

Investigating the Relationship between Conservatism, Independence of the Board of Directors and Innovation of Companies Acquired in Tehran Stock Exchange

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ABSTRACT

The purpose of this research was to investigate the relationship between conservatism, the independence of the board of directors and the innovation of the companies admitted to the Tehran Stock Exchange. In this regard, 110 companies listed in the Tehran Stock Exchange were investigated using Cochran's method and systematic knockout method for the period from 2011 to 2016. The results of this study indicate that it can be stated that the independence of the board of directors is positively associated with innovation in companies selected as the sample of this study, according to the above description, the first hypothesis is confirmed. To be and since conservatism is positively associated with innovation in companies that have been selected as examples of this research, it can be concluded that the second hypothesis is confirmed.

KEYWORDS

Independence of the Board, Conservatism, Innovation, Stock Exchange

INTRODUCTION

In accounting, conservatism is a concept that has a long history and has influenced accounting for centuries, in theory and practice (Basu, 1997). Historical records of the early fifteenth century on controversial and cooperative claims reflect the fact that accounting in medieval Europe has been conservative. From the viewpoint of financial statements, conservatism is an attempt to choose a method of accounting accepted methods that results from one of the following results: a slower income recognition, quicker recognition of costs, less valuation of assets, or more valuation of debt (Shabahang, 2002).

The purpose of financial reporting and accounting principles is that information that provides financial reporting has certain characteristics. In theoretical concepts of Iranian financial reporting, these qualities are referred to as qualitative attributes. One of these characteristics is conservatism, which is referred to as caution.

Corporate governance reforms have significantly increased the rules and responsibilities of the board of directors. The rules of the board of directors are also developing advisory duties on supervisory tasks. The advisory role requires the board to advise and advise the executive board on strategic business decisions to create value for shareholders, without interfering in managing current affairs. Carrying out a supervisory role requires that the board oversees the plans, decisions, activities and management functions in order to ensure the protection of shareholders' interests. In all the actions that the board does, executives are expected to make their business decisions that they reasonably believe is the best interests of the company.

In the accounting literature, two important characteristics of conservatism have been investigated. First, there is a bias in offering less than the book value of a stock relative to its market value, which was quoted by Falsam and Ahelson in 1995. The second is the desire to accelerate the identification of losses and postpone the identification of profits, which was posed by Basu in 1997.

Basu interprets conservatism as a willingness of accountants to have a higher degree of certainty in identifying good news about bad news in financial statements and in a context related to capital markets, conservatism means more bad news about reported earnings on stock prices than good news.

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PROBLEM STATEMENT

In paragraph 95 of the statement, accounting concepts No. 2 are also used to describe the conservatism: "If there are two estimates of the amount received or payable and the probability of occurrence of both is the same, conservatism requires the use of an estimate that is less optimistic." (Board of Financial Accounting Standards, 1980).

Conservatism, which implies caution in identifying and measuring income and assets, is one of the most important limitations of financial statements. While most accountants accept the existence of conservatism, they have not yet provided a precise definition of it. Basu (1997) has interpreted accounting conservatism as an accounting trend by requiring a higher degree of confirmation to identify good news or profits compared to the amount of credibility required to identify bad news or losses. In fact, conservatism can be a product of ambiguity, and conservatism is used when faced with ambiguity by accountants. Givily et al. (2007) point out that simultaneously different models should be used to calculate the conservatism index. In their research, they showed that the results of the Basu model differ from other models, and given that the reporting environment varies according to the type of industry, country, and time period. You must use different models at the same time. In this study, according to Givily and Hayn (2007), two different methods, including the Basu model (1997) and the Givily and Hayn (2000) model, were used to measure conservatism.

According to the agency theory, non-executive directors and control mechanisms, including disclosure, are able to reduce the cost of conflicting interests between ownership and management. A number of empirical studies confirm that the enumeration of non-executive directors is actually effective in reducing agency problems. Several other empirical studies have also shown that disclosure is also used to reduce the cost of representation (Corits, 1999), which is, of course, consistent with what is projected by representation theory.

THE NECESSITY OF DOING RESEARCH

Unauthorized members of the board and voluntary disclosure as control mechanisms attempt to reduce the representation problems caused by separation between ownership and management. These mechanisms are used to ensure that management practices are consistent with the interests of the owners. Non-executive members of the board of directors are one of the most basic internal control mechanisms, because they are determined by shareholders in order to decide on behalf of them. Therefore, it is expected to be effective as a moderator of the behavior of managers. However, the effectiveness of independent board members can be limited when they are also corporate executives. On the other hand, senior executives are often members of the board because they have valuable information for decision making and have a thorough knowledge of the company's activities. As stated by Fama and Jensen, the breadth of senior executives (on duty) on the board may lead to the collusion and transfer of shareholders'

wealth. A corporate governance system (corporate governance) is expected to have a special role in ensuring the legality of affairs and limiting dealership issues, hence the collateral risk is reduced by senior executives and controlling shareholders. Empirical research supports the theory that "the presence of non-executive members of the board (independent directors) reduces the likelihood of distortion in financial statements." Also, the presence of the above members is effective in reducing the cost of representation (Beraycley and James, 1987).

The separation of ownership from management leads to the issue of representation. This raises the cost of representation. To prevent this, disclosure of information by managers is done to assure the owners. The existence of a corporate governance system (corporate governance) reduces the effects of the representation problem.

For example, the lack of authority of board members, the separation of the chairman of the board from the CEO, and ... examples of corporate governance are appropriate. On the other hand, some companies refuse to disclose information based on their specific ownership structure and ownership, which could increase their costs (Babazadeh, 2010).

Sustainability in business is defined as a strategy for designing and implementing business strategies that manages the interests of the organization through the establishment of sustainable performance in all aspects of the EGSEE while at the same time preserving human and natural resources for future use. Sustainability in business is affected by many factors, including global innovations and best practices. Stability is affected by the factors involved in the business that creates barriers that others need to adapt to or overcome. The benefits of a sustainable business plan include: addressing environmental issues, reducing waste of resources, increasing efficiency, reducing risk, improving relationships with the community, and reducing regulatory actions.

Therefore, in this research, this issue is considered that there is a meaningful relationship between the study of the relationship between management conservatism, independence of the board of directors and innovation for companies accepted in the Tehran Stock Exchange.

BACKGROUND RESEARCH

Leo and Wang (2018) have presented a model for linking innovation with the independence of the board of directors and conservatism. It was concluded that there is a close relationship between these parameters. In this thesis, the model is intended to be based on the model of these researchers.

Garcia and Penalva (2009) used a large sample of American firms between 1992 and 2003 to examine the relationship between corporate governance and conservatism. His benchmark in measuring the quality of the management system was a combination of corporate governance mechanisms. Also, to measure conservatism, the three criteria of asymmetry of time were used, accruals Givily and Hayen, accrual accruals and Shiva Kumar. Their results indicated that a more powerful system of governance

would result in more conservative accounting. However, the severity of the relationship and the level of significance were rather sensitive to the conservative choice criterion. They found that companies with a stronger corporate governance system, using optional accruals, would expedite the identification of bad news in financial statements and postpone the identification of good news.

Pa (2007) in his study examined the impact of managerial comments through accruals on conditional conservatism in accounting. Experimental results indicate that conditional conservatism in accounting is basically attributable to unexpected accruals and not expected accruals. Anyway, this inference should be interpreted with caution, because impressions about the relative impact of unexpected and expected accruals on conditional conservatism in accounting depend on accruals models.

chi, Liu and Wang (2007) examined the relationship between corporate governance and conservatism in Taiwanese firms between 2004 and 2004. They found conservatism to be a substitute for corporate governance mechanisms. Larger corporate boards and higher institutional ownership demanded less conservatism. On the other hand, a higher percentage of proprietary directorship and the simultaneous management of managerial and management board posts in companies were accompanied by more demand for conservatism.

Park and Shin (2004) examined the relationship between board composition and profit management in Canada. They considered optional voluntary accruals as an indicator of earnings management. The results show that in Canada there is no relationship between the ratio of non-executive directors and the level of accruals' manipulation, that is, non-executive directors do not help to oversee corporate profit management. But there is evidence that the presence of managers with a financial background in the composition of the board reduces the management of profits. Also, the presence of representatives of active institutional investors further reduces the management of profits.

RESEARCH HYPOTHESES

1. There is a significant positive relationship between the independence of the board of directors and the level of innovation of the company.
2. There is a significant positive relationship between management conservatism and the degree of innovation of the company.

RESEARCH METHODOLOGY

This research is categorized as research based on the purpose of the applied research. Research is applied research that applies theories, rules, principles, and techniques to solve real and actual problems. The present study is an

applied study with an emphasis on correlation and analytic relationships.

In multiple regression research, it is sought to find independent variables that predict the variables of the dependent variable either alone or jointly (Bazargan, 2005)

METHODS OF DATA COLLECTION

For this research, information about the independent dependent variable and control variables is collected through the databases and databases of the new sources as well as through the site and library belonging to the Stock Exchange.

This research is based on the nature of the research as part of regression-correlation research.

Information about the theoretical issues of research has been gathered from various sources, such as internationally recognized books and publications, which are available online. On the other hand, the raw data and data needed by companies to investigate the research hypothesis through the new software, Tadbir Pardaz and, when necessary, through direct referral to the company's financial statements, published on the CD-ROM published by the Tehran Stock Exchange and the website www.rdis.ir is available.

SOCIETY AND STATISTICAL SAMPLE

For this research, the companies listed in the Tehran Stock Exchange were considered as the statistical population and a sample of companies were extracted from the companies under the following conditions.

The statistical population includes all companies accepted in Tehran Stock Exchange between 2011 and 2016.

The sample includes companies admitted to the Tehran Stock Exchange. First of all, their financial year is due to end March, and secondly, their information is available from the beginning of fiscal year 2011 to the end of fiscal year 2016 (6 years), and thirdly, sample members are not investment companies. To select the statistical sample, all the bourse companies adapted to the criteria set for the family firms, and after selecting these companies, they were put in a group. After dividing these companies into the industry, the share of each industry, other companies was selected by simple random sampling and placed in the non-family group. By applying all of the above restrictions, the volume is 110 companies.

RESEARCH TOOL

The financial statements of the companies include the balance sheet, cash flows and notes accompanying the financial statements at the end of each financial year as a research tool. In this study, Eviews7 and Excel have been used to process, categorize and prepare data for entering the statistical software.

RESEARCH MODEL

Model 1:

$$\ln(1 + patents)_{it} = \alpha_0 + \alpha_1 outdir_{it} + \alpha_2 \ln(1 + R\&D)_{it} + \alpha_3 Leverage_{it} + \alpha_4 ROA_{it} + \alpha_5 Tangibility_{it} + \alpha_6 Capital Expenditure_{it} + \alpha_7 Board Size_{it} + \alpha_8 CEO Ownership_{it} + \alpha_9 Institutional Ownership_{it} + \alpha_9 \ln(Assets)_{it} + \epsilon_{it}$$

Model 2:

$$\ln(1 + patents)_{it} = \alpha_0 + \alpha_1 conservatism_{it} + \alpha_2 \ln(1 + R\&D)_{it} + \alpha_3 Leverage_{it} + \alpha_4 ROA_{it} + \alpha_5 Tangibility_{it} + \alpha_6 Capital Expenditure_{it} + \alpha_7 Board Size_{it} + \alpha_8 CEO Ownership_{it} + \alpha_9 Institutional Ownership_{it} + \alpha_9 \ln(Assets)_{it} + \epsilon_{it}$$

Tab.1. Research variables

The dependent variable	independent variable	Dependent variable
Innovation	The independence of the board	R & D ratio
		size of the company
	The independence of the board	Financial Leverage
		Institutional and managerial ownership
		The ratio of visible assets

Where in:

Patent: The number of royalties and patents of the company (which is registered in the name of the company).

Independence of the Board of Directors (Outdir): The percentage of non-executive members of the board of directors who are divided by the number of non-executive members to the entire board of directors.

$\ln(Assets)_{it}$: is the natural logarithm of the sum of assets for company i in year t.

LEV_{it} : Financial leverage equal to the ratio of total debt to total assets for company i in year t

ROA_{it} : Return on assets; Net profit divided by total assets for company i in year t

$Capital\ expenditure_{it}$: Logarithmic ratio of capital expenditures for company i in year t

$R\&D_{it}$: Ratio of research and development costs to total assets for company i in year t

$Tangibility_{it}$: is the ratio of total assets to i in year t

DESCRIPTIVE STATISTICS

In this section, information is provided on the calculated variables of the research. It is necessary to describe this data before analyzing the statistical data. It also describes the statistical data in order to identify the dominant model and the basis for explaining the relationships between the variables used in the research.

The first step in data analysis, description and knowledge of the characteristics and characteristics of the studied units is research and familiarity with their changes in the sample. Knowledge of frequency distribution and central criteria and the distribution of key variables can serve as complementary information in determining the findings of the research. Therefore, before examining the research hypotheses, the research variables are briefly summarized in Table (2). These variables include dependent and independent variables, in which the mean, mean, skewness and elongation of these variables are expressed in the research period in the following table.

Tab.2. Descriptive statistics of the variables of the research

Variables	Number	Minimum	Maximum	Average	Median	Standard deviation	Skidning	Elongation
Innovation	660	0.00	12.00	3.82	4.0	1.18	2.98	25.16
The independence of the board	660	0.33	1.00	0.69	0.6	0.02	1.91	33.67
Asset size	660	8.32	18.65	13.4	12.18	1.72	6.65	22.96
Financial Leverage	660	0.67	0.92	0.61	0.4	0.12	3.94	5.812
Asset returns	660	0.43-	0.89	0.12	0.2	0.12	3.44	9.643
Capital expenditure	660	2.12	11.37	7.92	4.8	1.93	7.54	12.37
R & D expenses	660	0.01	0.17	0.12	0.0	0.00	6.32	8.119
Intangible asset ratio	660	0.06	0.38	0.11	0.0	0.00	8.19	14.81

- **F Limer Statistics:**

Considering that observations in this research have been exploited in different sections. The question most often used in applied studies is whether there is any evidence of data integration or that the model is different for all cross-sectional units. Therefore, it must first be examined whether there are any differences between levels, heterogeneity, or individual differences. In case of heterogeneity of the panel data method, otherwise, the least square method is used to estimate the model. For this purpose, the F-Limer statistic is used. In this test, the assumption H₀ of the same width of origin (combined data) against the opposite hypothesis H₁, the inaccuracy of the width from the origin (panel data method) is used. The results of F Limer statistics are as follows:

Tab.3.F Limer statistics

Model	Description	Amount	Possibility
First	Period F	1.2451	0.4309
	Period Chi-square	5.0734	0.1294
Second	Period F	1.1782	0.4472
	Period Chi-square	4.0785	0.1327
Third	Period F	0.2790	0.5449
	Period Chi-square	2.0490	0.3612

As shown in Table 3, the results of the Chow test show that the probability for the F statistic is greater than 5%. Therefore, the hypothesis of zero is that model data are will be accepted.

- **Durbin-Watson Test:**

One of the assumptions taken into consideration in the regression is the independence of the errors (the difference between the actual values and the predicted values by the regression model). If the independence hypothesis of errors is rejected and the errors are correlated, regression is not possible. In order to be independent of each other, the camera-Watson statistics are used. If the value is in the range of 2.5 to 1.5, a lack of correlation between the errors is accepted, otherwise the correlation between the errors is present. With respect to the values obtained for the first, second and third models, the Durbin-Watson statistic is 1.83, 1.74, and 1.93, thus the lack of correlation between errors is accepted.

- **Least Squares Model (OLS Regression):**

According to the Chow test results, the least squares model is used to estimate the parameters of the multivariate regression equation. The results of this test are described in Table 4:

Tab.4.Results of the first regression test

Variable	Coefficient	Standard deviation	T Statistics	The significance
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				level
Width from source	-3.5676	1.4585	-2.4461	0.0309
The independence of the board	2.1726	0.4292	5.0617	0.0000
R & D cost	23.2955	1.1957	19.4828	0.0000
Financial Leverage	-64.8181	1.4848	-43.6557	0.0000
Return on assets	4.4052	0.1183	37.2514	0.0000
Visible assets	15.2748	1.2348	12.3706	0.0000
Capital cost	-3.9078	0.7765	-5.0323	0.0000
Board size	13.4732	4.0495	-3.3271	0.0238
Ownership of the CEO	8.2049	1.1918	6.8847	0.0000
Institutional ownership	0.2664	3.3199	0.0802	0.4692
Asset size	21.0618	4.1225	5.1090	0.0000
The coefficient of determination	0.4512	Significant level of F statistics		0.0000
Adjusted coefficient of determination	0.3983	F statistics		12.9115
Durbin-Watson Statistics	1.8312			

The coefficient of determination of 0.3983 means that 39.83 percent of the variation of the variable dependent on the regression tool is explained. The significance level of the F-000 statistic also shows that the assumption is zero and the F-statistic is significant at the 99% confidence level. Namely, variables defined as independent are predictor variables.

Tab.5.Results of the second regression test

Variable	Coefficient	Standard deviation	T Statistics	The significance level
Width from source	-3.9640	2.6253	-1.5099	0.0718
Conservatism	2.4140	0.7726	3.1247	0.0129
R & D cost	25.8841	2.1523	12.0263	0.0000
Financial Leverage	-72.0206	2.6727	-26.9471	0.0000
Return on assets	4.8947	0.2129	22.9860	0.0000
Visible assets	16.9721	2.2227	7.6359	0.0000
Capital cost	-	1.3977	-3.1065	0.0000

	4.3420			
Board size	- 14.970 3	7.2892	-2.0538	0.0433
Ownership of the CEO	9.1166	2.1453	4.2497	0.0045
Institutional ownership	0.2960	0.0759	3.9008	0.0058
Asset size	23.402 2	7.4206	3.1537	0.0126
The coefficient of determination	0.2816	Significant level of F statistics		0.0000
Adjusted coefficient of determination	0.2544	F statistics		17.6187
Durbin-Watson Statistics	1.7412			

DISCUSSION AND CONCLUSION

As it was seen, the level of independence of the board of directors is significant at a level of 0.0000. Since this number is less than 0.05, it can be concluded that the assumption zero is rejected and the assumption is verified. Regarding the coefficient of this variable (2.1726), it can be stated that the independence of the board of directors is positively associated with innovation in companies selected as the sample of this study and shows that 1% change in the independent variable causes 2.17% direct change in the dependent variable. According to the above description, the first hypothesis is confirmed.

As you can see, the level of conservatism is 0.0129. Since this number is less than 0.05, it can be concluded that the zero assumption is rejected and the assumption is verified. Regarding the coefficient of this variable (2.4140), it can be stated that conservatism has a positive meaningful relationship with innovation in companies selected as the sample of this study and shows that 1% change in the independent variable causes 2.41% direct change in the dependent variable. According to the above, the second hypothesis is confirmed.

• Suggestions for Future Research:

Whatever the research, though comprehensively, is, due to certain material and material constraints, both temporal and temporal, can not view all aspects of the subject and deal with it in various ways. This research has not been an exception to this, so for some research in line with this topic as well as its development, the following suggestions are presented for further research and future researchers:

1. For future research, other, and perhaps even more valid, results from other definitions of innovation are suggested in order to achieve a comprehensive benchmark. It is also suggested that the present study model is implemented with other definitions of

conservative variables to achieve the best definition for the above variables.

2. It is suggested that this study be compared with the number of years-more companies to achieve more reliable results, because the results of this study appear to be directly related to the sample size used.
3. Finally, it is suggested that research be carried out in the areas referred to below:
 - The relationship between conservatism and social responsibility is examined.
 - The relationship between the risk of falling stock prices and conservatism.
 - The relationship between innovation and social responsibility should be investigated.
 - The moderating role of corporate sustainability mechanisms in the relationship between conservatism and innovation.

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