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RESEARCH ARTICLE

The effect of managerial stock ownership on the relationship between internal control weaknesses with auditor rotation and audit quality

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Abstract

Purpose: *Given the significance of auditor quality and its impact on the quality and reliability of financial statements, studies on auditor quality are essential. One factor that affects audit quality apart from auditor selection and changes is the internal control system. This study examines the relationship between managerial stock ownership, internal control weaknesses, auditor rotation, and audit quality in the context of Iranian listed companies.*

Design/method/methodology: *A sample of 810 observations was selected using a screening method. The study covers the period from 2016 to 2021. Multiple regression analysis was employed as the statistical method for hypothesis testing.*

Findings: *The findings reveal that when managers posses a relatively low (high) level of managerial stock ownership, an increase in internal control weaknesses leads to the selection of lower (higher) quality auditors. Furthermore, the results demonstrate that under conditions where managers hold a relatively low (high) proportion of company shares, an increase in internal control weaknesses results in a decrease (increase) in auditor rotation. These findings shed light on the importance of managerial stock ownership between internal control weaknesses, auditor rotation, and audit quality. The study contributes to the existing literature on corporate governance, internal control systems, and audit practices, providing valuable insights for regulators, auditors, and managers in an emerging business environment.*

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1. Introduction

Research literature shows the relationship between weakness in the internal control system and the quality of financial reporting. The results of the studies show that weaknesses in the internal control system leads to a decrease in the accruals quality as well as an increase in financial abuse (Ashbaugh-Skaife et al., 2008, Doyle et

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al., 2007a). Other research is in line with these findings. For example, Raghunandan and Rama (2006), Hogan & Wilkins (2008), and Krishnan et al. (2008) claimed that companies with weak internal control systems also pay higher audit fees. Evidence in the literature suggests that due to a weakness in the internal control system, accrual accounting reports are bias and unreliable. In this case, there is an opportunity to create more bias in the estimated accruals. Weakness in the internal control system increases the risk of distortion in financial statements as well as business risk, and therefore the auditor expands its assessments. In such a situation, auditors are likely to increase the level of their evaluations in order to minimize audit risk, which in turn increases audit fees. Warfield et al (1995), LaFond and Roychowdhury (2008) stated that managerial stock is closely related to the method of financial reporting. The possibility of financial distortions will be more evident due to the agency problem and higher information asymmetry between managers and shareholders when separating ownership from control (Watts, 2003 and LaFond and Watts, 2008). Weakness in the internal control system can increase uncertainty as well as the risk of distortion in financial statements, so it is necessary to conduct a more qualitative audit in order to reduce the risk of reporting (Santanu, 2017). This is especially true in low-managerial stock institutions where accounting policies are chosen opportunistically to serve their own interests and even by publishing low-quality information reports. The negative impact of this incorrect motivation on low-quality information report is exacerbated when companies have poor internal controls over financial reporting. But when the interests of the manager and the shareholder are aligned through the greater ownership of the manager in the company, the agency problem in financial reporting also decreases. Under such circumstances, managers with high managerial stock try to minimize the risk of financial distortions and improve earnings reports to accurately reflect changes in the company's economic value over a period of time (Santanu, 2017). In this case, the audit risk is reduced, which also affects the choice of auditor and audit fee.

By examining the relationship between managerial stock ownership and internal control weaknesses, this study aims to provide valuable insights into the mechanisms through which managerial incentives and interests may affect the effectiveness of internal controls within organizations. Understanding the effect of managerial stock ownership on internal control weaknesses is crucial as it can help identify potential conflicts of interest and their implications for the overall audit quality. Moreover, investigating the relationship between managerial stock ownership, auditor changes, and audit quality is essential in enhancing our understanding of the factors that influence audit outcomes.

The findings of this can contribute to the development of effective corporate governance mechanisms, as well as inform policymakers, auditors, and investors about the potential risks associated with managerial stock ownership and their implications for audit quality. In addition, this research contributes to the existing literature by shedding light on the role of managerial stock ownership in influencing the outcomes of internal control weaknesses and their subsequent impact on auditor rotation and audit quality.

In the subsequent sections, this study will delve into the literature review and hypotheses development. The fourth section will outline the research methodology, including the population and sample selection, variable definitions, and statistical models employed. The fifth section will present the research findings, encompassing descriptive and inferential statistics. Finally, the last section will provide the concluding remarks.

2. Literature review

Cheng and Warfield (2005) stated that the relationship between managerial stock and auditing quality can be based on different perspectives. They argued that high-ownership managers have long-term economic interests in the company because part of their wealth is tied to the value of the company in the long run. As a result, managers will be more motivated to reduce the risk of distortions in financial reporting and improve the quality of information so that the market can evaluate the company as a whole positively and thus increase the value of the company. Such managers seek to reassure shareholders and investors about changes in the company's value by reporting information about their company's profits. From this perspective, in order to

reduce information uncertainty as well as financial reporting distortions, it may be necessary to conduct a more qualitative audit to communicate to the community this positive signal that the reported financial information is of high quality. Therefore, from the point of view of the demand side, companies that have weaknesses in the internal control system and high managerial stock are more likely to employ auditors with higher quality. In line with this view, Carcello et al. (2002) observed a positive relationship between the characteristics of the board of directors and the type of auditor. They argue that in order to maintain the company's credibility and develop its shareholders' interests, it selects a more independent, experienced, and diligent auditor's board of directors.

Gates et al. (2008) believe that the long-term relationship between the auditor and the client has led to relationships between their managers that can negatively affect the independence of auditors and reduce the quality of auditing and reliability of financial reporting. This has been the reason for the bankruptcy of large companies such as Enron in recent years. On the other hand, Aroiada (1997) believes that the more the company's audits are increased by a particular auditor, the lower the detection risk due to the auditor's knowledge of the firm. As a result, the likelihood that significant distortions will not be detected in the financial statements will be very low.

Following the discovery of major financial corruption in companies such as Enron and WorldCom in 2002, an Act called Sarbanes–Oxley was passed by the US Congress. The Act required a change in auditing firms to increase the quality of auditing as well as protect the rights of investors. The Act also prohibits auditors from providing some non-audit services to client. The Act was enacted to address part of the response to the corruption scandal. Apart from the United States, the Act has been passed in many countries and professional forums (Deilmipour, 2012). In Iran, the Securities Exchange Organization in 2007 forced the change of auditors in regular time periods Although the Auditor Change Law has been passed in Iran and many other countries, there are different and sometimes contradictory views on the impact of mandatory change on the independence and quality of auditors' work (Bagherpour et al., 2012).

Many professional experts believe that changing auditors will improve the quality of auditing and, consequently, increase the reliability of financial reporting. Gates et al. (2008) believe that the long-term relationship between the auditor and the client has led to relationships between their managers that can negatively affect the independence of auditors and lead to reduced audit quality and financial reporting reliability. For this reason, they support the mandatory change of auditor. They believe that close relationships between the parties will not allow the independent auditor to be intellectually independent and will accurately assess the client's accounting system. In recent years, this issue has led to the bankruptcy of several large companies such as Enron (Shoorvarzi, 2015). Mandatory change allows auditors to review each other's work. In this way, the accumulated accounting errors that occurred during the previous auditor's tenure will be detected. This improves the quality of accounting information. The new auditor is also responsible for detecting errors made by the previous auditor. Therefore, according to this argument, accounting and auditing errors are detected quickly and prevent the continuation of these errors (Shoorvarzi, 2015). Hasas Yeganeh and Jafari (2005) believe that although a mandatory change in the auditor may increase the auditor's fee, it can be justified if it increases the quality of the audit.

Managerial ownership is defined as the percentage of shares owned by company executives. Levels of managerial ownership vary and can be used as a measure of the conflict of interest between managers and owners (Jensen et al., 1976). High managerial ownership reduces the likelihood of agency costs occurring. Companies with high internal ownership are likely to use efficient investments to maximize shareholder value. Managerial ownership helps reduce managers' motivation to increase their personal interests by ignoring the interests of shareholders. Managers who own the company are motivated to work more efficiently, which in turn leads to profitable use of assets. In addition, very high managerial ownership may lead to managerial entrenchment. In agency theory, the management entrenchment allows managers to separate personal interests from their owners. Morck et al. (1988) showed that managerial entrenchment

reduces the value of the company. They demonstrated this by providing evidence that there is a nonlinear relationship between the value of the company and the shares held by the manager. Initially, just as equity increases from zero, so does the value of the company. But within a certain range, the value of the company actually decreases according to what the management has. They interpreted the situation in such a way that as agency costs increase due to the management entrenchment, it can also increase as ownership increases.

Simunic (1980) considers auditing as part of the entity's financial reporting system. He said internal control could be seen as an alternative to auditing. Therefore, the internal control environment is the part that is expected to affect the quality of auditing. Access to internal control data can be challenging, and there is no clear indication that it can be used to measure a unit's internal control. Some researchers, who have access to internal control data, have examined the relationship between internal control and audit quality; But their overall statistical results were not significant (Hay et al., 2006).

According to some experts, increasing the risk of weakness in the internal control system, and in particular the control risk, increases the audit risk, which leads to an increase in information risk. In order to cover this risk, companies try to select a quality auditor to reduce the information risk and consequently the decision risk. Considering the issues raised, it is expected that there will be a significant relationship between the weakness in the internal control system and the choice of quality auditing. On the other hand, according to some experts, increasing managerial ownership reduces the conflict of agency between managers and owners, which can affect the mechanisms of corporate governance such as audit quality (Chen et al., 2015). Given the above issues, it is expected that managerial ownership will affect the relationship between the weaknesses of the internal control system and the quality of the auditor.

Audit change (rotation): it refers to the practice of periodically changing the external audit firm responsible for conducting an independent audit of a company's financial statements. The concept of auditor rotation is rooted in several theoretical foundations that aim to enhance auditor independence, maintain audit quality, and mitigate potential conflicts of interest. The following are some key theoretical foundations associated with auditor rotation:

Agency theory-agency theory suggests that conflicts of interest can arise between principals (e.g., shareholders) and agents (e.g., management). In the context of auditing, auditor rotation is viewed as a mechanism to mitigate potential agency problems by reducing the familiarity and long-term relationships between the auditor and the audited entity. By periodically rotating auditors, the risk of collusion or undue influence between the auditor and management may be reduced (Keshtkar et al, 2019).

Independence theory- auditor independence is crucial for maintaining the credibility and reliability of financial statements. The independence theory argues that long-term associations between auditors and clients can compromise objectivity and impartiality. By implementing auditor rotation, the risk of self-interest or undue by auditors may be minimized, leading to a more independent audit process (Gul et al, 2002).

Professional skepticism- it is an essential attribute of auditors, involving a questioning mind-set and a critical evaluation of audit evidence. The theory suggests that over time, auditors may become overly familiar or complacent with their clients, potentially compromising their ability to exercise professional skepticism. Auditor rotation aims to counteract this familiarity threat by introducing fresh perspectives and reducing the likelihood of cozy relationship between auditors and clients (Mitra et al, 2017).

Quality control- effective quality control mechanisms are vital for ensuring the reliability and accuracy of audits. Auditor rotation can serve as a quality control measure by introducing new auditors with diverse experiences and perspectives. This diversity of auditors can enhance the quality of the audit process, increase the likelihood of detecting errors or irregularities, and contribute to continuous improvement in audit practices.

Public trust and perception- the public perception of the auditing profession plays a significant role in maintaining trust in financial markets. Auditor rotation is considered a means to enhance public trust by demonstrating the commitment of auditors to

objectivity and independence. Regularly changing auditors may signal a proactive approach to address potential conflicts of interest and enhance the overall credibility of the audit process (Li et al, 2022).

Audit quality:

Agency theory- this theoretical framework examines the relationship between principals (such as shareholders) and agents (such as auditors) and highlights the potential conflicts of interest that can arise. It suggests that audit quality can be enhanced when auditors act independently and serve as a reliable intermediary between principals and agents.

Information asymmetry- this concept emphasizes the unequal distribution of information between different parties involved in the audit process. Theoretical perspectives on audit quality often address how auditors can reduce information asymmetry by obtaining sufficient and reliable evidence to provide assurance on the accuracy of financial statements (Dewayanto, et al, 2017).

Signaling theory: this theory focuses on how auditors' actions and characteristics can serve as signals of the quality of financial information. Auditors with a reputation for high-quality work can signal credibility and enhance the overall perceived quality of the audit.

Professional skepticism: this theoretical concept underscores the importance of auditors maintaining a skeptical mindset and critically evaluating evidence during the audit process. Professional skepticism is considered a fundamental attribute of audit quality and helps ensure that auditors exercise due care and provide objective opinions (Chen et al, 2017).

Stakeholder theory- this perspective recognize that audit quality is not only relevant to shareholders but also to other stakeholders, such as creditors, regulators, and the public. Theoretical foundations based on stakeholder theory emphasize the importance of meeting the needs and expectations of these various stakeholders to enhance audit quality.

Institutional theory- this theoretical framework examines how social and organizational factors influence audit quality. It considers the impact of regulatory frameworks, professional standards, and cultural norms on auditors' behaviour and the overall quality of audits.

Contingency theory- this theory suggests that the effectiveness of audit quality practices may depend on various contextual factors. It highlights the importance of aligning audit procedures and practices with the specific circumstances and risks associated with each audited entity (Shan, et al, 2019).

Internal control weaknesses: the theoretical perspectives that underpin the emergence and persistence of internal control system weaknesses are as follow:

Agency theory and principal agent problems- agency theory focuses on the relationship between principals and agents within an organization. Principal-agent problems arise due to information asymmetry and conflicts of interest between the two parties. In the context of internal control systems, weaknesses can occur when agents engage in opportunistic behave, shirking their responsibilities, or exploiting their positions for personal gain (Li et al, 2022).

Systems theory and organizational complexity- systems theory views organizations as complex systems with interconnected components. Weaknesses in internal control systems can emerge from unintended consequences and emergent properties. As organizations become more complex, information processing limitations can lead to weaknesses in control design, implementation, and monitoring (Dewayanto, et al, 2017).

Behavioural theory and human factors- behavioural theory focuses on individual and group behaviour within organizations. Cognitive biases, such as overconfidence or confirmation bias, can lead to weaknesses in decision-making and risk assessment processes. Motivational factors, such as inadequate incentives or a lack of ethical culture, can also contribute to weaknesses in internal control systems (Shan, et al, 2019).

Managerial stock ownership: it refers to the extent to which managers or executives of a company holds shares or equity in that company.

The agency theory forms the basis for understanding managerial ownership. According to this theory, there is a principal-agent relationship between the principals

and the agents. Managers are entrusted with the responsibility to make decisions on behalf of shareholders, but their interests may not always align perfectly. Managerial ownership is seen as a mechanism to align the interests of managers with those of shareholders, reducing the agency costs and potential conflicts of interest.

Managerial ownership is considered an effective tool for aligning the incentives of managers with the long-term interests of shareholders. When managers have a significant stake in the company, they have a vested interest in maximizing shareholder value, as their personal wealth is directly tied to the company's performance. This alignment of incentives is expected to lead improved managerial decision-making and increased firm value (Shan, et al, 2019).

Managerial ownership also plays a crucial role in monitoring and controlling managerial behaviour. Higher levels of managerial ownership provide managers with a stronger sense of ownership and accountability, as they have a larger personal stake at risk. This can enhance their monitoring efforts, as well as facilitate greater control over managerial actions and decisions. On the other hand, high levels of managerial ownership can also lead to entrenchment and the concentration of power in the hands of managers. This can potentially reduce the effectiveness of external monitoring mechanisms, such as the board of directors or external shareholders. Therefore, the optimal level of managerial ownership needs to be carefully considered to strike a balance between aligning incentives and maintaining effective corporate governance (Li et al, 2022).

3. Hypotheses development

The agency theory suggests that conflicts of interest may arise between managers and stockholders. Managerial stock ownership can align the interests of managers with those of shareholders, as it provides incentives for managers to act in the best interest of shareholders and enhance firm performance (Azarberahman and Azarberahman, 2016). Internal control weaknesses can potentially undermine the reliability of financial reporting and increase agency costs. Managers with higher stock ownership have a stronger incentive to ensure effective internal controls and accurate financial reporting.

Internal control weaknesses can create information asymmetry between managers and external auditors. Weak internal controls increase the likelihood of errors or fraud going undetected, making it difficult for external auditors to provide assurance on the accuracy and reliability of financial statements.

Managers with significant stock ownership have a vested interest in maintaining strong internal controls, as their financial stake in the company is directly affected by the accuracy and reliability of financial reporting.

Managerial stock ownership serves as a monitoring mechanism that can enhance the effectiveness of corporate governance. Higher levels of managerial stock ownership increase the monitoring intensity, which can lead to greater scrutiny of internal control systems and improved audit quality (Li et al, 2022).

Internal control weaknesses may trigger increased monitoring efforts by managers with significant stock ownership, resulting in improved audit quality due to enhanced oversight and control environment.

Internal control weaknesses can erode stakeholder confidence in a company's financial statements. Managers with substantial stock ownership have a vested interest in maintaining stakeholder confidence, as it can affect the stock value and their personal wealth (Shan, et al, 2019).

Higher levels of managerial stock ownership may motivate managers to address internal control weaknesses promptly and effectively, leading to improved audit quality and increased stakeholder confidence.

Therefore, the first to fourth hypotheses of the study are formulated as follows:

$\boldsymbol{H_1}$: *Managerial stock affects the relationship between internal control weakness and audit quality.*

$\boldsymbol{H_2}$: *Low Managerial stock affects the relationship between internal control weakness and audit quality.*

$\boldsymbol{H_3}$: *Medium Managerial stock affects the relationship between internal control weakness and audit quality.*

$\boldsymbol{H_4}$: *High Managerial stock affects the relationship between internal control weakness and audit quality.*

Agency theory suggests that conflicts of interest may arise between managers and shareholders. Managerial stock ownership aligns the interests of managers with those of shareholders, as it provides incentives for managers to act in the best interest of shareholders and enhance firm performance. Internal control weaknesses increase the agency costs and can erode shareholders' confidence in the financial reporting process. Lower managerial stock ownership may weaken the managers' incentive to rectify internal control weaknesses, thereby increasing the likelihood of auditor change as an external monitoring mechanism. Higher managerial stock ownership also, enhances the likelihood of timely detection and remediation of internal control weaknesses, resulting in improved audit quality and reducing the need for auditor change.

$\boldsymbol{H_5}$: *Managerial stock affects the relationship between internal control weakness and auditor change.*

$\boldsymbol{H_6}$: *Low Managerial stock affects the relationship between internal control weakness and auditor change.*

$\boldsymbol{H_7}$: *Medium Managerial stock affects the relationship between internal control weakness and auditor change.*

$\boldsymbol{H_8}$: *High Managerial stock affects the relationship between internal control weakness and auditor change.*

4. Research Methodology

This study employs an applied research design and adopts a post-event approach to examine the effect of managerial stock ownership on the relationship between internal control system weaknesses and auditor rotation, as well as its impact on audit quality. The sample for this study consists of 810 firm-year for the years between 2016 and 2021. The data required for the analysis were collected from the www.codal.ir, which provides comprehensive financial information for Iranian companies.

The dependent variables in this study are audit quality and auditor rotation. The audit quality (AQ) is measured using the auditor size proxy. For this purpose, a dummy variable was used. If the company was audited by the audit organization of Iran in the year under study, it takes the value of 1; otherwise, it takes the value of zero. Similarly, the audit rotation (ACH) is also constructed using a dummy variable. In this case, if the year under study is the latest year in which the auditor has audited the company, it takes the value of one; otherwise, it takes the value of zero. The other variables are defined as follows:

ICW (Internal Control Weakness) is an index used to indicate the variable of internal control system weakness. This variable takes the value of one if the auditor's report mentions a significant weakness in the internal control system, and zero otherwise. RECINV is defined by dividing the sum of receivables and inventory by the total assets. FOREIGN is a dummy variable that takes the value of one if the company engages in foreign activities in the given year and zero otherwise. MB represents the Market-to-Book ratio, which indicates the ratio of market value to book value. LEV is an index used to express the financial leverage of a company, calculated as the ratio of total liabilities to total assets. ROA stands for Return on Assets, which represents the profitability of assets. This variable is calculated by dividing the operating income by the average total assets. GC is a dummy variable that takes the value of one if the auditor mentions the issue of going concern in their report, indicating concerns about the company's ability to continue its operations. It takes the value of zero otherwise. The variable "Modified" takes the value of one if the company has made modifications to its financial statements, indicating adjustments or changes made to the original reported figures. It takes the value of zero otherwise. The variable "INITIAL" takes the value of one if it is the first year of auditing, indicating the initial year of the auditor engagement. It takes the value of zero otherwise. ARL (Audit Report Lag) is a logarithm of the number of days from the end of the fiscal year to the issuance of the audit report. It represents the time taken for the completion of the audit process and the issuance of the audit report. BIND is defined as Board Independence, which is calculated as the ratio of non-executive directors to the total number of board members. It represents the independence of board members who are not employed by the company. INST represents institutional shareholders, indicating the percentage of shares held by institutional entities. It represents the ownership percentage of shares held by legal entities, such as financial institutions, investment funds, or corporate entities. LTA (Log of Total Assets)

serves as an indicator to express the size of the company. MGR_L equals MGR if 0.00 < MGR < 0.05, and 0.05 if MGR ≥ 0.05. MGR_M equals MGR-0.05 if 0.05 <MGR <0.25; 0.00 if MGR ≤ 0.05; 0.20 if MGR ≥0.25. MGR_H equals MGR-0.25 if 0.25 <MGR <1.00; 0.00 if MGR ≤ 0.25.

5. Data analysis and research results

Descriptive statistics of research variables for sample companies are presented in Table (1), which shows the amount of descriptive parameters including central indicators such as mean and mean. The second category of information includes scattering parameters such as standard deviation, which indicate the distribution of data around the mean axis.

Since the number of sample companies of 135 companies in 6 years (810 firm-year) in the range of 2016-2021 has been studied, the number of observations in panel data is 810.

TABLE 1- DESCRIPTIVE STATISTICS OF RESEARCH VARIABLES

variable	Mean	Median	Max	Min	Std. dev.
MGR	0.5576	0.6365	0.6946	0.0000	0.2771
ARL	108.49	106.00	155.00	86.000	24.481
INST	0.3042	0.1763	0.8866	0.0000	0.3139
LTA	14.228	14.101	16.827	12.025	1.2613
LEV	0.6686	0.6466	0.7402	0.2341	0.2605
MB	2.6220	2.2377	6.7911	0.1907	1.7582
RECINV	0.5658	0.5692	0.8451	0.2682	0.1664
ROA	0.0939	0.0831	0.3513	-0.137	0.1224

According to the values listed in Table (1), it can be seen that during the period under review, on average, about 56% of managers have a managerial stock. On average, about 67 percent of the assets of the companies under review are financed by borrowing. It is observed that the net profit of the sample companies is about 9% of the average of their total assets. Also, high dispersion in some variables is probably due to the activity of companies in various industries. Given the proximity of the mean and median values in all variables, it can be concluded that all variables used in the study have a distribution close to normal and also due to the fact that the standard deviation of any of the variables is not zero, they can be entered into the model.

TABLE 2- DESCRIPTIVE STATISTICS OF THE DUMMY VARIABLES

variable	Mean	Std. dev.	zero value	one value
AQ	0.2827	0.4506	494	316
ACH	0.240	0.4278	512	298
ICW	0.2185	0.4135	669	141
FOREGEIN	0.5185	0.5000	721	89
GC	0.0025	0.0497	792	18
INITIAL	0.3049	0.4607	461	349
Modified	0.5444	0.4983	400	410

Due to the fact that the dependent variables of the research are two state type, in order to study the goodness of fit in this research, the coefficient of determining the McFadden has been used, which has a chi-square distribution. The results of this test are shown in Table (3). As can be seen, considering that the statistical value of 206.758 is obtained with a probability of 0.000, it can be concluded that the regression model is significant.

TABLE 3- THE RESULTS OF ESTIMATING THE FIRST RESEARCH MODEL

The Logistic regression analysis was chosen to examine the relationship due to the nature of the dependent variable, which was defined as a dummy variable. In this table, the dependent variable is AQ.

Variable	Coef.	Std. Error	Z-Stat.	Prob.
C	-13.03	1.449	-8.998	0.000
ICW	-0.402	0.526	-0.765	0.444
MGR	1.396	0.408	3.421	0.001
ICW*MGR	-0.203	0.809	-0.251	0.802
LTA	0.631	0.084	7.516	0.000
RECINV	-0.409	0.557	-0.709	0.478
FOREGEIN	0.080	0.211	0.379	0.705
MB	0.047	0.059	0.808	0.419
LEV	1.940	0.481	4.036	0.000
ROA	1.038	1.061	0.979	0.328
GC	-0.161	0.291	-0.552	0.581
Modified	-0.759	0.225	-3.380	0.001
INITIAL	-1.651	0.284	-5.821	0.000
ARL	0.013	0.005	2.771	0.006
BDIND	-0.246	0.552	-0.447	0.655
INST	-0.193	0.311	-0.621	0.535
Ind.	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
LR stat.	206.758			
Prob.	0.000			
R2 McFadden	0.2265			

This table reports the Logistic regression test for hypothesis testing. We used the following model for this purpose. Refer to Section 3 for the definition of variables. $AQ_{it} = \alpha_0 + \alpha_1 ICW_{it} + \alpha_2 RECINV_{it} + \alpha_3 FOREIGN_{it} + \alpha_4 MB_{it} + \alpha_5 LEV_{it} + \alpha_6 ROA_{it} + \alpha_7 GC_{it} + \alpha_8 Modified_{it} + \alpha_9 INITIAL_{it} + \alpha_{10} ARL_{it} + \alpha_{11} BIND_{it} + \alpha_{12} INST_{it} + \alpha_{13} LTA_{it} + \alpha_{14} MGR_{it} + \alpha_{15} MGR * ICW_{it} + Ind + Year + \varepsilon_{it}$

The results of Table (3) show that the coefficient of moderating variable of the weakness in internal control

system and managerial stock is -0.203. This means that the variable of managerial stock has a negative effect on the relationship between weakness in the internal control system and audit quality, but it is not significant. Therefore, the first hypothesis is rejected.

In Table (4), the R^2 value of McFadden's test model for the second to fourth hypotheses is 0.24, which is acceptable for logistic regression.

TABLE 4- ESTIMATION RESULTS OF THE SECOND RESEARCH MODEL

The dependent variable in this table is AQ, which was treated as a binary variable. Logistic regression was employed due to the dichotomous nature of the dependent variable.

Variable	Coef.	Std. Error	Z-Stat.	Prob.
C	-12.875	1.534	-8.392	0.000
ICW	-1.128	0.519	-2.176	0.023
MGR_L	-2.032	0.760	-2.674	0.228
MGR_M	-1.584	0.281	-5.644	0.000
MGR_H	0.451	0.283	1.595	0.113
ICW*MGR_L	-0.206	0.037	-5.634	0.000
ICW*MGR_M	0.599	0.458	1.310	0.190
ICW*MGR_H	0.013	0.005	2.857	0.004
LTA	0.618	0.084	0.357	0.000
RECINV	-0.264	0.576	-0.458	0.647
FOREGEIN	0.049	0.212	0.232	0.817
MB	0.026	0.058	0.444	0.657
LEV	2.076	0.470	4.417	0.000
ROA	1.310	1.050	0.247	0.213
GC	-0.110	0.146	-0.748	0.455
Modified	0.736	0.228	-3.226	0.001
INITIAL	1.447	1.481	0.977	0.329
ARL	0.002	0.001	1.733	0.084
BDIND	-0.203	0.562	-0.362	0.717
INST	-0.101	0.316	-0319	0.750
Ind.	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
LR stat.	220.089			
Prob.	0.000			
R2 McFadden	0.242			

This table reports the Logistic regression test for hypothesis testing. We used the following model for this purpose. Refer to Section 3 for the definition of variables. $AQ_{it} = \beta_0 + \beta_1 ICW_{it} + \beta_2 RECINV_{it} + \beta_3 FOREIGN_{it} + \beta_4 MB_{it} + \beta_5 LEV_{it} + \beta_6 ROA_{it} + \beta_7 GC_{it} + \beta_8 Modified_{it} + \beta_9 INITIAL_{it} + \beta_{10} ARL_{it} + \beta_{11} BIND_{it} + \beta_{12} INST_{it} + \beta_{13} LTA_{it} + \beta_{14} MGR\_L_{it} + \beta_{15} MGR\_M_{it} + \beta_{16} MGR\_H_{it} + \beta_{17} MGR\_L * ICW_{it} + \beta_{18} MGR\_M * ICW_{it} + \beta_{19} MGR\_H * ICW_{it} + Ind + Year + \delta_{it}$

The results of Table (4) show that the significance level of the moderating variable (weakness in the internal control system*low managerial stock) is less than 5%, so the second hypothesis of the research is confirmed.

The negative variable coefficient states that when managers have a small stock in the firm, the increase in weaknesses in the internal control system causes the auditor to be selected with a lower quality. Also, given that the significance level of the moderating variable (weakness in the internal control system*medium management stock) is more than 5%, the third hypothesis is not confirmed.

Table (4) indicates the confirmation of the fourth hypothesis because the significance level of the moderating variable (weakness in the internal control system*high managerial stock) is less than 5%. Therefore, it can be argued that in cases where they have a high proportion of the company's stock, increasing the weaknesses in the internal control system will lead to the selection of a higher quality auditor.

Model (3) was used to test the fifth hypothesis. The test results of this model are shown in Table (5).

TABLE 5- ESTIMATION RESULTS OF THE THIRD RESEARCH MODEL

Variable	Coef.	Std. Error	Z-Stat.	Prob.
C	2.770	1.364	2.031	0.042
ICW	0.298	0.440	0.677	0.499
MGR	-0146	0.424	-0.344	0.731
ICW*MGR	0.453	0.698	0.650	0.526
LTA	-0.214	0.074	-2.882	0.004
RECINV	-0.253	0.525	-0.482	0.630
FOREGEIN	0.209	0.192	1.090	0.276
MB	-0.014	0.056	-0.250	0.803
LEV	-0.491	0.404	-1.214	0.225
ROA	-0.154	0.885	-0.174	0.862
GC	-0.857	0.769	-1.114	0.265
Modified	0.141	0.189	0.746	0.456
INITIAL	-0.922	0.219	-4.213	0.000
ARL	0.001	0.004	0.269	0.788
BDIND	-0.391	0.527	-0.741	0.459
INST	-0.291	0.287	-1.014	0.310
Ind.	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
LR stat.	42.993			
Prob.	0.001			
R2 McFadden	0.090			

This table reports the Logistic regression test for hypothesis testing. We used the following model for this purpose. Refer to Section 3 for the definition of variables. $ACH_{it} = \alpha_0 + \alpha_1 ICW_{it} + \alpha_2 RECINV_{it} + \alpha_3 FOREIGN_{it} + \alpha_4 MB_{it} + \alpha_5 LEV_{it} + \alpha_6 ROA_{it} + \alpha_7 GC_{it} + \alpha_8 Modified_{it} + \alpha_9 INITIAL_{it} + \alpha_{10} ARL_{it} + \alpha_{11} BIND_{it} + \alpha_{12} INST_{it} + \alpha_{13} LTA_{it} + \alpha_{14} MGR_{it} + \alpha_{15} MGR * ICW_{it} + Ind + Year + \varepsilon_{it}$

The results of Table (5) show that the significance level of the moderating variable (weakness in the internal control system *managerial stock) is more than 5%, so the fifth hypothesis of the research is not confirmed.

TABLE 6- ESTIMATION RESULTS OF THE FORTH RESEARCH MODEL

Variable	Coef.	Std. Error	Z-Stat.	Prob.
C	2.793	1.359	2.055	0.040
ICW	0.409	0.230	1.778	0.075
MGR_L	0.752	0.432	1.739	0.082
MGR_M	0.000	0.001	0.477	0.634
MGR_H	0.053	0.287	0.183	0.855
ICW*MGR_L	-0.912	0.218	-4.187	0.000
ICW*MGR_M	0.745	0.732	1.017	0.310
ICW*MGR_H	0.256	0.097	2.630	0.008
LTA	-0.215	0.075	-2.870	0.004
RECINV	-0.163	0.525	-0.311	0.756
FOREGEIN	0.171	0.194	0.880	0.379
MB	-0.020	0.057	-0.349	0.727
LEV	-0.495	0.397	-1.248	0.212
ROA	-0.009	0.890	-0.010	0.991
GC	-1.661	0.992	-1.673	0.094
Modified	0.095	0.190	0.501	0.616
INITIAL	-0.129	0.023	-5.551	0.000
ARL	0.000	0.004	0.009	0.992
BDIND	-0.433	0.526	-0.824	0.410
INST	-0.314	0.288	-1.091	0.275
Ind.	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
LR stat.	50.393			
Prob.	0.000			
R2 McFadden	0.088			

This table reports the Logistic regression test for hypothesis testing. We used the following model for this purpose. Refer to Section 3 for the definition of variables. $ACH_{it} = \beta_0 + \beta_1 ICW_{it} + \beta_2 RECINV_{it} + \beta_3 FOREIGN_{it} + \beta_4 MB_{it} + \beta_5 LEV_{it} + \beta_6 ROA_{it} + \beta_7 GC_{it} + \beta_8 Modified_{it} + \beta_9 INITIAL_{it} + \beta_{10} ARL_{it} + \beta_{11} BIND_{it} + \beta_{12} INST_{it} + \beta_{13} LTA_{it} + \beta_{14} MGR\_L_{it} + \beta_{15} MGR\_M_{it} + \beta_{16} MGR\_H_{it} + \beta_{17} MGR\_L * ICW_{it} + \beta_{18} MGR\_M * ICW_{it} + \beta_{19} MGR\_H * ICW_{it} + Ind + Year + \delta_{it}$

In Table (6), the R^2 value of McFadden's test model for the second to fourth hypotheses is 0.0888, which is acceptable for logistic regression. According to Table (6) in the sixth hypothesis test, it was found that the significance level of the moderating variable (weakness in the internal control system*low managerial stock) with a negative coefficient of less than 5% is significant. Therefore, the sixth hypothesis is confirmed. That is, in a situation where managers have a small proportion of the company's stock, an increase in weaknesses in the internal control system will reduce the change in auditors.

Also in Table (6) it is clear that the significance level of the moderating variable (weakness in the internal control system*medium managerial stock) is more than 5%, which leads to the rejection of the seventh hypothesis.

Finally, the significance level of the moderating variable (weakness in the internal control system*high managerial stock) with a positive coefficient of less than 5% is significant. Therefore, the eighth hypothesis is confirmed. That is, in a situation where managers have a large proportion of the company's stock, an increase in weaknesses in the internal control system will increase the change in auditors.

6. Conclusion

This study examines the effect of managerial stock on the relationship between internal control weakness with auditor change and audit quality. The results of the study show that in a situation where managers have a small proportion of the company's stock, increasing the weaknesses in the internal control system will cause the auditor to be selected with lower quality. Management ownership levels are vary. These levels can be used as a measure of the conflict of interest between managers and owners. As managers' ownership declines, the conflict of interest increases, leading to the selection of a low-quality auditor so that management's ability to pursue its own interests is not limited.

The results also showed that in a situation where managers have a high proportion of the company's stock, an increase in weaknesses in the internal control system causes a quality auditor to be selected as the company's auditor. Managerial ownership helps reduce managers' motivation to increase their personal interests by ignoring the interests of shareholders. Managers who own the company are motivated to work more efficiently, which in turn leads to profitable use of assets. One way to protect the rights of shareholders and, consequently, company executives is to select a quality auditor. Therefore, increasing the ownership of managers can increase the selection of quality auditors to protect the interests of shareholders.

Based on the research results, it was confirmed that in a situation where managers have a small proportion of the company's shares, increasing the weaknesses in the internal control system will reduce the change in auditors. By reducing managerial stock, the conflict of interest between owners and management increases. Under such circumstances, managers' incentives to pursue policies to protect their interests (and not the company's) increase, and thus increase the likelihood of fraudulent financial policies. In such a situation, managers try to choose a lower quality audit in order to

hide their actions.

In general, the results show that the variable coefficient of moderating of high ownership of managers is positive, which indicates the positive effect of high ownership of managers on the relationship between weakness internal control and auditor change. Therefore, in a situation where managers have a high proportion of the company's stock, increasing the weaknesses in the internal control system increases the likelihood of auditors changing.

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