Investigation of the effect of agency costs on firm performance of listed firms in Tehran Stock Exchange

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Abstract

This study examines the impact of agency costs on firm performance of listed firms in Tehran Stock Exchange. With this aim, main hypothesis and six sub-hypothesis have been designed and tested, with the selection of 73 firms listed in Tehran Stock Exchange during the 5-years period, 2006 to 2010. In this study, three criteria were used including operating expenses to sales ratio, asset turnover to sales ratio and Q-Tobin ratio to measure agency costs and two criteria such as return on assets and return on capital were implemented to measure firm performance. Results of statistical analysis showed that there is a significant relationship between agency costs and firm performance indicating that there are some evidences about verification agency theory in Tehran Stock Exchange.

Keywords: Agency Theory, Agency Cost, Firm Performance, Return on Assets, Return on Capital

Introduction

After the start of the Industrial Revolution in the nineteenth century and the development of joint corporations, there were many investors that no direct role their involvement in the management of economic units and only through the selection and oversight of the Board, trying in managing its business units. The outcome of this process was the separation of ownership from management firms. Separation of ownership from management led to the agency theory. The separation of ownership and management of corporations, there is the potential that managers make decisions that preposition their interests and in reverse interests of shareholders. (Valipour and Khoram, 2010)

Agency relationship consists of a contract in which the one or more person (owner or owners) another person (the agent or manager) to officer to carry out operations and in this regard, he will also have to make some decisions. (Jensen, 1986)

As regards agency costs are major portions of total costs of a firm and target shareholders from implement of these costs, ensuring the integrity management activities and also with the increasing percentage of management ownership, Management Less effort in order to increase the firm value and the need for additional tests, agency costs will be reduced (Mojtahedzadeh, 2010)

Wang (2010) investigated the impact of free cash flows and agency costs in 505 firms listed in Taiwan Stock Exchange during the years 2002-2007. In this study, two measures of return on assets and return on equity were used to measure the firm performance. The results of the study showed there is a significant positive relationship between asset turnover ratio and firm performance variables (return on assets and return on capital) and there is a significant negative relationship between operating expenses to sales ratio and firm performance (return on assets and return on equity).

Materials and Methods

This study is applied and it is a quasi-experimental design. Financial data is derived from financial statements and firms reports. Research data from sample firms are obtained resources such as Rahavard Novin software and Tadbir Pardaz software and Tehran Stock Exchange website during fiscal years 2006 to 2010; also is used SPSS and E-Views software for data processing. To test the research hypotheses, to determine the relationship between the

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dependent and independent variables, was used the multiple regression. Sampling with used systematic method and was based on the following criteria:

1- The selected firms are not banks, financial institutions, investment and leasing.

2- To compare the observed variability, financial year ending 29 March each year.

3- The firm has not changed fiscal year during 2006 to 2010.

4- The firm is listed on the Tehran Stock Exchange until the end of 2006.

5- The financial statements of these companies are available.

Considering the above criteria, were selected 73 firms of the firms listed in Tehran Stock Exchange,

The research hypotheses are:

H_1: Agency costs are impressive on firm performance.

H_{1-1}:Operating expenses to sales ratio is impressive on return of capital.

H_{1-2}:Asset turnover ratio is impressive on return of capital.

H_{1-3}:The Q-Tobin ratio is impressive on return of capital.

H_{1-4}:Operating expenses to sales ratio is impressive on return on asset.

H_{1-5}:Asset turnover ratio is impressive on return on asset.

H_{1-6}:The Q-Tobin ratio is impressive on return on asset

Table 1. Descriptive Statistics of Data

Description	Mean	Middle	SD	Min	Max
Operating Expenses to Sales Ratio	15/0	05/0	35/1	0/0	91/22
Asset Turnover Ratio	81/0	77/0	47/0	02/0	04/4
Q-Tobin	41/1	22/1	68/0	61/0	71/7
Return On Assets Ratio	69/11	83/9	19/12	27/31-	34/52
Return On Capital	19/31	75/29	69/61	462-	664
Firm Size	65/5	57/5	55/0	87/3	54/7
Debt Ratio	75/0	76/0	31/0	1/0	03/4
Market Return	27/0	11/0	38/0	21/0-	86/0

Results

The results of Table (1) showed, operating expenses to sales ratio with Mean of 0/15, SD 1/35, a minimum of zero and a maximum of 22/91; asset turnover ratio with Mean of 0/81, SD of 0/47, minimum of 0/02 and maximum of 4/04; Q - Tobin with mean of 1/41, SD of 0/68, minimum of 0/61 and maximum of 7/71; return on assets ratio with mean of 11/69, SD of 12/19, minimum of -31/27 and maximum of 34/52; return of investment with

mean of 31/19, SD of 29/75, minimum of -462 and maximum of 664; firm size with mean of 5/65, SD of 0/55, minimum of 3/87 and maximum of 7/54; debt ratio with mean of 0/75, SD of 0/31, minimum of 0/1 and maximum of 4/03; market return with mean of 0/27, SD of 0/38, minimum of -0/21 and maximum of 0/86.

Testing First and Third Sub-Hypothesis

The regression equation is:

$$ROE_t = \beta_. + \beta_1 OpeR_t + \beta_2 AssT_t + \beta_3 Q_t + \beta_4 Rm_t + \beta_5 Size_t + \beta_6 DA_t$$

The results of Table 2 showed Pearson correlation coefficient between the variable return on capital ratio with Operating expenses to sales, asset turnover ratio, Q-Tobin, market return, firm size and debt ratio are respectively -0/444, 0/495, -0/419, 0/015, 0/321 and -0/341. Pearson correlation coefficient between the variable Operating expenses to sales with Q-Tobin, market return, firm size and debt ratio are respectively -0/061, -0/056, 0/059, -0/06 and 0/307. Pearson correlation coefficient between the variable asset turnover

ratio with Q-Tobin, market return, firm size and debt ratio are respectively -0/239, -0/016, 0/437 and 0/065. Pearson correlation coefficient between the variable Q-Tobin with market returns, firm size and debt ratio are respectively 0/104, 0/167 and -0/266. Pearson correlation coefficient between the variable market returns with firm size and debt ratio are respectively 0/036 and -0/107. Pearson correlation coefficient between firm size and debt ratio is -0/051. Also all Pearson coefficients are significant at the 95% level.

Table 2. Correlation Coefficients between Variables

Debt Ratio	Firm Size	Market Return	Q-Tobin	Asset Turnover Ratio	Operating expenses to sales	Return on Capital		Description
-------	-------	-------	-------	-------	-------	1	Correlation coefficient	Return on Capital
-------	-------	-------	-------	-------	-------	-------	Confidence level	
------	-------	-------	-------	------	1	444/0-	Correlation coefficient	Operating Expenses to Sales
------	-------	-------	-------	------	-------	0/0	Confidence level	
------	-------	-------	-------	1	016/0-	495/0	Correlation coefficient	Asset Turnover Ratio
------	-------	-------	-------	-------	761/0	0/0	Confidence level	
----------	-------	-------	1	239/0-	056/0-	419/0-	Correlation coefficient	Q-Tobin
-------	------	-------		0/0	289/0	0/0	Confidence level	
-------	------	1	104/0	016/0-	059/0	015/0	Correlation coefficient	Market Return
-------	-------		047/0	766/0	262/0	775/0	Confidence level	
-------	1	036/0	167/0	437/0	06/0-	321/0	Correlation coefficient	Firm Size
-------		492/0	001/0	0/0	254/0	0/0	Confidence level	
1	051/0-	107/0-	266/0-	065/0	307/0	341/0-	Correlation coefficient	Debt Ratio
	331/0	04/0	0/0	213/0	0/0	0/0	Confidence level	

Table 3. Durbin-Watson Test

SD	Adjusted Correlation Coefficient	R^2	Correlation Coefficient	Durbin-Watson	Description
61/41	545/0	553/0	743/0	926/1	Amount

The results of Table (3) showed Durbin-Watson coefficient is equal to 1/926, which indicates the absence of multicollinearity between the independent variables.

The results of Table (4) showed F statistic is equal to 73/67 which was significant at the 95% level and indicates that the model is significant.

Table 4 . ANOVA results

Result Test	Confidence Level	F-Statistic	Type of Statistic
Confirmed	0/0	67/73	Amount of statistic

Table 5. Regression Results

Result Test	Variance Inflation	Confidence Level	t-Statistic	Coefficient	Description
Confirmed	11/1	0/0	66/9-	39/16-	Operating Expenses to Sales
Confirmed	31/1	0/0	22/10	87/41	Asset Turnover Ratio
Confirmed	17/1	0/0	206/6	94/20	Q-Tobin
Confirmed	03/1	89/0	138/0-	788/0-	Market Return
Confirmed	25/1	02/0	75/2-	69/6	Firm Size
Confirmed	22/1	0/0	87/4-	54/37-	Debt Ratio

The results of Table (5) showed Coefficients variable operating costs to sales ratio, asset turnover ratio, Q-Tobin, market return, firm size and debt ratio, respectively equal to -16/39, 41/87, 20/94, -0/788, 6/69 and -37/54 that all are significant at 95% level. Thus, the regression model was as follows:

$$ROE_t = \beta_{.} - 16/39OpeR_t + 41/87AssT_t + 20/94Q_t - 0/788Rm_t + 6/69Size_t - 37/54DA_t + \varepsilon_t$$

The results obtained from Table (5), first and third sub-hypothesis are confirmed significant relationship between the variables of return of capital and variables of operating expenses to sales ratio, asset turnover ratio and the Q-Tobin.

Testing Fourth to Sixth Sub-Hypothesis

The results of Table (6) showed Pearson correlation coefficient between the variable return on assets with Operating expenses to sales ratio, asset turnover ratio, Q-Tobin, market return, firm size and debt ratio are respectively --0/216, 0/34, -0/396, -0 /05, 0/291 and -0/334. Pearson correlation coefficient between the variable Operating expenses to sales with Q-Tobin, market return, firm size and debt ratio are respectively -0/071, -0/03, -0/058, -0/015 and -0/039. Pearson correlation coefficient between the variable asset turnover ratio with Q-Tobin, market return, firm size and debt ratio are respectively -0/156, 0/027, 0/393 and -0/114. Pearson correlation coefficient between the variable Q-Tobin with market returns, firm size and debt ratio are respectively 0/118, 0/114 and -0/25. Pearson correlation coefficient between the variable market returns with firm size and debt ratio are respectively 0/025 and -0/051. Pearson correlation coefficient between firm size and debt ratio is -0/143. Also all Pearson coefficients are significant at the 95% level.

Table 6. Correlation Coefficients between Variables

Debt Ratio	Firm Size	Market Return	Q-Tobin	Asset Turnover Ratio	Operating Expenses to Sales	Return on Assets		Description
-------	-------	-------	-------	-------	-------	1	Correlation coefficient	Return on Assets
-------	-------	-------	-------	-------	-------	-------	Confidence level	
------	-------	-------	-------	------	1	216/0-	Correlation coefficient	Operating Expenses to Sales
------	------	-------	-------	------	-------	0/0	Confidence level	
------	-------	-------	-------	1	071/0-	34/0	Correlation coefficient	Asset Turnover Ratio
------	-------	-------	-------	-------	179/0	0/0	Confidence level	
1	-------	-------	1	156/0-	03/0-	396/0-	Correlation coefficient	Q-Tobin
-------	------	-------		003/0	567/0	0/0	Confidence level	
-------	------	1	118/0	027/0	058/0-	05/0-	Correlation coefficient	Market Return
-------	-------		024/0	603/0	273/0	337/0	Confidence level	
-------	1	025/0	114/0	393/0	015/0-	291/0	Correlation coefficient	Firm Size
-------		631/0	03/0	0/0	771/0	0/0	Confidence level	
1	143/0-	051/0-	25/0-	114/0-	039/0-	334/0-	Correlation coefficient	Debt Ratio
	006/0	328/0	0/0	029/0	454/0	0/0	Confidence level	

Table 7. Durbin-Watson Test

SD	Adjusted Correlation Coefficient	R²	Correlation Coefficient	Durbin-Watson	Description
81/9	353/0	364/0	603/0	852/1	Amount

The results of Table (7) showed Durbin-Watson co-efficient is equal to 1/852, which indicates the absence of multicollinearity between the independent variables.

The results of Table (8) showed F statistic is equal to 08/34 which was significant at the 95% level and indicates that the model is significant.

Table 8. ANOVA results

Result Test	Confidence Level	F-Statistic	Type of Statistic
Confirmed	0/0	08/34	Amount of Statistic

Table 9. Regression Results

Result Test	Variance Inflation	Confidence Level	t-Statistic	Coefficient	Description
Confirmed	01/1	0/0	3/5-	98/1-	Operating Expenses to Sales
Confirmed	2/1	0/0	2/4	69/4	Asset Turnover Ratio
Confirmed	1/1	0/0	08/7	62/5	Q-Tobin
Confirmed	01/1	147/0	84/0-	008/0-	Market Return
Confirmed	19/1	002/0	15/3	69/2	Firm Size
Confirmed	08/1	0/0	18/5-	94/8-	Debt Ratio

The results of Table (9) showed Coefficients variable operating costs to sales ratio, asset turnover ratio, Q-Tobin, market return, firm size and debt ratio, respectively equal to -1/98, 4/69, 5/62, -0/008, 2/69 and -8/94 that all are significant at 95% level. Thus, the regression model was as follows:

$$ROA_t = \beta_\cdot - 1/98 OpeR_t + 4/69 AssT_t + 5/62 Q_t - 0/008 Rm_t + 2/69 Size_t - 8/94 DA_t + \varepsilon_t$$

The results obtained Table (9) fourth to sixth sub-hypothesis are confirmed significant relationship between the variable of Return on assets and variables of operating expenses to sales ratio, asset turnover ratio and the Q-Tobin.

Discussion

The results of Table (5) showed findings from the first sub-hypothesis that there is negatively and significantly relationship between operating expenses to sales ratio and return on investment; also findings from the second sub-hypothesis that there is a positive and significantly relationship between asset turnover ratio and return on investment; meanwhile findings from the third sub-hypothesis that there is a positive and significantly relationship between Q-Tobin ratio and return on investment; this part of the research findings agrees the results of Wang (2010). The results of Table (9) showed findings from the fourth sub-hypothesis that

there is a negative and significant relationship between operating expenses to sales ratio and return on asset. Also, findings from the fifth sub-hypothesis that there is a positive and significant relationship between asset turnover ratio and return on asset. Meanwhile, findings from the sixth sub-hypothesis showed that there is a positive and significant relationship between Q-Tobin ratio and return on asset. According to confirmation first to sixth sub-hypothesis, the main hypothesis is verified that there is a significant relationship between agency costs and firm performance.

Conclusions

This part of the research findings agrees the results of Wang (2010). Therefore, it is recommended for all users that consider the role of supervision or disciplinary actions because in their absence when managers are faced with surplus cash, they may misuse the funds in line with their interests. In such a situation, earning

management opportunistic behavior of managers is affected and agency costs increase arising from conflicts of interest between owners and managers.

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