estimated and used without interference of control variables (regression model No.1) once also this regression model has estimated and used with interference of control variables (regression model No.2).

1) Earning<sub>St+1=</sub>  $\alpha_0 + \alpha_1 CF_t + \alpha_2 (HQ_{t-1}*TACC_t) + \alpha_3 (LQ_{t-1}*TACC_t) + \varepsilon_{t+1}$ 

2) Earning<sub>St+1=</sub> $\alpha$ 0+ $\alpha_1$ CF<sub>t</sub>+ $\alpha_2$ (HQ<sub>t-1</sub>\*TACC<sub>t</sub>)<sub>t</sub>+ $\alpha_3$ (LQ<sub>t-1</sub>\*TACC<sub>t</sub>)+ $\sum_{k=1}^{3} \alpha_{k+2}$ (Control<sub>k</sub>\*TACC<sub>t</sub>)  $\varepsilon_{t+1}$ 

 $Earnings_{t+1}$ : is equal to net profit before extraordinary items, which is standardized by dividing into average of total assets.

Total accrual (TACC):

Total accrual is calculated by following relation: TACC=  $\Delta$  TA-  $\Delta$ CF- $\Delta$  TL- $\Delta$ PS

In above relation, TACC is total of accrual, TA is total assets, CF is ash fee, TL is total of liabilities and PS is preferential stock which all cases be standardized by dividing into average of total assets.

(Cash Flows): cash flows are equal to profit minus total of accrual which is calculated by following relation:

 $CF_{it} = Earnings_{it} - TACC_{it}$ 

Control variables: (Control<sub>k</sub>): In this study based on Dechew & Dichev (2002) studies and findings, some particular properties of each firm such as operational cycle, absolute value of the change in sales, absolute value of the change in cash flows of commercial unit which can be effective on accrual stability and finally on accrual reliability can be used as operational variables.

Firms with longer operational cycle are indicating the most insecurity and the most use of estimates and approximates in accrual.

Firms which have most instability in their sale, the probability of having less stability in cash fee flows in them is more.

Upon the same reasons, firms which have most instability in cash fee flows; the possibility of having less stability in them is more.

It should be noted that calculation treatment of operational cycle, as one of the study control variables is as follow:

 $360/(St/AAR_t) + 360/[(CGS_t)/(AI_t)]$ 

Which in above relation, S is representation of firm sale, AAR is middle of received accounts, CGS is extinct cost of sold goods and AI is a sophisticated variable and AI is average of goods stock.

In regression models mentioned above,  $\alpha_1$  coefficient measures stability of cash flows. HQ is an artificial variable that if audit quality is high, will be equal to 0 and if audit quality is low (when auditor firms is not of audit organization or if auditor tenure is less than five years) will be equal to 1.

 $\alpha_2$  is related to (HQ\* TACC), measures stability of accrual for samples by higher quality. And  $\alpha_3$  coefficient is related (LQ\* TACC) which measures stability of accrual for samples with lower audit quality.

In this study, the hypotheses are tested by considering difference (comparison) between  $\alpha_2$  and  $\alpha_3$ . So that if in estimated regressions, value of  $\alpha_2$  coefficient is larger than  $\alpha_3$  coefficient value, the assumption of this study is accepted, otherwise will be denied which this test has performed for both assumptions of this study (Chambers and Payne, 2008 a).

### Audit quality:

To measure audit quality following variables are used:

**Audit Size**: Such that in regression models No 1 & 2 if auditing institution is audit organization, artificial variable of 1 is used, otherwise number 0 is used.

**Auditor Tenure:** So that in regression methods no 1 & 2, if auditor tenure is 5 years or more, artificial variable of 1 is used, otherwise number 0 is used.

### **Study findings:**

Findings from descriptive statistics and correlation between variables.

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Tables 1 & 2, descriptive statistics and correlation between variables are shown. With reference to two tables one can realize that average of profit is more than average of cash flows and total of accrual, so this subject is indicating that most of the short term accrual is in positive form.

### Findings of descriptive statistics

						Table 1
Operational cycle	Absolute value of the change in cash flows	Absolute Value of the change in sales	Total of accrual	Cash flows	Profit	Explanatior
279.85	0.0327	0.229	0.142	-0.099	0.226	Average
165.093	0.0499	0.264	0.286	0.331	0.309	Standard Deviation
31.00	0.00016	0.0008	-0.719	-1.255	-0.339	First hundred
154.00	0.0046	0.0501	019	-213	0.073	First quarter
252.00	0.0206	0.1654	0.1097	-0.014	0.178	Mean

#### **Pierson Correlation**

Table 2

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Absolute Value of the change in cash flows	Absolute Value of the change in sales	Total of accrual	Cash Flows	Profit	Explanation
-0.187	-0.353**	0.118	-0.105	-0.255*	Operational cycle
	0.269*	0.334**	-0.436**	-0.234*	Absolute Value of the change in cash flows
		0.122	0.010	-0.038	Absolute Value of the change in sales
			-0.330**	0.241*	Total of accrual
				0.338**	Cash flows

Significant in safety level 95%\* Significant in safety level 99%\*\*

In regarding to Richardson model is observed that profit (One-year-ahead Earnings) is a dependent variable and cash flows are purposed along with total accrual as independent variable of this model; and because there is a significant correlation between cash flows variables and total of accrual with various profit (one-year-ahead Earnings), so dependent variables can some how predict independent variable. Also significant correlation between these two independent and dependent variables indicates that whatever cash flows and accrual is upward, firm profit also has a positive procedure. But significant negative correlation between accrual and cash flows indicates that whatever the firm have high cash flow, their accrual is also low and level of management point view applying for

manipulate on accrual be reduced and consequently, responsibility o accrual would be high.

Tables 3 and 4 show findings from test of first hypothesis; First hypothesis of this study has tested using of multi variable linear regression and based on Richardson et al., model's (2005) by investigation of difference (comparison) between  $^{a2}$  and  $^{a3}$ .

Regarding to results from significant estimated regressions in Table 3) and also results of performed tests about significant estimated regression in Table 4) due to value of  $\alpha_2^{-}$  mainly is more than  $\alpha_3^{-}$ , as a result fist assumption of this study is confirmed.

Also, accrual for samples with higher audit quality (larger size of auditor) compared with lower audit quality (smaller size of auditor) is primarily more.

### Findings from testing of first hypothesis (without applying control variables):

a) Significant test of regression coefficients:

Table 3

	$Earning_{St+1=} \alpha_0 + \alpha_1 CF_t + \alpha_2 (HQ_{t-1} \times TACC_t)_t + \alpha_3 (LQ_{t-1} \times TACC_t) + \varepsilon_{t+1}$												
Explanation	Year	(თ^	^al	^a2	^03	R	Adjusted R	F	F <sub>0.95(3,49)</sub>	Result			
Sectional	2005	0.074	0.710	0.408	0.147	0.562	0.274	7.558	2.8	Accepted			
Sectional	2006	0.121	0.284	0.115	0.055	0.298	0.033	1.591	2.8	Rejected			
Sectional	2007	0.089	0.887	0.256	0.021	0.552	0.262	7.169	2.8	Accepted			
Sectional	2008	0.133	0.118	0.195	0.174	0.266	0.014	1.243	2.8	Rejected			
Sectional	2009	0.178	0.626	0.423	0.027	0.390	0.111	2.950	2.8	Accepted			

### Findings from testing of first hypothesis (without applying control variables):

b) Result of study first hypothesis

Table 4

Year	Test Explanation	T-amoun	D.F	(p-Value)2	(P-Value)	Sig.	Result
	$\mathbf{H}_0: \mathbf{\alpha}_2 \geq \mathbf{\alpha}_3$	1.261	98	0.208	0.104	0.05	H <sub>0</sub> Accepted
2005	$\mathbf{H}_0: \ \mathbf{\alpha}_1 \geq \mathbf{\alpha}_2$	0.825	98	0.411	0.201	0.05	H <sub>0</sub> Accepted
	$\mathbf{H}_0: \boldsymbol{\alpha}_1 \geq \boldsymbol{\alpha}_3$	.2.025	98	0.046	0.203	0.01	H <sub>0</sub> Accepted
	$\mathbf{H}_0: \mathbf{\alpha}_2 \geq \mathbf{\alpha}_3$	0.699	98	0.486	0.243	0.05	H <sub>0</sub> Accepted
2007	$\mathbf{H}_0: \mathbf{\alpha}_1 \geq \mathbf{\alpha}_2$	1.334	98	0.0185	0.09	0.05	H <sub>0</sub> Accepted
	$\mathbf{H}_0:: \boldsymbol{\alpha}_1 \geq \boldsymbol{\alpha}_3$	2.006	98	0.048	0.024	0.01	H <sub>0</sub> Accepted
	$\mathbf{H}_0$ : $\alpha_2 > \alpha_3$	0.899	98	0.371	0.185	0.05	H <sub>0</sub> Accepted
2009	$\mathbf{H}_0: \mathbf{\alpha}_1 \geq \mathbf{\alpha}_2$	0.269	98	0.788	0.394	0.05	H <sub>0</sub> Accepted
	$\mathbf{H}_0: \boldsymbol{\alpha}_1 \geq \boldsymbol{\alpha}_3$	1.103	98	0.273	0.136	0.05	H <sub>0</sub> Accepted

In Table 5 results from the study are provided once again after applying control variables. In respect to results from significant estimated regressions in Table 5,), and also results of performed tests about significant estimated regression coefficients in Table. 6), because value of  $\alpha_2$  is mainly more than  $\alpha_3$ , finally first hypothesis of the study again is confirmed.

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#### Findings from fist hypothesis testing (by applying control variables):

a) Test of regression coefficient significance

#### Table 5

	$\sum_{k=1}^{\infty} \frac{1}{k} \sum_{k=1}^{\infty} \frac{1}{k}$												
$\text{Earning}_{St+1=} \alpha_0 + \alpha_1 \text{CF}_t + \alpha_2 (\text{HQ}_{t,1} \times \text{TACC}_t) + \alpha_3 (\text{L} \text{ Q}_{t,1} \times \text{TACC}_t) + \mathcal{L}_{\text{l}=1} \text{ k} + 2 \text{ Controlk} \times \text{Tacc}_t) + \varepsilon_{t+1}$													
Explanation	Year	ധ	α <sub>1</sub>	α <sub>2:</sub>	α.3	α <sub>4</sub>	$\alpha_5$	α <sub>6</sub>	R	Adjusted	F	F <sub>0.95(6,46)</sub>	result
-										R			
Sectional	2005	0.077	0.129	0.046	-0.267	-12.973	3.136	0.002	0.614	0.296	4.649	2.3	Accepted
Sectional	2006	0.121	0.111	166	0.272	0.6.11	-1.086	0.001	0.313	-0.020	0.834	2.3	rejected
Sectional	2007	0.094	0.494	0.046	-0.106	2.011	0.418	0.001	0.571	0.238	3.707	2.3	Accepted
Sectional	2008	0.130	1.25	1.050	0.069	5.639	-1.408	-0.002	0.509	0.163	2.688	2.3	Accepted
Sectional	2009	0.173	-0.020	-0.038	0.81	3.584	1.128	0.000	0.284	0.039	0.675	2.3	Rejected

#### Findings from fist hypothesis:

b) Result of first hypothesis

#### Table 6

Year	Test Explanation	t-value	D.F	2(p-value)	P-value	Sig.	Result
	$\mathbf{H}_0: \boldsymbol{\alpha}_2 \geq \boldsymbol{\alpha}_3$	0.281	92	0.779	0.389	0.05	H <sub>0</sub> Accepted
2005	$\mathbf{H}_0: \boldsymbol{\alpha}_1 \geq \boldsymbol{\alpha}_2$	0.891	92	0.891	0.445	0.05	H <sub>0</sub> Accepted
	$\mathbf{H}_0: \boldsymbol{\alpha}_1 \geq \boldsymbol{\alpha}_3$	0.664	92	0.508	0.254	0.05	H <sub>0</sub> Accepted
	$\mathbf{H}_0: \boldsymbol{\alpha}_2 \geq \boldsymbol{\alpha}_3$	0.313	92	0.755	0.377	0.05	H <sub>0</sub> Accepted
2007	$\mathbf{H}_0: \boldsymbol{\alpha}_1 \geq \boldsymbol{\alpha}_2$	1.250	92	0.214	0.107	0.05	H <sub>0</sub> Accepted
	$\mathbf{H}_0: \boldsymbol{\alpha}_1 \geq \boldsymbol{\alpha}_3$	0.712	92	0.478	0.239	0.05	H <sub>0</sub> Accepted
	$\mathbf{H}_0: \boldsymbol{\alpha}_2 \geq \boldsymbol{\alpha}_3$	1.594	92	0.114	0.057	0.05	H <sub>0</sub> Accepted
2008							
	$\mathbf{H}_0: \boldsymbol{\alpha}_1 \geq \boldsymbol{\alpha}_2$	1.250	92	0.840	0.420	0.05	H <sub>0</sub> Accepted
	$\mathbf{H}_0: \boldsymbol{\alpha}_1 \geq \boldsymbol{\alpha}_2$	1.449	136	0.111	0.055	0.05	H <sub>0</sub> Accepted
	$\mathbf{H}_0: \boldsymbol{\alpha}_1 \geq \boldsymbol{\alpha}_3$						

Tables 7, 8 show findings from research second hypothesis testing. Second hypothesis of this research has been tested using multi variable linear regression and based on Richardson et al model's (2005) by investigation of difference (comparison) between  $\hat{\alpha}_2$  and  $\hat{\alpha}_3$ .

Regarding to results from estimated significant regressions in Table 7, and also results of performed tests about coefficients of estimated significant regression in Table. 8, because value of  $\alpha_2$  is more than  $\alpha_3$  (particularly in 2009), as a result second hypothesis of this research is confirmed. Thus, stability of accrual for samples with higher audit quality (longer auditor tenure) is more compared with stability of accrual for samples with lower audit quality (shorter auditor tenure).

### Findings from second assumption test (without applying control variables):

a) Test of significant regression coefficients

#### Table 7

$Earning_{St+1=} \alpha_0 + \alpha_1 CF_t + \alpha_2 (HQ_{t-1} \times TACC_t)_t + \alpha_3 (L Q_{t-1} \times TACC_t) + \varepsilon_{t+1}$											
Year	$\alpha_0$	α1^	a2^	$\hat{\alpha}_3$	R	Adjusted	F	$F_{0.95(3.70)}$	Result		
	-			_		R		,,-			
2008	0.135	0.540	0.271	0.210	0.459	0.177	60235	2.7	Accepted		
2009	0.168	0.530	0.355	0.046	0.366	0.097	3.618	2.7	Accepted		
	$\frac{1}{2008}$	$\begin{array}{c c} & & & & \\ & & & \\ \hline & & & \\ & & & \\ \hline & & & \\ & & & \\ \hline & & & \\ & & & \\ \hline & & & \\ & & & \\ \hline & & & \\ & & & \\ \hline & & & \\ & & & \\ \hline & & & \\ & & & \\ \hline & & & \\ & & & \\ \hline & & & \\ & & & \\ \hline & & & \\ & & & \\ \hline & & & \\ & & & \\ \hline & & & \\ & & & \\ \hline & & & \\ & & & \\ \hline & & & \\ & & & \\ \hline \\ \hline$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $		

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### Findings from second hypothesis test:

b) Result of second hypothesis

							Tabl
Year	Explanation of test	t-value	D.F	2(p-value)	p-value	Sig.	Result
	$\mathbf{H}_0: \boldsymbol{\alpha}_2 > \boldsymbol{\alpha}_3$	0.265	142	0.791	0.395	0.05	H <sub>0</sub> Accepted
2008	$\mathbf{H}_0: \boldsymbol{\alpha}_1 \geq \boldsymbol{\alpha}_2$	0.897	142	0.371	0.1 85	0.05	H <sub>0</sub> Accepted
	$\mathbf{H}_0: \boldsymbol{\alpha}_1 \geq \boldsymbol{\alpha}_3$	1.586	142	0.115	0.058	0.05	H <sub>0</sub> Accepted
2009	$\mathbf{H}_0: \boldsymbol{\alpha}_2 > \boldsymbol{\alpha}_3$	1.272	142	0.205	0.102	0.05	H <sub>0</sub> Accepted
	$\mathbf{H}_0: \boldsymbol{\alpha}_1 > \boldsymbol{\alpha}_2$	0.485	142	0.628	0.314	0.05	H <sub>0</sub> Accepted
l	$\mathbf{H}_0: \boldsymbol{\alpha}_1 \geq \boldsymbol{\alpha}_3$	1.452	142	0.149	0.075	0.05	H <sub>0</sub> Accepted

In Table 9 findings from research after applying control variables are again purposed. Regarding to results from estimated significant regressions (in Table 9 and also results of performed tests about estimated significant regression coefficients in Table 10), because value of ^a2 is primarily larger than ^a3, as a result, second hypothesis of the study is confirmed once again.

#### Findings from second hypothesis testing (by applying control variables):

													Table
$Earning_{St+1=} \alpha_0 + \alpha_1 CF_t + \alpha_2 (HQ_{t-1} \times TACC_t) + \alpha_3 (LQ_{t-1} \times TACC_t) + \sum_{k=1}^{3} \overset{\propto}{k+2} Control_k \times Tacc_t) + \varepsilon_{t+1}$													
Explanation	Year	^α_0	ˆα <sub>1</sub>	^α <sub>2</sub>	^ <b>α</b> 3	^α <sub>4</sub>	ˆαs	^α <sub>6</sub>	R	Adjusted R	F	F0.95(6,67)	Result
Sectional	2008	0.147	7.89	0.634	0.163	-0.295	3.808	-0.002	0.587	0.286	5.885	2.17	Accepted
Sectional	2009	0.170	0.024	0.206	0.038	5.64	0.496	0.001	0.395	0.081	2.070	2.17	Rejected

a) Test of regression coefficients significance

### Findings from Second hypothesis testing

b`	) Result	of s	second	hy	pothesis	3
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Table	1	0

Tabla 0

Year	Test Explanation	t-Value	D.F	2 (p-Value)	P- Value	Sig.	Result
	$H_0: \alpha_2 \geq \alpha_3$	1.140	136	0.256	0.128	0.05	$H_0$ accepted
	$\mathbf{H}_0: \boldsymbol{\alpha}_1 \geq \boldsymbol{\alpha}_2$	1.2 50	92	0.829	0.415	0.05	H <sub>0</sub> accepted
2008	$\mathbf{H}_0: \boldsymbol{\alpha}_1 \geq \boldsymbol{\alpha}_3$	1.608	92	0.15	0.075	0.05	H <sub>0</sub> accepted

## Conclusion

As mentioned previously, Results of study assumptions' test show that value of accrual stability coefficient for higher audit is more than value of accrual audit coefficient for lower audit quality. These results are compatible to this thought that higher audit quality is related to higher accrual reliability. About confirming first assumption of this study, we can conclude that size of auditing

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institutions, history, and trade name of institutions are instances of indices distinguishing audit institutions, namely larger institutions and also institutions which have more popular trade names than other institutions have higher audit quality.

In other hand, more qualified audit institution results in increasing of accrual reliability.

It should be noted that results of first assumption test is according to findings of Chambers and Payne (2008 a), Kim Lai et al., (2009), Johl et al., (2007) Fallatah, (2006).

About confirm of second assumption of this study also can conclude that performing client audit operations by an institution during prolonged years, due to acquaintance of audit team with client audit operations can be done effectively and leads to increasing of accrual reliability.

Also results of second assumption test of this study are compatible to results of Chambers and Payne 2008 a), Johnson et al., (2002), Purposes based upon study results:

✓ Regarding to obtained results from this study can expect that audit institutions with larger size (for example, auditing organization. Also we can offer to public communities' use of large audit institutions to audit their firm. Also we can suppose to stock exchange organization that in selecting valid and reliable audit institution more focus on firms which have larger size. But investors who are most important group of using financial lists also pay attention to auditors of firms, i.e. in their decisions for purchasing firms' stock concentrate on size of audit institutions which audit the firm.

 $\checkmark$  But an important point which can be purposed is that whatever auditor tenure is longer, can hazard auditor independency. Therefore, it is commended that auditors be selected by stockholders, irresponsible managers and members of audit committee so that relation between firm and auditor is made by a person who is not among responsible members in the firm, otherwise auditor independency may be inquietude.

### **Recommends for further studies:**

Regarding to importance of the subject, it is commended to researchers that in further studies consider some subjects as follow:

- 1 The investigation of the effect of audit quality on accrual reliability using other audit quality indices.
- 2 The investigation of the effect of audit quality on accrual responsibility using Dechow and dichev.
- 3 The investigation of relation between size of auditor and auditor independency.
- 4 The investigation of relation between auditor tenure and auditor independency.

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#### Limitations of study:

Along with accomplishing this study there also were limitations that we indicate some of them. Because of lack of necessary transparency about rate of audit fees, we couldn't utilize some criteria of measurement corresponding with auditors' fees (Such as specialty in auditor industry) and have investigated their influence on accrual reliability.

One of the other limitations, was lack of adjustment of financial lists' items by influenced on existence of inflation and having different times to establish for commercial units and eventually, to achieve firms assets' items in different times which results in reducing comparable quality of items and effects on study results and accompanies results generalization with some limitations.

Further, lack of controlling some efficient factors on study results such as effect of variables like economical factors, political conditions, firms' life, kind of industry, condition of global economy, and regulations are out of reach of researcher and may influence on relations investigation.

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