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Auditor Type and Earnings Quality in Tehran Stock Exchange

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Abstract

This study examines the association between auditor type (public versus private) and earnings quality as measured by the levels of discretionary accruals in Iran. This study hypothesize that there is no significant difference in discretionary accruals between public and private sector audit firms when there is low incentives for auditors to provide high-quality audits in Iran.

Using a sample of listed firms in the Tehran Stock Exchange from 1998-2003 (1378-1383), this study finds that there is no significant difference between discretionary accruals of firms with a public sector auditor and firms with a private sector auditor. This result implies that there may be no significant difference in audit quality between public and private sector audits. Partitioning the sample into sub-periods to examine the effect of increased competition, as a result of establishing the Iranian Certified Public Accountants (ICPA) in 2001(1381), on audit quality, this study finds some evidences of an increase in the levels of discretionary accruals of firms with a public sector auditor. This is consistent with the argument that increased competition in the audit market which may reduce the quality of audits.

Keywords: Audit Quality, Public Sector Auditor, Private Sector Auditor, Discretionary Accruals.

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1. Introduction

Audit quality differentiation between Big 4 and non-Big 4 audit firms has received considerable attention in prior research. This line of research suggests that Big 4 auditors are more likely to object to management accounting choices that increase earnings if auditors are likely to be sued when financial statements overstate earnings (Becker, et al., 1998; Francis, et al., 1999). These findings, however, are based on data from countries where auditors face high litigation risk when they provide low-quality audits. However, when there is little risk of litigation and no other effective disciplinary mechanism to control opportunistic behavior, auditors may choose not to provide high quality audits. To my best knowledge, until now, there is no case of suing auditors in Iran. Dye (1993) shows that a less litigious setting should weaken the extent to which the auditors' wealth serves as a bond for audit quality. Also until recently, there is no other effective monitoring mechanism to prevent auditors' opportunistic behavior in Iran[1].

This study uses the extent in which earnings management is constrained as a measure of audit quality differentiation. Prior research (Becker, et al., 1998; Francis, et al., 1999; Francis and Krishnan 1999; Krishnan 2003) has shown that Big 4 auditors provide a constraint on earnings management, and in turn, provide a higher quality. Given that in the Iranian audit market, Big 4 audit firms are not allowed to work and provide audit services in the market, this study investigates whether there is a quality difference between audits provided by the public and private sector audit firms.

This study contributes to the audit quality literature in at least two important ways. First, it examines the issue of audit quality differentiation in a setting where Big 4 audit firms are not operating. This is important as all prior research examined audit quality differentiation among Big 4 and non-Big 4 audit firms and this is the first study to examine the audit quality differentiation in a non-Big 4 setting. Prior research argues that it is the litigation risk or reputation risk that may motivate auditors to provide higher quality audits. In Iran where the litigation risk is limited and the reputation risk for Big 4 audit firms is absent, this provides a unique setting to examine the relation between auditor type and audit quality. Second, it examines the effect of increased competition in the audit market, resulted from the increased number of private audit firms allowed to provide audit services to the audit market with the establishment of IACPA in 2001 (1381), on audit quality. This is important because prior research mostly focused on concentrated audit markets with the dominance of Big N accounting firms. This regulatory change provides a natural rich setting to examine the effect of decreased concentration on audit quality.

The remainder of the paper is organized as follows. The next section explains the literature review, the the Iranian audit market and hypothesis development.

1. With the establishment of the Iranian Securities and Exchange Organisation (SEO) in 2005 (1385), the office of Auditing and Financial Reporting Affairs has started reviewing audit reports provided for firms listed in the Tehran Stock Exchange.

Research methodology is explained in section 3. Sample-selection procedure and data are explained in section 4. Results are presented in section 5, and the summary and conclusion are presented in section 6.

2. Literature review and hypothesis development

2.1. The relation between auditor type and audit quality

The literature focuses on two principal forces to explain auditors' incentives to provide higher quality audits: (1) a litigation/insurance incentive; and (2) reputation incentive (Skinner, et al., 2009)[1]. Under the first motive, if auditors are legally liable for audit failures to an economically significant degree (which include regimes under which they are liable for more than their proportionate share of damages), they have incentive to deliver quality to avoid litigation. Under the second, auditors have reputational incentives to avoid audit failures because the quality of audits is valuable for clients and it is priced in capital markets.

Previous studies generally use the dichotomous Big N/non Big N audit firm variable to capture audit quality differences with the assumption that larger audit firms are expected to be less likely to perform low-quality audits because these firms have more to lose in terms of clients, audit fees and reputation in case of audit failure (DeAngelo, 1981). Watts and Zimmerman (1986) argue that larger audit firms supply higher quality audits because of their greater monitoring mechanisms. In contrast, an audit firm with smaller number of clients may logically conclude that they have more to gain by accepting its client's misreporting and fraud than being though and potentially being fired[2].

Another theoretical argument for the positive relation between audit firm size and audit quality relates to resource availability. Dopuch and Simunic (1982) argue that audit quality is a function of the number and the extent of audit procedures performed by the auditor. As larger accounting firms have more resources with which to conduct audit procedures, therefore they are able to provide higher quality audits. However, the application of the resources is more important than the availability of resources (Watkins, et al., 2004).

Prior research (e.g., Francis, et al., 1999; Davidson, et al., 1993; Lenox, 1999; Francis, et al., 1999; Teoh, et al., 1993; Mansi, et al., 2004; Weber, et al., 2008) examine the relation between audit firm size and audit quality using three observable audit outcomes; audit opinion, audited financial statements, and market reaction to audited financial statements. Evidence from audit opinion research indicates that larger accounting firms provide higher quality audits. Francis and Krishnan (1999) report that Big 4 accounting firms have lower thresholds (lower tolerance) for issuing modified audit reports, which indicates greater reporting conservatism for a given set of client characteristics. This practice will increase

1. Audit quality is defined as a function of auditors' (1) competence (sufficient auditing and accounting expertise to detect fraud and misstatements); and (2) auditors' independence (the ability to report detected fraud and misstatements) (DeAngelo 1981; Watts and Zimmerman 1986).

2. MacDonald (1997) reports that between 1994 and 1997, Big 6 auditors dropped 275 publicly traded audit clients due to concerns about potential harm to their reputation or litigation risk.

modified reports and lessen the likelihood of failing to issue a modified report where appropriate (Krishnan, 2003). Lennox (1999) finds that, relative to small audit firms, larger audit firms issue audit reports that are more accurate and more informative signals of financial distress in the United Kingdom. Consistent with this line of literature, Weber and Willenborg (2003) find that the pre- initial public offering (hereafter IPO) audit reports of large national and international Big accounting firms have more predictive accuracy than smaller accounting firms with respect to future stock returns and subsequent delisting.

There is another line of research suggesting that the enhanced assurance provided by Big N auditors should be translated into a tangible ex ante benefits for their clients (Titman, et al., 1986; Datar, et al., 1991; Becker, et al., 1998; Pitman, et al., 2004). Teoh and Wong (1993) report that Big 8 clients have larger earnings response coefficients (ERC) than non-Big 8 clients, suggesting that Big 8 auditors generate earnings reports with greater credibility for investors and this greater credibility is priced in capital markets. Mansi et al. (2004) find a negative association between auditor quality (Big 4 vs. non-Big 4) and the rate of return investors require on corporate bonds. Khurana Raman (2004), in a study of Anglo American countries study, report that a Big 4 audit is associated with a lower *ex ante* cost of equity capital only in the US. Azizkhani et al. (2010) find that even in Australia, where the litigation risk is limited, a Big 4 audit is associated with a lower *ex ante* cost of capital suggesting that it is the reputation of Big 4 auditors that derives perceived higher credibility of financial reports.

The evidence from financial statements also shows that large accounting firms provide higher quality audits. Using the abnormal accruals paradigm (Jones 1991), this line of research provides support for an inverse relation between using Big N accounting firms and the propensity for earnings management. Becker et al. (1998) and Francis et al. (1999) find that clients of Big 6 auditors report low discretionary accruals compared to clients of non-Big 6 auditors, even though clients of Big 6 auditors have high levels of total accruals. They argue that Big 6 auditors have a greater ability to constrain their clients' use of aggressive and questionable accounting methods and practices, thus increasing the quality of reported earnings for high-accrual firms. Big N auditors have better methods for detecting problem areas, interpret GAAP conservatively (thereby reducing the scope for aggressive accrual based earnings management), and can take a strong negotiation stance with clients who require more adjustments to the financial statements (Jeong, et al., 2004). Consistent with this line of research, Krishnan (2003) also finds that the association between discretionary accruals, stock returns, and future profitability is greater for Big 6 clients relative to non-Big 6 clients, suggesting Big 6 auditors enhance the credibility of reported accruals by minimizing noise in reported discretionary accruals and thereby improving their information value and their ability to predict future levels of profitability. Therefore, the fact that the firm's financial statements are audited by a Big N auditor may indicate that earnings are subjected to less opportunistic earnings management.

There are empirical research documents that audit quality indeed differs across different legal environments (e.g., Francis, et al., 2010; Maijoor, et al., 2004). If the economic environment and institutional setting does not demand high-quality audit services, auditors may not be willing to restrict the opportunistic behavior of management but rather may behave opportunistically themselves to attract more clients.

2.2. The Iranian Audit market and the hypotheses

Article 144 of the Iranian Commercial Law requires public companies to appoint a certified auditor which must be selected from those accredited auditors authorized by the Ministry of Economic[1] Affairs and Finance.

The Tehran Stock Exchange (hereafter TSE) was established in 1967 (1346) and grew to 105 listed companies at the time of the Islamic Revolution in February 1979 (1357). Following the revolution, all banks and insurance companies and many heavy industry companies were fully nationalized. Other not fully nationalized companies were transferred to and controlled by the government when private sector owners abandoned or forfeited their interests in these companies and through the government-owned banks acting on debt defaults. All audit services for these government controlled companies were assigned to government auditors, culminating with the establishment of the Iranian Auditing Organization (IAO) in 1987(1366). The TSE continued its operation with limited trading (mainly in government bonds) until 1983 (with the introduction of anti-usury laws) and became virtually inactive with the advancement of the war with Iraq, which ended in 1988 (1367).

To stimulate economic recovery, the Iranian government implemented a privatization policy to transfer ownership of public sector companies to the private sector through a series of five-year Plans (Davani, 1382). The first five-year Plan (1989-1993) required the government to transfer ownership of nationalized and State industrial units (excluding strategic industries) to private sector shareholders (Roudaki 1996). The number of companies listed on the TSE grew from less than 60 firms prior to 1990 (1369) to 201 firms by 1995(1374). During that time period, the TSE had experienced a significant increase in the number of shares traded with a very high volatile share prices (Davani 1382). The second five-year Plan (1995-1999) was a continuation of the first Plan with the number of TSE listed firms increased to 296 in 1999(1378).

By that time, the IAO was unable to provide audit services to the variety of government controlled entities and was not suited to audit the increasing number of profit-seeking companies post-1989 (Moulkaraei, 1384).

In 1993(1372), the Act "Using Services of Certified Public Accountants" which allows certified public accountants to practice and provide audit services to the public sector was passed by the Parliament but due to unknown reasons was not

1. The law requires the election of the auditor by the shareholders at the shareholders' annual general meeting.

effective till late 2001(1381). With the establishment of the Iranian Certified Public Accountants (IACPA) in late 2001(1381), the audit market experienced a large increase in the number of audit firms which are allowed to provide audit services to the market[1]. This Act also allows TSE listed firms to choose their auditor either the IAO or from members of the IACPA, regardless of their ownership structure (Davani, 1382).

The establishment of the IACPA in 2001has increased the competition between auditors and provided more opportunity for TSE listed companies to change auditors. In the Iranian context, the audit market went from a market dominated by the IAO to a market with many more auditors potentially offering a wider range of quality and services. This provided greater opportunity for companies to select an auditor that was a better match to their needs.

Iranian audit market is different from most audit markets in the world in that it is an emerging market with limited shareholder protection. Iranian auditors are not affiliated with international audit firms. There is rapid growth in audit market competition as evidenced by a 100 percent growth in the number of auditors engaged by companies listed on the TSE from 2000-2003.[2] In addition, the Iranian code law does not expose auditors to litigation risk other than prosecution by the State under criminal provisions, which eliminates the insurance hypothesis.

In Iran, there are two potential risks for auditors, who do not follow the professional rules set by the IACPA in their audits, and in turn, provide low quality audits: 1) a penalty imposed by the quality control committee of the IACPA that reviews audit works; and 2) revoking audit firm's license as the SEO's "trusted auditor" by the peer review Audit committee in the SEO who reviews audit reports of TSE listed firms[3]. Under the IACPA rules, the quality control committee monitors and reviews the quality of audits of its members on a sample basis and at least one audit report of any member should be reviewed within a 3 years period. In this environment, auditors may not believe there is a high chance of getting caught if they provide low-quality audits. Moreover, even when they are caught by the quality control committee the penalties are not severe enough to cause auditors to provide high quality audits.

In sum, prior research in audit quality suggests that there is a quality differentiation between Big N and non-Big N auditors and tried to explain this quality differentiation by insurance (litigation) and/or reputation hypotheses. However in the Iranian audit market, where Big N auditors are not operating (lack of reputational incentive), and the litigation risk is limited, it is an empirical question to see whether there is a quality differentiation between audits performed in the Iranian audit market. Specifically, if it is the reputation and/or litigation

1. A minimum of 3 CPAs is required to establish a an audit firm

2. The 100% increase is based on our sample data which comprises 88% of the companies listed on the TSE.

3.The SEO has a rule that all listed firms in TSE must choose their auditors among "SEO' trusted auditors" who are members of the IACPA. An audit firm member of IACPA can be a "SEO's trusted auditor" when it meets all the requirements that have been set by the SEO.

hypotheses that drive higher quality audits, then in an audit market where these two factors play a less of role, it is unlikely to see a quality differentiation among audits provided by private and public audit firms. The following hypothesis tests for this expectation:

H1. Firms with a Public sector auditor are likely to report the same level of discretionary accruals as firms with a private sector auditor.

3. **Research methodology and variable measurement**

3.1 Estimation of discretionary accruals

Following prior studies (e.g., Becker, et al., 1998; Francis, et al., 1999; Francis, et al., 1999; Cary, et al., 2006), this study uses accrual-based proxies for earnings and hence, audit quality.[1] This study calculates total discretionary accruals using the cross-sectional discretionary accruals model suggested by Jones (1991) and modified by Dechow et al. (1995). Recent studies has shown that current discretionary accruals are more susceptible to earnings management (e.g., Ashbaugh, et al., 2003) and firm performance should also be considered in calculating discretionary accruals (Kothari, et al., 2005)., Therefore and consistent with Jaggi, et., al (2009) , this study uses the following model (Model (1) to estimate discretionary accrual, which takes both of these factors into consideration. The residual from this model provides the measure of unexpected accruals, and hence, earnings quality. This model is estimated in cross-section for each industry code and for each year. Model (1) is estimated as:

$$TACC_{it} = \alpha_1 + \beta_1 \ (\Delta sales_{it,i_{t-1}} - \Delta \mathrm{Re}c_{it,i_{t-1}}) + \beta_2 PPE_{it} + \beta_3 ROA_{it} + \varepsilon$$

Model (1)

Where:

TACC= operating income less cash flow from operation in year t;

Δsales= change in sales in year t;

ΔRec= change in accounts receivables in year t;

PPE= year-end property, plant and equipment in year t;

ROA= return on assets in year t measured as net income divided by ending total assets in year $_t$; and;

ε= error term (abnormal accruals)

This study considers four specifications of its unexpected accruals measure. First, consistent with prior research (Becker, et al., 1998; Frankel, et al., 2002; Hamilton, et al., 2005), this study uses the absolute value of unexpected accruals (DAC). This measure ignores the direction but captures the overall magnitude of managerial intervention in the accounting process. However, most, if not all, of recent high profile accounting scandals have been instances where it is alleged that income has been overstated (Hamilton, et al., 2005). Therefore, this study tests the

1. Prior studies show that higher level of accruals are positively associated with auditor litigation (Heninger, 2001), the issuance of qualified audit opinion (Bartov, et al., 2000), and audit failures (Geiger, et al., 2002).

relation between auditor type and signed unexpected accruals, and then further refines this test by separately testing instances where unexpected accruals are positive and negative, respectively.

Consistent with Hamilton et al. (2005), this study estimates the following regression model (Model 2) to examine the relation between auditor type (auditor quality) and various measures of unexpected accruals, as proxies for earnings quality and quality of financial statements:

Model (2)

$$DAC = \alpha_1 + \alpha_2 Auditor + \alpha_3 cfo + \alpha_4 \ln size + \alpha_5 lev + \alpha_6 loss + \alpha_7 growth + \alpha_8 TAC_{t-1} + \alpha_9 chnage$$

where:

DAC = (i) signed unexpected accruals, (ii) absolute unexpected accruals, (iii) positive unexpected accruals and, (iv) negative unexpected accruals as estimated using the modified Jones model;
Auditor = 1 if auditor is the Audit Organization (Sazeman Hesabrasi), else 0;
Cfo = cash flow from operation in year t scaled by total assets in year t-1;
Lnsize = natural logarithm of total assets in year t;
Lev = ratio of long-term liabilities to total assets in year t;
Loss = 1 if net income in year t is less than 0, else 0;
Growth = percentage of growth in sales in year t;
TAC_{t-1} = total accrual in year t-1 scaled by total assets in year t-1; and
Change = 1 if audit firm has been changed in year t, else 0

This study examines the relation between auditor type and earnings quality, as measured by the level of unexpected accruals, while controlling for other factors expected to affect the magnitude and sign of unexpected accruals documented in prior research. Prior research (Dechow, 1994) suggests that accruals and cash flows are negatively correlated; therefore this study includes variable cash flows from operation in the model (CFO). Scaled total accruals in last year is included in the model as Ashbaugh et al. (2003) show evidence of a reversal effect over time. Consistent with extant earnings management research (e.g., Field, et al., 2001; Hamilton, et al., 2005), this study includes controls for firm size (lnsize) and leverage (LEV) as management incentives to manage earnings. Prior research shows that accruals are likely to be associated with a company's growth opportunities (Johnson, et al., 2002; Carey, et al., 2006) therefore; Growth is controlled for using the changes in sales from the prior year. Following Hamilton, et al., (2005), this study controls for instances of loss reporting (Loss) in the model. Variable Change is also included in the model to capture the effect of auditor changes (Change) on the magnitude and sign of unexpected accruals.

4. Data

4.1. Sample selection

The sample is drawn from the population of companies listed in Tehran Stock exchange (TSE) during 1998-2003[1]. This study excludes financial institutions from the sample because of the differences in estimation of their discretionary accruals from firms in other industries. Data are extracted from hard copies of financial reports, Tadbir Pardaz and the RDIS[2] data bases.

This study begins with a sample of 1316 firm-years observations. All financial firms and cases with missing accounting data are deleted from the sample and to control for extreme observations, this study removes observations in the top and bottom 1% of abnormal accruals. This leads to sample of 892 firm-years observations.

Table 1 summarizes the descriptive statistics for the sample. As shown in this table, the majority of the sample (63%, n=562) is audited by the Audit Organisation, indicating a dominance of the Audit organization in the TSE audit market. Operating cash flows are about 16% of total assets. 14% of firms (n=125) has reported a loss during the sample period and only 8% of the firms has changed their auditors.

Table 1:Descriptive statistics (N= 892)

Variable	Mean	St. deviation	Min	Max	median
DAC	0.0001	0.141	-1.502	0.562	0.0001
Auditor	0.63	0.483	0	1	1
cfo	0.156	0.221	-1.55	4.37	0.136
Lnsize	11.61	1.193	8.16	17.05	11.507
Lev	0.132	0.198	0.000	0.926	0.079
Loss	0.14	0.344	0	1	0
Growth	0.206	0.374	-1.226	3.475	0.165
TAC_{t-1}	-0.016	0.194	-1.849	1.027	-0.015
change	0.080	0.278	0	1	0

DAC is the unexpected accruals estimated using the performance model in year t. auditor = 1 if the firm is audited by Sazeman hesabresi, 0 otherwise. Cfo is cash flow from operation in year $_t$ scaled by total assets in year $_{t-1}$. lnsize is the natural logarithm of total assets in year $_t$. Lev is the ratio of long term liabilities to total assets in year $_t$. loss= 1 if the firm reported loss in year $_{t-1}$, 0 otherwise. Growth is the percentage of growth in sales in year $_t$. TAC_{t-1} is total accrual in year $_{t-1}$ scaled by total assets in year $_{t-1}$. Change = 1 if the firm has changed its auditor in year $_t$, 0 otherwise.

Table 2 reports the Pearson correlation matrix for the dependent and independent variables. The correlation between auditor type and abnormal accruals is negative and marginally significant at 10% level (p-value=0.104). The correlations between DAC, CFO, Loss and TACt-1 are significant. The correlation

1. I was not able to get data for before 1998. Also, to compare the levels of discretionary accruals before and after the regulatory change in 2001, and to have a balanced period before and after 2001, this study focuses on this period.

2. This is the official website of the Iranian securities and Exchange Organisation for financial reporting of listed firms at: www.rdis.seo.ir.

between DAC and all other independent variables are significant and in the expected directions. The low correlations between independent variables do not suggest a multi-collinearity problem within the regression model.

Table 2: Pearson correlation Matrix

	DAC	auditor	CFO	lnsize	LEV	Loss	Growth	TAC_{t-1}	Change
DAC	1.000								
auditor	-.027	1.000							
	(.104)								
CFO	-.592	.090	1.000						
	(.000)	(.001)							
Lnsize	-.007	.166	.131	1.000					
	(.207)	(.000)	(.000)						
LEV	-.006	.098	-.113	-.024	1.000				
	(.216)	(.001)	(.000)	(.117)					
Loss	-.034	.022	-.322	-.111	.229	1.000			
	(.077)	(.122)	(.000)	(.000)	(.000)				
Growth	.031	.016	.094	.094	.048	-.092	1.000		
	(.090)	(.159)	(.001)	(.001)	(.038)	(.001)			
TAC_{t-1}	.721	-.085	-.518	.024	-.097	-.310	.067	1.000	
	(.000)	(.003)	(.000)	(.121)	(.001)	(.000)	(.011)		
Change	.014	-.328	-.034	-.005	-.018	.009	-.022	.038	1.000
	(.171)	(.000)	(.076)	(.216)	(.146)	(.198)	(.127)	(.065)	

P-values are based on 2-tailed. Correlations are based on 892 firm-year observations during 1998-2003.

DAC is the unexpected accruals estimated using the performance model in year t. auditor = 1 if the firm is audited by Sazeman hesabresi, 0 otherwise. Cfo is cash flow from operation in year t scaled by total assets in year t-1. lnsize is the natural logarithm of total assets in year t . Lev is the ratio of long term liabilities to total assets in year t. loss= 1 if the firm reported loss in year t-1, 0 otherwise. Growth is the percentage of growth in sales in year t. TACt-1 is total accrual in year t-1 scaled by total assets in year t-1. Change = 1 if the firm has changed its auditor in year t, 0 otherwise.

5. Results

5.1. Univariate results

This section reports the univariate analysis of comparing abnormal discretionary accruals (DAC) and control variables among firms based on their auditor type. Table 3 reports the mean abnormal discretionary accruals (DAC) and other variables for the sample partitioned according to the audit firm type (public sector auditor vs. private sector audit firms). As reported in this table, there is no statistical significant difference in discretionary accruals of firms according to their audit firm type. This result suggests that the type of auditor make no difference to a manager's accounting flexibility of discretionary accruals. Examining the descriptive statistics of independent variables across two sub-samples reveals that clients of Sazeman Hesabresi are larger (greater lnsize), have greater debts, higher frequent of reported loss in the previous year, less frequent change of their auditor in the previous year and have lower cash flows from operation.

Thus, although this univariate analysis shows no statistical difference between discretionary accruals of firms according to their auditor type, there is no

consistent evidence to suggest that firms across two sub-samples are similar in terms of conditions that drives the levels of DAC. Therefore, in the multivariate analysis section, this study controls for these client-specific factors in examining the relation between the level of abnormal discretionary accruals and auditor-type.

Table 3:
Descriptive statistics for the Dependent and independent Variables among Auditor Types

variable	Sazeman Hesabresi	Other	Difference of Means (p-values)
DAC	-0.003	0.005	0.171
cfo	0.145	0.167	0.087*
lnsize	11.667	11.398	0.000***
lev	0.148	0.105	0.000***
loss	0.150	0.120	0.057*
growth	0.207	0.189	0.238
TAC_{t-1}	-0.027	0.005	0.005***
Change	0.01	0.20	0.000***
n	562	330	

*, *** indicate significant at p<0.1 and p<0.01, respectively, on two tailed tests.
DAC is the unexpected accruals estimated using the performance model in year t. Cfo is cash flow from operation in year t scaled by total assets in year t-1. lnsize is the natural logarithm of total assets in year t . Lev is the ratio of long term liabilities to total assets in year t. loss= 1 if the firm reported loss in year t-1, 0 otherwise. Growth is the percentage of growth in sales in year t. TACt-1 is total accrual in year t-1 scaled by total assets in year t-1. Change = 1 if the firm has changed its auditor in year t, 0 otherwise.

5.2. Multivariate analysis

This study estimates Model 2 as pooled cross-sectional models controlling for industry and year fixed effects using robust standard errors clustered by firm to alleviate serial correlation and hetroskedasticity issues arising from pooled data (Rogers, 1993). The results are reported in Table 4. As shown in this Table, all regression models are highly significant. The results show no evidence of any association between auditor type (Auditor) and absolute DAC, raw DAC, and positive DAC.

Based on these results, this study does not accept the null hypothesis that there is an audit quality differentiation between auditor in the private and public sector within the Iranian audit market. This suggests the possibility that the public sector auditor (Sazeman Hesabresi) does not provide higher quality audits relative to the private sector auditors. This result provides evidence that in the Iranian audit market, where the litigation risk is absent and the reputation effect for auditors is limited, auditors do not have incentive to provide higher quality audits.

Consistent with prior research (Becker, et al., 1998; Dechow, et al., 1995; Jeong, et al., 2004; Hamilton, et al., 2005), some of our control variables in the regression model are significantly related to discretionary accruals with expected signs which give confidence to the model specification. Firms with higher levels of operating cash flows are more likely to have lower levels of unexpected accruals.

Also, firms with higher levels of total accruals reported in the last year are more likely to report higher unexpected accruals in this year. Interestingly, loss reported firms in the last year are more likely to use income increasing discretionary accruals in the current year.

Table 4: Regression of unexpected accruals

	Raw DAC		Absolute DAC		Positive DAC		Negative DAC	
Variable	**β**	**P value**	**β**	**P value**	**β**	**P value**	**β**	**P value**
Constant	0.003	0.920	0.033	0.316	0.018	0.598	-0.022	0.484
Auditor	0.012	0.066	-0.004	0.590	0.004	0.633	0.014	0.059
CFO	-0.159	0.000	0.085	0.000	-0.014	0.526	-0.192	0.000
lnsize	0.001	0.310	0.004	0.158	0.004	0.167	-0.000	0.903
lev	0.002	0.435	-0.002	0.920	0.001	0.954	0.018	0.405
loss	0.033	0.004	0.026	0.043	0.059	0.000	0.015	0.245
growth	0.007	0.421	0.005	0.575	-0.006	0.455	-0.004	0.683
TAC_{t-1}	0.457	0.000	0.025	0.339	0.356	0.000	0.348	0.000
change	-0.002	0.833	0.006	0.662	0.004	0.771	-0.003	0.805
F-test	165.1		30.70		40.16		77.3	
Adj R^2	59.6%		18.1%		42%		57%	
n	892		892		431		461	

DAC is the unexpected accruals estimated using the performance model in year t. auditor = 1 if the firm is audited by Sazeman hesabresi, 0 otherwise. Cfo is cash flow from operation in year t scaled by total assets in year t-1. lnsize is the natural logarithm of total assets in year t . Lev is the ratio of long term liabilities to total assets in year t. loss= 1 if the firm reported loss in year t-1, 0 otherwise. Growth is the percentage of growth in sales in year t. TACt-1 is total accrual in year t-1 scaled by total assets in year t-1. Change = 1 if the firm has changed its auditor in year t, 0 otherwise

5.3. Pre-post 2001 period

As a result of regulatory changes in 1993, the Iranian Association of Certified Public Accountants (IACPA) was established in 2001. Before the establishment of IACPA, the Iranian audit market was monopolized by the Iranian Audit Organization (Moulkaraei, 1384).. With the establishment of IACPA, the public sector is encouraged to use the specialist and professional services of certified accountants.[1] This in turn, resulted in a substantive increase in the number of audit firms in the market and in turn, some degree of competition in the market for audit services. In late 2001, from the 402 issued licensed, 309 auditors were sole practitioners, mostly providing services to small non-listed clients, and 93 were in partnership, which are more likely potential competitors for the audits of listed companies (Bagherpour, et al., 2011). From 2001-2003, there was a 38% increase in the number of licensed private sector auditors who were principals in private

1. This legislation is called: "The law allowing the use of professional and specialist services of eligible accountants as certified accountants".

sector audit firms (Bagherpour, et al., 2011). This trend suggests a substantial increase in competition for audit clients in the audit market.[1].

Previous research in auditing has investigated the link between competition and audit quality by focusing on solicitation or bidding restrictions (Jeter, et al., 1995; Hackenbrack, et al., 2000; Kallapur, et al., 2008), with conflicting results. Hackenbrack, et al., (2000) report indirect evidence of higher audit quality (clients engaged larger, more specialized, auditors and more likely to be recognized for excellence in reporting) in a regime with low price competition. Jeter and Shaw (1995) find that in a more competitive regime, auditors are more likely to issue qualified opinions. On the other hand, Kallapur, et al., (2008) find that higher audit market competition is associated with lower audit quality.

Since the regulatory change, and in turn, the increased competition within the audit market, has introduced in 2001, we argue that it is possible that this change in the audit market might affect the audit quality (proxied by the levels of unexpected discretionary accruals).

In order to better understand the effect of this regulatory change on audit quality, this study repeats all its analyses in Table 4 on a time partitioned sample. The first sample consists of firm-year observations in 1998-2000, and the second sample consists of firm-year observations that fall in 2001-2003. This sub-period analyses seeks to identify if the effect (if any is detected) of auditor type on audit quality varies with the level of competition and the regulatory change. Table 5 reports the results of tests using various measures of unexpected accruals.

The results in Table 5 are generally consistent. Except for the results with raw discretionary accruals in 2001-2003 periods, the results for *Auditor* during two sub-periods using various measures of discretionary accruals are not significant, indicating of no relation between auditor type and audit quality. Only in the 2001-2003 periods and using the raw DAC as the measure of earnings quality, there is a statistically significant positive association between auditor type and earning quality, indicating that audits by the Audit organization is associated with higher levels of discretionary accruals, and in turn, lower audit quality. This result is consistent with the argument that the increased competition in the audit market could have a negative impact on audit quality (Kallapur, et al., 2008).

1. The data in this study shows that the market share of Sazeman Hesabresi has decreased from 73% in 1998 to a low 24% in 2003 two years after the establishment of IACPA.

Table 5: Sub-period analysis of Performance adjusted unexpected accruals

	1998-2000								2001-2003							
	Raw DAC		ABSDAC		Positive DAC		Negative DAC		Raw DAC		ABSDAC		Positive DAC		Negative DAC	
Variable	*β*	P value	β	P value	β	P value	β	P value	β	P value	β	P value	β	P value	β	P value
const	-0.01	0.737	0.047	0.354	0.012	0.806	0.007	0.888	-0.00	0.933	0.037	0.384	0.022	0.659	-0.06	0.167
auditor	***0.002***	***0.416***	***-0.01***	***0.194***	***-0.00***	***0.432***	***0.014***	***0.132***	***0.017***	***0.027***	***0.004***	***0.311***	***0.006***	***0.284***	***0.007***	***0.191***
cfo	-0.13	0.000	0.095	0.004	-0.01	0.413	-0.22	0.000	-0.19	0.000	0.046	0.045	-0.03	0.153	-0.15	0.000
lnsize	0.003	0.155	0.003	0.237	0.005	0.104	-0.00	0.381	0.001	0.350	0.004	0.153	0.003	0.261	0.001	0.366
Lev	-0.00	0.450	-0.01	0.298	-0.00	0.331	0.000	0.498	0.015	0.265	0.004	0.471	0.019	0.244	0.044	0.055
loss	0.059	0.000	0.002	0.463	0.007	0.000	0.002	0.082	0.010	0.259	0.032	0.017	0.041	0.014	-0.00	0.471
growth	-0.02	0.084	0.004	0.373	-0.02	0.035	-0.00	0.101	0.027	0.008	0.009	0.203	0.008	0.254	0.004	0.383
TAC_{t-1}	0.497	0.000	0.090	0.019	0.340	0.000	0.397	0.000	0.426	0.000	0.129	0.000	0.365	0.000	0.247	0.000
change	0.007	0.383	-0.00	0.101	-0.00	0.322	0.004	0.474	-0.00	0.383	0.019	0.078	0.009	0.284	-0.01	0.233
F-test	87.86		15.85		16.939		58.93		79.85		32.87		22.99		17.49	
Adj R^2	61.1%		18.1%		37.1%		67.3%		58.6%		13.9%		45.5%		36.1%	
n	445		445		218		227		447		447		212		235	

DAC is the unexpected accruals estimated using the performance model in year t. auditor = 1 if the firm is audited by Sazeman hesabresi, 0 otherwise. Cfo is cash flow from operation in year t scaled by total assets in year t-1. lnsize is the natural logarithm of total assets in year t . Lev is the ratio of long term liabilities to total assets in year t. loss= 1 if the firm reported loss in year t-1, 0 otherwise. Growth is the percentage of growth in sales in year t. TACt-1 is total accrual in year t-1 scaled by total assets in year t-1. Change = 1 if the firm has changed its auditor in year t, 0 otherwise.

6. Concluding remarks

This study examines the relation between discretionary accruals, as a measure of audit quality, and auditor type in the Iranian audit market. The Iranian audit market provides a unique setting from prior research in audit quality differentiation as the Big international audit firms are not operating in the Iranian audit market. Using various measures of discretionary accruals, as proxies for earnings quality, the empirical results show that there is not a strong statistically significant difference between discretionary accruals of firms with public and private sector auditors. This result could be interpreted as there may be no differences in audit quality between public and private sector audits in Iran during the study. This lack of quality differentiation among audits in Iran could be attributed to the lack of litigation or reputation effects documented in prior research, as main drivers for higher quality audits.

Partitioning its sample into two sub-periods allowed this study to examine the effect of increased competition in the audit market resulted from the regulatory change in 2001 on audit quality. The results for pre and post event are different, to some extent, from the full sample results. For the 2001-2003 periods, audits by the Audit Organisation (public sector) are associated with higher levels of discretionary accruals, and in turn, lower earnings quality. This implies that, after the regulatory changes which leads to a higher competition in the audit market, audits performed by the Audit Organization have higher levels of discretionary accruals, and by its implication, have a lower quality. This results show that increased competition in the audit market could have a negative impact on audit quality.

As the results are based on the Iranian market and accounting and auditing practice, and audit markets are different around the world (Chi, et al., 2005), caution is required in generalizing the reported results. For example, while the

Iranian public sector audit firm is the dominant auditor in the market, Big N audit firms are dominant in other audit markets.

The results reported in this study are subject to the following limitations. First, this study uses the levels of discretionary accruals as the measure of earnings quality and by its implication, audit quality. However, this proxy does not reflect the users' perceptions of audit quality differentiation. Also, this study was not able to get access to data before 1998 to examine the levels of discretionary accruals between auditor types in longer time period.

By extending the time period of this study, future research can re-examine this issue to see whether the documented positive association between auditor type and discretionary accruals persists beyond 2003 period. As mentioned, the results reported in this study are subject to a limited monitoring mechanism for audit quality. However, with the establishment of the Iranian Securities and Exchange Organization (SEO) and its monitoring over audit reports for listed firms, there is an opportunity for future research to shed lights on the impact of this monitoring mechanism on audit quality. Also, examining the audit quality differentiation from users' perspective is a fruitful venue for future research.

References:

1. Ashbaugh, H., R. LaFond, and B. Mayhew. 2003. Do non-audit services compromise auditor independence? Further evidence. The Accounting Review 78(4): 611-640.
2. Azizkhani, M., G.S. Monroe and G. Shailer. 2010. The value of Big 4 audits in Australia. Journal of Accounting and Finance 50 (4): 743-766.
3. Bagherpour, M.A., G.S. Monroe, and G.S. Shailer. 2011. Auditor-client alignment in an emerging audit market. Working paper: The Australian national University.
4. Bartov, E., F. A. Gul, and J.S.L. Tsui. 2000. Discretionary accrual models and audit qualifications. Journal of Accounting and Economics 30: 421-452.
5. Becker, C. L., M. L. DeFond., J. Jimbalvo., and K.R. Subramanyam. 1998. The effect of audit quality on earnings management. Contemporary Accounting Research 15 (1): 1-24.
6. Carey, P, and R. Simnett. 2006. Audit partner tenure and audit quality. The Accounting Review 81 (3):653-677.
7. Chi,W., and H. Huang. 2005. Discretionary accruals, audit -firm tenure and audit-partner tenure: empirical evidence from Taiwan. Journal of Contemporary Accounting and Economics 1(1): 65-92.
8. Datar, S., G. Feltham, and J. Hughes. 1991. The role of audits and audit quality in valuing new issues. Journal of Accounting and Economics 14 (1):3-49.
9. Davani, G. 2003 (1382) Stock Exchange, Shares & Shares Assessment, Tehran, Nashr Ney
10. Davidson, r. A., and D. Neu. 1993. A note on the association between audit firm size and audit quality. Contemporary Accounting Research 9 (Spring):479-488.
11. DeAngelo, L. 1981. Auditor size and audit quality. Journal of Accounting and Economic 3(1): 176-175.
12. Dechow, P. M. 1994. Accounting earnings and cash flows as measures of firm performance: the role of accounting accruals. Journal of Accounting and Economics 8(1): 3-42.
13. Dechow, P.M., R. G. Sloan and A. P. Sweeney. 1995. Detecting earnings management. The Accounting Review 70 (2): 193-225.
14. Dopuch, N., and D. Simunic. 1982. Competition in auditing research: an assessment. Paper read at the 4th symposium on auditing research, University of Illinois.
15. Dye, R. 1993. Accounting standards, legal liability, and auditor wealth. Journal of Political Economy 101 (5): 887–914.
16. Field, T.D., T.Z. Lys, and L. Vincent. 2001. Empirical research on accounting choice. Journal of Accounting and Economics 31(3): 255-307.
17. Frankel, R.M, M.F. Johnson, and K.K. Nelson. 2002. The relation between auditors' fees for non-audit services and earnings quality. The Accounting Review 77 (Supplement):71-105.

18. Francis, J. R., E. L. Maydew., and C.H. Sparks. 1999. the role of Big 6 auditors in the credible reporting of accruals. Auditing: A Journal of practice and Theory, 18 (Fall): 17-34.
19. ———, and J. Krishnan. 1999. Accounting accruals and auditor reporting conservatism. Contemporary Accounting Research 16 (2): 135-165.
20. ———, and D. Wang. 2010. The joint effect of investor protection and Big4 audits on earnings quality around the world. Contemporary Accounting Research 25(1): 157-191.
21. Jaggi, B., Lung, S, and F. Gul. 2009. Family control, board independence and earnings management: evidence based on Hong Kong firms. Journal of Accounting and Public Policy 28 (2): 281-300.
22. Jeong, S. W and J. Rho. 2004. Big6 auditors and audit quality: the Korean evidence, The International Journal of Accounting 39(2): 175-196.
23. Jeter, D.C, and P.E. Shaw. 1995. Solicitation and auditor reporting decisions. The Accounting Review 70 (2): 293-315.
24. Jones, J. 1991. Earnings management during import relief investigations. Journal of Accounting Research 29 (Autumn):193-228.
25. Johnson, V.E., I.K. Khurana, and J.K. Reynolds. 2002. Audit firm tenure and the quality of financial reports. Contemporary Accounting Research 19(4): 637-660.
26. Hackenbrack. K., K. L. Jensen, and J.L. Payne. 2000. The effect of bidding restriction on the audit services market. Journal of Accounting Research 38(2): 355-374.
27. Hamilton, J., C. Ruddock., D. Stokes, and S. Taylor. 2005.Audit partner rotation, earnings quality and earnings conservatism. Working paper: University of New South Wales
28. Heninger, W.G. 2001. The association between auditor litigation and abnormal accruals. The Accounting Review 76(1): 111-126.
29. Geiger, M. A., and K. Raghunandan. 2002. Auditor tenure and audit reporting failure. Auditing: A Journal of Practice and Theory 21 (1):67-78
30. Kallapur, S., S. Sankaraguruswamy, and Y. Zang. 2008. Audit market competition and audit quality. Working Paper: Indiana school of Business.
31. Khurana, I, K, and K.K. Raman. 2004. Litigation risk and the financial reporting of big 4 versus non-big4 audits: Evidence from Anglo-American countries. The Accounting Review 79 (2):473-495.
32. Kothari, S., A. Leone, and C. Wasley. 2005. Performance matched discretionary accrual measures. Journal of Accounting and Economics 39 (2): 163-197.
33. Krishnan, G.V. 2003. Audit quality and pricing of discretionary accruals. Auditing: A Journal of Practice and Theory 22 (1):109-126.
34. Lennox, C.S. 1999. audit quality and auditor size: an evaluation of reputation and deep pockets hypotheses. Journal of Business, Finance and Accounting 26(4): 779-805.
35. Macdonald, E. 1997. More accounting firms are dumping risky clients. Wall Street Journal (April 25).

36. Maijoor, S. and A. Vanstraelen. 2004. Earnings management: the effect of national audit environment, audit quality and international capital markets. Working paper: Maastricht University.
37. Mansi, S. A., W. F. Maxwell, and D. P. Miller. 2004. Does auditor quality and tenure matter to investors? Evidence from the bond market. Journal of Accounting Research 42 (4):755–793.
38. Moulkaraei, N. 2005(1384) A Review of Accounting and Auditing History in Iran. Hesabdar, 163-166.
39. Pitman, J. A., and S. Fortin. 2004. Auditor choice and cost of debt capital for newly public firms. Journal of Accounting and Economics 37 (1):113.
40. Rogers, W. 1993. Regression standard errors in clustered samples. Stata Technical Bulletin 13:19–23.
41. Roudaki, J. (1996) Undergraduate Accounting Programs in Developing Countries: the Case of Iran. School of accounting and Finance. Wollongong, University of Wollongong.
42. Skinner, D.J and S. Srivinasan. 2009. Audit quality and auditor reputation: evidence from Japan. Working paper: University of Chicago.
43. Teoh, S. H., and T. J. Wong. 1993. Perceived auditor quality and the earnings response coefficient. The Accounting Review 68 (2): 346–366.
44. Titman, S., and, B. Trueman. 1986. Information quality and valuation of new issues. Journal of Accounting and Economics 8 (2):159-172.
45. Watkins, A. L., W. Hillison., and S. E. Morecroft. 2004. Audit quality: a synthesis of theory and empirical evidence. Journal of Accounting Literature 23: 153–193.
46. Watts, R., and J. Zimmerman. 1986. Positive Accounting Theory. New York, NY: Prentice Hall
47. Weber, J, and M. Willenborg. 2003. Do expert informational intermediaries add value? Evidence from auditors in microcap IPOs. Journal of Accounting Research 41 (4):681-720.
48. Weber, J., M. Willenborg and J. Zhang. 2008. Does auditor reputation matter? The case of KPMG Germany and ComROAD AG. Journal of Accounting Research 46: 941-972.