

AGENCY COSTS, MANAGERS OPTIMISM AND INVESTMENT CASH FLOW SENSITIVITY: EVIDENCE FROM TEHRAN STOCK EXCHANGE

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Abstract *The aim of this study is to investigate the relationship between agency costs, manager's optimism and investment cash flow sensitivity in firms listed in Tehran Stock Exchange (TSE). The population of the study is firms listed in TSE and research sample includes 125 firms listed in TSE which is studied during the period of 2007 to 2011. Arsalan et al. (2006) model is used to measure investment cash flow sensitivity. Three proxies are considered to capture agency costs namely free cash flow, assets turnover, and operating cost to sale. Difference between predicted revenue and actual revenue divided by firm's assets measures managers' optimism. The results of the study show that there is a positive significant relationship between free cash flow and operating cost to sale with investment cash flow sensitivity and there is a negative significant relationship between assets turnover and investment cash flow sensitivity. Finally, the results indicate that, there is a positive significant relationship between manager's optimism and investment cash flow sensitivity.*

Keyword: *Agency Costs, Managers Optimism, Investment Cash Flow Sensitivity and Tehran Stock Exchange*

INTRODUCTION

Investment-cash flow sensitivity results from capital market imperfections. According to Modigliani and Miller (1958) when the external capital market is frictionless, internal and external financing are perfect substitutes. In this situation, corporate investment should be unrelated to internal cash flows. This is while the real world capital market is imperfect. The existence of information asymmetry and transaction costs make external financing costlier than internal financing. The difference between internal and external financing costs may lead to dependence of firm's investment on internal cash flow (Chen and Chen, 2013). Investment-cash flow sensitivity has significantly declined in the past 40 years and has completely disappeared in recent years. Investment-cash flow sensitivity was about 0.3 in the 1960s. Since 1997, investment-cash flow sensitivity has been below 0.03 and disappeared in manufacturing as well as nonmanufacturing firms (Chen and Chen, 2012). However, Brown and Petersen (2009) show that for the time period 1970–2006, the investment-cash flow sensitivity: (i) largely disappears for physical investment, (ii) remains comparatively strong for R&D, and (iii) declines, but does not disappear, for total investment.

They argue that these findings can largely be explained by the changing composition of investment and the rising importance of public equity as a source of funds, particularly for firms with persistent negative cash flows. They argue: Perhaps the most important reason is developments in US equity markets over the last three decades. One major improvement was the creation of the Nasdaq in 1971 and repeatedly improved thereafter – which likely gave young firms access to a much more efficient stock exchange than was available to them for most of the 20th century. In the last few decades, there has been a sharp increase in the use of public equity finance by young firms, suggesting that stock issues may have become a closer substitute for internal finance. A second, closely related reason for a declining investment cash flow sensitivity is the sharp increase in the fraction of publicly traded firms that report persistent negative cash flows. Since these firms often make very heavy use of public equity to expand investment when cash flow is particularly low, failure to account for external finance in investment cash flow regressions can result in a downward omitted variable bias in the estimated cash flow coefficient. Third, there has been a sharp change in the composition of total investment: the absolute and relative importance of physical investment

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has declined substantially and R&D intensity has risen dramatically for the typical publicly traded manufacturing firm. Because almost all investment cash flow studies focus on physical investment, the declining relative importance of physical investment can, by itself, lead to a decline in the conventionally measured investment cash flow sensitivity.

Cash flow sensitivity is classified into two groups:

1. Investment cash flow sensitivity which refers to change in capital expenditures depending on changes in cash flows.
2. Cash holding cash flow sensitivity which refers to change in cash holdings depending on changes in cash flows (Dichu et al., 2012). In this study, the first group is our concern.

On the other hand, managers are “optimistic” when they overestimate the probability of good firm performance and underestimate the probability of bad firm performance (Heaton, 2002). The cognitive psychology literature suggests that most people naturally display optimistic expectations about the future. Managers are particularly inclined to exhibit optimism in their decision-making for numerous explanations. First, managers are more optimistic when they have a great deal of control over their firms’ performance. Second, managers are committed to the firms’ good performance because their personal wealth, reputation, and employability are highly dependent on it. Third, people tend to overstate their skills relative to the average of others. A manager who seeks external financing for investment purposes is inclined to overstate the value and importance of the project relative to the average portfolio of the projects introduced by other managers to the market so it is expect to be related investment cash flow sensitivity. The explanations provide foundations of the subject, the impact of managerial optimism on corporate decisions, in behavioural (Lin et al., 2005).

Agency costs result from the conflict of the interests of the owners and managers of firms when the separation of ownership and control exists (Jensen, 1986). Agency problems and managers optimism are expected to reduce firms value. Huang et al. (2010) argue that there is a significant relationship between agency costs and manager’s overconfidence and overconfident managers either over or under invest which leads to inefficiency in investment.

However, taking the presented arguments, this study tries to find answers to following questions:

Is there a significant relationship between agency costs and investment cash flow sensitivity?

Is there a significant relationship between managerial optimism and investment cash flow sensitivity?

LITERATURE REVIEW

Ben Mohamed et al. (2013) conducted an empirical study of investment cash flow sensitivity among NYSE manufacture firms during 1999-2010. Their results report that investment cash flow sensitivity exists and it is significant especially for firms that have agency costs.

Pawlina and Renneboog (2005), in a research titled “Is investment cash flow sensitivity caused by the agency cost or information asymmetry?”, find that the observed cash flow sensitivity results mainly from the agency costs of free cash flow and the magnitude of the relationship depends on insider ownership in a non-monotonic way. Furthermore, they obtain that outside blockholders, such as financial institutions, the government, and industrial firms (only at high control levels), reduce the cash flow sensitivity of investment via effective monitoring. Finally, they find that financial institutions appear to play a role in mitigating informational asymmetries between firms and capital markets.

Drobetz et al. (2009) investigated the relationship between information asymmetry and the value of cash. Their results support the free cash flow theory and indicate that the value of corporate cash holdings is lower in states with a higher degree of information asymmetry.

Xing and Bao (2007) investigated the effects of controlling shareholders agency on debt financing agency costs. Their result shows that the occurrence of controlling shareholders increases the information asymmetry between creditors and shareholders and induces more early investment. Future, they indicate that with the increase of cash flow of controlling shareholders, the agency costs of debt financing decreases and with the increase of separation of cash flow rights and control rights, asset substitution problem becomes severe and the agency costs of debt financing increase.

Singh and Davidson (2003) studied the relationship between agency costs, ownership structure and corporate governance mechanisms and find that managerial ownership is positively related to asset utilization but does not serve as a significant deterrent to excessive discretionary expenses. They also show that outside block ownership may only have a limited effect on reducing agency costs. Furthermore, they indicate smaller boards serve the same role, but independent outsiders on a board do not appear to protect the firm from agency costs.

Huang et al. (2011) examined the effect of agency cost on the relation between top executives’ overconfidence and investment-cash flow sensitivity. They find that on average top executives’ overconfidence leads to increased investment-cash flow sensitivity. However, this relation holds

only for companies with state-owned entities as controlling shareholders. In contrast, the relation is not significant for non-state controlled firms. They find that state-controlled companies have significantly greater agency cost than non-state controlled companies. Their results on sub-samples sorted by agency cost again show that the positive effect of top executives' overconfidence on investment-cash flow sensitivity holds only for companies that exhibit high agency cost. On the whole, their results suggest that agency cost has a significant impact on the relation between top executives' overconfidence and investment-cash flow sensitivity, and the investment distortion due to top executives' overconfidence behaviour may be alleviated by reducing agency cost through elevated supervision.

Jurkus et al. (2011) investigated gender diversity among the top managers and its effect on agency costs. They find that firms with a greater percentage of female officers present lower agency costs but that the negative relation is not robust when considering the endogeneity of diversity. Their study also finds that external governance influences the relationship. Although increasing diversity does not reduce agency costs for all firms, the evidence shows that diversity is significantly negatively related to agency costs in firms in less competitive markets. Their results suggest that increasing diversity in management can have beneficial effects for firms where strong external governance is absent.

Chen and Yur-Austin (2007) examined the effectiveness of blockholders in mitigating agency costs such as managerial extravagance, poor asset management and underinvestment. Their evidence suggests that outside and inside blockholders exert their interventions differently. They find that outside blockholders are more vigilant about mitigating managerial extravagance while inside blockholders, especially managerial blockholders, are more effective in improving the efficiency of firm asset utilization. However, only managerial blockholders significantly overcome underinvestment problems, which may be attributable to their duality roles.

Agca and Mozumdar (2008) investigated the impact of capital market imperfections on investment-cash flow sensitivity and find a steady decline in the estimated sensitivity over time. Furthermore, they find that investment-cash flow sensitivity decreases with increasing fund flows, institutional ownership, analyst following, antitakeover amendments and with the existence of a bond rating. Their evidence suggests that investment-cash flow sensitivity decreases with factors that reduce capital market imperfections.

Ascioglu et al. (2008) explored the relationship between information asymmetry and investment-cash flow sensitivity and show that scaled investment expenditures are on average lower and the investment-cash flow sensitivity is greater when the probability of informed trading is high.

Attig et al. (2012) find that institutional investors with longer investment horizons have greater incentives and efficiencies to engage in effective monitoring. This improved monitoring mitigates asymmetric information and agency problems, and in turn reduces the wedge between the costs of internal and external funds. As a result, the sensitivity of firms' investment outlays to internal cash flows decreases in the presence of institutional investors with long-term investment horizons.

RESEARCH HYPOTHESES

Main hypothesis: There is a significant relationship between agency costs and investment cash flow sensitivity.

Sub-hypothesis 1: There is a significant relationship between free cash flow and investment cash flow sensitivity.

Sub-hypothesis 2: There is a significant relationship between assets turnover and investment cash flow sensitivity.

Sub-hypothesis 3: There is a significant relationship between operational expenses and investment cash flow sensitivity.

Main hypothesis 2: There is a significant relationship between managerial optimism and investment cash flow sensitivity.

METHODOLOGY

Considering that the study tries to find a significant relationship between research variables, the study can be classified as descriptive-correlation research. Archival method is used to develop literature review and data of financial statements are collected from TSE database. Required data are transmitted to Excel software and after calculating the variables, the hypotheses are tested by multiple regression models using Eviews software.

The Population and Statistical Sample

The statistical population of study contains all firms listed in TSE. However, to reach homogenous statistical sample, following conditions are considered:

- 1- Required information for the period of 2007 to 2011 must be available.
- 2- Fiscal year must be ended at the end of year and must not have changed its fiscal year during the period of 2007 to 2011.
- 3- Firms stock must be traded continually during the period of 2007 to 2011.
- 4- Sample firms must not be financial, investment, bank or holding firms.

As a result of putting these conditions a sample of 125 firms is obtained to be studied during the period of 2007 to 2011.

Variables Definition and Measurement

According to Huang et al. (2010) following regression model is used to capture research hypotheses:

$$\text{Investment-Cash Flow Sensitivity}_{i,t} = \beta_0 + \beta_1 \text{FCF}_{i,t} + \beta_2 \text{AT}_{i,t} + \beta_3 \text{OCS}_{i,t} + \beta_4 \text{MO}_{i,t} + \beta_5 \text{OS}_{i,t} + \beta_6 \text{SIZE}_{i,t} + \epsilon_{it}$$

where i and t represents time and firm, respectively.

FCF: Free cash flow

AT: Assets turnover

OCS: operating cost to sale ratio

MO: Managers optimism

OS: Ownership structure

SIZE: Firms size

ϵ : Error term

Independent Variable

In this study cash flow sensitivity is measured by Arsalan et al. (2006) model which is as following:

$$\text{INV}_{i,t} = \beta_0 + \beta_1 \text{CFLOW}_{i,t} + \beta_2 \text{Q}_{i,t} + \epsilon_{it}$$

where i and t is representative for time and firm, respectively.

INV: representative for firm's investment which is calculated by dividing capital investment by net assets at beginning of year.

CFLOW: representative for firm's cash flow which is calculated by dividing cash flow from operational activities by net assets at beginning of year.

Q: growth opportunities which are calculated by dividing stock market value plus debts book value by net assets at beginning of year.

In this model CFLOW coefficient is a proxy for investment cash flow sensitivity.

Independent Variable

In this study, independent variables are agency costs and managers optimism. According to Ang et al. (2000) three proxies are used to capture agency costs namely: free cash flow, asset turnover and operational costs to sale.

Free Cash Flow:

$$\text{FCF}_{i,t} = (\text{INC}_{i,t} - \text{TAX}_{i,t} - \text{INTEP}_{i,t} - \text{PSDIV}_{i,t} - \text{CSDIV}_{i,t})$$

FCF: free cash flow

INC: income before depreciation

TAX: firm's tax

INTEP: firm's interest cost

PSDIV: dividend to preferred share holders

CSDIV: dividend to common share holders

Assets Turnover

Assets turnover is calculated by dividing total sale by total assets. Assets turnover shows the effectiveness of firm's investment decisions and utilization of assets for more selling. This proxy is an adverse measurement of agency costs (more assets turn over, less agency costs).

Operational Costs to Sale

Operational costs to sale is calculated by dividing operational expenses to total sale. This proxy shows that how managers control operational costs. This proxy is a direct adverse measurement of agency costs (more operational costs to sale, more agency costs).

Manager's Optimism:

According to Huang et al. (2011) manager's optimism results from his or her confidence to his or her performance. In this study the difference between predicted revenue and actual revenue divided by firm's assets captures manager's optimism.

Control Variables

Ownership Structure:

Ownership structure can affect investment cash flow sensitivity. Effective blockholders supervision may limit managers option and consequently reduces information asymmetry and investment cash flow sensitivity (Kashanipour et al., 2010). In this study, blockholders are those who hold at least 5 percent of firms total shares.

Firm's Size:

Big firms are less likely to encounter problems in investment absorption. However, these firms face less investment cash flow sensitivity. In this study, natural log of assets is considered as a proxy for firm's size.

Table1: Descriptive Statistic

	ICF	FCF	AT	OCS	MO	OS	SIZE
Mean	0.369460	-0.007423	1.312529	0.755206	41.59292	0.734372	13.38449
Median	0.417000	0.001061	0.724801	0.804781	17.43678	0.790000	13.19747
Maximum	1.444000	8.337673	11.60293	1.752498	4713.370	0.980000	18.11153
Minimum	-1.495000	-6.848583	0.004085	-0.018191	-5338.840	0.105900	10.37610
Std. Dev.	0.492833	0.904527	1.637614	0.239338	742.6005	0.188281	1.484628
Skewness	-0.602644	1.112567	2.395477	-0.950682	0.000582	-1.415055	0.723146
Kurtosis	2.845108	40.63278	10.24303	5.137879	20.79699	4.711020	3.217725
Observations	625	625	625	625	625	625	625

Table 2: Kolmogorov-Smirnov Test

	AT	OCS	OS	Size	MO	FCF	ICF
N	625	625	625	625	625	625	625
Kolmogorov-Smirnov Z	1.304	3.263	1.374	1.065	4.731	8.279	1.047
Sig.	.075	.000	.071	.112	.000	.000	.141

EMPIRICAL RESULTS

Descriptive Statistic

Descriptive statistic of research variable is presented in Table 1.

Notes: ICF is investment cash flow sensitivity, FCF is free cash flow, AT is assets turnover, OCS is operating costs to sale, MO is managers optimism, OS is ownership structure, SIZE is firms size.

Table 1 indicates descriptive statistic of research variables for 625 observations. Mean, median, maximum and minimum are central parameters and std. dev, skewness and kurtosis are dispersion parameters. Mean of investment cash flow sensitivity is rather high that shows investment cash flow sensitivity has not disappeared in TSE as emerging market which is against Chen and Chen (2012) results.

Kolmogorov-Smirnov Test

One of the preconditions of applying regression model is the normality of independent variable. To test the normality of research variables Kolmogorov-Smirnov Test is used whose result is indicated in Table 2.

According to the results of Table 2, assets turnover, ownership structure, firms size and investment cash flow sensitivity have normal distribution. However, the normality of dependent variables is not our concern; what is important is the normality of independent variable to have a normal model. As it is shown in Table 2, investment cash flow

sensitivity has normal distribution which leads to normal model.

Correlation between Research Variables

Correlation shows that how much of changes in one variable are resulted from the other variable and its value varies from -1 to 1; -1 is the most negative correlation and 1 is the most positive correlation. The correlation matrix (above table Pearson and bottom of table Spearman's correlation) between research variables is shown in Table 3.

The results of Table 3 show that the most correlation is between assets turnover and firms size (-.414 and -.569 for Spearman's and Pearson correlation, respectively) which is negative and significant at 99 level. This indicates that bigger firms have less asset turnover and vice versa, therefore more agency cost. The least correlation is between operating costs to sale and asset turnover (.008 and .007 for Spearman's and Pearson correlation, respectively) which is not significant. The low correlation between the most of variables shows that is not a collinearity problem between research variables.

Hypotheses Test

Main hypothesis 1: There is a significant relationship between agency costs and investment cash flow sensitivity.

The results of this hypothesis test are shown in Table 4.

Since F-limer (0.114) is more than 5 percentage confidence level; however, the pooled method is preferred to panel method. In addition, because F-white statistic is 0.000, there

Table 3: Correlations

	ICF	FCF	AT	OCS	MO	OS	Size
ICF	1	.116**	-.253**	.114**	.243**	-.148**	.206**
FCF	.346**	1	-.008	-.304**	.068	-.091*	-.022
AT	-.175**	-.098*	1	-.007	-.028	.088*	-.569**
OCS	.170**	-.015	.008	1	-.034	-.214**	.135**
MO	.115**	.135**	.029	-.024	1	-.002	.050
OS	-.203**	-.252**	.075	-.162**	-.052	1	-.230**
Size	.220**	.246**	-.414**	.130**	.060	-.278**	1

** Significance at 99 level and * Significance at 95 level

Table 4: Summary Results of First Main Hypothesis

	Coefficient	f	Sig
C	0.078	0.299	0.765
FCF	0.165	5.105	0.000
AT	-0.035	-2.425	0.015
OCS	0.322	4.093	0.000
OS	0.018	-1.687	0.092
SIZE	0.179	1.178	0.239
R Square	0.173	F Statistic	27.166
Adjusted R Square	0.173	Sig	0.000
Durbin-Watson	1.646		
Godfrey Statistic	3.914	Sig	0.100
F-white Statistic	7.261	Sig	0.000
F-limer Statistic	1.868	Sig	0.1140

is a heteroskedasticity problem in regression model; however, after solving heteroskedasticity problem, regression model results are shown in Table 4. Godfrey statistic (0.100) shows that there is not a serial autocorrelation. F statistic (0.000) manifests that the whole model is significant at 99 level and Durbin-Watson statistic indicates that there is not autocorrelation problem in models residual since its value is between 1.5 to 2.5 which is acceptable level. Adjusted R square has value of 0.179 showing that 0.179 of independent variable that is investment cash flow sensitivity is explained by dependent and control variables. The results of the first main hypothesis test show that, there is a negative significant relationship between assets turnover and ownership structure with investment cash flow sensitivity and there is a positive relationship between free cash flow and operating cost to sale with cash flow sensitivity. However, the results show that there not a significant relationship between firms size and cash flow sensitivity. Taking the whole results into consideration, there is a significant relationship between agency costs and investment cash flow sensitivity which leads to acceptance of first main hypothesis.

Sub-hypothesis 1: There is a significant relationship between free cash flow and investment cash flow sensitivity.

The results of first sub-hypothesis test are shown in Table 5.

Table 5: Summary Results of First Sub-Hypothesis

	Coefficient	t	Prob.
C	0.012	0.056	0.955
FCF	0.158	4.510	0.000
OS	-0.249	-2.050	0.040
SIZE	0.040	2.968	0.003
R Square	0.146	F Statistic	35.66
Adjusted R Square	0.142	Sig.	0.000
Durbin-Watson	1.541		
Godfrey Statistic	1.689	Sig.	0.159
F-white Statistic	15.237	Sig.	0.000
F-limer Statistic	1.383	Sig.	0.238

Since F-limer (0.238) is more than 5 percentage confidence level; however, the pooled method is preferred to panel

method. In addition, because F-white statistic is 0.000, there is a heteroskedasticity problem in regression model; however, after solving heteroskedasticity problem, regression model results are shown in Table 5. Godfrey statistic (0.159) shows that there is not a serial autocorrelation. F statistic (0.000) manifests that the whole model is significant at 99 level and Durbin-Watson statistic indicates that there is not autocorrelation problem in models residual since its value is between 1.5 and 2.5 which is acceptable level. Adjusted R square has value of 0.142 showing that 0.142 of independent variable that is investment cash flow sensitivity is explained by dependent and control variables. The results of the first sub-hypothesis test show that, there is a negative significant relationship between ownership structure and investment cash flow sensitivity and there is a positive relationship between free cash flow and firm's size with cash flow sensitivity. However, taking the whole results into consideration, there is a significant relationship between free cash flow as a proxy for agency costs and investment cash flow sensitivity which leads to acceptance of first sub-hypothesis.

Sub-hypothesis 2: There is a significant relationship between assets turnover and investment cash flow sensitivity.

The results of second sub-hypothesis test are shown in Table 6.

Table 6: Summary Results of Second Sub-Hypothesis

	Coefficient	t	Prob.
C	0.134	0.542	0.587
AT	-0.032	-2.184	0.029
OS	-0.413	4.191	0.000
SIZE	0.043	2.834	0.004
R Square	0.079	F Statistic	17.955
Adjusted R Square	0.075	Sig.	0.000
Durbin-Watson	1.623		
Godfrey Statistic	17.995	Sig.	0.121
F-white Statistic	2.315	Sig.	0.000
F-limer Statistic	6.182	Sig.	0.267

Since F-limer (0.267) is more than 5 percentage confidence level; however, the pooled method is preferred to panel method. In addition, because F-white statistic is 0.000, there is a heteroskedasticity problem in regression model; however, after solving heteroskedasticity problem, regression model results are shown in Table 6. Godfrey statistic (0.121) shows that there is not a serial autocorrelation. F statistic (0.000) manifests that the whole model is significant at 99 level and Durbin-Watson statistic indicates that there is not autocorrelation problem in models residual since its value is between 1.5 and 2.5 which is acceptable level. Adjusted R square has value of 0.075 showing that 0.075 of independent variable that is investment cash flow sensitivity is explained by dependent and control variables. The results of the second

sub-hypothesis test show that, there is a negative significant relationship between ownership structure and assets turnover with investment cash flow sensitivity and there is a positive relationship between firm's size and cash flow sensitivity. However, taking the whole results into consideration, there is a significant relationship between assets turnover as a proxy for agency costs and investment cash flow sensitivity which leads to acceptance of second sub-hypothesis.

Sub-hypothesis 3: There is a significant relationship between operational expenses and investment cash flow sensitivity.

The results of third sub-hypothesis test are shown in Table 7.

Table 7: Summary Results of Third Sub-Hypothesis

	Coefficient	t	Prob.
C	-0.302	-1.243	0.214
OCS	0.261	2.909	0.003
OS	0.356	-3.476	0.000
SIZE	0.054	3.810	0.000
R Square	0.085	F Statistic	19.402
Adjusted R Square	0.081	Sig.	0.000
Durbin-Watson	1.621		
Godfrey Statistic	1.718	Sig.	0.153
F-white Statistic	4.558	Sig.	0.000
F-limer Statistic	2.213	Sig.	0.066

Since F-limer (0.066) is more than 5 percentage confidence level; however, the pooled method is preferred to panel method. In addition, because F-white statistic is 0.000, there is a heteroskedasticity problem in regression model; however, after solving heteroskedasticity problem, regression model results are shown in Table 6. Godfrey statistic (0.153) shows that there is not a serial autocorrelation. F statistic (0.000) manifests that the whole model is significant at 99 level and Durbin-Watson statistic indicates that there is not autocorrelation problem in models residual since its value is between 1.5 and 2.5 which is acceptable level. Adjusted R square has value of 0.081 showing that 0.081 of independent variable that is investment cash flow sensitivity is explained by dependent and control variables. The results of the third sub-hypothesis test show that, there is a negative significant relationship between ownership structure and investment cash flow sensitivity and there is a positive relationship between firm's size and operating cost to sale with cash flow sensitivity. However, taking the whole results into consideration, there is a significant relationship between operating cost to sale as a proxy for agency costs and investment cash flow sensitivity which leads to acceptance of third sub-hypothesis.

Main hypothesis 2: There is a significant relationship between managerial optimism and investment cash flow sensitivity.

The results of second main hypothesis test are shown in Table 8.

Table 8: Summary Results of Second Main Hypothesis

	Coefficient	t	Prob.
C	-0.112	-0.488	0.625
MO	6.430	2.590	0.009
OS	-0.391	-3.967	0.000
SIZE	-0.057	4.008	0.000
R Square	0.079	F Statistic	17.877
Adjusted R Square	0.075	Sig.	0.000
Durbin-Watson	1.646		
Godfrey Statistic	2.311	Sig.	0.121
F-white Statistic	4.213	Sig.	0.000
F-limer Statistic	1.897	Sig.	0.149

Since F-limer (0.149) is more than 5 percentage confidence level; however, the pooled method is preferred to panel method. In addition, because F-white statistic is 0.000, there is a heteroskedasticity problem in regression model; however, after solving heteroskedasticity problem, regression model results are shown in Table 6. Godfrey statistic (0.121) shows that there is not a serial autocorrelation. F statistic (0.000) manifests that the whole model is significant at 99 level and Durbin-Watson statistic indicates that there is not autocorrelation problem in models residual since its value is between 1.5 and 2.5 which is acceptable level. Adjusted R square has value of 0.075 showing that 0.075 of independent variable that is investment cash flow sensitivity is explained by dependent and control variables. The results of the second hypothesis test show that, there is a negative significant relationship between ownership structure and investment cash flow sensitivity and there is a positive relationship between firm's size and manager's optimism with cash flow sensitivity. However, taking the whole results into consideration, there is a significant relationship between manager's optimism and investment cash flow sensitivity which leads to acceptance of second hypothesis.

DISCUSSION AND CONCLUSION

The aim of this study is to investigate the relationship between agency costs, manager's optimism and investment cash flow sensitivity in firms listed in Tehran Stock Exchange (TSE). The population of the study is firms listed in TSE and research sample includes 125 firms listed in TSE which is studied during the period of 2007 to 2011. Arsalan et al. (2006) model is used to measure investment cash flow sensitivity. Three proxies are considered to capture agency costs namely free cash flow, assets turnover and operating cost to sale. Difference between predicted revenue and actual revenue divided by firm's assets measures managers'

optimism. In addition, two control variables are considered, ownership structure and firms size. Ownership structure is measured by blockholders and firm's size is captured by natural log of firm's assets.

In this study, two main hypotheses are developed to capture the aim of study. First hypothesis argues that there is a significant relationship between agency costs and investment cash flow sensitivity. To test this hypothesis, three sub-hypotheses are considered. First sub-hypothesis posits that there is a significant relationship between free cash flow and investment cash flow sensitivity. The results of the first sub-hypothesis test show that there is a negative significant relationship between ownership structure and investment cash flow sensitivity and there is a positive relationship between free cash flow and firm's size with cash flow sensitivity. However, taking the whole results into consideration, there is a significant relationship between free cash flow as a proxy for agency costs and investment cash flow sensitivity which leads to acceptance of first sub-hypothesis.

Second sub-hypothesis manifests that there is a significant relationship between assets turnover and investment cash flow sensitivity. The results of the second sub-hypothesis test show that there is a negative significant relationship between ownership structure and assets turnover with investment cash flow sensitivity and there is a positive relationship between firm's size and cash flow sensitivity. However, taking the whole results into consideration, there is a significant relationship between assets turnover as a proxy for agency costs and investment cash flow sensitivity which leads to acceptance of second sub-hypothesis.

Third sub-hypothesis supposes that there is a significant relationship between operational expenses and investment cash flow sensitivity. The results of the third sub-hypothesis test show that there is a negative significant relationship between ownership structure and investment cash flow sensitivity and there is a positive relationship between firm's size and operating cost to sale with cash flow sensitivity. However, taking the whole results into consideration, there is a significant relationship between operating cost to sale as a proxy for agency costs and investment cash flow sensitivity which leads to acceptance of third sub-hypothesis.

The results as to the relationship between agency costs and investment cash flow sensitivity is according to the results of Pawlina and Renneboog (2005).

Second main hypothesis argues that there is a significant relationship between managerial optimism and investment cash flow sensitivity. The results of the second hypothesis test show that there is a negative significant relationship between ownership structure and investment cash flow sensitivity and there is a positive relationship between firm's size and manager's optimism with cash flow sensitivity.

However, taking the whole results into consideration, there is a significant relationship between manager's optimism and investment cash flow sensitivity which leads to acceptance of second hypothesis. This result is consistent with the results of Huang et al. (2011).

These results suggest that agency cost and managers overconfidence are effective factors on investment cash flow sensitivity that should be taken into account by financial statement users and also regulation and standards setting boards.

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