



## MULTI-CRITERIA STATISTICAL-BASED ANALYSIS ON THE EFFECT OF OWNERSHIP STRUCTURE AS A MODERATING FACTOR ON THE RELATIONSHIP BETWEEN FREE CASH FLOW AND APPLYING THE SUITABLE ASSETS

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### ABSTRACT

This research seeks to investigate the relationship between free cash flow, proper use of assets and the role of moderating the ownership structure. The sample of this study includes 94 companies listed in the list of listed companies of Tehran Stock Exchange from 1391 to 1395. In this research, Microsoft® Excel software was used for data processing and statistical analysis of EViews®8 was used for statistical analysis. The results of this research show a significant negative linear relationship between cash flow and the proper use of assets. The findings also show that institutional ownership and the existence of an audit committee can modify the relationship between free cash flow and the proper use of assets, that is, institutional ownership and the existence of an audit committee can make assets more appropriate.

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## 1. INTRODUCTION

From economic point of view, given logical mode of people' behavior, it is supposed that in first step, all are following to maximize their benefits. Managers are not exception. Managers are interested in maximize personal benefits, social welfare and fix their occupational position and offer suitable picture from their financial situation of commercial units to shareholders and beneficiaries.

But, in some of cases, increment of wealth of managers is not on regard to increment of wealth of other shareholders. This case is conforming to conformity between benefits of managers and other beneficiary groups in commercial units. By consideration of conflict theory between managers and owners, managers of commercial units have necessary motivations to maximize their benefits.

In regard to analysis by value for shareholders, flows of cash amount are so important in company. Managers can increase said cash flow by identify suitable growth opportunities in projects with flow value and increase wealth of shareholders. As for conflict theory between managers and owners, it is possible some of managers are allowed to supply flows of free cash flow in special

projects in short term and also, much free cash amount stimulates in non-profitable projects and reduce assets. Therefore, free cash flow result to agency problem because managers are willing to apply cash flow which have less cooperation in value of company. Thus, free cash flows are possible to result to apply assets.

## **2. RESEARCH PROBLEM**

Cash flow is regarded as one of the most important parts of capital turnover and attracted by managers and investors. Maintenance of cash amount is regardless advantages like doing commercial transactions, ability to confront probable events, flexibility to supply from internal resources and avoid from investment because of limitations in supply foreign resources and cause problems like increment of non-optimal investment because of agency problems (Biom, 2015).

Shareholders of each company consists of persons and institutes that conform to interests, aims and horizons of investment goals. Some of ownership structures give possibility to shareholders to participate in ownership and intervene in management. This problem is a case which influences performance of company (Jenson et al., 1976).

One of control methods and corporation government is to determine ownership structure. Added it, in order to determine type of ownership to reduce agency costs, it is so important. Therefore, one of the most important items in corporation government is to aware from ownership structure and rank it in standard scales to compile suitable strategies in locating corporation governance. Ownership structure and order of shareholders is different in different companies. Some of companies' ownership belongs to partial shareholders and real identities. This group supervises on performance of managers and access to information like financial statements. Thus, other section of corporation ownership is under professional shareholders that have valuable information about future perspectives and commercial strategies and long term investment by direct relationship with managers and ownership structure. As for said contents, researcher is following to respond questions:

Is ownership structure as modifier factor effective on relation between free cash flow and assets application?

### **2.1 RESEARCH PURPOSES**

The first main purpose is to identify relation between free cash amount and apply suitable assets in companies. The second main purpose is to identify relation between corporation ownership, free cash amount and apply suitable assets in companies under research. Third main Purpose is to identify relationship between audit committee, free cash flow and apply suitable assets in companies under research.

### **2.2 RESEARCH HYPOTHESES**

#### **First Main Hypothesis**

There is significant relationship between free cash flow and apply suitable assets in companies accepted in Tehran stock exchange.

#### **Second Main Hypothesis**

Institutional ownership modifies relation between free cash flow and apply suitable assets.

### Third Main Hypothesis

Audit committee modifies relation between free cash flow and apply suitable assets.

## 3. RESEARCH BACKGROUND

Literature review of related works is summarized in Table 1.

**Table 1:** Summary of research background

Year	Researcher	Title	Results
2014	Yatim	Discuss relation between audit fee and specifications of BD and audit committee in 736 Malaysian companies	Results showed that fee of independent audit committee have direct and significant relationship with auditor independence, expert of audit committee, and frequent visiting, that is many specifications, increase fee
2015	Denial W., Klena et al	Discuss free cash amount and its effect to measure interest based on conditional conservation	Results showed that life cycle of firm consists of expense, age, growth and capital. By using three empirical settings, free cash flows which are on growth step, act conservatively and have relation with life cycle of company
2016	Klins et al	Discuss relation between time skewness for free cash flows during life cycle of company	It is concluded that the companies are on early life cycle and have more time skewness compared with others
2018	Hotchen et al	Discuss relation between tax structure and ownership structure	They stated that according to literature, tax resource has significant and direct relation with tax company and shows that tax saving is for tax risk.
2013	Namazi	Discuss interaction between free cash flow, debt policy and ownership structure by using simultaneous transaction system, case study: companies in Tehran stock exchange	It shows that use of debt to reduce agency costs derived from free cash amount is not suitable solution by risks of free cash amount. Also, by consideration of statistical results, variables for institutional ownership and governmental ownership have positive effect on risk of free cash amount
2016	Heydarpour et al	Effect of life cycle of company in free cash flow from companies in Tehran stock exchange	Findings show that effect of life in company has direct and significant on life cycle and its properties
2017	Aghili and Jalinian	Discuss relation between long term and mid-term institutional ownership in interest	They stated that according to literature, in companies that don't manage interest as effectively, percent of institutional ownership is relation with accruals and in companies where don't manage interest, its relation is negatively conform to accruals
2018	Alineghad and Sarokalani and Bahrayni	Discuss effect of institutional ownership and ownership concentration on investment opportunities in companies accepted in Tehran stock exchange	Results showed that percent of institutional ownership has significant on investment and also, hypothesis for institutional ownership is significant
2018	Izadinia et al.	Discuss relation between tax avoidance and ownership structure in companies accepted in Tehran stock exchange	Results showed that there is no relation between corporation strategy and audit fee. Also, there is no negative relation between tax avoidance and audit fee. Results showed that corporation leadership system has interactive effect on tax avoidance and audit fee

## 4. RESEARCH METHODOLOGY

This research is applied research in terms of purpose and it is quantitative research in terms of type of data. It is inductive from reason point of view. It is semi-empirical from type and nature. It is time series from time of performing.

## 4.1 STATISTICAL POPULATION

Statistical population consists of companies selected during 2012 to 2016 in stock exchange and the companies are selected in terms of following specifications:

1. Companies which have accepted since early 2012 in Tehran stock exchange and are active in tile period.
2. Companies that their financial year ends to March.
3. Companies which are not members of financial intermediary, investment, insurance and banks (as for difference in their activity)
4. Companies shall not change during 2012 to 2016 in financial year.
5. Companies have not transaction pause more than 6 months
6. Their financial statements are audited.

Finally, as for limitations, 94 companies are selected among companies accepted in Tehran stock exchange and selected as systematic method and information pertain to 94 companies collected. Thus, information is for 479 years/companies.

## 4.2 CONCEPTUAL MODEL

This study applies the conceptual model of Len and Polson model to measure free cash currents of commercial unit. According to model, free cash current is obtained by operational interest before depreciation and sum of taxation, cost of interest and divisional profit. In this conceptual model, Modifier variables are ownership structure, auditing committee (internal audit of company) and institutional ownership, *see* Figure 1.

Dependent variable: apply suitable assets.

Controlled variables: company size, financial leverage and yield of assets.

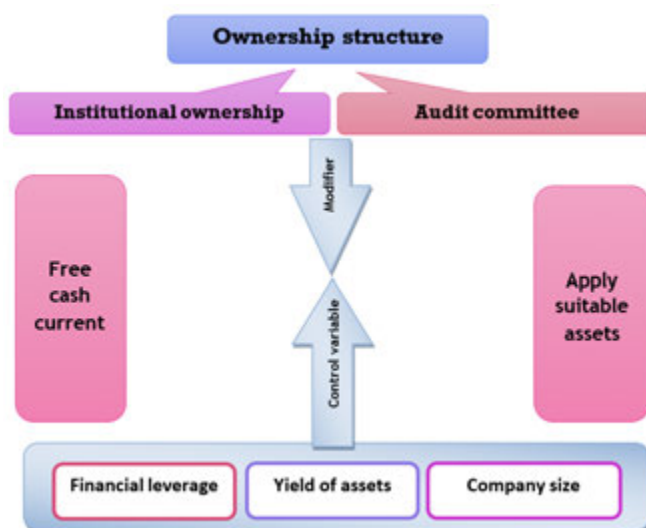


Figure 1: Conceptual model of Research

## 5. HYPOTHESIS ANALYSIS

### 5.1 FIRST MAIN HYPOTHESIS

There is significant relationship between free cash flow and apply suitable assets and role of Ownership structure as a moderating factor.

#### 5.1.1 FIRST MINOR HYPOTHESIS

There is significant relationship between free cash flow and apply suitable assets in companies

accepted in Tehran stock exchange:

$$ASSET - UT = \alpha_0 + \alpha_1 FCF + \alpha_2 INS + \alpha_3 SIZE + \alpha_4 ROA + \alpha_5 LEV + eit \quad (1).$$

Detail of variables and test result is given in Table 2.

**Table 2:** Results of data analysis to test of the first Minor hypothesis.

ASSET – UT					
Variable		Coefficient	standard deviation	T statistics	p-value
Fixed coefficient	<i>C</i>	1.592916	0.072228	22.05396	0.0000
Free cash flow	<i>FCF</i>	-0.035470	0.009876	-3.591592	0.0004
Company size	<i>SIZE</i>	-0.154344	0.015761	-9.792622	0.0000
Yield of assets	<i>ROA</i>	0.055702	0.023172	2.403889	0.0167
Rate of debt	<i>LEV</i>	0.088034	0.036067	2.440863	0.0151
Durbin-Watson statistics			2.006046	F-statistic	18.29275
Prob (F-statistic)			0.0000	Adjusted R-squared	0.781494

As for results derived from regression model, it is observed that P-value pertain to F statistics which show significant total regression is 0.000 and shows that model is significant in confidence interval 95%. Modified determination coefficient  $R^2$  equals to 0.781494 and shows that 78% of changes for independent variable is determined and Durbin-Watson statistics is 2.006046 and is between 1.5 to 2.5 that shows lacking co-correlation between variables. As indicated in table 2, independent coefficient of free cash flow is -0.035470 and its probable is 0.0004. as for T statistics and p-value, the results show coefficient is on interval error 5% and this finding shows that there is negative and significant relation between free cash flow and apply assets in companies Tehran stock exchange.

From the analysis, there is significant relationship between free cash flow and apply suitable assets in companies accepted in Tehran stock exchange.

Free cash flows motivate management to use and consume resources in different activities which increase company value and don't change in company value. Managers are willing to invest for free cash flows in projects with personal benefit and don't follow legal systems and neglect negative pure value of project. Some of investment activities have positive yield but the yield is lower than cost of capital. Opportunities behavior of managers for companies having surplus cash flow is explained by free cash flows. Company' managers for free cash flows not only have lower performance than suitable mode but also don't use free cash flow accurately. Cash flows motivate managers to maintain cash flow in company and don't divide it as interest and by using free cash flows and assets, increase their control power in company and this strategy conforms to free cash flows for investment activities which are not pertain to main activities and misuses assets. Results conform to documents in theoretical framework of literature and researches of Darn and Henry (2010), and Taklio et al. (2012).

### 5.1.2 SECOND MINOR HYPOTHESIS

Institutional ownership modifies relation between free cash flow and apply suitable assets.

$$ASSET - UT = \alpha_0 + \alpha_1 FCF + \alpha_2 INS + \alpha_3 (FCF \cdot INS) + \alpha_4 SIZE + \alpha_5 ROA + \alpha_6 LEV + eit \quad (2).$$

Detail of variables and test result is given in Table 3.

**Table 3:** Results of data analysis to test of the Second Minor hypothesis.

ASSET – UT					
Variable		Coefficient	standard deviation	T statistics	p-value
Fixed coefficient	<i>C</i>	1.483419	0.096632	15.35127	0.0000
Free cash flow	<i>FCF</i>	-0.047930	0.020892	-2.294184	0.0223
Institutional ownership	<i>INS</i>	0.098484	0.021751	4.527827	0.0000
Institutional ownership *Free cash flow	<i>FCF·INS</i>	0.018285	0.007336	2.492549	0.0226
Company size	<i>SIZE</i>	-0.140996	0.018463	-7.636840	0.0000
Return On Asset	<i>ROA</i>	0.072923	0.036296	2.009141	0.0452
Debt Ratio	<i>LEV</i>	0.087248	0.027174	3.210662	0.0014
Durbin-Watson statistics			2.020844	F-statistic	18.50093
Prob(F-statistic)			0.000	Adjusted R-squared	0.786972

As for results derived from regression model, it is observed that P-value pertain to F statistics which show significant total regression is 0.000 and shows that model is significant in confidence interval 95%. Modified determination coefficient  $R^2$  equals to 0.786972 and shows that 79% of changes for independent variable is determined and Durbin-Watson statistics is 2.020844 and is between 1.5 to 2.5 that shows lacking co-correlation between variables. As dedicated by table 3, FCF\*INC variable coefficient is equal to 0.018285 and probable value is 0.0226. As for t statistics and p-value, the results show the coefficient is on error interval 5%. This finding shows that by entering into institutional ownership, relation between free cash flow and assets is modified and institutional ownership results to apply assets.

Findings show that by entering into institutional ownership in model, relation between free cash flows and apply assets is modified. And institutional ownership results to assets. Institutional owners have more control abilities compared with managers in countries where have government and legal strategies. Also, institutional ownership reduces skewness information and agency problem. Because, institutional ownership controls management efforts to manipulate leadership strategies and do their best and make logical confidence to quality of financial reporting, protect benefits of shareholders and increase benefits derived from investment. Institutional owners help to promote production technology to obtain efficiency maximally by their expert and knowledge. Institutional owners who have higher percent of company ownership, have more stimulations to leader and control it as if by increasing percent of institutional ownership, relation between free cash flows and use of assets is significant and this results conforms to theoretical framework of Daren and Henry (2010), and Taklio et al. (2012).

### 5.1.3 THIRD MINOR-HYPOTHESIS

Audit committee modifies relation between free cash flow and apply suitable assets.

$$ASSET - UT = \alpha_0 + \alpha_1 FCF + \alpha_2 CAU + \alpha_3 (FCF \cdot CAU) + \alpha_4 SIZE + \alpha_5 ROA + \alpha_6 LEV + eit \quad (3)$$

Detail of variables and test result is given in Table 4.

**Table 4:** Results of data analysis to test of the Third Minor hypothesis.

ASSET – UT					
Variable		Coefficient	standard deviation	T statistics	p-value
Fixed coefficient	<i>C</i>	1.576833	0.097305	16.20509	0.0000
Free cash flow	<i>FCF</i>	-0.030138	0.025987	-1.159720	0.2469
Audit committee	<i>CAU</i>	-0.101247	0.021892	-4.624829	0.0000
Audit committee *Free cash flow	<i>FCF*CAU</i>	-0.018937	0.005907	-3.206024	0.0092
Company size	<i>SIZE</i>	-0.140658	0.018398	-7.645286	0.0000
Return On Asset	<i>ROA</i>	0.073294	0.036610	2.002022	0.0460
Debt Ratio	<i>LEV</i>	0.087515	0.026977	3.244040	0.0013
Durbin-Watson statistics			2.021477	F-statistic	18.54726
Prob(F-statistic)			0.000	Adjusted R-squared	0.787415

As for results derived from regression model, it is observed that P-value pertain to F statistics which show significant total regression is 0.000 and shows that model is significant in confidence interval 95%. Modified determination coefficient R<sup>2</sup> equals to 0.787415 and shows that 79% of changes for independent variable is determined and Durbin-Watson statistics is 2.021477 and is between 1.5 to 2.5 that shows lacking co-correlation between variables. As indicated in table 4, FCF\*CAU variable coefficient is -0.018937 and significant value is 0.0092. As for t statistics and p-value, the results show that there is significant relation between coefficients in error interval 5%. This finding shows that by entering into audit committee, relation between free cash flows and apply assets is modified and audit committee results to apply assets.

According to hypothesis of free cash flows, it is predicated that companies having surplus cash flow can reduce working level to use assets. Opportunities behavior for managers in companies having surplus flow is explained by free cash flows. Managers for companies having free cash flow not only have low performance compared with suitable mode and it is possible not to use free cash flows and thus according to free cash flow, it motivates managers to invest in non-profitable projects which reduce efficiency of assets and this theorem means lacking management for cash amount. As for results and hypothesis, it is recognized that by increment of free cash flow in companies where high management ownership have optimal use of assets is reduced because managers use surplus to their benefits. Thus, it is necessary to use controlled mechanisms against inaccurate use of amount which are operational auditing in order to efficient use surplus resources. And it conforms to documents in theoretical framework of Daren and Henry (2010) and Taklio et al. (2012).

Research result is summarized in Table 5.

**Table 5:** Summary of Research Results.

Research Hypotheses	Type of Relationship	Confirmed or Rejected of Hypotheses
<b>First main Hypothesis</b> There is significant relationship between free cash flow and apply suitable assets in companies accepted in Tehran stock exchange.	Negative and significant	confirmed
<b>Second main Hypothesis</b> Institutional ownership modifies relation between free cash flow and apply suitable assets.	Positive and significant	confirmed
<b>Third main Hypothesis</b> Audit committee modifies relation between free cash flow and apply suitable assets	Negative and significant	confirmed

## 6. CONCLUSION AND REMARK

In this research, we conclude that ownership structure is effective on free cash current and apply suitable assets as modifier variable. And in order to find relationship, firstly, descriptive statistics analysis has been discussed. After, by application of normal squares method and generalized minimized sums, scale of effectiveness for independent and other variables are discussed on application of assets. Also, we concluded that variable coefficient of free cash current is equal to  $-0.035470$  with probable  $0.0004$  that shows free cash current coefficient is 95% confidence level. Variable coefficient for institutional ownership is  $0.018285$  with probable  $0.0226$  that shows significant effect of variable on relation between free cash current and apply assets in 95% confidence interval. Variable coefficient for auditing committee is  $-0.018937$  with probable  $0.0092$  that shows significant effect of variable on free cash current and apply assets in confidence interval 95%.

The present results showed that variables for ownership structure play important role in company performance. Since necessity of corporation mechanism is emphasized in Tehran stock exchange system, thus, it is necessary companies and governments to use suitable ownership structure which result to performance. By applying financial statements during study financial sheets of companies, it is suggested that supervisory role is considered by ownership and assets.

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