Original Article: The effect of ownership structure on the transparency of accounting information with emphasis on environmental uncertainty in companies listed on the Tehran Stock Exchange

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A B S T R A C T

The purpose of this paper is to investigate the impact of ownership structure on the transparency of accounting information with emphasis on environmental uncertainty in companies listed on the Tehran Stock Exchange. The statistical population of this study is the companies listed on the Tehran Stock Exchange. After the restrictions were lifted, 174 companies were selected as the statistical sample size. The studied years are between 2015 and 2021.The findings of this paper are based on the fact that environmental uncertainty moderates the impact of ownership structure on transparency of accounting information. The results of the first hypothesis show that environmental uncertainty does not moderate the effect of government ownership on transparency of accounting information. Also, according to the second hypothesis test, the environmental uncertainty moderates the effect of managerial ownership on transparency of accounting information. Finally, the third hypothesis states that environmental uncertainty modulates the effect of institutional ownership on the transparency of accounting information.

Introduction

If the legal constraints and charts are ignored, the ownership structure of the business units can help to increase the profitability and efficiency of the executive projects. Considering the structural roots of ownership in business units, two things can be inferred that shareholders are also introduced as supervisors of companies and during the executive operations of companies by delegating to managers, they also entrust the relevant affairs to them. When the financing structure of companies is further done sporadically by

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natural or legal persons, it means that the information available to each person who owns the companies is not equally available to them, and this increases the cost of representation and in some countries like Japan and Germany, which have the strong and effective civil law, and attach great importance to this issue. Likewise, due to the structure which makes up the focus of a business unit, there are major and small investors in it. Therefore, one of the major problems in the ownership structure can be mentioned because micro-shareholders are always complaining about the concerns of major shareholders, because major shareholders are more involved in the operations and adoption of corporate financial policies [1]. Accounting is a science that identifies events based on accepted and logical principles and measures them based on available tools. Converting items from qualitative to quantitative was also one of the most important challenges in the field of accounting, which was able to strengthen its role in society and the economy. Transparency of information has long been of interest to individuals who have benefited from business units, because it is financial information which can inform an investor of a company's financial condition and profitability and invest in a business. Profit or loss reported by supervisors and top financial managers of companies, if it is relatively transparent, it can have a significant impact on stock transfers and transactions will be done at the highest quality [4]. It should be noted that environmental changes in today's world force the company to respond to a number of predetermined factors and require the company to be aware of all the changes which occur in its environment, and based on this issue, the company puts it in a position to take a different and structured look at environmental opportunities in today's challenging environment with a strategic entrepreneurial approach. These tools should be able to provide a comprehensive analysis of the current state of the organization and its environment, as well as assist the organization in choosing the appropriate strategy. Therefore, it should be added that the prerequisite for the organization to survive in today's competitive business environment is to have a structured and accurate plan which identifies the opportunities

and environmental threats of the organization and improve the necessary strategies by considering the organizational strengths and eliminating its weaknesses [3]. The ownership structure is generally analyzed based on two concepts, first, the type of combination or merger of ownership with other persons in order to provide the required financial resources, and second, the type of corporate governance structure (concentration of company shares) which is based on the type of investment. According to the above statements, it is inferred that the groups that make up the shares of companies (owners) do not act in a unilateral way to influence the performance of companies [6-7]. Transparency in information gives confidence and heart to small shareholders that the financial documents available to them are also relatively reliable and can predict and estimate the value of the company and the concentration of ownership (major shareholders) to weaken their position. They are not in the company to earn returns and benefits [2-5]. Transparency of accounting information allows it to help assess financial performance and financial flexibility. On the other hand, if the information extracted by business units is inefficient, i.e. it does not have much reliability, then the cost of representing the company will be higher because the information between investors and managers will have information differences and the company has a duty to close this gap. It is important to note that financial transparency minimizes the incentive for managers to conceal losses [9]. Organizations need very careful planning to be able to create special value for their customers and should use the right strategy tools to achieve their goal. These factors can further be used in risk fluctuations to accurately estimate future profits of shareholders. If supervisors and financial managers do not take precautionary measures against fluctuations in this environment, the information between managers and investors will also come to the plain with a difference in its content, and this in turn will be misleading for investors. An environment with high uncertainty can also cause problems for managers in distinguishing the amount of funding from financial leverage or the level of cash reserves [8].

Methodology and Hypotheses

This research, based on the classification of the type of purpose, is of practical and executive type because it reviews a series of conditions and situations in the stock market to reject or accept the basic objectives explained, the product of the research hypotheses. It can be applied on the use of stockbrokers, capital companies, and companies with asset providers. Moreover, this research is a descriptive research based on classification according to the method of collecting information and data, because it analyzes and examines the relationship between the main components of the subject and measures their effectiveness. Given that the data used is real and historical data and this research is retrospective. In terms its type, this research is quasi-experimental. The statistical population of this research is all companies listed on the stock exchange. These companies will be selected according to the economic and statistical methods. According to the selection criteria of the statistical sample of the research, the volume of the selected statistical sample is 174 companies.

Based on the studies conducted by Fullana and Ruiz (2021), the hypotheses of the present research can be formulated as follows:

H 1) Environmental uncertainty moderates the impact of ownership structure on the transparency of accounting information.

H 2) Environmental uncertainty moderates the impact of government ownership on the transparency of accounting information.

H 3) Environmental uncertainty moderates the impact of managerial ownership on the transparency of accounting information.

H 4) Environmental uncertainty moderates the impact of institutional ownership on the transparency of accounting information.

According to the research topic, the property structure variable is considered as an independent variable which is used to calculate the ownership structure in line with the research of Fullana and Ruiz (2021) and Ika et al. (2021) of three types of ownership; institutional ownership, state ownership, and managerial ownership are used, each of which is measured as follows:

A) Government ownership:

Government ownership is considered as an independent variable of the present study that the effect of this variable on the relationship is examined between auditor quality and stock price delay in the main hypothesis of the present study. In this scrutiny, if the major shareholder is a state-owned company, the number 1 and otherwise (non-government companies) the number zero for this variable is considered.

B) Managerial ownership:

In this study, the independent variable is managerial ownership, which represents the percentage of shares held by management and board members, the method of which is calculated from the average percentage of managerial ownership of ordinary shares in company i during the sample period.

C) Institutional ownership:

In this study, the independent variable is institutional ownership. The number of ordinary shares of a company held by investment institutions or other commercial companies indicates the degree of ownership of institutional shareholders. In order to calculate the percentage of institutional ownership of the relationship, the number of shares of institutional shareholders is divided by the total number of ordinary shares of the company. We use the following formula:

$$INOWN = N/M$$

INOWN: Percentage of the company's institutional shareholders,

N: The number of common stock held by investment and trading companies.

M: The total number of common stock of the company.

In this study, Din et al. (2021) model has been used to define the transparency of accounting information. This model introduces transparency as simultaneous changes in earnings and changes in earnings with stock returns. The index which measures the transparency of earnings is the coefficient of

determination (R2), which is obtained from the regression of stock returns against earnings and its changes. This index is interpreted as transparency of information, because profit and change in profitability reflect changes in the economic conditions of the company, which is measured by stock returns. To measure the transparency, the following model has been estimated [8].

$$R_{i,t} = \alpha_0 + \alpha_1 \frac{EPS_{i,t}}{P_{i,t-1}} + \alpha_2 \frac{\Delta EPS_{i,t}}{P_{i,t-1}} + \varepsilon_t$$

Ri, t: Annual return of shares i in year t,

EPSi, t: Earnings per share before Company I's unusual items in year t,

Pi, t-1: Stock price at the end of the year t-1,

ΔEPSi, t: Change in earnings per share before unusual items from year t-1 to t.

The following equation is used to calculate the annual return on the company's shares:

$$R_{i,t} = \frac{P_t(1+\alpha+\beta) - (P_{t-1}+C\alpha) + D_t}{P_{t-1}+C\alpha}.$$

Pt: Stock price at the end of the period t,

Pt-1: Stock price at the beginning of the t-period or the end of the t-1 period,

Dt: Cash interest paid in year t,

α: Percentage increase in capital from receivables and cash inflows,

β: Percentage increase of capital from the place of reserve,

C: The nominal amount paid by the investor for the capital increase from the cash inflow.

Environmental uncertainty:

Decho (1994) and Berg and Lovelace (1988) emphasized sales change coefficients as a measure of uncertainty. Thus, the higher the sales fluctuation, the more uncertainty the company's operating environment [7].

The mentioned model is as follows:

$$EU_{i,t} = \frac{\sigma \, Sales}{\mu \, Sales} \, \dots \dots \quad i,t-4 \; to \; t$$

In the above model:

EU: Indicates the coefficient of variation in sales and the variable index of environmental uncertainty,

Δ Sales: Indicates the standard deviation of the company's sales over a period of six years (from year t-5 to t),

Q Sales: Indicates the average sales of the company over a six-year period (from year t-5 to t).

In this research, to better test the hypothesis, we use two types of control variables that affect the dependent variable, which is the transparency of accounting information.

Financial Leverage (LEV): The ratio of a company's liabilities to its assets.

Firm's Size: The natural logarithm of the market value of the company's equity.

Analytical model of research:

1) Ri,t = β0 + β1 OS it + β2 EUit + β3 (OS it × EUit) + β4LEV it + β5SIZE it + €it

2) Ri,t = β0 + β1 GP it + β2 EUit + β3 (GP it × EUit) + β4LEV it + β5SIZE it + €it

3) Ri,t = β0 + β1 PM it + β2 EUit + β3 (PM it × EUit) + β4LEV it + β5SIZE it + €it

4) Ri,t = β0 + β1 IO it + β2 EUit + β3 (IO it × EUit) + β4LEV it + β5SIZE it + €it

In the above regression equation, Ri, t: Transparency of accounting information, OS: Ownership structure IO: Institutional ownership, GP: State-owned, EUit: Environmental uncertainty, PM: Managerial ownership, LEV: Financial leverage, SIZE: Company size.

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Data Analysis

Descriptive

After collecting data and calculating the variables used in the research, the descriptive parameters of each variable are calculated separately. These parameters include information about central indicators such as mean, mean, minimum, and maximum, as well as information about scatter indicators such as standard deviation, skewness, and elongation. The table below illustrates the descriptive statistics of the quantitative variables under study. Among the central indicators mentioned, the average is the most important, which indicates the equilibrium point and the center of gravity of the distribution. The average is a good indicator to show the centrality of data. For example, the average of the financial leverage variable is 0.614, which demonstrates that most of the data related to this variable is concentrated around this point. The middle is

another central feature. As can be seen in the following table, the median of this variable is 0.610, which indicates that half of the data in this variable is less than this and the other half is more than this value. An important point that can be argued from the comparison of the mean and median of the variables is the distribution status of the variables and their relative normality. Given that mean and median values of the variables are close to each other, it can be concluded that distribution of variables is very close to the normal distribution. Dispersion indices are generally a criterion for determining the degree of dispersion of data from each other or their degree of dispersion relative to mean. One of the most important scattering indices, which is the optimal condition for entering the variable into the regression model, is the standard deviation. As can be seen in the following Table 1, the standard deviation of the variables is not zero and they meet this condition.

Table 1: Descriptive Statistics

	R	IO	PM	GP	SIZE	LEV	EU
Mean	0.032624	0.635057	0.648415	0.508875	14.18284	0.614655	0.244006
Median	0.022800	0.700000	0.710000	0.600000	13.93000	0.610000	0.215700
Maximum	0.435000	0.990000	0.980000	0.950000	19.37000	2.660000	1.732100
Minimum	0.000100	0.010000	0.000000	0.000000	10.17000	0.090000	0.016700
Std. Dev.	0.034896	0.268021	0.237171	0.339441	1.586328	0.247891	0.154090
Skewness	3.504298	-0.746673	-0.933042	-0.415853	0.872326	1.721747	2.813165
Kurtosis	27.70584	2.434444	3.162543	1.658678	4.034101	12.62639	21.07025
Jarque-Bera	33469.58	129.4093	178.0659	126.4120	208.7438	5304.644	18178.13
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	39.73650	773.5000	789.7700	619.8100	17274.70	748.6500	297.1987
Sum Sq. Dev.	1.481989	87.42345	68.45644	140.2228	3062.503	74.78451	28.89622

The results of Jarkobra statistic indicate that the research variables are not normal during the research period. The level of significance in each of the variables is all less than 0.05, so with 95% confidence we can mention that these variables do not have a normal distribution. While according to Stevens (2002) theory, if the sample size is high in the research, the high

sample size has solved the problem of abnormality of the feature under study. Stevens argues that according to the central limit theorem, even societies that do not have a distribution become normal if their sample size is selected. As a result, parametric tests can be used to analyze all the hypotheses of the present study.

Table 2: Test the normality of the data

Variable	Statistic	Prob.**
SIZE	208.743	0.0000
R	334.69	0.0000
IO	129.409	0.0000
EU	181.87	0.0000
PM	178.065	0.0000
LEV	530.46	0.0000
GP	126.412	0.0000

Table 3: Results of the first hypothesis test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.054195	0.019889	2.724815	0.0065
GP	-0.016280	0.007969	-2.043042	0.0413
EU	-0.037820	0.007491	-5.048797	0.0000
GP*EU	0.003903	0.013251	0.294571	0.7684
LEV	-0.013454	0.004455	-3.019983	0.0026
SIZE	-0.001039	0.001320	-0.787108	0.4314
R-squared	0.362126	Mean dependent var		0.045057
Adjusted R-squared	0.252847	S.D. dependent var		0.036839
S.E. of regression	0.033311	Sum squared resid		1.152875
F-statistic	3.313759	Durbin-Watson stat		2.360831
Prob(F-statistic)	0.000000			
R-squared	0.211304	Mean dependent var		0.032624
Sum squared resid	1.168838	Durbin-Watson stat		2.172025

According to the test results of the hypothesis presented in the table above, it demonstrates that the value of the statistic, F is equal to 3.313 Prob calculated for the F statistic of the model is less than the error level of 5% and is significant. The significance of F statistic indicates the significance of the whole model. The variable coefficient of environmental uncertainty * government ownership is equal to 0.003 and is significant considering the accepted error level of 0.768, which is more than five percent which shows that environmental uncertainty does not moderate the impact of government ownership on the transparency of accounting information. Watson's camera statistic is 2.360, which ranges from 1.5 to 2.5, indicating a lack of autocorrelation between regression error statements. Given that the values of VIF statistics for all variables are less than 10. Therefore, it can be concluded that there is no alignment between the independent variables of the research.

Table 4: Results of the second hypothesis test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.037705	0.018137	2.078945	0.0379
PM	0.237255	0.041563	5.708291	0.0000
EU	-0.071235	0.021157	-3.366881	0.0008
PM*EU	-0.050868	0.017538	-2.900492	0.0038
LEV	-0.011321	0.005033	-2.249429	0.0247
SIZE	-0.000443	0.001248	-0.355160	0.7225
R-squared	0.367329	Mean dependent var		0.045290
Adjusted R-squared	0.258941	S.D. dependent var		0.036805
S.E. of regression	0.033422	Sum squared resid		1.160592
F-statistic	3.389015	Durbin-Watson stat		2.368201
Prob(F-statistic)	0.000000			
R-squared	0.211252	Mean dependent var		0.032624
Sum squared resid	1.168916	Durbin-Watson stat		2.184866

According to the results of the hypothesis test presented in the above table, the value of the statistic, F equal to 3.389 Prob calculated for the F statistic of the model is less than the error level of 5% and is significant. The significance of F statistic indicates the significance of the whole model. The coefficient of environmental uncertainty * of managerial ownership is -0.050 and is significant considering the accepted error level of 0.003, which is less than five percent which illustrates that environmental uncertainty moderates the impact of managerial ownership on the transparency of accounting information. Watson's camera's value is 2.368, which ranges from 1.5 to 2.5, indicating a lack of autocorrelation between regression error statements. The coefficient of determination and the adjusted coefficient of determination are 25% and 36%, respectively, which demonstrates that approximately 35% of the changes in the transparency variable of companies can be explained by the dependent variable and control variables. Given that the values of VIF statistics for all variables are less than 10. Therefore, it can be concluded that there is no alignment between the independent variables of the research.

Table 5: Results of the Third hypothesis test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.045080	0.019355	2.329070	0.0200
IO	0.034976	0.010842	3.225870	0.0013
EU	-0.118963	0.018109	-6.569171	0.0000
IO*EU	-0.041289	0.015661	-2.636433	0.0085
LEV	-0.012181	0.004420	-2.755654	0.0060
SIZE	-0.000439	0.001312	-0.334583	0.7380
R-squared	0.384834	Mean dependent var		0.045069
Adjusted R-squared	0.276019	S.D. dependent var		0.036782
S.E. of regression	0.033297	Sum squared resid		1.151915
F-statistic	3.352774	Durbin-Watson stat		2.363142
Prob(F-statistic)	0.000000			
R-squared	0.208340	Mean dependent var		0.032624
Sum squared resid	1.173231	Durbin-Watson stat		2.171552

According to the test results of the hypothesis presented in the above table, the value of the statistic F is equal to 3.352 Prob calculated for the F statistic of the model is less than the error level of 5% and is significant. The significance of F statistic indicates the significance of the whole model. The coefficient of environmental uncertainty * of institutional ownership is -0.041 and is significant considering the accepted error level of 0.008, which is less than five percent

which indicates that environmental uncertainty moderates the impact of institutional ownership on the transparency of accounting information. Watson's camera statistic is 2.363, which ranges from 1.5 to 2.5, indicating a lack of autocorrelation between regression error statements. The coefficient of determination and the adjusted coefficient of determination are 27% and 38%, respectively, which depicts that approximately 35% of the changes in the transparency variable of companies can be explained by the dependent variable and control variables. Given that the values of VIF statistics for all variables are less than 10. Thus, it can be concluded that there is no alignment between the independent variables of the research.

Conclusion

Accounting in Iran also began with the arrival of manufacturing plants. When American and British companies came to Iran to invest, accounting flourished, and the demand for it increased greatly. Reporting and how to make information available in Iran is based on a series of components. The first is the economic environment and its mechanisms, and the second is the rules and regulations governing the provision of information. The views of modern economics state that third world countries should provide efficient and realistic information, and if this information does not have sufficient content, the economy itself will be vulnerable and financial markets will grow less. However according to the statistics that the auditing organization has recounted over several decades of study, reporting and accounting in Iran is ahead of its economic trend because accounting for economically active people is trying to meet their needs. Based on the results and achievements of the present study as well as obtaining a suitable context for expanding and clarifying the research topic, suggestions can be made for other researchers to conduct similar research as follows: Investigating the effect of environmental uncertainty on the relationship between profit forecast error and the quality of accounting information, the effect of transparency of accounting information on the behavioral response of investors, the effect of environmental uncertainty on the relationship between the unique characteristics of managers, and the business behavior of investors.

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