



RESEARCH ARTICLE

The Role of Workforce Support on Financial Restatement: Evidence from Iran

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Abstract

The current study investigates whether the human factors of listed companies on the Tehran Stock Exchange affect financial restatement. The statistical population of this study includes all listed firms on the Tehran Stock Exchange during 2018-2023. The results show a positive and significant relationship between employee support and the occurrence of financial restatements. Further, the results confirm a positive relationship between managers' ability and financial restatement. By the way, there is a negative relationship between the existence of an internal control weakness in financial reporting and the financial restatement obtained. This study evidences that the support of human force, as one of the factors in implementing internal control, contributes to the role of internal control on financial restatement.

Keywords:

Employee Support, Financial Restatement, and Internal Control Weaknesses in Financial Reporting

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1. Introduction

Financial restatements and correcting accounting mistakes are practically acceptable since financial statements contain false information and have a statutory responsibility for auditors and managers (Kellogg, 1984; Karpoff et al., 2007; Francis et al., 1994). Gertsen et al. (2006) presented a fragmentation of financial restatements, stating that the criterion of this division is the intent of managers and the degree of falsification. According to their beliefs, the first category is the white lies, a situation where managers have not had an irregularity, and the distortion rate is also unimportant. The second category is purple delusion, which is when managers have significant distortions, but the management does not have malevolence. Further, the third is called grey accounting hocus pocus, and the low level of distortion is due to financial restatements. Finally, the fourth category, the most serious type of financial restatements, has been called black magic fraud, and significance distortion has led to financial restatements. Gleason et al. (2008) proved that financial restatements negatively affect the shareholders' wealth and even cause companies that operate in the same industry to experience stock price cuts. The important point is that if the number of financial restatement cases is high, the result is a decline in earning quality the allocation of inefficient resources and inappropriate transfer of wealth (Schipper and Vincent 2003).

This point should not be ignored, as internal controls are not their goals; they are a means to achieve one goal. In fact, with the implementation of the internal control process, we want to obtain reasonable assurance about the effectiveness and efficiency of operations and the ability to rely on financial reporting and compliance with the laws and other vital elements for the company's survival. Individuals heavily influence internal controls, including policies, guidelines, systems and forms, and individuals and their actions. It should be noted that fraud is structurally and behaviorally defined as the iceberg whose structural features are above the surface of the water. In contrast, the behavioral aspects of fraud are hidden underwater. Therefore, in order to detect fraud, in addition to structural factors, particular attention should be paid to behavioral issues, and the auditor must pay particular attention to dealing with the fraud in the motivation of employees and managers and should also check carefully internal controls and with a cursory look, discover the existing weaknesses or ambiguities.

The fourth principle adopted by the Committee of Sponsoring Organization (COSO) refers to commitment and adherence to competence and meritocracy. It states that employees are one of the most important aspects of internal controls, and that organizations must be committed to hiring and maintaining qualified personnel. The remarkable effect of human resources management practices, employment policies, training, evaluation, promotion and determination of the salaries and benefits of employee redundancy over the effectiveness of the control environment should not be neglected. Indeed, to successfully carry out all activities, individuals and their competencies should be considered an empowering factor.

Although the ultimate responsibility for the quality of financial reporting is the responsibility of the board of directors, it should be noted that the entire company's workforce not only contributes to the provision of accounting information but also plays an indirect role in providing raw data, which is the basis for the directors' reporting decisions, and this way they are also effective in financial reporting (Call et al., 2017). Hennes et al. (2008) and Acito et al. (2009) proved that the unintentional mistakes made by accounting staff members in applying accounting principles are the main factor of most financial restatement and they also found evidence that such kind of financial restatement less likely to happen in companies that pay attention to the interests of employees. Allocating costs to improve the quality of personnel, such as the cost of training and retraining, can reduce these unintended errors in gathering and generating data used as inputs to the accounting system. Highly educated employees are more likely susceptible in this regard. The highly educated

employees working in non-accounting sectors also improve the quality of financial reporting by the firm; one of the reasons is that to identify whether a problem is abnormal or not, there is no need to know about generally accepted accounting principles (GAAP) (Call et al., 2017). Dyck et al. (2010) found that in the process of fraud detection, investors, auditors and SEC do not play a crucial role, but it was employees who played the vital role in fraud detection; they documented that about 17 percent of fraud been discovered by the employees, that is, even more than auditors and the SEC (auditors 10 % and SEC 7 %). Weiss (1980), Laffont and Tirole (1988), and Perotti and Spier (1993) Suggest that fair treatment of a company with personnel can improve the company's access to qualified personnel, and by motivating employees, they can reduce the probability of personnel mistakes in performing financial reporting tasks. And according to Call et al. (2017), Hennes et al. (2008), and McGuire et al. (2012), more training for employees leads to higher quality accruals, declines weakness in internal controls and will also lead to a reduction in financial restatements.

Gaurav (2010), referring to the importance of employee satisfaction in organization survival, states that employee attrition is one of the organization's problems. There is a close relationship between employee attrition and employee satisfaction. In this regard, educational organizations intend to provide benefits such as attractive compensation packages, efficient training and flexible work options.

Due to the above discussion and theory of human capital of corporate governance, we can say that research in this field was necessary.

2. Literature review and hypothesis development

Jensen and Meckling (1976) emphasize the role of senior executives. However, it must be said that corporate governance problems at the top of the company pyramid are wrong. We should look more deeply into human resource behavior rather than highlighting the agency problem. In article 4, the internal control guidelines of accepted publishers in Tehran Stock Exchange, one of the requirements for creating an appropriate control environment is the competence of staff and human resources management, and it explains that senior management of the company must hire people who are competent, professional and committed to different categories of employees. To achieve this goal, the company executives must implement formulated methods for continuous education, assessment, rewarding, and disciplinary actions to maintain the competence of managers and staff. In fact, if there is success in financial reporting, it is the result of the whole workforce effort and it should not be considered that the senior executives are the main factor in this regard (Guo et al. 2016). So, it can be said that investing in the welfare of employees is likely to improve the performance of employees in financial reporting activities (Rajan and Zingales 1998; Zingales 2000). Katou and Budhwar (2007) show that human resource management policies related to employment, training, promotion, motivation, benefits, partnerships, health and safety have a positive relationship with organizational performance. Call et al. (2017) show that firms with workforce quality have higher quality accruals, quash fewer internal controls, and have less financial restatement.

In fact, employee behavioral policies can be considered a predictor for financial restatement. Hennes et al. (2008) and Acito et al. (2009) show that the reason for most financial restatements is the unintentional mistakes made by the accounting team's staff in applying the accepted accounting principles, and there has been evidence that such financial restatement has been less in companies that invest in employee benefits. According to Weiss (1980), Laffont and Tirole (1988), and Perotti and Spier (1993), the logic is that if the company has a fair treatment of personnel, it will facilitate access to qualified personnel, and by motivating employees, the risk of employees' mistakes in

performing financial reporting tasks will be reduced. [Cao et al. \(2020\)](#) find that negative abnormal employment changes are associated with a higher likelihood of subsequent financial restatements.

Therefore, paying attention to employees' welfare and pursuing desirable policies is a key factor in reducing financial restatements and correcting weaknesses in internal control. This leads us to our first hypothesis:

H₁: There is a relationship between employee support and financial restatement.

The ability of companies to use and manage intangible assets is much more important than tangible assets because the ability of organizations to use intangible assets is the main strength of the value of these organizations. [Dahmash et al. \(2009\)](#) pointed out that today's companies' highest value of assets is made up of intangible assets. According to [Blair and Wallman \(2000\)](#) human resources are one of the types of intangible assets in companies and maybe we can call it the most valuable intangible assets in the companies and to the point society. Therefore, the past discussions guide us to formulate the second hypothesis:

H₂: The ratio of high investment in manpower towards investment in assets effectively affects financial restatement.

Managers are also part of the human capital that plays a momentous role in turning resources into revenue and creating wealth for shareholders. Managers must understand the company's business operations, control activities, and industry conditions to design and direct the internal control framework; qualified directors are more likely to apply effective and efficient supervision to low-level personnel ([Guo et al., 2016](#)). General Accounting Office (GAO) (2002) considers financial restatement an important event, reflecting the poor quality of financial reporting last year. On the other hand, there is a sign of mismanagement derived from poor corporate governance. [Demerjian et al. \(2013\)](#) found that earnings quality has a positive relationship with managers' ability, and managers' ability has an inverse relationship with financial restatements. [Richardson et al. \(2005\)](#) state that financial restatement due to accounting mistakes includes a financial reporting situation that, contrary to accepted accounting principles, is approved by the management, which is more likely to occur in cases that deliberately and intentionally manipulate profits.

[Andreou et al. \(2013\)](#) believe that managers' ability has a positive and significant relationship with the company's performance. [Jihui and Linlan \(2019\)](#) explore management power's impact on financial restatement. [Kuang et al. \(2022\)](#) show that CFOs' professional ties with senior managers are associated with a lower likelihood of financial restatements.

The above points draw our attention to the following hypothesis:

H₃: There is a relationship between managerial ability and financial restatement.

3. Research methodology

In this research, our sample comprises 103 firms on the Tehran Stock Exchange in 6 years from 2018-2023. We used the Propensity Score Matching-Method (PSM) based on [Rosenbaum and Rubin \(1983\)](#) to test hypotheses. Due to the number of independent variables in each model being more than one, the statistical method is exploratory. In each hypothesis, all independent variables and the independent variable examined in the hypothesis should be meaningful in the model. In the exploratory method for testing each hypothesis, all independent variables must be meaningful alongside the independent variable of the hypothesis; otherwise, the independent variables should be extracted from the model in order of maximum p-value in order to arrive at a model where all independent variables are meaningful, and then we can comment on the result of the hypothesis.

According to the size of the acyclic criterion, in testing from H1 to H3, our chosen logistic regression is the effect of time.

3.1 Model specification and variable description

To test hypotheses, our logistic regression model is as follows (by using the PSM):

$$\begin{aligned}
 \text{PROB}(\text{RES}_t = 1) &= F(\alpha_0 + \alpha_1 \text{EMP}_t + \alpha_2 \text{MA}_t + \alpha_3 \text{MW} + \alpha_4 \text{MW}_{\text{PROCESS}} + \alpha_5 \text{CH}_{\text{EPL}}_t \\
 &+ \alpha_6 \text{MAG}_{\text{ACC}}_t + \alpha_7 \text{CH}_{\text{REC}}_t + \alpha_8 \text{CH}_{\text{INV}}_t + \alpha_9 \text{CH}_{\text{CS}}_t + \alpha_{10} \text{CH}_{\text{ROA}}_t + \alpha_{11} \text{MB}_t \\
 &+ \alpha_{12} \text{LOG}(\text{SEG}_t) + \alpha_{13} \text{FOR}_t + \alpha_{14} \text{RST}_t + \alpha_{15} \text{AQV}_t + \alpha_{16} \text{OUTBD}_t \\
 &+ \alpha_{17} \text{LN_MARKETCAP} + \alpha_{18} \text{AGGREGATE_LOSS} \\
 &+ \alpha_{19} \text{EXTREME_SALES_GROWTH} + \alpha_{20} \text{MERGER} + \alpha_{21} \text{BIG_AUD_FIRM} \\
 &+ \alpha_{22} \text{AUDITOR_RESIGN} + \alpha_{23} \text{BANKRUPTCY_RISK} \\
 &+ \alpha_{24} \text{RETURN_SKEWNESS} + \alpha_{25} \text{RETURN_STD_DEV} + \gamma \text{ industry effects} \\
 &+ \varepsilon_t)
 \end{aligned}$$

In the equation, the dependent variable is RES, which represents financial restatements. If a company discloses financial restatement, we assign it to 1; otherwise, it is 0. The first independent variable in this model is EMP, which represents employee support; in other words, it reflects the criteria of behavioral policies with employees at the company level, whether the company has invested in its personnel welfare compared with the industry in operation. In order to measure this variable, we have prepared a list of all active companies in industries, and for all active companies in the industry in the research years, the information about 17 chapters of expenditures, including personnel training, bonus chords, ben laborer, non-cash contributions to employees, health costs, donate to the employee, rewards, benefits of productivity, handsel, staff welfare, costs of retraining, retirement and innovation, benefits of ending staffing, employee benefits, cash and non-cash benefits of employees, paying per case, right to recruit, was gathered and then we calculated the average cost of personnel support for per person in the industry. If these costs were higher than the average industry, we would assign this value to 1; otherwise, 0. The next independent variable is CH_EPL, which represents a high proportion of investment in human resources relative to the proportion to investment in assets; if the percent change in the cost of personnel support is greater than the percentage of the change in assets, we will assign the value of 1, otherwise 0. The next independent variable is MA, which represents the ability of managers. In this paper, we used the model of [Demerjian et al. \(2013\)](#) to measure the managers' ability; in their view, two components influenced the company's performance, including the company's inherent characteristics and the managers' ability. According to [Ashbaugh-Skaife et al. \(2007\)](#), Firms that have weak internal controls are more likely to face financial restatements and legal actions in the stock market MW, which represents a material weakness in financial reporting if an independent auditor points out at least one material weakness in financial reporting, we assign number 1 to this variable, otherwise 0. The MW_PROCESS variable represents a material weakness in financial reporting at the process level; if the independent auditor pointed out in his comments a weakness in the main operations of the company (for example, a weakness in the firm's cost system), we would give this variable a value of 1 or otherwise 0. The MAG_ACC variable represents the magnitude of accruals; this variable was measured by modeling the research of Richardson, [Sloan et al. \(2005\)](#) Since the mistake in accounts receivable may lead to the company's sales growth fluctuating, we introduce the CH_REC variable in the model, which represents the percentage of changes in accounts receivable at the end of the fiscal year compared to the previous year. Also, because a mistake in inventories may lead to exaggeration in the company's profit margin, we introduce the CH_INV variable in the

model, which indicates changes in the inventory at the end of the fiscal year divided by total assets. To control the effect of the company's performance on the mistakes made in the financial reporting, the variables of CH_CS and CH_ROA have been considered; the former represents the percentage change in cash sales at the end of the fiscal year, the second indicates a change in the ratio of net profit to total assets at the end of the fiscal year. MB variable (to control the effect of company growth) represents the ratio of the market value of equity in proportion to its book value at the end of the fiscal year. The LOG (SEG) variable represents the natural logarithm of the number of subsidiaries, one of the criteria that express the complexity of the company's operations. The variable FOR represents the existence of external sales in the company, which also indicates the criterion of the complexity of the company's operations; if the company had sold export sales during the fiscal year, it would take a value of 1, otherwise 0. The variable RST represents the existence of a restructuring in the company; if a company discloses non-current assets held for sale in the year-end financial statements, the value equals 1; otherwise, 0. The variable AQV represents an increase in the number of subsidiaries. If a company had an increase in the number of subsidiaries during the fiscal year, this variable would be equal to 1; otherwise 0. The investment in subsidiaries would complicate the company's operations, so managers should properly evaluate and calculate these issues, implications, and fields. [Cao et al. \(2012\)](#) have found that the existence of more independent members on the board could act as an effective factor in limiting mistakes in financial reporting. We put the OUTBD variable in the model, indicating the board's independence, which is measured by the percentage of non-executive members of the board. The variable LN_MARKETCAP represents the natural logarithm of the sum of the market capitalization. In order to calculate this variable, the stock market value at the end of the fiscal year is multiplied by the number of shares, and then its natural logarithm is computed. [Xiong \(2006\)](#) also believes that the company's weak profitability motivates the director to refine the presentation of financial restatements, so we put the AGGREGATE_LOSS variable in the model. If a company discloses losses in two successive years, we assign a value of 1 to this variable; otherwise, 0. The EXTREME_SALES_GROWTH variable shows that if the industry's average sales grow from the previous year, we assign 1 to this variable; otherwise, 0. [Kinney et al. \(2004\)](#) believed that the acquisition activities had a positive relationship with the likelihood of restatement. We value the MERGER variable in this way: if the subsidiaries had increased over two consecutive years, we would have assigned 1 to this variable; otherwise, it would have been 0. To measure the effect of the size of an audit firm on financial restatements, we use the BIG_AUD_FIRM variable. In order to measure this variable, it is examined that if the Iranian Association of Certified Public Accountants is an independent auditor of the company, we assign 0 to this variable; otherwise, 1. The variable AUDITOR_RESIGN represents the change in the audit firm. [Mandle and Son \(2013\)](#) believed financial restatements positively correlated with the auditor's rotation. If the company's independent auditor changes, we assign 1 to this variable; otherwise, it is 0. The BANKRUPTCY_RISK variable represents the company's bankruptcy risk, the participation criterion in Article 141 of the Iranian trade law. If the company is covered by Article 141, we assign value 1 to this variable; otherwise, it is 0. When the company has a large bankruptcy risk, there is a sufficient incentive for fraudulent and fraudulent financial reporting. The RETURN_SKEWNESS variable represents the skewness of the firm's stock return calculated from t-5 to t. The RETURN_STD_DEV variable represents the standard deviation of stock returns calculated from t-5 to t.

4. Findings

4.1 Statistical analysis

In Table 1 and Table 2, we describe the descriptive statistics of independent and dependent

variables. The remarkable point is that financial restatements in Iran are frequent; the repeatability of this issue in Iran reduces the reliability of the financial statements and undermines the professionalism of accounting and auditing. About 71.80 percent of companies had financial restatements in our research (RES). Also, about 41.10 percent of companies had good support for their employees in proportion to the industry in which they work (EMP).

Table 1. Descriptive statistics of quantitative variables

Variables	Max	Min	Mean	Standard deviation
MAG_ACC	1.129	-0.659	0.042	0.168
CH_REC	267.900	-0.988	0.721	10.789
CH_INV	0.417	-0.390	0.031	0.083
CH_CS	63.756	-211.093	-	9.602
CH_ROA	0.417	-0.744	-0.013	0.106
MB	121.510	-32.953	2.922	7.300
LOG_SEG	3.401	0.000	1.529	0.823
OUTBD	1.000	0.000	0.673	0.189
LN_MARKETCAP	19.415	10.133	13.796	1.618
RETURN_SKEWNESS	2.235	-2.046	1.031	0.920
RETURN_STD_DEV	280.478	0.000	76.024	50.594
MA	0.578	-.5919	0.000	0.207

Table 2. Descriptive statistics of qualitative research variables

Variables	The number of firm-year, which number 1 was assigned		The number of firm-year, which number 0 was assigned		Missing data		Total
	Number	Percent	Number	Percent	Number	Percent	
RES	444	71.800	167	27.000	7	1.100	618
MW	393	63.600	214	34.600	11	1.800	618
MW_PROCESS	104	16.800	503	81.400	11	1.800	618
EMP	254	41.100	356	57.600	8	1.300	618
CH_EPL	295	47.700	291	47.100	32	5.200	618
FOR	433	70.100	177	28.600	8	1.300	618
RST	85	13.800	533	86.200	0	0.000	618
AGGREGATE_LOSS	58	9.400	560	90.600	0	0.000	618
EXTREME_SALES_GROWTH	467	75.600	151	24.400	0	0.000	618
MERGER	176	28.500	428	69.300	14	2.300	618
BIG_AUD_FIRM	151	24.400	456	73.800	11	1.800	618
AUDITOR_RESIGN	140	22.700	467	75.600	11	1.800	618
BANKRUPTCY_RISK	75	12.100	543	87.900	0	0.000	618

In the meantime, the interesting and important point is that in collecting variable data (EMP), we found that among the companies in the industry, only about 14.80 percent of companies spent their training or retraining costs on their employees, which in terms of amount, the cost of training and retraining accounted for only about 0.61 percent of the total expense incurred to support employees, which indicates that companies are not paying attention to the issue of personnel training. Also, among industry companies, approximately 4.20 percent of companies paid their right to recruit their personnel, which could be explained by the fact that companies have been incapable of recruiting and retaining specialist and meritorious employees or the company has ignored the value of employees' specialities, and they did not pay the right to recruitment, including the salary of qualified personnel, and therefore did not provide support for their valuable and experienced staff. While the importance of these personnel for the firm's survival was a clear issue.

Figure 1 The ROC-axis belongs to the logistic model of the dependent variable of financial restatements, which evaluates the model's hypotheses. The surface area under this curve is (0.9622), indicating that this model is strong in sensitivity.

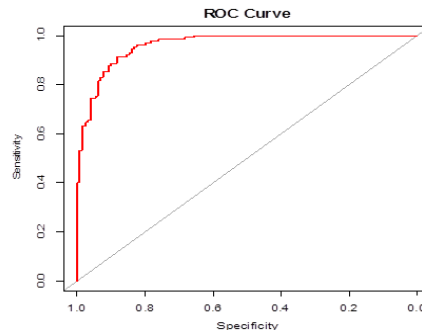


Figure 1. Curve ROC model

The surface area under the curve is equal to 0.9622, which indicates that the model has been a strong model for sensitivity.

4.2 Testing of hypotheses

Table 3 relates to the inferential statistics of the hypotheses, which examines the relationship between independent variables and the dependent variable financial restatements; in the table's columns, the p-value of each hypothesis's independent variables and control variables is presented separately.

Column H₁ belongs to the H1 test. As it is known, the p-value for the support personnel variable is less than 0.05, so H1 is verified. Also, with regard to the sign of the number of statistics, a positive relationship is detected; in other words, the greater the support of the personnel, the more the financial restatements. Column H₂ is related to the H2; as indicated in the table, the p-value for this variable is greater than 0.05, so this hypothesis is rejected; therefore, there is no relationship between the ratio of investment in manpower in proportion to investment in assets and financial restatements. Column H₃ shows the results of the implementation of the H3. As shown in Table 3, the value of the variable for managerial ability is less than 0.05; therefore, the H3 is verified, and according to the statistical sign, the relation is positive. In other words, by increasing managers' ability, financial restatements will also increase.

5. Conclusion

Our findings in Iran confirm that Charan and Colvin (1999) believe that about 90 percent of organizations fail to implement their strategies because only 5 percent of employees understand and only 20 percent of executives see their interests in strategies. All employees must consider their business interests and fate to achieve organizational strategies. The design and implementation of compensation systems linked to the evaluation criteria of strategies can provide an appropriate mechanism for creating more employee alignment with the strategy. In fact, positive workplace cultures in which employees believe they are important to the organization are the key to achieving the objectives of performance appraisal (Cravens et al. 2015). Bentley-Goode et al. (2017) explored the implications of the strategies concept and concluded that business strategies are an indispensable indicator of internal control power. Each person adds unique abilities to their workplace and has different needs and priorities. However, it is not possible to conceal the value of

these differences in innovation and productivity. Still, if individual differences coherence is correct with the entity's objective, it can have a negative effect (COSO, Internal Control-Integrated Framework 2011). Frey (1997) argues that even though economists do not deny the effects of intrinsic motivation, they believe that "everything has its price", but psychologists emphasize the behavioral motives within the person. Still, it must be said that intrinsic and extrinsic motivation are not separable. Frey (1997) also argues, based on Stiglitz (1987) that wage incentives are often addressed to managers and are rarely considered effective for mid-level employees. Another result of this study is a positive relationship between managers' ability and financial restatements. This can be justified in the capital market of Iran, where powerful executives have enough motivation to report revenue exaggeratedly and preserve their reputation and market; because of having such capabilities, they are successful in this field, and in fact, the fourth dimension of the fraud diamond of Wolfe and Hermanson (2004), which is the representation of talent factor, vaunts in the capital market of Iran. According to Francis et al. (2008), the reason can be that companies with a low earning quality are recruiting more reputable directors in this way; the company introduces a company with strong internal controls and reduces the severity of the negative effects on the company. Indeed, the Epic of America theory, expressed by Adams (1931) and Anomic Theory, as expressed by Merton (1938), also partly vaunts in Iran. In reality, the emphasis on monetary success is a factor in increasing the tendency to commit fraud by senior executives (Choo and Tan 2007), and the factor of ability and talent also do so.

Table 3. Results of hypotheses testing

Dependent variable: financial restatements (RES)						
Independent and controllable variable	H ₁		H ₂		H ₃	
	Z statistic	p-value	Z statistic	p-value	Z statistic	p-value
EMP	4.492	< 0.001***	4.526	< 0.001***	4.492	< 0.001***
MA	2.189	0.028*	1.987	0.046*	2.189	0.028*
MW	-3.144	0.001**	-3.159	0.001**	-3.144	0.001**
MW_PROCESS	4.481	< 0.001***	4.49	< 0.001***	4.481	< 0.001***
CH_EPL			-0.956	0.339		
MAG_ACC	-3.278	0.001**	-3.324	0.000***	-3.278	0.001**
CH_REC	2.011	0.044*	2.008	0.044*	2.011	0.044*
CH_INV	1.510	0.131	1.544	0.122	1.510	0.131
CH_CS	-0.048	0.961	-0.098	0.921	-0.048	0.961
CH_ROA	-1.040	0.298	-0.911	0.362	-1.040	0.298
MB	-1.990	0.046*	-2.073	0.038*	-1.990	0.046*
LOG(SEG)	1.077	0.281	1.108	0.267	1.077	0.281
FOR	-3.336	0.000***	-3.325	0.000***	-3.336	0.000***
RST	1.594	0.110	1.569	0.116	1.594	0.110
AQV	-1.821	0.068	-1.904	0.056	-1.821	0.068
OUTBD	-2.670	0.007**	-2.562	0.010*	-2.670	0.007**
LN_MARKETCAP	3.817	0.000***	3.786	0.000***	3.817	0.000***
AGGREGATE_LOSS	-1.577	0.114	-1.55	0.121	-1.577	0.114
EXTREME_SALES_GROWTH	1.770	0.076	1.653	0.098	1.770	0.076
MERGER	3.948	< 0.001***	3.981	< 0.001***	3.948	< 0.001***
BIG_AUD_FIRM	-3.315	0.000***	-3.406	0.000***	-3.315	0.000***
AUDITOR_RESIGN	-3.868	0.000***	-3.942	< 0.001***	-3.868	0.000***
BANKRUPTCY_RISK	4.799	< 0.001***	4.837	< 0.001***	4.799	< 0.001***
RETURN_SKEWNESS	2.438	0.014*	2.545	0.010*	2.438	0.014*
RETURN_STD_DEV	-2.660	0.007**	-2.660	0.007**	-2.660	0.007**

*, **, *** Denote the error level at 5 percent, 1 percent and 0.1 percent.

In the a-model, the PSM-Method is used to test the hypotheses.

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