



**The Effect of Managerial Entrenchment on
the Relationship between Free Cash Flow and Financial
Performance on
the Egyptian Listed Companies: An Empirical Study**

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Abstract

The purpose of this paper is to investigate the effect of managerial entrenchment on the relationship between free cash flow and financial performance by answering the following question: what is the effect of managerial entrenchment on the relationship between free cash flow and financial performance of the listed companies in Egypt? This is considering both the Agency and Stewardship theories. The researcher depends on managerial entrenchment index as a measure of managerial entrenchment consisting of five mechanisms of managerial entrenchment (Independence of the board of directors, chief executive officer duality, chief executive officer tenure, managerial ownership, financial leverage). The researcher uses free cash flow index depending on the following equation $((\text{operating cash flow} - \text{capital expenditures}) / \text{book value of total assets at the end of the year})$. The researcher depends on Tobin Q ratio and return on equity ratio as a measure of financial performance. This study depends on a sample of non-financial companies over the period from 2014 to 2019, with 522 firm-year observations. The results of multiple regression analysis show a negative relationship between free cash flow and financial performance. The results also reveal that there is a positive relationship between managerial entrenchment and financial performance. The results also show that there is a positive relationship between the interaction of free cash flow and managerial entrenchment and financial performance. These results highlight the importance of assurances of stewardship theory that it is not necessary to present managerial entrenchment as it is against the interests of stockholders and the effectiveness of organizations. Entrenchment could be useful if it is able to create value for the company which reflects positively on the wealth of its stockholders.

Keywords: **Managerial Entrenchment, Free Cash Flow, Financial Performance, Tobin Q Ratio, Return on Equity Ratio.**

1. Introduction

Boukrouma (2012) states that an essential problem is raised from agency theory in organizations as managers may have their own objectives that compete with the owner's goal of maximization of shareholder wealth which leads to conflict of interest between managers and owners. There is a conflict between managers and owners in several fields. One of such fields is the utilization of free cash flows. Whenever a company benefits from a high level of free cash flows and lower growth, investors become interested in receiving higher dividends while managers are interested in investing the surplus cash. As a result, a conflict of interest arises between managers and investors when they pay dividends or invest cash to grow the business. This conflict is called agency problem of free cash flows (Jensen, 1986).

Jensen (1986) explains free cash flow as cash flows over the invested cash in projects that have positive net present value and expresses that free cash flow is invested in projects with negative net present value and states that a company with a high amount of free cash flows is subject to higher agency costs of equity, involving negative relation between free cash flows and performance. Positive free cash flow represents that the company has free cash flow from operations after payment of expenses and doing the investments. On the other hand, negative free cash flow from operations stands for the company has not earned sufficient cash to cover costs and its investment activities (Nahr and Nemati, 2015).

The firms have to maintain a suitable level of liquidity for smooth operations. Managers tend to keep a large proportion of firm assets in the form of cash and cash equivalents for acquiring other physical assets, to pay to shareholders, and to keep cash in the firm (Almeida et al., 2004). Free cash flow is an indication of agency problems because excess cash may not be got back to

stockholders. When companies have free cash, investments made by these companies may have negative net present value (Brailsford and Yeoh, 2004). free cash flow improves the performance of firms with investment possibilities, but it is not the case for firms without the possibilities to invest (Hau, 2017). In addition, Chung et al. (2005), Bukit and Iskandar (2009) find that for firms with a high level of free cash flow but low growth opportunities (measured by the market value/book value ratio P/B ratio), the existence of issues related to the agency costs may cause a negative impact on their performance.

One of the costliest aspects of the agency problem is managerial entrenchment (Jensen and Ruback, 1983). Managers, who set a great value on control but own only a small equity stake, work to guarantee their job. Thus, they entrench themselves and stay in that position even if they are no longer expert or qualified to manage the firm (Shleifer and Vishny, 1989).

Weisbach (1988: p.435) defines that managerial entrenchment occurs when managers gain great authority that enables them to exploit the firm to achieve their benefits instead of shareholders' benefits. Additionally, Berger et al. (1997: p.1411) define entrenchment as the extent to which managers fail to examine discipline from the full range of corporate governance and control mechanisms, including monitoring by the board, the threat of expulsion or takeover, performance-based compensation, and shares incentives.

Morck et al., (1988) state that Entrenchment theory supposes that the managers seek to get revenues at the expense of the firms' partners. In addition, it supposes that managers can neutralize the various control mechanisms to enhance their power for instance the discretionary latitude. Moussa et al., (2013) declare that a manager is regarded as entrenched when he cannot be easily dismissed by the board of directors. Jensen and Ruback (1983); and

Shleifer and Vishny (1989) suggest that entrenched managers extract private benefits by carrying out inefficient projects and therefore gain more latitude in determining firm strategy.

The concept of the managerial entrenchment is tightly attached to the concept of the "moral hazard" as the models of moral hazard with informational asymmetries donate that managers prefer to carry on short-term results which fulfill their interests to the detriment of the long-term results which would be superior for their companies (Moussa et al., 2013). managers with private information on a project will try to enhance their reputation, and thus they will have a motivation to expand the efficiency of the project to the detriment of the long-term performance (Holmstrom and Costa, 1986).

In an attempt to investigate the relationship between managerial entrenchment and financial performance, some previous studies show that firms which have weak stockholders' rights or entrenched managers are sensitive for considerably weak performance, more cash holding, fewer dividends payment and have less financial leverage (Morck et al.,1988; McConnell and Servaes,1990; Berger et al.,1997; Gompers et al., 2003; Ozkan and Ozkan, 2004; Davies et al., 2005; Core et al.,2006; Harford et al.,2008; Cheng et al., 2012). the effect of managerial entrenchment on financial performance remains statistically significant for all measures of financial performance (return on assets ratio, return on equity ratio), using discretionary accruals, tenure, and characteristics of the board of directors as the measures of managerial entrenchment (Moussa et al., 2013). the market for corporate control and show that managerial entrenchment has a negative effect on operating performance and firm value (Gompers et al., 2003; Cremers and

Nair, 2005; Masulis et al., 2007). All these studies indicate that there may be a relationship between managerial entrenchment and financial performance.

2. The Study Problem

To the best of our knowledge, there is little evidence from developing countries such as Egypt about the effect of managerial entrenchment on the relationship between free cash flow and financial performance. So, this study tries to investigate the effect of managerial entrenchment on the relationship between free cash flow and financial performance. The study problem can be summarized in the following questions:

1. what is the effect of free cash flow on financial performance?
2. what is the effect of managerial entrenchment and financial performance?
3. what is the effect of managerial entrenchment on the relationship between free cash flow and financial performance?

3. The Study Objective

The objectives of this study are to

1. Investigate the effect of free cash flow on financial performance.
2. Investigate the effect of managerial entrenchment on financial performance.
3. Investigate the effect of managerial entrenchment on the relationship between free cash flow and financial performance.

4. The Study Importance

This research contributes to the literature as follows:

1. This study adds to the literature by providing evidence of the effect of managerial entrenchment on the relationship between free cash flow and financial performance in Egypt.

2. To my best of knowledge, no study examined the effect of managerial entrenchment on the relationship between free cash flow and financial performance in Egypt.
3. The results of current study provide vital visions for investors and managers about investing free cash flow in projects that maximize the value of the company in the presence of managers with wide power and latitude of decisions making.

The rest of the paper is organized as follows. The next section presents the related literature to develop the hypotheses. Then providing the research method and the empirical results. The conclusions and limitations are in the last section.

5. Literature Review and Hypotheses Development

This section presents a relevant literature that investigates the relationship between free cash flow and financial performance, and the relationship between managerial entrenchment and financial performance, then the effect of managerial entrenchment on the relationship between free cash flow and financial performance to develop the hypotheses.

5.1 The Relationship between Free Cash Flow and Financial Performance

Kadioglu et al., (2017) found a significant, negative relationship between free cash flow and firm performance evaluated by Tobin's Q ratio. The higher the free cash flow in the hands of managers, the lower the performance and vice versa. The results also show that leverage and dividend payments have a positive effect on performance. Hong et al., (2012) state that the free cash flow of a company has a negative linear correlation to its financial performance, i.e.,

excessive free cash flow has a negative relationship with the financial performance. Thus, the investors and the managers should completely analyze the free cash flow and avoid an inefficient business because of excessive free cash flow which generates the investment risk and loss.

Moussavi et al., (2015) state that there is a relationship between free cash flow and evaluation indicators of financial performance. On the one hand, the general relationship between free cash flows and the rate of return on equity is not significant. On the other hand, the relationship between free cash flow and earnings before interest and tax, and market value-added is verified. When there is an increase in free cash flow, earnings before interest and taxes and market value-added increases.

While (Lachheb et.al, 2017) conducted a study on that there is a positive impact of free cash flow on operating performance and company value. Kamran et.al (2017) found that free cash flows enhance the company's performance. Nguyen et.al (2018) found that free cash flow has a positive impact on corporate profitability. Because of these mixed results, the following hypothesis will be tested in the study:

H₁: There is no relationship between Free Cash Flow and Financial Performance.

5.2 The Relationship between Managerial Entrenchment and Financial Performance

Managers possess a scope of latitude in business enterprises to make decisions about particular policies of investment and so they can use this latitude to attain self-interests or reduce the scale of practiced effort (Rodrigues and Antonio, 2011). If the power and authority of managers are accompanied

by increasing performance of the firm, this reinforces its capability to create wealth and this power is considered as legal as it arises from the recognition of the firm with its management abilities (Afifi, 2017). On the other hand, if the increase in the power of managers isn't accompanied by an ability to create value, then this power is regarded illegal, as managers don't commit to what they must do (Boddy, 2008).

Afifi, (2017) refers that the relationship between managerial entrenchment and firm performance is non-linear. In this concern, he shows that the efforts deployed by the entrenched manager are valuable and allow improving the performance of the firm. However, by exceeding a particular level of entrenchment, assuring the reduction of replacement risk, the manager starts to arbitrate more and more in his preference which would decrease the performance of the firm. Core et al., (1999) indicate that entrenchment and weak governance have negative consequences for operational and financial performance. The following hypothesis will be tested in the study:

H₂: There is no relationship between Managerial Entrenchment and Financial Performance.

5.3 The Effect of Managerial Entrenchment on The Relationship Between Free Cash Flow and Financial Performance.

A manager has an incentive to invest the firm's resources in assets that have higher value under his administration than under the best alternative manager (manager-specific investments), even when such investments are not value-maximizing. Because such investments are most valuable under the current manager, they are referred to as manager-specific investments. As a

result of such entrenching investments, replacing the manager is expensive and he can extract from stockholders higher remunerations in the form of a higher salary or greater discretionary attitude (Shleifer and Vishny, 1989). These investments are made with corporate resources and are permitted to run without intervention by the board. The board may fail to intervene because it is inadequately well informed to assess the investment, or because board members approve the manager's fundamental corporate strategy. After the cost is sunk, the board may or may not discover that the investment was value-minimizing (Shleifer and Vishny, 1989).

Shleifer and Vishny, (1989) and Morck et al., (1988) state that managerial entrenchment is detrimental as it allows the managers to escape from the control of the shareholders and so managers seek to engage specific investments in their competencies. According to this hypothesis, managers run their firms without the restriction of maximizing the shareholders' wealth. While (Castanias and Helfat, 1992) show that the engagement of the specific investments by the managers allows generating revenues profitable to the stockholders. In this respect, they estimate that the accumulation of the managerial capital during the manager mandate period pledges to the shareholders certain profitability from the undertaken projects. Consequently, managerial entrenchment is not always detrimental to the shareholders' wealth. In addition, managers can protect their position on the condition that they generate to the stockholders a minimum of profitability (Castanias and Helfat, 1992).

Jensen and Meckling (1976) state that Discrepancies between agent and principal can result from various individual incentives of managers. One of

these incentives is known as empire-building. Jensen (1986) contends that empire-building managers tend to make sub-optimal investment decisions when they have free cash flow, irrespective of whether those investments would enhance firm value. Jensen (1986) assumes that if managers have free cash, empire-building managers prefer to make acquisitions and over-investment rather than rise payouts to stockholders because returning cash to shareholders can reduce the resources under those managers' control, resulting in a reduction of their strength. These acquisitions or over-investments can have little benefit and even be value-destroying. Firms operated by such managers usually grow beyond their optimal size.

When the firm generates free cash flow, contradictions of interest between shareholders and managers rise. The problem is how to affect this resource to motivate managers not to make over-investment that destroys shareholder value (Shleifer and Vishny, 1989). Additionally, (Hau, 2017) shows that if a firm does not possess good available investment opportunities, maintaining more cash may decrease the firm performance. Firm managers may misuse this free cash flow for personal benefits. Jensen (1986) relates the agency problem to free cash flows and states that management might misuse free cash flows at their authority when investment opportunities were not easily available to the firm. Therefore, free cash flows to management were agency costs to shareholders. While (Charreaux and Desbrieres, 1998) state that according to stewardship theory it isn't important to consider managerial entrenchment as contrary to the interests of stockholders and the effectiveness of the organizations, where entrenchment can be useful if it can generate value for the

organization, which is reflected positively on its stockholders. The following hypothesis will be tested in the study:

H₃: Managerial Entrenchment may not affect the relationship between Free Cash Flow and Financial Performance.

6. The Study Methodology

6.1 Sample

Table (1) shows the final sample of the study according to the sectoral distribution of the Egyptian stock exchange and the percentage of the sample size to the population. the sample contains non-financial Egyptian companies listed in the Egyptian stock exchange for the period of 2014 – 2019, with 522 firm-year observations (87 companies), is selected. This study excludes banks and financial institutions because of their special nature. The sample firms are restricted by the availability of necessary data required to measure the different variables.

Table (1): Sectoral distribution of the final sample and the percentage of sample size to the population

No	Sector	Number of observations	Years and No of companies					
			2014	2015	2016	2017	2018	2019
			No of companies	No of companies	No of companies	No of companies	No of companies	No of companies
1	Food and Beverage	48	8	8	8	8	8	8
2	Basic resources	24	4	4	4	4	4	4
3	Real Estate	102	17	17	17	17	17	17
4	Construction and materials	66	11	11	11	11	11	11
5	Retail	12	2	2	2	2	2	2
6	Personal and household products	48	8	8	8	8	8	8
7	Oil and Gas	6	1	1	1	1	1	1

8	Chemicals	42	7	7	7	7	7	7
9	Healthcare and Pharmaceuticals	54	9	9	9	9	9	9
10	Industrial Goods and Services and Automobiles	60	10	10	10	10	10	10
11	Technology	6	1	1	1	1	1	1
12	Telecommunications	6	1	1	1	1	1	1
13	Travel and Leisure	36	6	6	6	6	6	6
14	Utilities	6	1	1	1	1	1	1
15	Media	6	1	1	1	1	1	1
Total		522	87	87	87	87	87	87
Total egyptian companies listed on egyptian stock exchange ¹			214	221	222	222	220	218
Number of companies within the banking and financial sectors			38	43	46	47	49	51
Number of non-financial companies (the population)			176	178	176	175	171	167
Percentage of sample companies to population			49%	49%	49%	50%	51%	52%

6.2 Variable Measurement

Table (2) defines variables of the current study and their operational definitions

Table (2): The operational definitions of the variables of the study

Variables		
Variable's name	Variable's symbol	Operational Definition
Financial performance		
	Tobin'Q	Measured by = ((book value at the end of the year of total assets – book value at the end of the year of owners' equity) + (no. of outstanding shares * price per share)) divided by the book value at the end of year t of total assets
Return On Equity	ROE _{it}	Measured by net income divided by owners' equity at the end of year t.
free Cash Flow		
Free Cash Flow	FCF _{it}	Measured as (operating Cash flow – capital expenditures) divided by the book value of total assets at the end of the year (Yero and Hassan, 2013)
Managerial Entrenchment		
Managerial Entrenchment indicator	MEINDE X _{it}	The indicator consists of 5 items: 1) Board of Directors Independence

¹ Source: Egyptian exchange stock website (<https://www.egx.com.eg/ar/marketindicator.aspx>)

		2) CEO Duality 3) CEO Tenure 4) Managerial Ownership 5) Financial Leverage All items of the indicator take the value of 1 or zero. 1 refers to more entrenchment, so the value of the indicator is ranging from zero to 5, as the degree of the indicator increases, this refers to more managerial entrenchment.
control variables:		
Board size	BSIZE _{it}	Number of members of the board of directors for firm i in year t
Firm size	FSIZE _{it}	Measured as the natural logarithm of year-end total assets for firm i in year t
Institutional ownership	INOWN _{it}	Percentage of shares owned by institutional investors for firm i in period t

6.3 Regression Models

Two main regression models are developed in the current study to test the research hypotheses

Multiple Linear Regression Models will be used to examine

- 1) The Impact of Free Cash Flow and Managerial Entrenchment on Financial Performance individually.

$$\text{Financial Performance}_{it} = \beta_0 + \beta_1 \text{FCF}_{it} + \beta_2 \text{MINDEX}_{it} + \beta_3 \text{BSIZE}_{it} + \beta_4 \text{INOWN}_{it} + \beta_5 \text{FSIZE}_{it} + \varepsilon_{it} \dots\dots\dots (1)$$

- 2) The Impact of the Interaction between Free Cash Flow and Managerial Entrenchment on Financial Performance.

$$\text{Financial Performance}_{it} = \beta_0 + \beta_1 \text{FCF}_{it} + \beta_2 \text{MINDEX}_{it} + \beta_3 \text{FCF}_{it} * \text{MINDEX}_{it} + \beta_4 \text{BSIZE}_{it} + \beta_5 \text{INOWN}_{it} + \beta_6 \text{FSIZE}_{it} + \varepsilon_{it} \quad (2)$$

Financial Performance_{it}: Financial Performance for firm i in year t

FCF_{it}: Free Cash Flow for firm i in year t

MINDEX_{it}: value of Managerial Entrenchment Index for firm i in year t

FCF_{it}*MINDEX_{it}: the interaction between Free Cash Flow and Managerial Entrenchment for firm i in year t

$BSIZE_{it}$: Board Size for firm i in year t

$FSIZE_{it}$: Firm Size for firm i in year t

$INOWN_{it}$: Percentage of Institutional Ownership for firm i in year t

β : Regression Coefficient

ε_{it} : Error term

7. Results

7.1 Descriptive Statistics

Descriptive statistics provide simple summaries about the sample and the observations that have been made. It is used to present background information on the data used in the study before testing study hypotheses. Table (3) presents descriptive statistics for the full sample of 522 firm-year observations.

From table (3), Descriptive statistics of financial performance (dependent variable) state that (Tobin Q) for the sample (520 companies) within 6 years period of the study has maximum value (5.670427) and minimum value (0.3520158), this is to a wide range (5.3184112), the mean of this ratio is 1.365168 which refers that the market value for the firms in the sample to its book value is greater than 1, in another word the market value for the firms in the sample is greater than its book value, the standard deviation of this ratio is 0.9908496 approximately. Descriptive statistics also state that (ROE) for the sample (522 companies) has maximum value (0.6560517) and minimum value (-0.4417409), this is to a wide range (1.0977926), the mean of this ratio is 0.1035658 and standard deviation of this ratio is 0.1619 approximately.

Descriptive statistics of free cash flow (independent variable) show that free cash flow for the sample (522 companies) within 6 years study period has maximum value (0.4384904) and minimum value (-0.9085833) with a range

(1.3470737), the mean of this ratio is (0.119144) and the standard deviation is (0.1626672) approximately.

In respect to managerial entrenchment index (independent variable), descriptive statistics indicate that the index has value range from (0 to 5), the mean of this index (2.367816) and standard deviation (1.148628)².

Descriptive statistics also indicate that the interaction of managerial entrenchment and free cash flow (independent variable) has maximum value (1.115687) and minimum value (-1.213269) with a range (2.328956), the mean is (0.0555382) and standard deviation (0.3300638).

Regarding control variables in the sample within study period 6 years, descriptive statistics in table (3) indicate that Board size ranges from 4 to 16 members with range (12 members), with a mean (8) members approximately and standard deviation (2.85666) approximately. Descriptive statistics in table (3) also show that institutional ownership ranges from (0 to 1) with a mean (0.53418) and standard deviation (0.2918644). this refers to the importance of relative weight of shares owned by institutions as investors in the structure of ownership for Egyptian listed companies. Descriptive statistics in table (3) also state that firm size within 6-year study period ranges from 17.29805 to 24.11549 with range (6.81744) with a mean (20.55584) and a standard deviation (1.656366) approximately.

² Number of observations with value (zero) of managerial entrenchment index are (23) Observations, with value (1) are (102) observations, with value (2) are 161 observations, with value (3) are 140 observations, with value (4) are (88), with value (5) are 8 observations. These results are not included in the descriptive statistics of the current study, but the researcher makes these observations for the sample of the study within 6 years of study period.

Table (3): Descriptive statistics for the full sample

Variable	Observations	Mean	Std. Dev.	Min	Max
Dependent Variable (Financial Performance)					
Tobin Q _{it}	520 ³	1.365168	0.9908496	0.3520158	5.670427
ROE _{it}	522	0.1035658	0.1619	-0.4417409	0.6560517
Independent Variables					
FCF _{it}	522	0.119144	0.1626672	-0.9085833	0.4384904
MINDEX _{it}	522	2.367816	1.148628	0	5
FCF _{it} * MINDEX _{it}	522	0.0555382	0.3300638	-1.213269	1.115687
Control variables					
BSIZE _{it}	522	8.249042	2.85666	4	16
INOWN _{it}	522	0.53418	0.2918644	0	1
FSIZE _{it}	522	20.55584	1.656366	17.29805	24.11549

7.2 Correlation Matrix

Pearson correlation is used to test the correlations among all variables of the study models. Correlation coefficients were calculated for the full sample, Table (4) for correlation matrix between financial performance (dependent variable) and independent and control variables

Correlation analysis of the sample study Table (4) indicates that there is negative significant correlation between Tobin Q and free cash flow (at level of significance 10%). Correlation analysis in table (4) also state that there is positive significant correlation between Tobin Q and ROE (at level of significance 1%). Correlation analysis also state that there is positive significant correlation between Tobin Q and board size (at level of significance 10%). Correlation analysis shows that there is positive significant correlation between Tobin Q and institutional ownership (at level of significance 1%).

Correlation analysis of the sample study Table (4) indicates that there is positive significant correlation between ROE and free cash flow (at level of

³ No of observations for (Tobin Q) as measure for financial performance is 520 observations, as the sample contains two companies both do not have a price share for a year.

significance 1%). Correlation analysis also state that there is positive significant correlation between ROE and interaction between managerial entrenchment and free cash flow (at level of significance 1%). Correlation analysis shows that there is positive significant correlation between ROE and board size (at level of significance 5%).

Correlation analysis of the sample study Table (4) indicates that there is positive significant correlation between ROE and institutional ownership (at level of significance 1%). Correlation analysis also state that there is positive significant correlation between ROE and firm size (at level of significance 1%).

Correlation analysis of the sample study Table (4) indicates that there is positive significant correlation between free cash flow and managerial entrenchment (at level of significance 1%). Correlation analysis also state that there is positive significant correlation between free cash flow and interaction between managerial entrenchment and free cash flow (at level of significance 1%). Correlation analysis shows that there is positive significant correlation between free cash flow and firm size (at level of significance 1%).

Correlation analysis of the sample study table (4) also indicate that there is positive significant between managerial entrenchment and interaction of managerial entrenchment and free cash flow (at level of significance 1%). Correlation analysis shows that there is negative significant correlation between managerial entrenchment and institutional ownership (at level of significance 1%). Correlation analysis shows that there is negative significant correlation between managerial entrenchment and firm size (at level of significance 1%).

Correlation analysis of the sample study table (4) also indicate that there is positive significant between interaction of managerial entrenchment and free cash flow and firm size (at level of significance 1%). Correlation analysis of the sample study table (4) also indicate that there is positive significant between board size and institutional ownership (at level of significance 1%). Correlation analysis of the sample study table (4) also state that there is positive significant between board size and firm size (at level of significance 1%). Correlation analysis of the sample study table (4) also shows that there is positive significant between institutional ownership and firm size (at level of significance 1%).

Correlation analysis of the sample study table (4) also shows there is no significant correlation between Tobin Q and managerial entrenchment, interaction between managerial entrenchment and free cash flow, and firm size. Correlation analysis of the sample study table (4) also shows that there is no significant correlation between free cash flow and board size, and institutional ownership. Correlation analysis of the sample study table (4) also state that there is no significant correlation between managerial entrenchment and board size. Correlation analysis of the sample study table (4) also shows there is no significant correlation between interaction between managerial entrenchment and free cash flow and board size, and institutional ownership.

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Correlation analysis of the sample study table (4) also state that there is no significant correlation between managerial entrenchment and board size. Correlation analysis of the sample study table (4) also shows there is no significant correlation between interaction between managerial entrenchment and free cash flow and board size, and institutional ownership.

Table (4): correlation between financial performance and independent and control variables

no	variables	1	2	3	4	5	6	7	8
1	Tobin Q _{it}	1							
2	ROE _{it}	0.4580***	1						
3	FCF _{it}	-0.0831*	0.1404***	1					
4	MINDEX _{it}	-0.0251	0.0425	0.1237***	1				
5	FCF _{it} * MINDEX _{it}	0.0628	0.2473***	0.8813***	0.1498***	1			
6	BSIZE _{it}	0.0771*	0.1051**	0.0083	-0.0543	0.0543	1		
7	INOWN _{it}	0.1512***	0.1438***	0.0392	-0.4224***	0.0620	0.1280***	1	
8	FSIZE _{it}	0.0710	0.1564***	0.1248***	-0.2564***	0.1144***	0.3777***	0.3874***	1

*, **, ***Correlation is significant at the level of (10%), (5%), (1%) respectively.

7.3 Regression Results

The current study depends on Pooled Ordinary Least Squares (Pooled OLS) using STATA14 software, which is simply an OLS method run on panel data. It assumes homogeneity between and within entities and completely ignores all individuals' specific effects (Park, 2011). To avoid the influence of outliers; all variables are winsorized at 1%. The Robust Standard Error is used to correct for heteroscedasticity and autocorrelation in the case of their presence (Greene, 2012).

7.3.1 Results of Regression Analysis of the First Model for Testing the Effect Free Cash Flow on Financial Performance and The Effect of Managerial Entrenchment on Financial Performance

7.3.1.1 Results of Regression Analysis of Financial Performance and Free Cash Flow

Regression analysis in table (5) states that multiple linear regression model for financial performance and independent variables (free cash flow, managerial entrenchment and control variables) is significant at level of 5%, (p-value (0.0000) < Sig. (1%)) inferred from F test. Regarding the results of hypotheses testing for the current study, multiple regression analysis in table (5) states that there is no relationship between free cash flow and financial performance expressed as (Tobin Q). multiple regression analysis in table (5) states that there is no relationship between free cash flow and financial performance expressed as (ROE). Therefore, these results support the hypothesis of the current study which there is no relationship between free cash flow and financial performance, so this hypothesis is accepted.

7.3.1.2 Results of Regression Analysis of Financial Performance and Managerial Entrenchment

Multiple regression analysis in table (5) indicates that there is no relationship between managerial entrenchment index and financial performance expressed as (Tobin Q). multiple regression analysis in table (5) also shows that there is positive relationship between managerial entrenchment index and financial performance expressed as (ROE) at level of significance (5%). These results support the expectations of stewardship theory that the outstanding

performance for firms is associated with organizational structures existence which provide managers with wide authority, this is based on the fact that the leadership of the company will be more visible and consistent both for the subordinate managers and for other members of the company's board of directors.

These results also highlight the importance of assurances of stewardship theory that it is not necessary to present managerial entrenchment as it is against the interests of stockholders and the effectiveness of organizations. Entrenchment could be useful if it is able to create value for the company which reflects positively on the wealth of its stockholders. Therefore, these results do not support the hypothesis of this current study that there is no relationship between managerial entrenchment and financial performance, so this hypothesis is rejected.

7.3.1.3 Results of Regression Analysis of Financial Performance and Control Variables

Regarding to control variables, Multiple regression analysis in table (5) finds that there is no relationship between board size and financial performance expressed by (Tobin Q, ROE). Multiple regression analysis in table (5) also indicates that there is positive relationship between institutional ownership and financial performance expressed as (Tobin Q, ROE) at level of significance (1%). Multiple regression analysis in table (5) indicates that there is no relationship between firm size and financial performance expressed as (Tobin Q). Multiple regression analysis in table (5) also states that there is positive relationship between firm size and financial performance expressed as (ROE) at level of significance (10%).

Table (5) results of regression analysis for testing the effect of free cash flow on financial performance and the effect of managerial entrenchment on financial performance

Independent Variables	Tobin Q			ROE		
	Regression coefficients	Significance of regression coefficients		Regression coefficients	Significance of regression coefficients	
		(t) value	(Sig.)		(t) value	(Sig.)
Constant	0.6027613	0.91	0.361	-0.1990304	-1.91	0.057
FCF _{it}	-0.608161	-1.18	0.240	0.107125	1.63	0.105
MINDEX _{it}	0.0564565	1.36	0.175	0.016657	2.31	0.021**
BFSIZE _{it}	0.0187453	1.44	0.151	0.0031605	1.10	0.270
INOWN _{it}	0.5782637	3.90	0.000***	0.0805325	3.34	0.001***
Fysize _{it}	0.008408	0.27	0.791	0.0093788	1.82	0.069*
*** significant at 1%, (Sig. < 0.01)						
** significant at 5%, (Sig. < 0.05)						
* significant at 10%, (Sig. < 0.10)						
Coefficient of determination (R ²)	0.0376			0.0619		
Calculated F	4.65			5.13		
Significance of F test	0.0004***			0.0001***		
No. of observations	520			522		

7.3.2 Results of Regression Analysis of the Second Model for Testing the Effect of Interaction Between FCF and Managerial Entrenchment on Financial Performance

7.3.2.1 Results of Regression Analysis of Financial Performance and Free Cash Flow:

Regression analysis in table (6) states that multiple linear regression model for financial performance and independent variables (free cash flow, managerial entrenchment, the interaction between free cash flow and managerial entrenchment and control variables) is significant at level of 5%, (p-value (0.0000) < Sig. (5%)) inferred from F test.

Regarding the results of hypotheses testing for the current study, multiple regression analysis in table (6) states that there is negative relationship between

free cash flow and financial performance expressed as (Tobin Q) at level of significance (1%). multiple regression analysis in table (6) states that there is negative relationship between free cash flow and financial performance expressed as (ROE) at level of significance (1%).

These results support free cash flow hypotheses, agency theory of free cash flow which stated that firms with high free cash flow and high level of agency costs, could employ the extra cash for their self-benefits or use that in projects with lower returns than the capital cost, therefore free cash flow increases the conflict of interests between management and stockholders as free cash flow could be used to increase the percentage of dividends or purchase treasury stock instead of used in projects with negative net present value. (Jensen, 1986, 1989). Therefore, these results don't support the hypothesis of the current study which there is no relationship between free cash flow and financial performance, so this hypothesis is rejected.

7.3.2.2 Results of Regression Analysis of Financial Performance and Managerial Entrenchment

Multiple regression analysis in table (6) indicates that there is no relationship between managerial entrenchment index and financial performance expressed as (Tobin Q). multiple regression analysis in table (6) also shows that there is positive relationship between managerial entrenchment index and financial performance expressed as (ROE) at level of significance (10%). These results support the expectations of stewardship theory that the outstanding performance for firms is associated with organizational structures existence which provide managers with wide authority, this is based on the fact that the

leadership of the company will be more visible and consistent both for the subordinate managers and for other members of the company's board of directors.

Therefore, these results do not support the hypothesis of this current study that there is no relationship between managerial entrenchment and financial performance, so this hypothesis is rejected.

7.3.2.3 Results of Regression Analysis of Financial Performance and The Interaction of Managerial Entrenchment and Free Cash Flow

Multiple regression analysis in table (6) indicates that there is positive relationship between the interaction of managerial entrenchment index and free cash flow and financial performance expressed as (Tobin Q) at level of significance (1%). multiple regression analysis in table (6) also shows that there is positive relationship between the interaction of managerial entrenchment index and free cash flow and financial performance expressed as (ROE) at level of significance (1%).

According to free cash flow hypothesis and agency theory, firms with free cash flow or extra cash than required for projects with positive net present value, have high agency costs which considered a burden on shareholders' wealth and affects negatively on financial performance. Stewardship theory states that managerial entrenchment could be a treatment to avoid agency problems regarded to free cash flow and enhance financial performance for firms based on managers with wide power enable them to make decisions that are in the interest of subordinate managers, other members of the board of directors and stockholders. That refers that managerial entrenchment is not

necessary to be against the interests of stockholders as entrenchment could be beneficial if it could create a value for the company.

Therefore, these results do not support the hypothesis of this current study that managerial entrenchment may not affect the relationship between free cash flow and financial performance, so this hypothesis is rejected.

7.3.2.4 Results of Regression Analysis of Financial Performance and Control Variables

Regarding to control variables, Multiple regression analysis in table (6) finds that there is no relationship between board size and financial performance expressed by (Tobin Q, ROE). Multiple regression analysis in table (6) also indicates that there is positive relationship between institutional ownership and financial performance expressed as (Tobin Q, ROE) at level of significance (1%).

Multiple regression analysis in table (6) indicates that there is no relationship between firm size and financial performance expressed as (Tobin Q). Multiple regression analysis in table (6) also states that there is positive relationship between firm size and financial performance expressed as (ROE) at level of significance (5%).

Table (6): Results of regression analysis of financial performance on free cash flow, managerial entrenchment, and control variables

Independent Variables	Tobin Q			ROE		
	Regression coefficients	Significance of regression coefficients		Regression coefficients	Significance of regression coefficients	
		(t) value	(Sig.)		(t) value	(Sig.)
Constant	0.6265098	1.00	0.318	-0.1958344	-1.94	0.054
FCF _{it}	-3.691845	-3.46	0.001***	-0.3405	-3.18	0.002***
MINDEX _{it}	0.0250081	0.59	0.555	0.0120811	1.66	0.097*
FCF _{it} * MINDEX _{it}	1.740255	4.19	0.000***	0.2526205	5.31	0.000***
BSIZE _{it}	0.0086412	0.70	0.486	0.0016871	0.62	0.537
INOWN _{it}	0.4689513	3.40	0.001***	0.0647381	2.84	0.005***
FSIZE _{it}	0.014846	0.50	0.619	0.0103291	2.09	0.037**
*** significant at 1%, (Sig. < 0.01)						
** significant at 5%, (Sig. < 0.05)						
* Significant at 10%, (Sig. < 0.10)						
Coefficient of determination (R ²)	0.1108			0.1194		
Calculated F	5.67			11.61		
Significance of F test	0.0000			0.0000		
No. of observations	520			522		

8. Conclusion

This study explores the effect of free cash flow and financial performance, the effect of managerial entrenchment and financial performance and the effect of managerial entrenchment on the relationship between free cash flow and financial performance. Multiple regression analysis is used on a sample of non-financial companies over the period from 2014 to 2019, with 522 firm-year observations. The results show a negative relationship between free cash flow and financial performance, this is consistent with (e.g., Hong et al., 2012; Kadioglu et al., 2017). The results reveal that there is a positive relationship between managerial entrenchment and financial performance, this is consistent with Elwan, (2020). The results show a positive relationship between the interaction of free cash flow and managerial entrenchment and financial performance, this is consistent with

stewardship theory which states that managerial entrenchment could be a treatment to avoid agency problems regarded to free cash flow and enhance financial performance.

9. Limitations

Despite the evidence documented in this study, its findings and interpretations are subject to certain limitations.

- The study depends on data for the period 2014- 2019 which was the latest data available at the time of the study.
- Some companies do not have price share for some years.
- Financial companies are excluded from the sample of the current study as these companies are totally different from non-financial companies.

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أثر التحصين الإداري على العلاقة بين التدفقات النقدية الحرة والأداء المالي دراسة اختبارية على الشركات المسجلة بالبورصة المصرية

ملخص

تهدف هذه الدراسة الي اختبار أثر التحصين الإداري على العلاقة بين التدفقات النقدية الحرة والأداء المالي، وذلك من خلال الإجابة على هذا التساؤل ما هو أثر التحصين الإداري على العلاقة بين التدفقات النقدية الحرة والأداء المالي في الشركات المسجلة المصرية؟ وذلك في ضوء كلا من نظريتي الوكالة والإشراف. وقد اعتمد الباحث في قياس التحصين الإداري على مؤشر التحصين الإداري الذي يتكون من خمس آليات لتحصين الإداري (استقلالية مجلس الإدارة، ازدواجية دور المدير التنفيذي الأول، فترة بقائه في منصبه، نسبة الملكية الإدارية، نسبة الرافعة المالية. وقد استخدم الباحث مؤشر التدفق النقدي الحر من خلال استخدام المعادلة ((التدفق النقدي التشغيلي- المصروفات الرأسمالية) / القيمة الدفترية لإجمالي الأصول في نهاية السنة)، وكذلك اعتمد الباحث في قياس الأداء المالي على نسبة التوزيع كيو ومعدل العائد على حقوق الملكية. تعتمد هذه الدراسة على عينة من الشركات الغير مالية خلال الفترة 2014-2019 مكونة من 522 مشاهدة. تظهر نتائج تحليل الانحدار المتعدد 1- وجود علاقة سالبة بين التدفقات النقدية الحرة والأداء المالي. تظهر النتائج أيضاً 2- وجود علاقة موجبة بين التحصين الإداري والأداء المالي. كما تظهر النتائج أيضاً 3- وجود علاقة موجبة بين التفاعل بين التحصين الإداري والتدفقات النقدية الحرة والأداء المالي. توضح هذه النتائج توقعات نظرية الإشراف بأنه ليس ضرورياً أن يكون التحصين الإداري ضد مصالح المساهمين وفعالية المنظمات. التحصين يمكن أن يكون مفيداً إذا كان قادراً على خلق قيمة للشركة وینعكس ذلك إيجابياً على ثروة مساهميها.

الكلمات الدالة: التحصين الإداري، التدفقات النقدية الحرة، الأداء المالي، نسبة التوزيع كيو، معدل العائد على حقوق الملكية.