CEO Turnover and Internal Control Material Weaknesses

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Abstract

The practical aim of the paper is to examine whether CEO turnover occurs under account-level and company-level internal control material weaknesses (ICMWs) in Tehran Stock Exchange (TSE) or not. The authors utilized data from 99 Iranian firms' financial statements as the sample over 5 years (2013-2018). A total of 594 observations were analyzed using a logit regression model. Empirical findings revealed there is no significant relationship between account-level and company-level ICMWs with CEO turnover. Therefore, establishing appropriate internal control is not merely dependent on the CEOs but may require committed staff withholding strong moral values. This paper develops the literature and generates empirical evidence of the relation between CEO turnover and ICMWs in Iran's specific context as a developing country.

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1. Introduction

In today's competitive world, CEOs support a critical task in managing their economic entities and success. Therefore, the critical role of the CEO in efficiently managing economic activities is undeniable (Yeh et al., 2019; Lobo et al., 2018; Yaqoubi et al., 2015). Furthermore, the quality of the CEO fulfills a significant role in the rising trend of companies. One of the specific criteria for adequately measuring the superior quality of the CEO is invariably the CEO's possible turnover (Yin et al., 2020; Abbo, 2018; Ting, 2011). The company managing with one person over the years has led to greater recognition of the company's business and ultimately leads to an increase in the CEO's quality. The results of previous research show that the moderate level of CEO turnover will increase the CEO cognition and expertise in the relevant employer industry and will increase the quality of the CEO (Ma et al., 2018; Hejazi et al., 2016; Li et al., 2019). Hence, the decision-making to change the CEO of a company is one of the most critical decisions adopted by the board of directors because it retains the long-term case for investment, operating, and financing decisions of the companies (Lai et al., 2020; Uemura, 2018; Chen et al., 2019; Deng et al., 2019).

Currently, enterprise CEOs reward much attention to internal control systems because they know that accomplishing the primary mission is incredibly difficult to maintain profitability and minimize unexpected events in the absence of an effective internal control system. Internal control makes them more confident in accounting statistics and generates information based on their decisions. It also assures them that proper financial and administrative systems and procedures within their enterprise are completely implemented (Chen et al., 2019; Aghaei et al., 2015; Rezaei et al., 2011; Lisic et al., 2019). Therefore, the prime necessity of implementing correctly supervisory mechanisms and appropriate procedures for the financial management of intellectual activities made by the enterprise CEOs has typically provided a suitable context for internal controls to realistically achieve the predetermined purposes (Rostami and Kohansal, 2015). For example, more ICMWs of the companies receive significant consequences, including weakening trust (Beneish et al., 2008; Uemura, 2018).

Moreover, internal controls are among business units' various mechanisms to control agency problems (Iatridis, 2011). Companies maintain an economic incentive to report on internal control. Previous studies have shown that internal control reduces agency costs and investor risk, and increases conservatism and CEOs' supervision, reducing capital costs (Li, 2013). Hence, changes in the quality of internal control mechanisms are expected to improve CEOs' supervision and should be accompanied by an increase in the likelihood of the CEO turnover of ailing companies so that their successors provide better shareholder benefits.

In most Iranian companies, CEO turnover of the company leads to critical changes in company policies and operational procedures. The company's CEO leads to major changes in the active policies tentatively adopted by the pleasant company's managers and typically affects shareholders' interests.

The following research questions generally contribute to the literature by providing evidence on factors affecting the CEO turnover in Iran because the relevant studies in this field are limited. The disclosure of internal control information equally establishes a primary channel for investors to obtain company accounting information and reduce information asymmetry in the capital market (Fakhari and Kabiri, 2018; Uemura, 2018; Chang et al., 2019). Since the ICMWs of the companies naturally determine whether active companies have investment value or not? Since then, on the economic basis of this novel concept, measuring ICMWs of capital market companies and sufficiently examining its consequences seems necessary, particularly in Iran as a developing country. This investigation can be a concerning issue in explaining essential attention to the

literature of ICMWs in Iran, which is another contribution of the paper. The present academic paper merely focuses on the key issues related to ICMWs affecting CEO turnover in Iran as an emerging Islamic economy and attempts to highlight the apparent factors and foster discussion within two categories of ICMWs: account-level and company-level. Hence, the current study adequately establishes the following critical questions:

whether ICMWs allow an effect on the CEO turnover of listed companies in the Tehran Stock Exchange or not?

By this introduction, it can be stated that the present study does not merely develop the previous background in the field of internal control of the companies but additionally provides significant results of whether CEO turnover represents a vital sign of ICMWs or not.

The organized remainder of the academic paper naturally obtains structured as follows. Specific section 2 outlines theoretical foundations and hypothesis development. Section 3 presents the empirical approach and typically describes the critical data, parameter measurements, and testing models. Section 4 intelligently discusses model estimation and hypothesis testing, desired results addressing collinearity test of research parameters. The possible impact of ICMWs on the CEO turnover is typically analyzed controlling for loss reports. Section 5 reasonably concludes the academic paper.

2. Theoretical foundations and literature review
2.1. Definition of Internal Control

According to section 315 of Iran's Audit Standard, internal control comprises a process that signifies designed and implemented by the CEO and other staff to achieve reasonable assurance from the purposes of a unit dealing with the reliability of financial reporting, the efficiency of operations, and compliance with relevant laws and regulations. Therefore, internal controls are typically designed and reliably identified to instantly recognize those business risks that allegedly threaten each of these practical purposes. Internal controls include an enterprise plan and all the procedures adopted by an enterprise to preserve the assets, address the accounting data's correctness and reliability, improve operational efficiency, and encourage compliance with management procedures. Internal controls enhance the performance of enterprises and even improves financial reporting (Ghorbani, 2007).

2.1.1. ICMWs categories
- Internal control at the account-level: It is typically the control that directly maintains a practical effect on relying on accounting documents and financial statements.
- Internal control at the company-level: It is typically the control that has little impact on financial statements and is properly designed to increase the operational efficiency of sales, production, or other non-financial operations (Mohammadi, 2012; Bauer, 2016). Today, unlike in the historical past, appropriate standards do not distinguish between internal control at the account and company levels. Auditors only focus on that group of internal controls designed to prevent or accurately detect civil cases of misrepresentation in financial statements.

2.2. Relevant literature

Feng et al. (2009) examine the relationship between internal control quality and management guidance accuracy. Consistent with managers in firms with ineffective internal controls relying on erroneous internal management reports when forming guidance, they document less accurate guidance among firms reporting inadequate

internal controls. This relationship extends to change analysis. The impact of ineffective internal controls on forecast accuracy is three times larger when the weakness relates to revenues or cost of goods sold-inputs, particularly relevant to forecasting earnings. They conclude that internal quality control has an economically significant effect on internal management reports and, thus, decisions based on these figures. To improve the context of corporate governance, Johnstone and Rupley (2011) stated that the revelation of material adverse events about a firm, including issues like fraud, restatements, or ICMW, may destabilize the firm's corporate governance equilibrium as it works to remediate the event or effects thereof. As prior research investigates the association between the revelation of fraud and restatements and both board and management turnover, they extend that research, proposing and testing a conceptual model of the process that firms use to remediate negative events in general and ICMW precisely, with a focus on the role of governance structure changes. They finally reveal a positive association between disclosure of ICMWs and subsequent turnover of board members, audit committees, and top management. Their paper illustrates a positive association between the remediation of ICMWs and improvements in the characteristics of boards of directors, audit committees, and top management.

Moreover, Hoitash et al. (2012) revealed that non-financial criteria, like internal control weaknesses, effectively determine managers' rewards. They have proven the disclosure of internal control weaknesses indicates a weakness in management performance, and firms with strong managerial experience will, after disclosure of weaknesses, see further reductions in rewards. Furthermore, Lisic et al. (2016) posit that CEO power reduces or even eliminates the improvements in audit committee effectiveness resulting from independent and financially expert committee members. Thus, CEO power may result in an audit committee that appears effective in form but is not in substance. They construct a composite index for CEO power by combining ten CEO characteristics and employing internal control weaknesses as a proxy for audit committee monitoring quality. Since all the firms in their sample have completely independent audit committees, they contribute financial expertise to examine the impact of CEO power on audit committee effectiveness. When CEO power is low, they find that audit committee financial expertise is negatively associated with internal control weaknesses. As a close paper, Uemura (2018) stated that several accounting scandals have occurred in Japan in recent years (e.g., Olympus). However, the government, regulators, and auditing standard setters have struggled to identify alternative directions for corporate governance in listed companies, such as standard setting to address fraud risks in an audit or the adoption of new corporate governance codes. He stated that the validity and effectiveness of monitoring by outside directors had received criticism within such a context.

Nevertheless, in 2015 accounting fraud at Toshiba was discovered, which surprisingly involved upper management; the independent directors had failed to detect and prevent this fraud. Once more, the Japanese board of directors and outside directors' monitoring function was regarded with suspicion. Therefore, he examines Japanese corporations that disclose significant deficiencies in internal controls over financial reporting and determines whether replacing the CEO and enhancing board members' independence and financial expertise are followed by significant deficiencies remediation. He indicated that Japanese companies that disclose significant internal controls over financial reporting are more likely to replace their CEOs and enhance board independence. In addition, he discovered that although these actions do not affect significant deficiencies remediation, upgrading the board's accounting expertise does correlate positively with significant deficiencies remediation. Indeed, Zarei et al. (2020) emphasize that since there is a shortage of academic literature about studies on the weaknesses of internal control in Iran,

it is valuable to make more investigation in this field.

As Chalmers et al. (2019) stated, in 2001, the US moved to regulate internal control reporting by management and auditors. While some jurisdictions have followed the lead of the US, many others have not. An important question, therefore, is the relevance of internal control to stakeholders. The more specific issue of the benefits of US-style regulation of internal control reporting is also topical. They review studies on the determinants of internal control quality and its economic consequences for stakeholders, including investors, creditors, managers, auditors, and financial analysts. They extend previous reviews by focusing on US studies published since 2013 and all non-US studies investigating IC quality, including countries regulating IC disclosure and unregulated settings and both developed and developing economies. Three primary insights arise from our analysis. First, evidence on the economic consequences of internal control quality suggests that the quality of internal control can significantly affect decision-making by users of financial information. Second, research on the observed association between ownership structure, specific board characteristics, and internal control quality is generally mixed. Empirical evidence concerning the association between audit committee characteristics and internal control quality supports a positive and significant association typically. Finally, while studies in non-US jurisdictions are increasing, opportunities remain to explore the determinants and consequences of internal control in other jurisdictions.

2.3. Linking ICMWs and CEOs turnover

Since CEOs are responsible for the accuracy, documenting, and presenting financial statements (Zarei et al., 2020; Khlif and Samaha, 2019), they must adequately carry out their role in the defensive front to monitor the internal controls of financial reporting to ensure from internal reporting quality. Therefore, after the misrepresentation of accounting items, the company's board of directors, to rebuild the internal control system, may accomplish their cooperation with the CEO in the first step, as they sufficiently consider ICMWs as an evident sign of apparent weaknesses in the CEO of the company (Wang and Huang, 2013; Uemura, 2018; Adhikari et al., 2020). Experimental results also show that reducing internal controls' quality is invariably accompanied by a higher CEO turnover and vice versa. Jagannathan (1996) adequately assessed the direct relationship between internal control mechanisms and mandatory CEO change; founding CEOs with weak performance in internal control mechanisms would be replaced more quickly in companies with a higher percentage of non-executive members of the board of directors, as well as a higher percentage of the board of directors share than the CEO. The same person does not play the official position of CEO and chairman of the board.

A significant ICMWs report can provide information to aware users about the weaknesses and practices of CEO performance. In Iran, as a developing country, there is currently no report on the ICMWs. Still, after the adoption of Article 35 of the TSE Law, the CEO is required to prepare a report on internal control and the design and implementation of internal control reporting (Hajiha and Hosseinnejad, 2015). Like an essential part of enterprise responsibilities, senior management members maintain an ordinarily critical role by monitoring and executing internal controls in enterprises to implement and maintain these controls (Johnstone et al., 2011).

Promptly given the potential risks, much attention has been paid to the possible relationship between CEO supervision, the presence, and internal controls' power. In accounting, various studies have shown ICMWs can effectively change the finance department head and independent auditor workflow (Rice and Weber, 2012; Wang and Huang, 2013).

In recent decades, after the scandals of 2002 and the Sarbanes-Oxley Act's adoption,

internal control is very much considered. This Act adequately addresses internal controls and CEO tasks to create and maintain an effective internal control system (Javaheri, 2006). Section 302 of the Sarbanes-Oxley Act requires the senior executive manager and senior financial manager to evaluate internal control effectiveness and disclose any defect in internal control (Gao and Zhang, 2019). Section 404 of this Act also requires that the company record CEO assessment from the modern design of the operational efficiency of the internal control system, and besides, requires the independent auditor to knowingly provide a separate commentary on CEO assessment and internal control assessment (Mohammadpour et al., 2013; Dahmardeghaleno *et al.,* 2019). Therefore, it can be stated that the responsibility for effective internal control remains the responsibility of CEOs. CEO integrates with purposes, inserts control activities and mechanisms in its place, monitors, and evaluates controls. Therefore internal control represents a tool for the CEO and directly related to enterprise purposes. Although the CEO is naturally the main internal control element, all enterprise executive staff fulfills an essential role in creating and implementing it (Abbaszadeh et al., 2011). The results of many studies have shown that most of the auditor's workflow and CEO turnover occurs when the ICMWs is more apparent. The results of these studies have also shown enterprises seeking to strengthen their internal controls often replace some of their CEOs (Rice and Weber, 2012; Calderon et al., 2012; Xi & Sun, 2014; Uemura, 2018).

Furthermore, large companies can rapidly replace these changes to improve their internal controls and access resources progressively. Along with this remarkable fact, other published studies like Yu-jie et al. (2011) have sufficiently shown that CEO turnover can undoubtedly affect enterprise accounting and leading company financial reporting choices. From the viewpoint of agency problems, it is as sumped that ICMWs are due to the agent's choice to perform a series of tasks to achieve the best of the landlords' purposes against agency principles' observance. It would be reasonable to argue that in most cases, agents, including the CEO, financial manager, and the independent auditor, were considered as factors that could affect the ICMWs.

In general, considering the theoretical foundations and research background, there are reasons to believe the existence of further ICMWs increases the likelihood of a change in CEO. Furthermore, the present study is properly divided into two categories at the account and company levels for enriching the background of internal control according to the considerable importance of the companies' internal control details and based on the Bauer research (2016).

Taken as one, based on theoretical arguments and literature review, a single critical hypothesis and three sub-hypotheses are presented in the alternative form as following:

Hypothesis 1: There is a significant and direct relation between ICMWs and CEO turnover.

Hypothesis 1-1: There is a significant and direct relation between account-level ICMWs and CEO turnover.

Hypothesis 1-2: There is a significant and direct relation between company-level ICMWs and CEO turnover.

3. Empirical approach

Regarding that, the paper's data is typically related to real companies' financial information, and the practical results can be used wisely to better decisions of capital market participants. The paper's ultimate aim is functional and in terms of the method is descriptive type through correlation with post-event approach (semi-experimental). The statistical population of the paper is listed companies in TSE. The apparent reason for choosing TSE to examine is adequately monitoring relevant organizations like the ministry of finance and the Central Bank over TSE. In notable addition, since financial

statements of listed companies in TSE are subject to be approved by trusted auditors, thereby more reliability is expected. Besides, since listed companies in TSE are traditionally required to submit their financial statements uniformly, there will be more comparability. Therefore, TSE is the best place to extract companies' financial information in Iran and contribute the paper to reliable results.

The present study intends to describe the relationship between the two parameters by collecting relevant data. Indeed, to collect theoretical foundations and literature reviews, library sources are used. The content analysis approach of the board of directors' activities report and the independent auditor's report will analyze the data using the direct observation method. Financial data are carefully extracted from comprehensive databases such as Rahavard Novin, which support Iranian companies' financial data listed in TSE. Then collected data are classified through Microsoft Excel. It is performed utilizing econometric software, Eviews 9.

To investigate the relationship between ICMWs and CEO turnover, the explanatory and dependent parameters in research models have been tested using panel data. The Logistic Regression (LR) method, or binary logit-maximum likelihood estimate method, is used in the paper because the research's dependent parameter (CEO turnover) is a dummy parameter. Indeed, to determine the significance of the entire regression model, the likelihood ratio test and the McFadden's R squared statistic are used (Sur et al., 2017; Shirin and Khonsari, 2009; Allison, 2014).

3.1. Sample

The statistical population included all listed companies on TSE during 2013-2018. It is considered longitudinal in terms of time horizon. In the study, sampling is carried out through a systematic elimination method, and the sample volume equal to those companies that satisfy the following conditions:

1. Listed before 2013 in TSE and have been active ending fiscal year of 2018.
2. In practical terms of increasing comparability, their fiscal year should be ending in March and remain unchanged during the 2013-2018 fiscal year.
3. Listed companies, including banks and financial institutions, investment companies, financial intermediaries, holding companies, which ordinarily have separate reporting structures, are removed from selected samples.
4. The required financial and management information (in particular, board reports and explanatory notes of financial statements) and information related to their CEOs (contained in the board reports)should be available for six years.
5. During 2013-2018, except for the regular period of holding general assembly, the trading stock is not stopped.

After introducing the above restrictions, selected samples were reduced to 99 companies during 2013-2018; therefore, there would be 594 observations.

3.2. Parameters and measurement method

Responding parameter: To measure CEO turnover of the company as a dependent parameter, a dummy parameter is utilized. Its information is derived from the annual public meetings report or the board of director activities report. Therefore, if the company's CEO has changed since last year, the number 1 and otherwise 0 would be considered (Khosh et al., 2017; Ghasemi and Gharkas, 2014; Wang and Huang; 2013; Uemura, 2018). From now on, this parameter will be represented by the symbol (TURN).

Explanatory parameter: In the current paper, the ICMWs as an independent parameter following the researches of Blasam et al. (2014), Javid et al. (2015), and Hajiha and Hosseinnejad (2015) significant ICMWs are utilized which comes from independent auditors report. Given that in the audit report, only the company's significant ICMWs is

presented as a clause of the condition and avoids providing all the weaknesses that the auditor has already addressed in the CEO letter. The present study addresses all the clauses of the condition related to the ICMWs are considered significant ICMWs. Therefore, if the company has at least one ICMW, it equals 1 and otherwise 0. Therefore, in the paper, the significant weaknesses are the auditor's weaknesses in his/her report and usually remediate during the financial year and/or not. These include weaknesses in account receivable, inventories, assets, taxes, or items related to the board of directors' decisions, and these weaknesses exist at the account and company levels. From now on, this parameter will be represented by the symbol (ICMWs). Table 1 presents the classification of ICMWs derived from Bauer's research (2016).

Table 1: ICMWs Categories

ICMWs	Codes	Definition
Company-level ICMWs	A1a	Lack of key personnel
	A1b	Management override or integrity issues
	A2a	Financial statement close process issues
	A3a	Fraud or red flags for fraud
	A3b	Insufficient documentation and policies
	A3c	Inadequate lines of communication
	A3d	Insufficient risk assessment policies
Account-level ICMWs	B1a	Lack of timely reporting/filing
	B1b	Lack of quality corporate governance
	B1c	Lack of training & staffing/resources
	B1d	Internal audit/monitoring issues
	B2a	Lack of timely review
	B2b	Incomplete account analysis
	B2c	Untimely account reconciliations
	B2d	Issues with nonroutine transactions
	B2e	Lack of discipline in reporting
	B3a	Issues with IT controls

Control parameters: To measure the relationship between ICMWs and CEO turnover more accurately, it is necessary to handle a set of relevant studies' potential parameters. In the present study, 7 control parameters are utilized, including company size (Fama and French, 2001; Mirza and Afza, 2010; Balsam et al., 2014; Dang et al., 2018), company sales growth rates (Abdolrahimi et al., 2018; Hoitash et al., 2012; Uemura, 2018), loss report (Hoitash et al., 2012; Ghasemi and Gharkas, 2014), current ratio/rate, and the natural logarithm of total sales (Dang et al., 2018; Khosh et al., 2017), return on assets (Khosh et al., 2017; Hoitash et al., 2012; Bauer, 2016; Uemura, 2018) and earnings ratio/rate (Khosh et al., 2017).

Finally, following Hoitash et al. (2012), Wang and Huang (2013), Balsam et al. (2014), Bauer (2016), Uemura (2018), the intended models for each of the hypotheses are as follows; the primary hypothesis is stated by the model (1):

$TURN_{i,t-1} = \beta 0 + b1ICMW_{i,t} + b2SIZE_{i,t} + b3GROWTH_{i,t} + b4LOSS_{i,t} + b5CurRate_{i,t} + b6LnTotalSales_{i,t} + b7ROA_{i,t} + b8Earnings_{i,t} + \sum_t YEAR + \sum_j IND + \varepsilon_{i,t}$

The hypothesis 1-1 is stated by model (2):

$TURN_{i,t-1} = \beta 0 + b1ICMW\text{-}ACCT_{i,t} + b2SIZE_{i,t} + b3GROWTH_{i,t} + b4LOSS_{i,t} + b5CurRate_{i,t} + b6LnTotalSales_{i,t} + b7ROA_{i,t} + b8Earnings_{i,t} + \sum_t YEAR + \sum_j IND + \varepsilon_{i,t}$

The hypothesis 1-2 is stated by model (3):

$TURN_{i,t-1} = \beta 0 + b1ICMW\text{-}COMP_{i,t} + b2SIZE_{i,t} + b3GROWTH_{i,t} + b4LOSS_{i,t} + b5CurRate_{i,t} + b6LnTotalSales_{i,t} + b7ROA_{i,t} + b8Earnings_{i,t} + \sum_t YEAR + \sum_j IND + \varepsilon_{i,t}$

Where:

$TURN_{i,t-1}$: A dummy parameter equals 1 if the CEO has been replaced from the previous year, otherwise equal to 0.

$ICMW_{i,t}$: A dummy parameter equals 1 if the company holds at least one weakness in the internal control system, otherwise equal to 0.

$SIZE_{i,t}$: Company size, which is calculated by the log of the market value of equity on the fiscal year's balance sheet.

$GROWTH_{i,t}$: Equal to company sales growth rate, which is the difference between the total sales of the current year and the previous year divided by the previous year's sales.

$LOSS_{i,t}$: Equals 1 if the company reports losses, otherwise equal to 0, which will be determined by the statement of profits/losses of the companies.

$CurRate_{i,t}$: This index compares a firm's current assets to its current liabilities and is expressed as follows: The current ratio indicates a firm's liquidity.

$LnTotalSales_{i,t}$: Represent the total net sales of the company. In the current paper, to eliminate the effects of size, the company's total net sales' natural logarithm is considered net sales.

$ROA_{i,t}$: Income before extraordinary items divided by lagged total assets in the fiscal year.

$Earnings_{i,t}$: Represent the company's earnings ratio, equal to net profit after tax deduction divided on the total income annually.

$\sum_t YEAR$: Time parameters with a value of 1 or 0. A vector of indicator parameters by year. This parameter is selected to control the effect of variations overtime on the responding parameter.

$\sum_j IND$: Firm's parameters with a value of 1 or 0. A vector of indicator parameters by the company. This parameter is selected to control the effect of corporate changes on the responding parameter.

$ICMW\text{-}ACCT_{i,t}$: This is the Indicator for the presence of an account-level ICMW, which is equal to 1 if a firm has an ICMW and only an account-level ICMW during the year, 0 otherwise.

$ICMW\text{-}COMP_{i,t}$: This is the Indicator for the presence of a COMP-level ICMW, which is equal to 1 if a firm has an ICMW and only a company-level ICMW during the year, 0 otherwise.

4. Model Estimation and Hypothesis Testing

To provide an overview of the key features among parameters, the concepts of descriptive statistics of such parameters, including the number of observations, mean, median, standard deviation, skewness coefficient, and Kurtosis coefficient, are presented in Table (2). Table 2 shows that company size (SIZE) and the loss report (LOSS) own the highest and lowest average values. Moreover, the current ratio (CurRate) and the return on assets (ROA) include the highest and lowest standard deviations, respectively. Indeed, considering the mean and standard deviation of significance, which are equal to 0.51 and 0.50, respectively, sufficiently indicate our sample companies are subject to ICMWs at a relatively modest level. Furthermore, the distribution of sample companies based on the classification of significant ICMWs shows these companies are not reluctant to reveal the significant ICMW at the company level and focused more on significant ICMW, indicating that these companies are not reluctant to reveal the significant ICMW at the account-level. Companies with at least one significant weakness contain 300 observations, and control companies contain 294 observations. Besides, companies with significant weaknesses than control companies have more CEO turnover, sales growth, and losses. Companies with significant weaknesses than control companies are larger and

have more net sales. On average, the current ratio, return on assets, and earnings ratios of the companies with significant weaknesses are less than control companies.

Table 2. Descriptive statistics of research parameters

Parameters	Observation	mean	median	standard deviations	skewness	kurtosis
TURN	594	0.28	0	0.45	0.96	1.91
ICW	594	0.51	1	0.50	-0.02	1.00
ICW_ACCT	594	0.49	0	0.50	0.05	1.00
ICW_COMP	594	0.22	0	0.41	1.38	2.92
SIZE	594	14.62	14.13	1.70	0.75	2.94
GROWTH	594	0.21	0.17	0.41	3.20	29.62
LOSS	594	0.09	0	0.29	2.78	8.71
CurRate	594	1.67	1.24	2.72	10.34	133.83
LnTotalSales	594	14.37	13.87	1.76	0.77	3.40
ROA	594	0.13	0.11	0.15	-0.51	9.50
Earnings	594	0.16	0.14	0.32	-5.25	78.49

Source: Research findings based on Eviews output

4.1. Collinearity of Parameters

The correlation matrix is of the methods to evaluate the collinearity of parameters. In this matrix, the correlation coefficient between each pair from the independent parameters is calculated. As a rule, the correlation coefficients of less than 50 percent can be considered acceptable between each pair of independent parameters, and there is no concern for the existence of collinearity (Aflatoni, 2017). In the current paper, since all estimated coefficients are significant and separable, the collinearity between the parameters is not acute. The amount of collinearity oscillations between the model's independent parameters has been investigated and indicates that each pair of independent parameters does not have acute collinearity. Due to the limitations on the paper's pages, the correlation matrix tables have also been removed.

4.2. The hypothesis testing

In this section, using statistical modeling, we are about to analyze research regression models carefully and adequately consider significant parameters coefficients analysis to confirm or reject the hypotheses. A significant level of 5percent intended. The econometric technique with the panel data approach has been used wisely for properly estimating empirical models during 2013-2018. In the paper, the LR method, or binary logit-maximum likelihood estimate method, has been used to estimate the models according to data nature. The dependent parameter of the paper is a dummy parameter. The results of estimating the logistic model for the paper's primary hypothesis and sub-hypotheses are presented in Tables (3) and (4).

Graciously according to Table (3), the significant ICMWs parameter of the companies, as an independent parameter with a significance level of more than 10% of the Z statistic, supports no significant relationship with the CEO turnover parameter the company (TURN) at 90% confidence level. As a result, the primary hypothesis is rejected.

Table 3: Estimating the Logistic Model for the Primary Hypothesis

Explanatory parameter	Responding parameter: CEO turnover (TURN)			
	Coefficient	standard error	Z-statistic	Prob.
ICMWs	0.2723	0.1982	1.3735	0.1696
SIZE	0.1323	0.1814	0.7293	0.4658
GROWTH	0.3454	0.2840	-1.2163	0.2239
LOSS	0.8755	0.3623	2.4168	0.0157**
CurRate	0.2420	0.1354	-1.7880	0.0738*
LnTotalSales	0.2157	0.1766	-1.2213	0.2220
ROA	0.9222	1.2532	0.7359	0.4618
Earnings	0.2804	0.5335	0.5256	0.5992
C	0.3461	0.8919	0.3880	0.6980
LR Statistic	27.8555	H-L statistic	1.5731	McFadden's R Square
LR Statistic Prob.	0.0005	H-L statistic Prob.	0.9914	0.0392
Year Effects			Controlled	
Industry Effects			Controlled	

Source: Research findings based on Eviews output
* Significance at 90% confidence level ** Significance at 95% confidence level and ***
Significance at 99% confidence level.

Table 4: Estimating the Logistic Model for the Sub-hypotheses

Explanatory parameter	Responding parameter: CEO turnover (TURN)			
	The hypothesis 1-1		The hypothesis 1-2	
	Coefficient	Prob.	Coefficient	Prob.
ICMW-ACCT	0.2550	0.1990	-----	
ICMW-COMP	-----		-0.0010	0.9968
SIZE	0.1305	0.4728	0.1635	0.3676
GROWTH	-0.3468	0.2227	-0.3083	0.2775
LOSS	0.8738	0.0159**	-0.8901	0.0140**
CurRate	-0.2424	0.0738*	0.2310	0.0835*
LnTotalSales	-0.2113	0.2317	-0.2281	0.1958
ROA	0.9205	0.4641	0.5854	0.6353
Earnings	-0.2819	0.5981	-0.1961	0.7145
C	0.3253	0.7149	0.2144	0.8111
McFadden's R Square		0.0389	McFadden's R Square	0.0365
LR Statistic		27.6151	LR Statistic	25.9624
LR Statistic Prob.		0.0005	LR Statistic Prob.	0.0010
H-L statistic		3.5884	H-L statistic	4.3697
H-L statistic Prob.		0.8922	H-L statistic Prob.	0.8223
Year Effects			Controlled	
Industry Effects			Controlled	

Source: Research findings based on Eviews output
* Significance at 90% confidence level ** Significance at 95% confidence level and ***
Significance at 99% confidence level.

Indeed, according to Table (4), the parameter of significant ICMWs at the account-level (ICMW-ACCT) and the parameter of significant ICMWs at the company-level (ICMW-COMP) as independent parameters, have a significance level of more than 10%, which indicates no effect on the CEO turnover at the 90% confidence level. Hence, the first and second sub-hypotheses are also rejected.

Moreover, the results evidenced that among the control parameters, the loss report

parameter concerning the significance level of less than 10% in the primary hypothesis and sub-hypotheses holds a significant relationship with the CEO turnover at 90% confidence level which according to the positive value of the estimated coefficient, this relationship is direct. This result shows that in the historical event of a loss in the company, the company CEO changes with a probability of 90%. The current ratio (CurRate) has an inverse relationship at 90% confidence with CEO turnover in both the primary and sub-hypotheses. This result emphasizes that the reduction in the current ratio increases the possibility of CEO turnover.

According to the table (3) and (4), the probability of LR statistics for the primary hypothesis and sub-hypotheses is less than the error level of 5%, which points that these models are significant at the 95% confidence level and are highly valued. Also, the Mc Faden's R Squared value for the primary model and the estimated LR sub-models is 0.0392, 0.0389, and 0.0365, respectively, and show the explanatory parameters explain the low percentages of the changes of the dependent parameter.

Furthermore, to investigate the fitting's goodness, the LR model, the Hosmer-Lemeshow test, is applied. Considering the probability of the Hosmer-Lemeshow statistic for the primary model and the LR model, sub-models are equal to 0.99914, 0.8922, and 0.8223, which are more than 0.05; therefore, it can be declared that the estimated models provide a suitable fit.

5. Conclusions and suggestions

The purpose of the paper is to investigate the effect of ICMWs on CEO turnover in TSE. The results determine that ICMWs produce no effect on the CEO turnover at the account-level and company-level. This means that the existence or absence of such ICMWs does not lead to CEO turnover.

The rejection of the hypotheses remains following the results of Huson et al. (2001) and contradicts the results of Wang and Huang (2013) and Uemura (2018).

Regarding the possible reason for the lack of a relationship between ICMWs, and CEO turnover, it can be stated that although the responsibility of healthy internal control signifies part of CEO responsibility, the CEO only integrates purposes, and all staff of the enterprise fulfill a critical role in advancing and promptly executing it. The staff comprises human who executes internal controls. Therefore, it can be mentioned that the internal control system can be effective when that behavior and technical competence of the staff are granted in its establishment. Thus, achieving the appropriate internal control implies that it remains not merely dependent on the CEO, but requires the presence of committed, honest staff withholding strong moral values.

The present paper progressively expands the academic literature on CEO turnover and provides evidence of the consequences of the ICMWs over CEO turnover. ICMWs establish many new research fields related to internal controls at the account-level and company levels for academic researchers. Since internal controls represent a fundamental aspect of the quality of financial statements, these new research opportunities are likely to be of interest to a comprehensive range of academics and legislators.

5.1. Limitation of the study

- The central limitation of this paper comprises the leaning in identifying ICMWs. During the review period, no codified law or regulation is justified to report on ICMWs; despite the attempt to minimize the bias, the results may be affected. As mentioned earlier, the auditing institute's size and the different degrees of risk appetite can be mentioned among the field's influential constituents. This means that larger auditing institutes generally take more risk. Therefore, ICMWs that are considered significant from a smaller auditing institute's point of view may be simply not

identified to be significant by a larger auditing institute, and it is not inserted in the independent auditor's report. Although in the present paper, the confounding effect of the audit institute size parameter on the relationship between ICMWs and the CEO turnover is controlled, but due to the difference in the measurement of the mentioned parameter compared to previous research, one can not rely effectively on it.

- Similar researches in developed countries set the huge sample (e.g., over 1,000 companies), including more years. However, we cannot follow such a trend due to data limitations. There is no organized database in developing countries like Iran, and we are supposed to consume considerable time to collect data. For instance, in some companies, CEO turnover and ICMWs are not confined in detail, which naturally reduces sample size.

5.2. Further to the study

- Researches on internal controls are considered to be ongoing in Iran as a developing country. Graciously according to the practical importance of internal controls, the contributing constituents typically affect ICMWs feature and quality examined as the new investigation.
- The comprehensive re-testing of the existing examination independently for each of the active industries accompanies more empirical observations.

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