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The study of the effect of accounting and finance expertise of the members of audit committee on investment risk

Case study: automotive industry companies listed in the Tehran Stock Exchange

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Abstract: *The aim of this study was to investigate the role of audit committee members' expertise in accounting and finance on the risk of investment in the automotive industry companies listed in the Tehran Stock Exchange. The research method was descriptive-correlational. The samples in this study were the automotive companies in the Tehran Stock Exchange during the period of 2009-2014, 15 of which were selected as the samples. The results showed that the audit committee members' levels of expertise in accounting and finance significantly affects the risk of investment.*

Keywords: *Audit committee, financial reporting, audit committee chairman*

INTRODUCTION

Investment can account for one of the fundamental bases in the economy of every country. There is no doubt that increase in production as a first step in the process of development requires increased investment. Accordingly, theories are raised in economics that assume the underdevelopment of some countries to be due to the lack of capital and investment assigning the vicious circle of reduced production to the lack of investment. In addition to the macro-economic consequences of investment, this issue is also considered a desirable event from the perspective of investors. This is because it preserves the purchasing power of money against inflation taking into account the time value of money and the rewards of delayed consumption. For this reason, investment is believed to be an essential and vital prerequisite for the development from the aspects of capital supply and demand (Etemadi et al., 2006).

In our country, along with the development of capital market having the Stock Exchange located at the top, a significant portion of invested assets are deposited in the shares of listed companies in the stock exchange. The nature of business activities and investments are such that achievement of efficiency requires business risk. Given the extent of the duties of the board, especially in large business and multinational organizations, it is not possible to directly control over all aspects in effect. Thus, through formation of sub-committees and delegation of powers, the board tries to have an effective management and increase the value of the organization. The formation of audit committee helps the board to properly perform its responsibility with respect to processes and financial activities such as reporting, monitoring, and compliance of internal controls with the rules to ensure the accuracy of the data reported.

At present, audit committees are required to be established with the use of specialists in all fields, especially finance and accounting, for listed companies in the stock exchange of most countries (Mohammadpour and Shahrabi, 2014). Timeliness is one of the most important qualitative characteristics of financial information. The shorter the interval between the end of fiscal year and publication date of entities' financial statements,

the higher the usefulness of annually audited financial statements of entities. Evidence suggests that specialist auditors in the industry provide a more effective audit (Takhtaei et al., 2012). The purpose of this study, therefore, was to investigate the role of audit committee members' expertise in accounting and finance on the investment risk in the automotive industry companies listed in the Tehran Stock Exchange.

Methods

The research method was descriptive-correlational. The study samples were the automotive companies in the Tehran Stock Exchange, 15 of which were selected with the following criteria:

1. The fiscal year should have been ended in March 2014.
2. The company must have an active trading symbol with the least traded shares of once a year.
3. The financial information has to be available during the study period.
4. There must be no cessation during the intended period.

In this study, data and information were collected through the library method. Data were obtained from the sample companies by referring to the financial statements, explanatory notes, and annual reports of stock exchange using the software Rahavard Novin as well as through the site: www.rdis.ir (reserved to the Stock Exchange Organization). The dependent and independent variables were evaluated by the model of Abernathy et al. (2014). The variables studied include:

1. Control variables

LBSIZE: this variable represents the size of the board; HBIND: shows the ratio of directors out of the board (external managers); HACSIZE: indicates the ratio of total number of directors in the audit committee to total directors in the board; HACIND: denotes the number of independent directors in audit committee; and HINSTOWN: presents percentage of institutional ownership.

2. Independent variables:

AFEPPER: This variable shows audit committee managers as corporate finance inspectors; CFOPER: represents the number of audit committee directors with expertise and experience in finance and accounting; INDUSTRY INDICATORS: this variable indicates the characteristics of the firms surveyed. The following indices should be studied for the above characteristics.

SIZE: logarithm of total assets of the company i in year t ; AGE: the formation period of the company from the beginning to the year t ; LEVERAGE: total cash divided by total assets of the company i in the year t ; STOCK ISSUE: represents income from the release of common stock; ROA: net income divided by total assets; EI: this variable reflects the reports of extraordinary meeting of company; BOTHPER: the number audit committee managers capable of both accounting, and financial control and general skills; CHAIRAF: this variable indicates the eligibility of audit committee chairman for the inspection of financial issues in the committee, who specializes in finance control; MEMBERAFEPPER: this variable is an index for the evaluation of members other than the committee chairman, CHAIRPA: this variable reflects the director's expertise in general accounting; CHAIRCFO: indicates the expertise of chief financial director in finance for the company; CHAIRBOTH: examines the expertise of audit committee chairman; YEAR INDICATORS: this variable measures the annual index of audit committee, which is measured and included into the model based on the following variables:

ACMEET: number of meetings held by the audit committee to participate for the company i in the year t . ACTENURE: average number of years during which each member of the audit committee has been in the board.

3. Dependent variable

Investment risk is the dependent variable in this research. In a general definition, Weston and Brigham called the risk as the volatility of investment returns. Markowitz (1952) defines the risk as follows (quoted by Mahdavi et al., 2010):

$$\sqrt{\frac{\sum (R_i - E(R_i))^2}{n-1}} \quad 57$$

Investment risk =

where R_i is actual daily returns of stock i , $E(R_i)$ is expected return of stock i , and n is defined as the number of periods. It should be noted that daily information issued in the above formula to calculate the risk; Return on equity: the ratio of total revenue from an investment in a given period compared to the investment used during that period. Overall, return on equity is calculated as follows.

$$R_t = \frac{(P_t - P_{t-1}) + DPS_t}{P_{t-1}}$$

where R_t is common return on equity in the period t ; P_t is common stock price in the period t ; P_{t-1} is stock price during the period $t-1$; and DPS_t is defined as common dividend stock in the period t . If the capital increases as a result of both earns cash and receivables or reserves (bonus shares), P_t cannot be compared with P_{t-1} due to differences in the number of shares before and after the capital increase, therefore, P_t has to be adjusted. Finally, common return on equity of a company is calculated as follows:

$$R_t = \frac{(1+a)P_t + DPS_t - P_{t-1} - C}{P_{t-1}}$$

$$E(R_i) = \sqrt[n]{x_1 \times x_2 \times \dots \times x_n}$$

where a is the percentage of capital increase (from the reserves or earns cash and receivables) and C is defined as earns cash while an increase in the capital (Moradi et al., 2009). It should be noted that returns are calculated on a daily basis; expected returns: returns expected from an investment, the geometric mean of the last rounds of investment returns (Talebnia & Barzigar quoted from Lofty, 2008), which is calculated in the following way:

It is noteworthy that expected return is calculated using daily data. Correlation and regression were used for data analysis.

Results

From the econometric literature of compilation patterns, one of the two models was selected, namely common effects and constants. The first is called common intercept method and the second is known as variable intercepts. F-statistic was used to select each equation. When F-statistic is larger than 0.05, common intercept method is selected, and the constants model is preferred if F-statistic is smaller than 0.05.

Table 1. Value of F-statistic

Test type	Test statistic	df	Sig.	Test result
F Limer	3.946	(22, 2032)	0.000	Fixed effects
Hausman	5.327	22	0.000	Fixed effects

According to Table 1, the significance level of Limer F-statistic for the first model samples equals 0.000 confirming the fixed effects model. After the model was selected for estimation, the hypotheses considered in the regression should be examined, that is: nullity of mean error terms, normality of error terms, lack of self-correlation between error terms, and dissimilarity in the variance of error terms. Wooldridge recommends a simple self-correlation test for panel data in which error terms follow the first order self-regression of AR (1).

If the significance level is smaller than 0.05, the null hypothesis about the lack of data correlation is rejected and self-correlation will be accepted at a level of over 95%. Results of the test are shown in Table 2.

Table 2. Wooldridge test results

F-statistic	df	Sig.	Result
0.830	22, 2032	0.432	No self-correlation

According to the results presented in Table 2, the significance level of the test is greater than 0.05, thus the null hypothesis is not rejected meaning that there is no self-correlation problem of error terms in the model. The nature of panel data requires that the problem of unequal variants to occur in many studies based on such data, especially when the number of periods is more than that of the times under investigation. Given the significant impact of variance heterogeneity on estimating the standard deviation of coefficients as well as on the problem of statistical inference, it is necessary to verify the presence or absence of variance heterogeneity before any estimation. The generalized Wooldridge test was conducted for the equality of variance in the panel data. Results are summarized in Table 3.

Table 3. Results of variance heterogeneity test

χ^2 statistic	df	Sig.	Result
15.88	1	0.000	No variance heterogeneity

The null hypothesis is rejected as the significance level obtained from this test is less than 0.05, hence, the heterogeneity of variance is accepted. Given that one of the ways to solve the problem of variance heterogeneity is to estimate the model using Generalized Least Squares (GLS), all models were finally estimated by GLS method. In order to evaluate the effect of audit committee members' accounting and finance expertise on the investment risk, the model was estimated through fixed effect method. The results of Chow and Hausman test showed that the best method to estimate panel data model is to use fixed effects with GLS. The results are given in Table 4.

Table 4. Results of regression analysis

Results of the regression model				
Variable	Coefficient	Standard error	t-statistic	Sig.
Constant	56.16	1.434	39.158	0.0000
AFEPPER	-4.005	1.039	-3.856	0.0001
LBSIZE	3.681	3.339	1.102	0.075
HBIND	3.492	1.162	3.005	0.002
HACSIZE	-3.36	2.395	-1.402	0.09
HACIND	-2.84	1.106	-2.568	0.034
HINSTOWN	0.59	1.162	0.508	0.582
SIZE	-3.43	0.970	-3.536	0.000
AGE	-0.54	0.429	-1.259	0.362
LEVERAGE	0.36	0.085	4.235	0.000
STOCK ISSUE	2.27	2.48	0.915	0.138
ROA	-15.86	4.798	-3.306	0.000

EI	-2.46	1.497	-1.643	0.063
Results of the regression model				
Variable	Coefficient	Standard error	t-statistic	Sig.
ACMEET	-1.25	0.383	-3.264	0.001
ACTENURE	-1.92	0.448	-4.286	0.000
Coefficient of determination	0.658	Mean of dependent variable		0.5123
Corrected coefficient of determination	0.521	Standard deviation of dependent variable		0.19154
Pearson's standard error	1.28	Total residual squares		531,391
F-statistic	6.57	Durbin-Watson's statistic		1.967
Sig.	0.000			

As Table 4 shows, the whole model is significant based on F-statistic obtained and also a significance level of 5%. An initial model coefficient of determination equal to 0.658 was decreased to 0.521. This figure presents a powerful explanation on the expertise of audit committee members in accounting and finance as the independent variable. As the significance level of AFEFER is less than 0.05, it has a significant effect on the risk of investment. Accordingly, a unit change in AFEFER results in an alteration in the credit rating equal to -4.005 units. As a result, it can be stated that the expertise of audit committee in finance and accounting significantly affects investment risk. Also, due to the correlation between the disturbing elements, it is necessary to employ Durbin-Watson statistic in order to validate the regression model. The output of this analysis is a number between 0 and 4. When this value is closer to zero, it will indicate the fact that the model errors are more correlated. If the number is closer to 2, it means an acceptable validation of regression model. It is observed that the statistic is 1.967, which rejects the H₀ about the correlation between disturbing elements because of closeness to 2 and being distant from zero. Thus, it is concluded that there is a correlation between the variables in this research.

Discussion and conclusion

This study aimed to investigate the role of audit committee members' expertise in accounting and finance on the investment risk in the automotive industry companies listed in the Tehran Stock Exchange. The results showed that the expertise of audit committee members in accounting and finance significantly affects the risk of investment. Previous investigations indicate that the type of financial expertise may differently affect financial reporting. The presence of financial experts in audit committees has a positive effect through monitoring the quality of financial reporting. Accounting expertise enhances the ability of audit committee members in understanding technical issues facing their companies. The amount of time required for prediction leads to a better understanding and assessment of accounting and management issues through increasing the competence of audit committee. Thus, reducing the time required for financial reporting may be obtained through a higher competence of the audit committee. Expertise in finance and accounting affairs can be achieved through experience in general accounting, obtaining an accounting certificate, and/or through experience as a senior financial manager, controlling or a position of monitoring accounting. There is evidence showing that the role of senior financial manager provides changing attitudes from technical accounting towards strategic planning. The findings showed that of the reliability of the companies' financial reports are considerably affected by the accounting expertise of members and the head of audit committee, which can have a remarkable contribution to decision-making by both the investors and financial analysts.

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