

Evaluating the effects of risk management of non-compliance with laws and regulations on the financial performance of companies listed on the Tehran stock exchange

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ABSTRACT

With the growing competition between today's organizations and the threats and opportunities that entangle all organizations at various domestic and international levels, the concept of risk has become very important. These threats can be so great that they can lead the organization to failure. Therefore, managers must think of some ways to reduce adverse risks for the organization to grow and survive. The main purpose of this study was to evaluate the effects of risk management on the financial performance of companies listed on the Tehran Stock Exchange. This research falls into the realm of positive financial research. Given that the companies' historical information has been used to test its hypotheses, it falls into the quasi-experimental and post-event research group. Also, since the purpose of conducting research is to measure the effects, given the nature and method used in this research, it is a descriptive-correlational research. The present research is epistemologically empirical, its reasoning system is inductive, and in terms of study, it is field-archival (field-library study). The statistical population of this study is spatially limited to companies listed on the Tehran Stock Exchange and in terms of time includes a five-year period from the beginning of fiscal year 1389 SH (2010) to the end of fiscal year 1393 SH (2014), as a result of considering conditions and considerations in simple sampling of 122 companies from the statistical population was selected to perform the tests. The results of the analysis of research hypotheses using Eviews 8 statistical software showed that risk management of non-compliance with laws and regulations has a significant effect on the financial performance of companies listed on the Tehran Stock Exchange. Keywords: Risk management, Risk management of non-compliance, Financial performance

Introduction

Major developments in the business environment, such as business globalization and the rapid pace of changes in technology, have increased competition and management difficulties in organizations. In today's business environment, companies need to be able to deal with the internal relationships and obscure dependencies between technology, data, tasks, activities and processes. In such complex environments, organizations need managers who take these inherent complexities into account when making important decisions. Meanwhile, firm risk management with a systematic perspective, creates the maximum opportunity from the risks in an industry and business. In the business environment, especially the stock exchange, companies and industries face more risks and higher impact factor. Therefore, the importance of implementing risk management techniques in these firms is very necessary and important. (Boone and Kurtz, 2012) Risk management is a system in which the organization, while identifying and analyzing risks,

adopts a set of techniques and strategies to deal with them, and the success rate of risk management depends on the ability to assess risks, use the optimal combination of strategy and existence of appropriate feedback. (Nowruzi (2015) Accordingly, the definition of risk management consists of three components; risk identification and analysis, risk management techniques and strategies and feedbacks. These components constitute the basic principles of risk management and are present in more or less all risk management perspectives. (Olamide et al., 2015)

Effective risk management, which is based on the valid conceptual principles, is an important part of this decision-making process. In optimal risk management, a prioritization process is considered through which the risks with the highest loss and the highest probability of occurrence are addressed at the beginning and the risks with the lowest probability of occurrence and the lower probability of loss are considered later. In practice, this process can be very difficult, and often balancing the risks with high probability of occurrence and low probability of loss, and the risks with low probability of occurrence and high probability of loss may not be properly addressed. (Bruce, 2014) On the other hand, the continuous improvement of financial performance creates a huge synergistic force that can support the growth and development program and create opportunities for excellence of companies and organizations. Organizations and institutions make progressive efforts in this regard, that In the meantime, without examining and gaining knowledge of the amount of risks in the business and without identifying the challenges ahead and gaining feedback and information on how to deal with these challenges and risks, continuous improvement in financial performance will not be possible. (Olamide et al., 2015) Meanwhile, in the last two decades, risk and its strategic management has become one of the topics of interest and attractiveness, so that risk management is mentioned as an intelligent, continuous and comprehensive action in the field of internal and external environment of the organization. (Bruce, 2014) Therefore, considering that this research is being studied for the first time at the level of listed companies and its findings will largely alleviate the sufferings and problems of these companies, it is considered as one of the undeniable necessities of the present research.

In any case, it can be said that financial performance is something that, if realized, guarantees the productivity of organizations. Improving financial performance is a new and effective technique to improve the productivity of the organization by utilizing organizational dimensions. Employees have latent power through their knowledge, experience and motivation, and in fact empowerment is the release of that power. This technique provides the capacities to exploit the source human potential that is not fully utilized, and in a healthy organizational environment provides a balanced approach between the exercise of complete control by management and the complete freedom of action of employees. There are numerous environmental drivers that motivate organizations to improve financial performance.

Since the main purpose of corporate management is to benefit shareholders, with an accounting approach, ROE can be considered the ultimate measure of a company's financial performance: strategic risk management. Strategic risk management consists of systematic industry risks (external risks), which includes the company's ability to reduce systematic risks. Systematic risks are measured with a factor of β , so to measure strategic risk management, we use the adjusted beta ratio of the company to the industry average beta (companies' beta is part of the stock exchange information that can be obtained through the Tehran Stock Exchange). Also operational risk management; Company risk management techniques also increase employee efficiency. Therefore, the appropriate criterion for managing the company's operational risks is the data-output rate, which is obtained by dividing sales by the number of employees in the organization.

Today's organizations are under the influence of factors such as increasing global competition, sudden changes, the need for quality and after-sales service, limited resources, and so on. After years of experience, the world has come to this conclusion that if an organization wants to be pioneer in its economy and business and not lag behind in the field of competition, it must have a skilled, creative and highly motivated workforce. Human resources form the basis of an organization's real wealth. There is a direct relationship between human capital and productivity in organizations. One of the major concerns of the world's most successful businesses is to obtain the educated and rational human capital capable to create the transformation in the organization to which they belong. (Al-Hakim et al., 2014)

Corporate executives, without a purpose, line up with shareholders, commonly known as agency representation. These events are due to managers acting as agents to represent the interests of shareholders who are the main assets. When the ownership is issued or a large number of shareholders participate in a relatively small share of the company's capital, the issue of representation is bigger. (Motahari, 2014) The higher costs of controlling the operations of agents in higher moral hazard, there is an overall likelihood of poor financial decision-making with the aim of improving the wealth of managers in reducing shareholder expenses. Taking Hong Kong during the 1997-1998 crises as an example of companies' reactions to financial problems, Leung and Horowitz (2010) found an effective relationship between stock ownership by the company's internal staff and financial performance. Effective integration of ownership and control, through shareholder managers (internal employees of the company), can work together to increase performance by benefiting managers from the efficiency of shareholder value-added decisions. As a result, agency costs are analyzed. Shareholder value depends on many factors, including profitability and liquidity. While the firm's profitability does not necessarily lead to increased shareholder value by itself, the persistence of unprofitability at one time or another damages liquidity in such areas as stock devaluation. For low debts lower than equity in respect of shareholders' equity, high investment to pay off debt motivates managerial behaviors that result in reduced organizational costs and consequently higher profitability. (Jegadeesh, 2014) Nevertheless, the results of many studies on the role and importance of risk management in the growth and development and improvement of financial performance of organizations and sometimes their overall growth and development, emphasize that companies are considered successful when they continuously develop performance with respect to effective and comprehensive risk management. Today, researchers have realized that risk management is one of the undeniable necessities of any organization, so that over the past half century, a significant part of the development of developed countries has been due to change in this area. (Olamide et al., 2015) Therefore, the main issue in the present study is whether risk management has a significant effect on the financial performance of companies listed on the stock exchange? To answer this question, in the present study, the return on equity (ROE) rate is used to evaluate the financial performance of companies listed on the Tehran Stock Exchange. In the last two decades, financial performance has become one of the topics of interest, and this trend has led to a lot of innovation, both in research and in applications areas.

Research Methods

This research is in the field of positive financial research. Due to the fact that historical information of companies was used to test its hypotheses, it is included in the quasi-experimental and post-event research group. Also, since the purpose of conducting research is to measure the effects, given the nature and method used in this research, it is a descriptive-correlational research. The present research is epistemological in terms of empiricism, its reasoning system is inductive and in terms of type of study is field-archival (field-library study)

Statistical population

The statistical population of this research includes companies listed on the Tehran Stock Exchange between 2010 and 2014, during which they have submitted their financial statements to the Stock Exchange Organization. This is also due to access to reliable information and audited financial statements. The number of companies active in the Tehran Stock Exchange at the beginning of 2009 is about 342 companies.

The sampling method in this study is systematic omission (Mehrani and Bagheri, 2009).

1- The number of companies that were listed on the stock exchange between 2010 and 2014 and were not part of investment companies and banks.

2- Companies that are not part of investment companies, banks and insurance companies.

3- Companies whose fiscal year ends on March 20.

4- Companies that did not change their fiscal year during the investigation period.

5- Companies whose financial information is available during the period under study.

Number of companies whose data has been collected (final sample of 122 companies).

Results of Conditions and Considerations in simple sampling, 122 companies were selected from the statistical population to perform the tests. The research period is 7 consecutive years, so the final sample size is 610 years, the company (122 * 5) is observed.

Research variables

The variables studied in the present study include the risk management variables of non-compliance with laws and regulations as independent variables and the rate of return on equity (ROE) as an indicator of financial performance as a dependent variable that is extracted based on Olamide et al. (2015).

Financial performance; equity rate of return (ROE) is used to calculate this variable. (Olamide et al., 2015)

Strategic risk management; adjusted beta ratio of the company to the industry average beta is used to calculate this variable. (Olamide et al., 2015)

Operational risk management; sales are divided by the number of employees is used to calculate this variable. (Olamide et al., 2015)

Reporting risk management; significant weaknesses in internal controls, conditional audit reporting, and restatement of financial statements are used to calculate this variable. (Olamide et al., 2015)

Risks management of non-compliance with laws and regulations; the ratio of audit fee to total assets is used to calculate this variable. (Olamide et al., 2015)

Research model;

$$ROE = \beta_0 + \beta_4(NLRM) + \varepsilon_{it}$$

$$ROE = \beta_0 + \beta_1(NLRM) + \varepsilon_{it}$$

Where,

(NLRM: Risk Management of non-compliance and ROE: Financial Performance)

Research hypotheses

Risk management has a significant effect on the financial performance of companies listed on the Tehran Stock Exchange.

Risk management of non-compliance with laws and regulations has a significant effect on the financial performance of companies listed on the Tehran Stock Exchange.

Data collection method

The necessary information for this research is collected through the library and site of Tehran Stock Exchange and related databases and using the information published on this site and as well as the calculation of this information through financial or accounting software that are used to analyze the results.

Data gathering tools

The tools used to collect information in the library method were text reading and the use of receipts, statistics reading and the use of balance sheets and profit and loss statements of companies and document reading. The data collection method is studied from the companies listed on the Tehran Stock Exchange and their financial information from 2010 to 2014.

Data analysis method

Eviews 8 software and the following steps will be used for statistical analysis and testing the research hypotheses.

Descriptive statistics: Using central indicators such as mean, average, maximum and minimum values and dispersion indices such as standard deviation.

Inferential statistics:

- 1- Checking the normality of Jarque-Bera test model (J-B)
- 2- Data reliability test over time
- 3- Inequality of variance test
- 4- Variance inflation factor (VIF) test
- 5- Significant t-student test of variables in the model

- 6- Homogeneity test of data distribution F-Limer test (panel data or integrated data)
- 7- No-difference test in y intercept of Hausman test model
- 8- Determining the type of suitable model OLS or EGLS
- 9- Fisher F-test for significance of the whole model
- 10- Fisher F-test of remaining independent model
- 11- Determination coefficient R^2
- 12- Modified determination coefficient R^2

Results

Table 1: Descriptive statistics of research variables

	NLRM	ROE
Average	0.314	0.312
Median	0.312	0.294
Maximum	0.512	0.421
Minimum	0.012	0.124
Standard deviation	0.405	1.070
Skewness	0.836	-1.846
Kurtosis	0.875	2.410
Jarque-Bera's statistics	23.225	40.328
Significance level	0.064	0.059
Sample	610	610

According to the results of Table 1, the average value for the corporate financial performance ratio variable is 0.312, which shows that most of the data is concentrated around this point. The median of the variable of companies' financial performance is 0.294, which indicates that half of the data is less than this value and the other half is more than this value. The standard deviation is one of the most important scattering parameters and is a measure of the scattering of observations of the average. The value of this parameter for the variable of financial performance of companies is equal to 1.070.

Study of correlation coefficients of research variables

Table 2: Correlation coefficients of research variables

Correlation		
Probability	ROE	NLRM
NLRM		1.000000

ROE	1.000000	0.506966
	-----	0.0000

Through the correlation test, we examine the initial relationship between the variables and according to the results, we can say whether there is a relationship between the variables or not, and we can examine these relationships in more detail. For example, the results obtained from the correlation coefficient table show that there is a positive and significant relationship between the variables of risk management of non-compliance with laws and regulations and financial performance of companies listed on the Tehran Stock Exchange (Table 2).

Studying the durability of research variables

Before estimating the model, it is necessary to examine the durability of its variables. A variable is durable when its mean, variance, and autocorrelation coefficients remain constant over time. In general, if the temporal intercept of a variable changes and the mean, variance, and covariance do not change, then variable is durable, otherwise the variable will be no-durable. The hypotheses related to the durability of the variables are as follows:

$\left\{ \begin{array}{l} H_0: \text{The variable is no-durable} \\ H_1: \text{The variable is durable} \end{array} \right.$
 The durability of the variables can be examined in three modes: "on the level", "on the first difference" and "on the second difference". Variables whose probability of testing is "at level" is less than 5%, the null hypothesis is rejected about them, and that variable is at the durable level, if it is more than 5%, is no-durable. The results of durability test are listed in Table (3). According to Levin, Lin and Chu test, because the value of P-value was less than 5%, all independent, dependent and control variables in the research period were at a reliability level. Reliability means that the mean and variance of research variables over time, and covariance of variables for different years have been constant. As can be seen in Table (3-4), all variables are meaningful and we do not need a comprehensive test.

Table 3: Results of test durability of research variables

Variables	Levin, Lin and Chu		Results
	Statistics	Possibility	
NLRM	-46/29	0.000	durable
ROE	-64/16	0.000	durable

Limer and Hausman F tests

Before estimating the research models, it is necessary to specify the estimation method (integrated or panel). For this purpose, F-Limer test is used. For observations whose test probability is more than 5%, or in other words their test statistic is less than the table statistic, the integrated method is used and for observations whose probability test is less than 5%, the panel method is used to estimate the model. The panel method can be done using two models, "random effects" and "fixed effects". The Hausman test is used to determine which model to use. For observations with a probability of testing less than 5%, the fixed effects model is used, and for observations with a probability of testing of more than 5%, the random effects model is used to estimate the models. In general, the F-Limer statistic is used to select one of the panel data methods or integrated data. In other words, does the F-Limer test statistic determine whether there is a separate y intercept for each company? In the F-Limer test, the null hypothesis indicates equality of y intercept (integrated data) and the opposite hypothesis indicates the heterogeneity of y intercept (panel data). Thus, if the null hypothesis is rejected, the panel data method is accepted. Thus;

H_0 : Integrated data method.

H_1 : Panel data method.

And we have for Hausman test;

H_0 : Random effects method.

H_1 : Fixed effects method.

Table (4) shows the results of these tests for the research model.

Table 4: Results of Limer and Hausman F tests

Model	Test	Statistics	Possibility	Result
First	F Limer	1,506	0.185	Integrated method
	Hausman	Due to the possibility of the F-Limer test, there is no need to perform the Hausman test		
Second	F Limer	0.167	6.295	Integrated method
	Hausman	Due to the possibility of the F-Limer test, there is no need to perform the Hausman test		

Collinearity test

Collinearity is a condition that indicates that an independent variable is a linear function of other independent variables. If the collinearity in a regression equation is high, it means that there is a high correlation between the independent variables and the model may have been used despite the high determination coefficient. According to the variance and tolerance inflation of the independent variables in Table (4-5), there is no Collinearity between the independent variables.

Table 5: Collinearity test results

Variables	Tolerance	VIF
NLRM	0.465	1.958
ROE	0.618	2.658

Variance inflation factor (VIF) is used to examine collinearity. If this value is more than 5, the intense collinearity should be suspected. According to the table above, this value is less than 5 for all variables, so this assumption is not distorted.

Variance heterogeneity test

If the model is an integrated data type, variance heterogeneity is also examined. In this study, White test is used to examine the heterogeneity. The value obtained from the White test indicates that there is no heterogeneity of variance; the information in Table (6) shows the result of this test.

Table 6: Variance heterogeneity test (White test)

Research models		Value	Significance level
Research models 1	Statistics F	1.18	0.63
	Lagrange multiplier	1.06	0.62
Research models 2	Statistics F	1.44	0.58
	Lagrange multiplier	1.40	0.58

Test the hypotheses

1- Risk management has a significant effect on the financial performance of companies listed on the Tehran Stock Exchange.

H_0 : Risk management does not have a significant effect on the financial performance of companies listed on the Tehran Stock Exchange.

H_1 : Risk management has a significant effect on the financial performance of companies listed on the Tehran Stock Exchange.

Table 7: The results model test 1

Variable	Coefficients	Standard error	t statistic	Significance level
Constant coefficient	0.085	0.046	1.824	0.334
SRM	0.584	0.111	5.254	0.000
ORM	0.170	0.030	5.521	0.000
RPM	0.148	0.035	4.52	0.000
NLRM	0.134	0.047	2.824	0.008
Statistics F		41.004	The determination coefficient	0.5698
Significance level of F statistic		0.000	Adjusted determination coefficient	0.5541
			Durbin-Watson Test value	2.167

In order to test this hypothesis, the results of estimation of the model presented in Table 7 and (combined) model of multiple linear regression coefficient is used. The probability value or significance level for each of the variables is less than 0.05; the null hypothesis is rejected at the 95% confidence level. Watson's Durbin statistic is 2.167, which indicates the absence of autocorrelation. Also, considering the value of t-statistic is significant for the research variables (due to being in the range of +1.96 and -1.96 or the same critical values at the 95% confidence level), according to the above, the main research hypothesis can be confirmed. This means that risk management has a significant effect on the financial performance of companies listed on the Tehran Stock Exchange. Finally, according to the significance level of F test obtained 0.000 (because this value is less than 0.05) shows that the dispersion of data with respect to the regression line has a reasonable dispersion. Also, the determination coefficient of the model shows that risk management has an effect on the financial performance of companies listed on the Tehran Stock Exchange at 56.98%.

2- Managing the risks of non-compliance with laws and regulations has a significant effect on the financial performance of companies listed on the Tehran Stock Exchange.

H₀: Risk management of non-compliance with laws and regulations does not have a significant effect on the financial performance of companies listed on the Tehran Stock Exchange.

H₁: Risk management of non-compliance with laws and regulations has a significant effect on the financial performance of companies listed on the Tehran Stock Exchange.

Table 8: The results model test 2

Variable	Coefficients	Standard error	t statistic	Significance level
Constant coefficient	0.165	0.120	1.381	0.508
NLRM	0.444	0.048	9.089	0.000
Statistics F		46.052	The determination coefficient	0.1976
Significance level of F statistic		0.000	Adjusted determination coefficient	0.1915
			Durbin-Watson Test value	2.049

In order to test this hypothesis, the results of estimation of Model 2 presented in Table (8) and simple regression coefficient is used. The probability value or significance level is 0.022 and because this value is less than 0.05, the null hypothesis is rejected at the 95% confidence level. Watson-Durbin statistic value is 2.049, which indicates the absence of autocorrelation. Also, considering the value of t-statistic is significant for the research variables (due to not being in the range of +1.96 and -1.96 or the same critical values at the 95% confidence level), according to the above, hypothesis 4 of the research can be confirmed. This means that risk management of non-compliance with laws and regulations has a significant effect on the financial performance of companies listed on the Tehran Stock Exchange. Also, according to the obtained Coefficient of determination (effect) shows that risk management of non-compliance with laws and regulations has an effect (19.19 %) on the financial performance of companies listed on the Tehran Stock Exchange. Finally, according to the significance level of F test obtained 0.000 (because this value is less than 0.05) shows that the dispersion of data with respect to the regression line has a reasonable dispersion.

Conclusion

The purpose of this study was to investigate the effect of risk management of non-compliance with laws and regulations on the financial performance of companies listed on the Tehran Stock Exchange. The results of hypothesis analysis showed that risk management of non-compliance with rules and regulations has a significant effect on financial performance of companies listed on the stock exchange Tehran Stock Exchange. Also, according to the obtained coefficient of recognition (effect), it shows that risk management of non-compliance with laws and regulations has an effect (19.19%) on the financial performance of companies listed on the Tehran Stock Exchange. Failure to comply with the laws and regulations increases the risks of litigation as well as the risk of costs associated with it. It also seems obvious that with

appropriate management of this part, we can reduce the degree of bankruptcy risks and take steps towards better performance of the company by reducing legal costs as well as bankruptcy costs.

In general, regarding the main hypothesis of the research, it can be acknowledged that risk management has a significant effect on the financial performance of companies listed on the Tehran Stock Exchange; a review of the research background on research variables shows that the results of the present study are similar and in line with the results of Dastjerdi and Qatrehnabi (2009), Izadpanahi (2009), Fareq (2014), Hosseini et al. (2014), Nowruzi (2015) in the country and similar and in line with the research results of Gordon et al. (2009), Hoyt and Leinberg (2009), Boone and Kurtz (2012), Bruce (2014) and Olamide et al. (2015).

Considering that the risk management of non-compliance with laws and regulations has a significant effect on the financial performance of companies listed on the Tehran Stock Exchange, the following suggestions can be made;

- Inclusion of binding laws and regulations in the company's articles of association
- Use of consultants and legal experts in the company
- Accurate and point-by-point implementation of the opinions and critics of the auditor and the statutory inspector
- Efforts to obtain quality assurance and safety certificates.

As we have seen, the optimal performance of a listed company depends on the reduction of comprehensive risks, so the success of the company depends on the control and optimal use of these risks. Observance of all the proposed items for each of the risks will provide the company with immunity against all types of risks that threaten the company and ultimately will have more competitive stability.

Considering that operational risk management has a significant effect on the financial performance of companies listed on the Tehran Stock Exchange, companies must adopt methods to increase the efficiency and effectiveness of the production process and increase the asset turnover ratio to improve their performance. These methods should also be reciprocally applied to the company's employees. In this regard, the use of optimal and modern production methods can be suggested to improve the company's performance. Also, effective training programs can be used to improve the activities of the company's employees.

Considering that the management of financial reporting risks has a significant effect on the financial performance of companies listed on the Tehran Stock Exchange, the following suggestions can be made:

- Amending the annual accounts of companies
- Amending the bylaws and instructions required by the company
- Systematically systematizing the internal controls of the organization
- Correction of accounts between groups
- Disclosure of transactions with related parties according to Accounting Standard No. 12 of Iran.

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