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The Relationship between Firm Characteristics and Internal Control Weaknesses in the Financial Reporting Environment of Companies Listed on the Tehran Stock Exchange

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ABSTRACT

Internal control is not only policies, procedures or forms, but also a process, which licenses operating activities of the organization and is part of main tasks of management. Objectives of internal control include effectiveness and efficiency of operation, credibility of financial reporting, and observing laws and regulations. Achieving these objectives increases the confidence of corporate activities and management policies which is along the interests of shareholders, in particular, and those of all the stakeholders, in general. This study has investigated the relationship between internal control weaknesses and firm characteristics in the financial reporting environment of companies listed on Tehran Stock Exchange. In this study, 174 companies listed on Tehran Stock Exchangein 1389 (2010),were selected as our samples.Also, nine variables selected based on the developed model of internal control weaknesses which are related to some specific characteristics of the companies were tested by applying the Logistic Regression Model with cross-sectional.Results showed that there is a significant relationship between firm characteristics and the internal control weaknesses of companies listed on Tehran Stock Exchange.In other words we can saythat companies which are smaller, financially weaker, more complex, and fast-growing and also companies with high inventory levels probably have a higher number of serious internal control weaknesses.
KEYWORDS: Firm characteristics,integrated framework of internalcontrol, internal control weaknesses, financial reporting environment

INTRODUCTION

Since the emergence and creation of the mankind, financial and economic relations were also established for all exchanges.Slowly over time, there were small communities. The larger and more advanced these communities were,the more complex economical relationships were between them.With the advent of large corporations and the formation of the major subject of the separation of ownership from management andcreation of a significant conflict of interest between owners and managers, assessing the performance of companies and theirmanagers and leaders is among the most important subjects for the creditors, governmental owners and even the managers. Theconcept of internal control is the product of the development of organizational thinking and complexity of the structure of organizations which is، itself the product of the evolution of human communities and deepening the commercial and industrial relations among them.

If we want to facilitate accountability and demanding response, we definitely need to have a proper executive bed and this bed is nothing but appropriate internal controls.According to statistics, the internal controls system has the largest proportion inmiscalculation and fraud detection (Pooryanasab, AmiroMaham, Keyhan, 2009).According to the above-mentioned notes regarding internal controls, limited data from previous research on the determinants of the quality of internal control exist. Determinants in this study are characteristics of the firms.There are many characteristics that affect internal controls some ofwhich have been applied in this studyincluding firm size, firm age, and financial health, the complexity of the financial report, rapid growth, reproducibility, and the inventoryof the firm.These features are extracted from the financial statements.Some of the major weaknessesin the internal controls are related to the problems of the man power, and some of them are related to other external transactions or operations between firms.

In order to make this classification, 3 categories including man power, complexity, and generalare developed. For instance, lots of major weaknesses are issues regarding human manpower including improper separation of tasks, resources and inappropriate manpower or the absence of a financial manager all the time.Issues regarding

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complexity include interpretation and applying complex standards of accounting. The General Issues are related to interest identifying policy or control weaknesses in the reporting trend at the end of the course.

Firm characteristic differ throughout these three issues. The manpower issue (including task separation) well fits the smaller and younger companies which are financially weaker and lack the financial resources necessary for the recruitment or training personnel. A firm with weaknesses relating to the Complexity issue is probably larger, older, and with various and complex operations. Finally, as the General Issue includes firms with revenue identification problem, we expect that these firms are weaker regarding their management (JafariDoelet al., 2007). Therefore, the ultimate aim of this study is to identify the relationship between firm characteristics and internal control weaknesses in financial reporting environment.

Theoretical bases of the Research
Chief frameworks of internal control

- Internal controls before 2002: Kosovo is the most important internal control framework. The working group organizations sponsoringTredwayCommission, in the context of their historical publication in 1992, acted as integrated internal control framework.
- Internal Control of 2002, Sarbinz–Axley Rule:Congress of the United States, in response to the corporate scandals of the late twentieth century, passed this law in 2002. Its Requirements include:
  - ➢ Management and the independent auditors must assess the company's internal controls on an annual basis.
  - ➢ Management must disclose information reporting to the Securities and Stock Exchange Commission.
  - ➢ Management should personally sign documents and reports related to items in previous years.
  - ➢ No representative even having the power of attorney can sign on behalf of management.
  - ➢ In addition to this section (B - 404) Sarbinz – Axley Rule which considers the assessment and reporting of internal control requires auditors are required to give testimony and reporting of the assessment made by management.

- Internal controls after 2002: the most important one is the 2012 version. This version does not change how the internal control should be assessed or managed, but it gives more clarity and provides a comprehensive theoretical guide and practical examples.Roles of thevalue increasing and advisory are also attributed to it in recent years.Moreover, from another viewpoint, audit committees and effective internal control system not only reduce the financial, operational and compliance risks, but also increases the quality of financial reporting.

Table1. The historical development of the internal control

1900-1929: The basic concept of internal control; protection against theft of cash by staff **1929-1936: First revision of internal control, protecting cash and other assets from employee theft, and promoting operational efficiency** **1936-1949: Basic concept of revised internal control; protecting cash and other assets and auditing the accuracy of inventory documents.** **1949-1992: Wider concept of internal control:**
• **Protecting assets against damage and theft;**
• **Audit the accuracy and reliability of accounting data;**
• **Promoting operational efficiency;**
• **Encouraging and following the established managing policies.**
1992 – now: the definition of internal control based on Kosovo:
• **Effectiveness and efficiency of operations ;**
• **Reliability of financial reporting;**
• **Compliance with laws and regulations.**

(Hassas, Yeganeh, and Nataj, 2006: p. 144)

LITERATURE REVIEW

Hermanson (2000) studied the demand for internal control reporting through investigation of different groups of consumers in the United States.The results showed that respondents generally agree that internal controls are bulky.They also generally agree that the voluntary reporting of internal control encourages management to improve internal control and enhance the regulatory process of the audit committees and provides additional informationto the rest.If the discussed reporting becomes mandatory, respondents will feel that its informational value worth less.

Huber (2001)studied the effects ofcultureon the auditors' evaluation of internal control and determination of control risk byAmerican auditors.Results ofthestudyshowed thatin the evaluation of internal control, culture risk should be considered.Huber'sresultsalso showthat the American auditors applied a higher control riskfor companies working in countrieswith low Individualism domain,highpower distanceandavoidanceof the lowlack of confidence.

Doyle et al (2005) showed that companies with major weaknesses are companies that have lower interest quality than firms that report significant weaknesses.

Ashbaq*et al* (2006) in their research showed that firms that have reported internal control weaknesses have more complex operations, changes in organizational structure, exposure to increased accounting risks, and fewer resources for investment in the internal control.

Doyle, J. and McVeigh (2007b) and Ashbaugh-Skaife, Collins, Kinney and

Lafond (2007) in their studies showed that the company which has significant weaknesses in internal control in its report, its accruals quality is lower and thus its financial statements are less reliable.Another research conducted is the impact of major weaknesses of internal control on the cost of capital.

Different results have been found in this area. For example, previous research in this area (Ashbaugh-Skaife, Collins, Kinney and Lafond, 2007) showed that companies that internal control have significantly higher cost of capital than companies that didnotreport lack of internal control. Internal controls are important. Moreover, they showed that the balance of the auditor and the auditor's resignation also have significant effectson the existence ofmajor weaknesses in internal control.

(Tang and Xu, 2007) were the first individuals who studied the relationship between major internal control weaknesses and corporate performance and showed that there is significant relationship betweenmajor internal control weaknesses and corporate performance.

Lambert et al (2007) in their study examined whether and how the low quality of financial information for companies that have major weaknesses of internal controls affectsthe cost of capital of those companies?

They showed that the quality of financial information affects the cost of capital by two methods; a direct method by influencingthe user's evaluation of the distribution of future cash flows, and an indirect method by affecting the real decision making of the company. The impact on the indirect method occurs in two ways, first, the impact of the quality of accounting information on the cash that is allocated by managers from the capital of investors, and the second is that the impact of the quality of accounting information on decision making is manager's investment.

Leenen (2008) examined the same study done byTang and Zhou (2007)adding firm characteristics that are associated with major internal control weaknesses.They concluded that in general, lower operationalperformanceof companies that have major internal control weaknesses is not due to the major weaknesses in internal controls, butis attributed to the firm characteristics which are related to internal control weaknesses.

Deumes and knechel(2008) examined the economic incentives for managers toreportoptionally on risk management and internal control.an interpretation of their findings is that it is possible that lawmakers want that the companies be authorized to have flexibility in undertakingtheir internal control report so that the companies can adopt a broad approach for their internal controls beyond the regulations based onSOX and according to internal control report that is compatible with its particular environment.

Wee,Goh and Li (2010) studied the relationship between internal control and conditional conservatism and showed that a positive relationship between the quality of internal controls and conditional conservatism exists.Specifically, companies that have major weaknesses, have lower conservatism than firms without such weaknesses.

Results Lin et al (2011) on the impact of employees on internal controls showed that honest and competent staff help managers in enforcing strong controls over financial reporting and reduce the problems of internal controls within the organization.

Research hypotheses

The main hypotheses: there is a significant relationship between the firm characteristics and internal control weaknessesof the company.

To test the main hypothesis, for each independent variable yield a research hypothesis is proposed as follows:

1 **-** There is a significant relationship between firm size and internal control weaknesses.
2 **-** There is a significant relationship between firm age and internal control weaknesses.
3 **-** There is a significant relationship between financial health of the company and internal control weaknesses.
4 **-** There is a significant relationship between complexity of firm transactions and internal control weaknesses.
5 **-** There is a significant relationship between company's rapid growth and internal control weaknesses.

6 **-** There is a significant relationship between firm restructuring and internal control weaknesses.
7 **-** There is a significant relationship between inventories of the company and internal control weaknesses.

METHODOLOGY

Based on the aims of the study, methodology of the research is of developmental research type and based on the nature of the research,the method is correlation.SPSS software was used in this study.

Population and sample size

Research samples are selected among all industrial firmsactive in the Tehran Stock Exchange in 1389, except investment industries, services and financial intermediation activities.Thus, the sample consists of 174 companies listed on Tehran Stock Exchange.

Variables and models used in the study

Variables used in this research are:

A) The independent variables in this study include: size, complexity, rapid development (attracting and training operations,sales growth),organizational restructuring, inventorys, financial health (Profit (loss) beforeextraordinary items, bankruptcy) and longevity of the company.

B) The dependent variableis the internal control weaknesses in the original model of the research.

According to the developed model, internal control weaknesses are related to some specific characteristics of the companies that based on the model are expressed as follows:

$$Prob(ICW) = f(\beta_{0} + \beta_{1}FOREIGN_{i} + \beta_{2}M\&A_{i} + \beta_{3}RESTRUCTURE_{i} + \beta_{4}SALEGRW_{i} + \beta_{7}LOSS_{i} + \beta_{8}RZSCORE_{i} + \beta_{9}LOG\_AGE_{i}) + \beta_{5}INVENTORY_{i} + \beta_{6}LOG\_MKTV_{i}$$

FOREIGN: Index that is equal to one if the company has foreign trade, otherwise it is equal to zero.

M & A: Index that is equal to one if the companyhas begun absorbing and training operations during the period, otherwise it is equal to zero.

RESTRUCTUR: Index that is equal to one if the company has restructuredthe organization, otherwise it is equal to zero.

SALEGRW: Index that is equal to one if the sale is below the average industry sales, otherwise it is equal to zero.

INVENTORY: total inventories over total assets.

LOG _MKTV: Logarithm of market value of equity. (Market value of equity is equal to the priceper share multiplied by the number of shares issued at the end of the period).

LOSS: Index that is equal to one if earnings before items of emergencyshowloss,otherwise it is equal to zero.

RZSCORE: Altman (1986) bankruptcy index in which the lower index indicates weakness and higher probability of failure.

LOG _ AGE: Logarithm of the number of yearsthe company have been listed on the Stock Exchange, because it seems that older firms have better internal controls.

ICW: Variable that is equal to one if the company has internal control weaknesses, otherwise it is equal to zero (Doyle *et al*, 2007, p 22).

To assess internal control weaknesses, the average special characteristic of the firms method has been used (Seyedi, 1390).

Data Analysis

The relationship between firm characteristics and weaknesses in their internal controls

Table 2. Descriptive statistics

Variable	Average	Standarddeviation
SALEGRW	0.65	0.47
INVENTORY	0.23	0.11
RESTRUCT	0.03	0.18
LOGMKTV	11.59	0.69
LOSS	0.13	0.33
RZSCORE	1.90	35/1
LOGAGE	10.1	0.27
FOREIGEN	0.86	0.34
MA	0.24	0.42
ICW	0.19	0.39

Normality test of variables

In this analysis, the assumption of normality of variables has been examined using the one-sample Kolmogorov-Smirnov test and the results are presented in the table.According to these results it can be seen that the assumption of normality of the variables: INVENTORY، LOGMKTV ، RZSCOREs are accepted (significance for these variables is greater than the probability level of 0.05). Mean and standard deviation can be obtained from the table of descriptive statistics.

One-sample Kolmogorov-Smirnov test(K-S)

ICW	LOGAGE	RZSCORE	LOSS	LOGMKTV	INVENTORY	SALEGRW	RESTRUCT	MA	FOREIGEN		
174	174	174	174	174	174	174	174	174	174	Frequency	
.19	1.1044	1.9029	.13	11.5986	.2351	.65	.03	.24	.86	Normal distribution parameters	Mean Standard Deviation
.393	.27823	1.35797	.333	.69553	.11862	.479	.183	.426	.346		
.496	.146	.079	.521	.081	.091	.418	.540	.474	.517	Maximum boundary differences	Absolute Positive Negative
.496	.093	.072	.521	.081	.091	.263	.540	.474	.345		
-.315	-.146	-.079	-.352	-.044	-.053	-.418	-.425	-.290	-.517		
6.537	1.921	1.042	6.877	1.067	1.194	5.508	7.126	6.258	6.821	Kolmogorov-Smirnov test statistic	
.000	.001	.228	.000	.205	.116	.000	.000	.000	.000	Two-range significance	

The correlation

Correlationis a Mathematical index that describes the amount and direction of relationship between two variables.Because all the variables were not normal, Spearman correlation coefficients were used.The correlation coefficients between variables are often moderate and weak and are significant atthe levelof 0.01.

Spearman correlation coefficients

FOREIGEN	MA	RESTRUCT	SALEGRW	INVENTORY	LOGMKTV	LOSS	RZSCORE	LOGAGE	ICW	
1	0.026	- 0.107	- 0.084	0.010	0.350*	- 0.149	0.146	0.059	0.194*	FOREIGEN
.	(0.736)	(0.160)	(0.269)	(0.896)	(0.000)	(0.050)	(0.055)	(0.442)	(0.011)	
	1	0.044	- .131	- 0.143	0.250*	- 0.170*	0.056	- 0.042	0.422*	MA
		(0.569)	(0.084)	(0.060)	(0.001)	(0.025)	(0.461)	(0.584)	(0.000)	
		1	0.007	0.066	- .126	0.023	0.047	- 0.012	0.150*	RESTRUCT
			(0.929)	(0.388)	(0.097)	(0.764)	(0.538)	(0.876)	(0.049)	
			1	0.227*	- 0.394*	0.171*	- .037	.037	0.355*	SALEGRW
				(0.003)	(0.000)	(0.024)	(0.626)	(0.628)	(0.000)	
				1	- 0.194*	0.056	0.153*	0.108	0.032	INVENTORY
					(0.010)	(0.460)	(0.043)	(0.156)	(0.671)	
					1	- 0.325*	0.329*	- 0.198*	- 0.028	LOGMKTV
						(0.000)	(0.000)	(0.009)	(0.714)	
						1	- 0.461*	0.059	0.389*	LOSS
							(0.000)	(0.439)	(0.000)	
							1	- 0.260*	- 0.171*	RZSCORE
								(0.001)	(0.024)	
								1	0.125	LOGAGE
									1	
									1	ICW

(*) At the level of 0.05are significant.
(**) At the level of 0.01 are significant.

Regression analysis

Results are thesignificance and the effect of each independent variable on the dependent variable.Wald statistic indicated a significant presence of each independent variable in the model. Actually, Wald statistic equals t statistic in the linear regression.According tothe results,it can be seen that this statistic is not significantonly for variables restructureand log-age. Therefore, age and changing structure of the organizationhave not had significant effect on dependent variable i.e. internal control weaknesses.However, other variables because significant, have had effects on the dependent variable and they can be used to predict the internal control weaknesses.

Table of Logistic regression results

Table of Logistic regression results

	Regression coefficient (B)	Standard deviation	Wald statistic	Degrees of freedom	Significant
FOREIGEN	10.296	3.378	9.293	1	0.002
M&A	7.555	2.246	11.318	1	0.001
RESTRUCT	6.562	9.743	0.454	1	0.501
SALEGRW	7.373	2.056	12.857	1	0.000
LOSS	9.375	3.073	9.305	1	0.002
LOG-MKTV	1.877	0.889	4.458	1	0.035
INVENTORY	7.634	2.229	11.734	1	0.001
RZSCORE	-2.095	0.584	12.880	1	0.000
LOG-AGE	-3.233	1.774	3.323	1	0.068
Constant factor	-38.513	14.102	7.458	1	0.006

Therefore, based on the above results, the regression equation will be as follows:

$$\mathrm{Prob(ICW)} = f(-38.5 + 10.29\ \mathrm{FOREIGNi} + 7.5\ \mathrm{M\&Ai} + 7.37\ \mathrm{SALEGRWi} + 7.63\ \mathrm{INVENTORYi} + 1.8\ \mathrm{LOG} - \mathrm{MKTV} + 9.37\ \mathrm{LOSSi} - 2.09\ \mathrm{RZSCOREi})$$

In this model, only variables that their coefficients are significanthave been entered in the modeland variables with no significant impacthave been removed from the model.Variables that have positive coefficients show their direct effect on internal control weaknessesIn this study, the failure index (Rzscore) indicates an inverse relationship between this variable with internal controlweaknesses.To test the subsidiary hypotheses based on the above statistical method, theLogistic Regression was used.

DISCUSSION AND CONCLUSION

Results of the main hypothesis test shows that there is significant relationship between firm characteristics and internal control weaknesses; therefore, the main hypothesis is approved. But results of the subsidiary hypotheses are as follows:

1. There is a direct and significant relationship between internal control weaknesses and firm size.
2. The variable firm age does not have significant effects on the internal control weaknesses.
3. There is a direct and significant relationship betweenthe internal control weaknesses and financial health (loss before extraordinary items). There is an indirect and significant relationship between the internal control weaknesses and financial health (bankruptcy).
4. There is a direct and significant relationship between internal control weaknesses and complexity of transactions.
5. There is a direct and significant relationship between internal control weaknesses and rapid growth (absorption and training).
6. There is a direct and significant relationship between internal control weaknesses and fast growthof the company (sales growth).
7. Variable firm restructuringhas a significant effect on internal controlweaknesses.
8. There is a direct and significant relationship between internal control weaknesses and firm inventory. In other words we can say that smaller, financially weaker, more complex, and fast-growing companies, and also companies with high inventory levels, have more internal control weaknesses.

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