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Assessing and Interpreting the Impact of Internal Control Mechanisms on the Firm's Performance An Applied Study

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Abstract:

Purpose – The purpose of this study is to investigate the impact of Internal Control Mechanisms which are Ownership Concentration, Capital Structure and Growth Opportunities on both Financial and Non-Financial Firm's Performance.

Design/Methodology/Approach- A panel data regression analysis is conducted for the period 2010-2015. The researcher utilized a random-effects model to control firm size and time effects that may influence the performance of the firm.

Findings- This study provides evidence that Internal Control Mechanisms have significant impact on the performance of the firm financially and non- financially. Ownership Concentration and Growth Opportunities are positively associated with both the financial and non-financial firm's performance. Additionally, Financial Leverage (as a proxy for Capital Structure) is negatively associated with both the financial and non-financial performance of the firm.

1. Introduction:

Internal control mechanism is that which monitor the progress and activities of the organization and take corrective actions when the business goes off track."There is a number of possible internal

mechanisms such as capital, ownership structure and growth opportunities which have been proved to discipline firms' managers".

Small shareholders would not be interested in monitoring because they would afford all monitoring costs. On the other hand, large shareholders have a strong incentive to actively monitor and influence firm management to protect their significant investments. Concentrated ownership is usually a mechanisms to control manager`s discretionary decision and enhancing the performance of the firm.

Particularly, ownership structure is an incentive device for reducing the agency costs associated with the separation of both ownership and management, which can be used to protect property rights of the firm.

The link between capital structure and accounting decision can be due to debt covenant. When the firms increase their leverage, shareholders will sell their common shares in low prices and less amount of dividend will be obtained than the value at liquidation and dividend offered on preferred stock won't be changed. Thus, the net effect on the firm is an increase in its fixed commitments and obligations.

Firm performance is a subjective measure of how much a corporation can use its resources in an efficient and effective way from its eliminatory mode of business and generate revenues. Firm performance can be defined as an analysis of a company's performance as compared to its goals and objectives. It's a relevant structure in strategic management research and considerably used as a dependent variable.There are different types of firm's performance, financial and non-financial performance.

2. Research problem:

Ineffective internal controls might facilitate misappropriation of assets and misleading or fraudulent financial reporting. Management is responsible for implementing effective internal control over financial reporting. In addition, to improve the

quality of accounting information for reporting, company managers frequently take steps to strengthen other governance related matters. Foster &Shastri mentioned that generating good quality accounting information requires the joint efforts of management, the audit committee, and auditors.

In addition to the factors of internal competition between companies, which requires companies to focus on the importance of the proper perception of these challenges and the assessment of the correct and realistic opportunities to deal with them, the survival of the company and its growth has become difficult and critical and calls for concerted efforts and compete at various levels.

The positive financial performance depends on the ability of companies to reach the optimal structure of the capital structure, namely to determine the appropriate method for the use of sources of finance and ownership and sources of financing by borrowing, which balance the return and risk, which leads to reducing the cost of financing and the increase in profit rates and thus maximize the returns of shareholders and increase the share of earnings, but in the short time, reliance on debt sources may lead to an increase in the loss of shareholders in the event of low rate of power of the company.

3. Research Objectives:

The main objective of the research is to assess and interpret the impact of internal control mechanisms on firm's performance, financially and non-financially.

This can be achieved through attaining the following sub-objective:

1. Determining the relationship between the ownership concentration and firm's performance; financially and non-financially.
2. Determining the relationship between the financial leverage and firm's performance; financially and non-financially.

3. Determining the relationship between the growth opportunities and firm's performance; financially and non-financially.

4. Research Hypothesis:

According to the firm's financial performance:

H_1: There is a significant relationship between internal control mechanisms and firm's financial performance.

- H_{1a}: There is a positive relationship between ownership concentration and firm's financial performance.
- H_{1b}: There is a negative relationship between capital structure and firm's financial performance.
- H_{1c}: There is a positive relationship between growth opportunities and firm's financial performance.

According to the firm's non- financial performance:

H_2: There is a significant relationship between internal control mechanisms and firm's non-financial performance.

- H_{2a}: There is a positive relationship between ownership concentration and firm's non-financial performance.
- H_{2b}: There is a negative relationship between capital structure and firm's non-financial performance.
- H_{2c}: There is a positive relationship between growth opportunities and firm's non-financial performance.

5. Variables:

Dependent variables:

The dependent variables applied in this study were quantified by the following two measurements:

To assess firm financial performance we use return on assets ROA by dividing net income by average assets while firm non-financial performance was measured by earning per share EPS.

Independent variables:

Equity Ownership structure was measured by the percentage of investors that holds at least 5% of equity. Capital Structure was measured by Financial leverage which is quantified by dividing the total debt by total assets (B.V). Finally, to measure Growth Opportunities, we use the variable Tobin's q.

Control Variables:

Firm's features variables were used to control the effect of the time and the firm's size on its performance. To control for the effect of time, we use year dummy variables. Also we approximate size of the firm by the natural logarithm of total assets.

6. Methodology:

Random-effect Model:

Model (1): Firm financial performance (ROA):

$$ROA_{it} = \mu + \beta_1 OC_{it} + \beta_2 CS_{it} + \beta_3 GO_{it} + \beta_4 \text{Log-TA-Size} + \text{Years} + V_{it} + \varepsilon_{it}$$

Model (2): Firm non-financial performance:

$$EPS_{it} = \mu + \beta_1 OC_{it} + \beta_2 CS_{it} + \beta_3 GO_{it} + \beta_4 \text{Log-TA-Size} + \text{Years} + V_{it} + \varepsilon_{it}$$

Where

i = firm, t = time, μ = constant

ROA = Firm Financial performance.

EPS = Firm Non-Financial performance.

β_1, β_2, β_3 and β_4 are the coefficients for the Ownership Concentration, Capital Structure and Growth Opportunities respectively.

OC, CS and GO are the proxies of Ownership concentration, Capital Structure and Growth opportunities.

Log TA is a proxy for the control variable, the size of the firm.

Years is a proxy for the control variable, years.

V_{it}, E_{it} are the between and within- entity error terms respectively.

7. Data Collection:

Data is collected from year 2010-2015 through financial statements published by the Egyptian Stock Exchange. Also, it is collected from the Mubasher Egypt site.

8. Population and Sample Size:

The population of the study is the non-financial EGX 70 listed companies for six years from 2010 to 2015. This is due to the availability of data and information regarding the variables of the study.

The sample size for the firm financial performance (ROA) is (42) companies listed in the Egyptian Stock Exchange in the period from 2010 to 2015. Moreover, for the firm non-financial performance (EPS), the sample size is (41) companies listed in the Egyptian Stock Exchange for the same period.

9. Limitation of the Study:

The sample should be 42 companies listed in the Egyptian Exchange Stock for both the financial and non-financial performance, but only 41 companies are taken in the sample of the non-financial model as the researcher excludes the extremes from the data. The available and recent financial statements are taken into the sample so, it covered the period from 2010 to 2015.

10. Results:

Descriptive statistics:

Table (1) Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	252	-0.50	0.38	0.0407	0.09473
EPS	245	-19.66	13.78	0.915909	2.766399
OC	252	0.00	1.00	0.5327	0.24144
CS	252	0.00	0.89	0.3787	0.21584
GO	252	0.06	13.85	1.0634	1.25585
Log_TA_Size	252	17.25	24.30	20.6760	1.55771
Years	252				

The table above shows that the sampled firms, on average, experience high return on assets (ROA= 4%) with a standard deviation (0.09473) and a minimum of -0.50 and a maximum of 0.38, and high earnings per share (EPS= 91.5%) with a standard deviation (2.77), ranging from -19.66 and 13.78.

ROA Model:

Correlation Matrix:

Table (2) Correlation between the Internal Control Mechanisms and Financial Performance.

	ROA	OC	CS	GO	Log_TA_Size
ROA	1	0.171**	-0.158*	0.182**	0.087
OC	0.171**	1	0.285**	0.021	0.668**
CS	-0.158*	0.285**	1	-0.127*	0.301**
GO	0.182**	0.021	-0.127*	1	-0.039
Log_TA_Size	0.087	0.668**	0.301**	-0.039	1

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

According to the correlation there are significant correlation between all the mechanisms of internal control and the financial performance of the firm. As the correlation between:

- Ownership Concentration (OC) and ROA was 0.171 > 0.01 which indicates significant direct correlation.
- Capital Structure (CS) and ROA was - 0.158 > 0.01which indicates significant inverse correlation.
- Growth Opportunities (GO) and ROA was 0.182 > 0.01 which indicates significant direct correlation.

Panel Data Analysis:

Haussmann Test:

Table (3)Haussmann Test

	Chi^2	P
ROA	0.08	0.9992

Table (3) shows the results of Haussmann test for the ROA model. As is evident from table results, p-value is greater than 0.05. Therefore, H0 is accepted. This means that the most appropriate method for estimating parameters and testing the research hypothesis is random effects model.

Collinearity-Test:

Table (4)Multi Collinearity Test

	Tolerance	VIF
OC	0.542	1.844
CS	0.881	1.135
GO	0.978	1.023
Log_TA_Size	0.539	1.856

Table (4) depicts that the tolerance value is greater than 0.1 and VIF is less than 10 for all the variables of the study. And we conclude that the independent variables of the study are not suspected of Multicollinearity and are free from such problem.

Heteroscedasticity Test:

Table (5) Breush-Pagan Test &White Test

	P-value	Chi^2	Df
Breush-Pagan Test	0.0024	9.22	1
White Test	0.0000	93.71	14

It is shown from the previous table (5) that degree of freedom (*df*) of *Breush-Pagan test* is 1 and the p-value of *White* test is 0.0000 (p<0.05) then heteroskedasticity exists. Therefore, we should be confident that *Robust Regression* is appropriate for these data.

Panel Random- effects GLS regression:
For the ROA model:

Table (6) The results of Panel Random-effects regression of the ROA model

R^2	Wald-Test	P-value
Within: 0.0943 Between: 0.7976 Overall: 0.0983	77.48	0.0000

By using R^2 (between) it is shown that the independent variables explain nearly 80% (79.76%) from the change in the dependent variable and nearly 20% (20.24%) of ROA has not been explained by the independent variables.

Table (7) Coefficients of the ROA model

Variable	Coefficients	Z-test	P-value
Constant	0.0071875	0.10	0.923
OC	0.0867068	5.08	0.000*
CS	-0.0895709	-4.30	0.000*
GO	0.011438	4.02	0.000*

Note: significant at: * p-value<0.05

The above table shows that the t-test value for Ownership concentration (OC) is 5.08 with a significant level 0.000 which is less than 0.05. Additionally, the t-test value for Capital Structure (CS) is -4.30 associated with a significant level 0.000. Finally, the t-test value for Growth opportunities is 4.02 with a significant level 0.000.

EPS Model:

Correlation Matrix:

Table (8) Correlation between the Internal Control Mechanisms and Financial Performance.

	EPS	OC	CS	GO	Log_TA_Size
EPS	1	0.061	0.011	-0.075	0.065
OC	0.061	1	0.285**	0.021	0.668**
CS	0.011	0.285**	1	-0.127*	0.301**
GO	-0.075	0.021	-0.127*	1	-0.039
Log_TA_Size	0.065	0.668**	0.301**	-0.039	1

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

The correlation among those variables was > 0.01.

Panel Data Analysis:
Haussmann Test:

Table (9)Haussmann Test

	Chi^2	P
EPS	6.58	0.1595

It was shown from the previous table (4.9) that p-value is 0.1595 which is greater than 0.05.

Collinearity-Test:

Table (10)Multi Collinearity Test

	Tolerance	VIF
OC	0.542	1.844
CS	0.881	1.135
GO	0.978	1.023
Log_TA_Size	0.539	1.856

In table (10), the tolerance value is greater than 0.1 and VIF is less than 10 for all the variables of the study.

Heteroscedasticity Test:

Table (11) Breush-Pagan Test &White Test

	P-value	Chi^2	Df
Breush-Pagan Test	0.0000	38.09	1
White Test	0.0009	36.53	14

It is clearly shown from table (11) that degree of freedom (df) of Breush-Pagan test is 1 and the p-value of White test is 0.0009 (p<0.05) then heteroscedasticity exists. Therefore Robust Regression is the appropriate model for these data.

Panel Random- effects GLS regression:

For the EPS model:

Table (12) The results of Panel Random-effects regression of the EPS model

R^2	Wald-Test	P-value
Within: 0.0582 Between: 0.0577 Overall: 0.0576	78.24	0.0000

By using R^2 (between) it is shown that the independent variables explain nearly 6% (5.77%) from the change in the dependent variable and nearly 94% (94.24%) of ROA has not been explained by the independent variables.

Table (13) Coefficients of the EPS model

Variable	Coefficients	Z-test	P-value
Constant	- 1.741288	- 0.46	0.644
OC	2.238201	4.63	0.000*
CS	- 1.273212	- 1.77	0.077**
GO	0.173605	1.84	0.066**

Note: significant at: * p-value<0.05 and **p-value<0.1

The above table shows that the t-test value for Ownership concentration (OC) is 4.63 with a significant level 0.000 which is less than 0.05. Additionally, the t-test value for Capital Structure (CS) is - 1.77 associated with a significant level 0.077. Finally, the t-test value for Growth opportunities is 1.84 with a significant level 0.066.

11. Conclusion:

In summary the internal control mechanisms which are ownership concentration, capital structure and growth opportunities have a significant relationship with the firm's financial and non-financial performance.

In the financial performance model (ROA), all the internal control mechanisms; ownership concentration, capital structure and growth opportunities have the same impact on the financial performance of the firm as the p-value of the three mechanisms are 0.000 which concludes that they are significant at 99%.

While in the non-financial performance model (EPS), ownership concentration has the greatest impact on the firm's non-financial performance with p-value 0.000 which means that ownership concentration has a significant impact on EPS at 99%. Whereas, the p-value of both capital structure and growth opportunities are 0.077 and 0.066 respectively which shows that these two mechanisms has a less impact on the EPS compared to the ownership concentration as they are significant at 90%.

Therefore the researcher can recommend that we can use any of the internal control mechanisms as an indicator in the ROA model (Financial performance), while we can use the ownership concentration mechanism as an indicator to the internal control mechanisms in the EPS model (Non-Financial Performance).

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