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The Relationship Between Social Responsibility and Investment-Cash Flow Sensitivity and the Role of Agency Costs

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Abstract

In this study, the relationship between social responsibility and investment-cash flow sensitivity and the role of agency costs in companies listed on Tehran Stock Exchange were investigated. To this end, 127 companies were examined during the period 2011-2016. The required data in this research was extracted, classified and calculated using Excel software and finally, the hypotheses were tested at a 95% confidence level through Eviews and Stata software. The results obtained from hypothesis testing demonstrated that corporate social responsibility negatively moderates investment-cash flow sensitivity. Furthermore, no reliable evidence was found in relation to the effectiveness of agency costs in the relationship between social responsibility and investment-cash flow sensitivity at a 95% confidence level.

Keywords: Agency costs; Investment-cash flow sensitivity; Social responsibility.

1. Introduction

Since in a business unit, cash flows are one of the most basic events according to which accounting measurement is performed (Rabi'ei and Alipour, 2013) and are somehow considered as one of the criteria for assessing the corporate ability, they play a considerable role in investment, which is referred to as investment-cash flow sensitivity in financial literature. Garcia and Sogorb- Mira (2014) believe that investment-cash flow sensitivity represents the amount of the company's reliance on domestic resources. Accordingly, the higher the rate of corporate investment-cash flow sensitivity, the greater the company reliance on domestic resources will be and such a company will enjoy more financial constraints (Garcia and Sogorb- Mira, 2014).

In incomplete markets, the company's investment decisions depend on its financial situation. If participants in the capital market face considerable uncertainty about the company's future prospect, the cost of providing foreign capital is often more than internal financing. This increases sensitivity of investment to internal funds (Samet and Jarboui, 2017). Consequently, the amount of the company's reliance on domestic resources is determined by its investment-cash flow sensitivity. Thus, one of the major domestic resources of companies is the operating cash flow. Fazzari *et al.* (1988) revealed that there is a direct relationship between investment and operating cash flow. They introduced an indicator called investment-cash flow sensitivity. This indicator is defined through measuring the amount of changes in the company's capital expenditures per unit of change in the operating cash flow. Investment-cash flow sensitivity indicates the amount of a company's reliance on domestic resources (Fazzari *et al.*, 1988),. Funding constraints are created in years with low cash flows; i.e. investment at a time when the shortage of domestic funds accelerates due to less capability to acquire foreign capital. In years with low cash flows, creation of debt in these companies is less provided. This suggests that probably the cost of borrowing is high (Hovakimian *et al.*, 2001). Contribution of extra-organizational partners is costly probably because the ratio of market value to book value of equity in companies sensitive to cash flow is low in these years. Therefore, external financing is expected to have a potential relationship with investment-cash flow sensitivity since in this study, Kim (2014) divided external financing into two groups: First, positive net external financing and second, negative net external financing. Additionally, flexibility of companies with high levels of external financing depends on reduced levels of internal cash flow. On average, external financing for financially limited companies is greater than unlimited companies. The results obtained by Kim (2014) disclosed that there is a negative relationship between external financing and investment-cash flow sensitivity. Besides, it was demonstrated that companies with positive net external financing have less investment-cash flow sensitivity compared to other groups.

In summary, research findings confirm a positive relationship between investment and cash flow. This sensitivity is due to the difference excess in costs between domestic and foreign capital. Choosing how to finance is effective in investment decisions (due to tax issues), agency costs, stock issue costs and information asymmetry. Companies need cash to take advantage of investment opportunities (Samet and Jarboui, 2017). In this study, the role of corporate social responsibility in investment-cash flow sensitivity will be investigated since this topic has been

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less considered. Samet and Jarboui (2017) illustrated that companies with better social responsibility experience less investment-cash flow sensitivity. They argue that corporate social responsibility facilitates access to foreign financial resources and hence, investment dependence on domestic resources will be reduced. Indeed, better access to capital will be due to the reduction in agency costs caused by free cash flows. Based on the foregoing, the main research question is whether corporate social responsibility moderates investment-cash flow sensitivity and also whether agency costs affect the relationship between social responsibility and investment-cash flow sensitivity. Accordingly, this study aims to investigate the role of corporate social responsibility in investment-cash flow sensitivity and also the impact of agency costs on this relationship.

Today, considering the importance and increasing expansion of capital markets in equipping and collecting small individual investments towards productive activities, identification of investors' behavior and variables affecting the price and return of stocks in these markets has become very important. On one hand, given that Tehran Stock Exchange has been grappling with a lot of ups and downs at the time of its activity, conducting extensive research in this field is necessary (Heydarpour and Zare', 2014). On the other hand, to evaluate the business unit, investors, creditors and other stakeholders attach great importance to its ability to create and increase cash. Cash flows play a central role in many financial decisions, securities valuation models, capital projects evaluation techniques, management reward schemes, loan contracts and so on (Rahmani and Montazer, 2013). Recent studies carried out in Iran to determine the relationship between investment and domestic resources (cash flows) have used criteria for corporate cash reserves and financial constraints while the current research, for the first time in Iran, emphasizes social responsibility for determining the relationship between investment and cash flows. The reason for this emphasis is that the growth potential of a company has roots in investment opportunities resulting from the fulfillment of social responsibility. If investment-cash flow sensitivity changes with a change in social responsibility, then the evidence associated with this relationship can be useful in improving how to choose financing and investment decisions.

2. Research Theoretical Foundations

2.1. Social Responsibility

Pervasive predominance of corporate social responsibility (CSR) has manifested a domain that embraces multiple topics: Sustainable development, environmental protection, social equity and sustainable economic growth. In this context, business ethics also provide the underlying foundation for business through which improved work situation becomes possible. In the same vein, quality management is also based on ethics, leading to theoretical and practical progress of the business (Zairi and Peters, 2002). Besides, there is a close relationship between work ethics and corporate social responsibility. It is argued that it can have a significant impact on corporate social responsibility; an impact that is more important today than before. On the other hand, the issues raised in corporate social responsibility are also closely related to the principles of quality management. Quality researchers and practitioners should observe ethical principles in quality management programs and should act in such a way that quality management has a leading role in promoting ethical business practices. Corporate social responsibility is considered as an important stimulus in paying more attention to society as the main beneficiary of organizational activities although it should be noted that the focus on social issues is not a new concept. For example, in the topics of total quality management, there are many guidelines for emphasizing the importance of stakeholders. For example, Deming has argued that statistical quality techniques should not be limited to financial and economic applications. He emphasized on social participation, which is shaped by the application of quality techniques. He has laid great stress on social participation, which is shaped by the application of quality techniques (Jacques, 1999).

In the academic world, studies in the field of quality management and work ethics have often been separated. One reason for this issue is that the origins of these two topics are very different. Business ethics originate from philosophy whereas quality management is the result of theoretical and practical management research. With regard to the growth and development of both topics, there are solid reasons for linking these two: In both, there are common issues and practices concerning responsibility (Fisscher and Nijhof, 2005).

2.2. Investment-Cash Flow Sensitivity

Investment-cash flow sensitivity is investment response to the amount of cash flow generated by the company (Carpenter and Petersen, 2002). Sensitivity is measured through the coefficient prepared by regressing investment-cash flow with the control of growth opportunities by Tobin's Q (Fazzari *et al.*, 1988). Fazzari *et al.* (1988) stated that companies with low dividend ratio have greater sensitivity to cash flow volatility compared to companies with higher dividend ratio.

Since cash flows of investors and creditors depend on cash flows of the profit unit, profit units invest in non-cash resources which are looking for investment returns in addition to obtaining additional cash. This process is called financial flexibility in theoretical concepts of financial reporting. Financial flexibility means the ability of the business unit to take effective action to change the amount and timing of cash flows so that the business unit can respond to unexpected events and opportunities. Financial flexibility enables the business unit to properly exploit unexpected investment opportunities and continue its economic activity when cash flows from operations are low and probably negative due to an unexpected decline in demand for manufactured products of the business unit. It is evident that the higher the financial flexibility of the business unit, the greater the ability to respond to unexpected opportunities will be. Financial flexibility is usually raised in the field of financial decisions. Based on theoretical foundations, cases such as decisions on cash management, savings, distribution of profits, how to finance,

investment and the like can be mentioned as examples of such financial decisions (Hasani, 2013). In this study, specific attention has been paid to the aspect of investment decisions and the focus is on the amount of investment-cash flow sensitivity.

2.3. Agency Costs

When the manager has less than 100% of the corporate shares, the agency problem is potentially created. If the company is of individual ownership, management is in the hands of the owner and the owner and the manager act in a bid to maximize their welfare and measure welfare in terms of increasing assets, having more leisure and increasing personal wealth. But if a manager who owns the company sells some of his shares to others after establishing the company, immediately conflicts of interest arise. In such a case, the owner manager may change his lifestyle and may not engage in difficult jobs in order to maximize the shareholder wealth or may decide to consume some of his assets because some of these costs will be imposed upon the shareholders. In most large companies, the conflict of interests of the agent is of great importance since usually, managers of large companies are the owner of only a small percentage of the shares of these companies. In such a case, the issue of shareholder wealth maximization does not take priority and this goal will be in conflict with management objectives; for instance, the primary goal of managers may be to increase and develop the company (Brigham and Davis, 1996). The agency cost is a type of internal cost that must be paid to an agent acting on behalf of a manager. These costs arise from issues such as conflicts of interest between shareholders and management (Namazi, 2005).

2.4. Research Literature Review

Kashanipour *et al.* (2010) investigated investment-cash flow sensitivity and came to the conclusion that companies with financing constraints enjoy higher investment-cash flow sensitivity compared to companies with no financing constraints and put greater emphasis on internal cash flows when making investment decisions. Arab Arab Salehi and Ashrafi (2011) conducted a study and examined the relationship between financial constraints and investment-cash flow sensitivity. The research findings indicate the positive role of cash reserves in reduced investment-cash flow sensitivity of companies. On the other hand, no particular advantage was observed in using the optimal cash reserve model relative to traditional criteria of financial constraints. Haqiqat and Zargar (2013) concluded that there is a positive relationship between capital expenditures and cash flows and companies with no financial constraints have more investment-cash flow sensitivity compared to companies with financial constraints. Additionally, another finding of this study suggests that the interaction between cash holdings and investment-cash flow sensitivity is negative and this relationship is stronger in firms with financial constraints. Findings of the research by Pourheydari and Qasemi (2014) revealed that no significant relationship exist between cash flows and investment in member companies. Abbasi and Parhun (2016) performed a study and demonstrated that investment opportunities and cash flows have a significant positive impact on corporate investment. Moreover, findings displayed that investment-cash flow sensitivity in companies with higher investment opportunities is less than companies with lower investment opportunities.

In a research on New York Stock Exchange market, Almeida and Campello (2010) proved that cash flow sensitivity is a more suitable criterion for identifying financial constraints. The results obtained by Bao *et al.* (2012) uncovered that in a situation where the business unit has positive cash flows, it will have less willingness to hold cash and in a situation where it has negative cash flows, the willingness to hold cash is greater. Further, companies with financing constraints compared to companies with no financing constraints show less willingness to invest in new projects and provide funding for unprofitable projects. The results of the study by Kim (2014) exhibited that companies with financial constraints have less investment-cash flow sensitivity compared to unlimited companies. Findings of the research by Garcia and Sogorb- Mira (2014) suggest that both in limited companies and in companies with no financial constraints, there is a negative relationship between operating cash flows and external financing. Espallier and Guariglia (2015) reported that investment-cash flow sensitivity for small and medium-sized companies does not easily reflect investment opportunities and perhaps, the previous literature on this subject is exaggerated. The results of the study by Samet and Jarboui (2017) indicated that investment-cash flow sensitivity in companies with high social responsibility is lower. Besides, their results disclosed that free cash flows as an agency cost reduce the negative impact of social responsibility on investment-cash flow sensitivity. In other words, agency costs have a positive effect on the relationship between social responsibility and investment-cash flow sensitivity.

2.5. Research Methodology

This research is an applied study in terms of purpose and is a descriptive-correlations research in terms of nature and method since it examines the relationship between several variables. All of the companies accepted in Tehran Stock Exchange constitute the statistical population of the present research, which must possess the following characteristics: 1) Companies must be present in the stock exchange from 2011 to 2016; 2) the intended companies should not be banks, financial intermediaries, leasing companies or other investment companies; 3) data of the companies should not be incomplete. The temporal scope of the research is from the beginning of 1390 (2011) to the end of 1395 (2016). With regard to the above limitations, 127 companies were selected as the sample. After collecting the data needed for the research, Excel software was employed to calculate and prepare the variables and for hypothesis testing, combined data was used. To determine the type of combined data, F Limer and Hausman tests were applied. Additionally, to test the overall significance of the fitted regression model, F statistic was used at a 95% confidence level and to test the significance of each independent variable, Student's t-test was employed. Also, Wooldridge test and adjusted Wald test were applied respectively for testing the existence of autocorrelation

between model errors and heterogeneity of variance. Eviews and Stata were also used for the analysis of the above tests, correlation between variables and multivariate linear regression and other tests.

2.6. Research Hypotheses and Models

First hypothesis: Corporate social responsibility moderates investment-cash flow sensitivity.

Following Samet and Jarboui (2017), model (1) is used to test the first hypothesis.

Model (1)

$$\left(\frac{I_{it}}{K_{it}}\right) = \alpha_1 \left(\frac{S_{it}}{K_{it-1}}\right) + \alpha_2 \left(\frac{CF_{it}}{K_{it-1}}\right) + \alpha_3 CSR_{it} + \alpha_4 CSR_{it} * \left(\frac{CF_{it}}{K_{it-1}}\right) + \alpha_5 \left(\frac{I_{it}}{K_{it-1}}\right) + \alpha_6 \left(\frac{I_{it}}{K_{it-1}}\right)^2 + \alpha_7 \left(\frac{D_{it}}{K_{it-1}}\right)^2 + \beta_i + \beta_t + \varepsilon_{it}$$

Here:

I_{it}: Investment in fixed assets of the company i during the period t

K_{it}: Total capital of the company i during the period t

K_{it-1}: Total capital of the company i during the period t-1

S_{it}: Total sales of the company i during the period t

CF_{it}: Cash flow of the company i during the period t

CSR_{it}: Social responsibility of the company i during the period t

$CSR_{it} * \left(\frac{CF_{it}}{K_{it-1}}\right)$: Moderating effect of social responsibility and cash flow of the company i during the period t

D_{it}: Total debts of the company i during the period t

β_i: Year fixed effects for the company i during the period t

β_t: Period fixed effects for the company i during the period t

ε_{it}: Model error

To test the first research hypothesis, the coefficient of the variable $\alpha_4 CSR_{it} * \left(\frac{CF_{it}}{K_{it-1}}\right)$ in the model (1) is examined. If the significance level obtained for the coefficient of the above mentioned variable is less than 0.05 and the value obtained from t-test is negative (positive), then the first research hypothesis is not rejected.

Second hypothesis: Agency costs affect the relationship between social responsibility and investment-cash flow sensitivity.

Following Samet and Jarboui (2017), the three models below are used to test the second hypothesis.

In the first step, the effect of the independent variable (corporate social responsibility) on the dependent variable (investment-cash flow sensitivity) is investigated using the following model.

Model (2)

$$\left(\frac{I_{it}}{K_{it}}\right) = \alpha_1 \left(\frac{S_{it}}{K_{it-1}}\right) + \alpha_2 \left(\frac{CF_{it}}{K_{it-1}}\right) + \alpha_3 CSR_{it} + \alpha_4 CSR_{it} * \left(\frac{CF_{it}}{K_{it-1}}\right) + \alpha_5 \left(\frac{I_{it}}{K_{it-1}}\right) + \alpha_6 \left(\frac{I_{it}}{K_{it-1}}\right)^2 + \alpha_7 \left(\frac{D_{it}}{K_{it-1}}\right)^2 + \beta_i + \beta_t + \varepsilon_{it}$$

In the first step, the role of the moderating variable (agency cost) is assessed using the model (3).

Model (3)

$$FCF_{it} = \alpha_1 \left(\frac{CF_{it}}{K_{it-1}}\right) + \alpha_3 CSR_{it} + \alpha_4 CSR_{it} * \left(\frac{CF_{it}}{K_{it-1}}\right) + \beta_i + \beta_t + \varepsilon_{it}$$

Then, the residue obtained from the model (3) enters the model (4) in the form of the symbol FCF_{it}.

Model (4)

$$\left(\frac{I_{it}}{K_{it}}\right) = \alpha_1 \left(\frac{S_{it}}{K_{it-1}}\right) + \alpha_2 \left(\frac{CF_{it}}{K_{it-1}}\right) + \alpha_3 CSR_{it} + \alpha_4 CSR_{it} * \left(\frac{CF_{it}}{K_{it-1}}\right) + \alpha_5 FCF_{it} + \alpha_6 \left(\frac{I_{it}}{K_{it-1}}\right) + \alpha_7 \left(\frac{I_{it}}{K_{it-1}}\right)^2 + \alpha_8 \left(\frac{D_{it}}{K_{it-1}}\right)^2 + \beta_i + \beta_t + \varepsilon_{it}$$

To test the second research hypothesis, the coefficient of the variable $\alpha_5 FCF_{it}$ is examined in the model (4). If the significance level obtained for the coefficient of the mentioned variable is lower than 0.05 and the value obtained from t-test is negative (positive), then the second research hypothesis is not rejected.

Here:

I_{it}: Investment in fixed assets of the company i during the period t

K_{it}: Total capital of the company i during the period t

K_{it-1}: Total capital of the company i during the period t-1

S_{it}: Total sales of the company i during the period t

CF_{it}: Cash flow of the company i during the period t

CSR_{it}: Social responsibility of the company i during the period t

$CSR_{it} * \left(\frac{CF_{it}}{K_{it-1}}\right)$: Moderating effect of social responsibility and cash flow of the company i during the period t

FCF_{it}: Agency cost of the company i during the period t

D_{it}: Total debts of the company i during the period t

β_i: Year fixed effects for the company i during the period t

β_t: Period fixed effects for the company i during the period t

ε_{it}: Model error

2.6.1. Dependent Variable; Investment-cash Flow Sensitivity

Following Chen *et al.* (2013), George *et al.* (2011) and Samet and Jarboui (2017), investment-cash flow sensitivity is evaluated using the model (5).

$$\left(\frac{I_{it}}{K_{it}}\right) = \alpha_1 \left(\frac{S_{it}}{K_{it-1}}\right) + \alpha_2 \left(\frac{CF_{it}}{K_{it-1}}\right) + \alpha_3 \left(\frac{I_{it}}{K_{it-1}}\right) + \alpha_4 \left(\frac{I_{it}}{K_{it-1}}\right)^2 + \alpha_5 \left(\frac{D_{it}}{K_{it-1}}\right)^2 + \beta_i + \beta_t + \varepsilon_{it}$$

Here:

I_{it}: Investment in fixed assets of the company i during the period t

K_{it}: Total capital of the company i during the period t

K_{it-1}: Total capital of the company i during the period t-1

S_{it}: Total sales of the company i during the period t

CF_{it}: Cash flow of the company i during the period t

D_{it}: Total debts of the company i during the period t

β_i: Year fixed effects for the company i during the period t

β_t: Period fixed effects for the company i during the period t

ε_{it}: Model error

2.6.2. Independent Variable; Social Responsibility

The independent variable of this study is social responsibility that has been measured based on the criteria provided by the American Institute known as KLD which ranks organizations each year according to social and environmental criteria. Social responsibility in this research has four dimensions, each having its own strengths and weaknesses. By subtracting the strengths from the relevant weaknesses, the score of that dimension is obtained. Finally, by summing up all of the above dimensions, a total score will be obtained for social responsibility (Hajiha and Sarfaraz, 2014). Some of the strengths and weaknesses of social responsibility dimensions are summarized in Table (1):

Table-1. Social Responsibility Dimensions Along with Their Strengths and Weaknesses

Social Responsibility Dimensions	Strengths	Score	Weaknesses	Score
Social participation	1- Charity aids 2- Innovative contributions (assistance to non-profit organizations, participation in public plans)		1- Negative economic impact (negative effect on quality of life, closure of the factory) 2- Non-payment of taxes	
	Total score of the disclosure of social			

	participation			
Staff relations	1- Sharing cash profit 2- Retirement benefits		1- Health and safety weaknesses 2- Reduced workforce	
	Total score of the disclosure of staff relations			
Environment	1- Clean energy (using less polluting fuel) 2- Air pollution control and reduced greenhouse gases		1- Production of hazardous waste 2- Paying fines due to waste management violations	
	Total score of environmental disclosure			
Product features	1- Product quality 2- Product safety		1- Paying fines for product safety 2- Paying fines for negative advertising	
	Total score of the disclosure of product features			
Sum of scores				

2.6.3. Moderator Variable

The moderator variable in this research is the agency cost (FCF) and following Samet and Jarboui (2017), free cash flows are used.

2.6.4. Free Cash Flows

In this study, following Rostami *et al.* (2014), a model is applied to measure free cash flows of the business unit (Rostami *et al.*, 2014). Based on the aforesaid model, free cash flows are calculated using the following formula:

Equation (1)

$$FCF_{i,t} = (INC_{i,t} + TAX_{i,t} + INTEP_{i,t} + PSDIV_{i,t} + CSDIV_{i,t})/A_{i,t-1}$$

In which:

$FCF_{i,t}$: Free cash flows of the company i in the year t

$INC_{i,t}$: Operating profit before depreciation of the company i in the year t

$TAX_{i,t}$: Total tax paid of the company i in the year t

$INTEP_{i,t}$: Interest expense paid of the company i in the year t

$PSDIV_{i,t}$: Preferred shareholders dividends paid of the company i in the year t

$CSDIV_{i,t}$: Common shareholders dividends paid of the company i in the year t

$A_{i,t-1}$: Total book value of assets of the company i in the year t-1

3. Results

3.1. Descriptive Statistics

As can be observed in Table (2), descriptive statistics include mean, median, minimum, maximum, standard deviation, skewness and kurtosis, which are the most famous and at the same time most widely used indicators of descriptive statistics. Mean represents the average data. Skewness and kurtosis are indictors of data symmetry and indicate their status relative to the normal distribution.

Table-2. Descriptive Statistics of the Model Variables

Variables	Mean	Maximum	Minimum	SD
Investment to the current year capital	0/03	0/75	-0/62	0/10
Total sales	1/02	3/94	0/02	0/60
Cash flows	0/05	1/08	0/00	0/08
Investment to the previous year capital	0/05	2/33	-0/63	0/18
Social responsibility	1/53	7/00	0/00	1/22
Agency cost	-0/00	0/61	-1/66	0/16

The main central index is mean, which represents the equilibrium point and distribution gravity center and is a good indicator to show data centrality. For example, the average value for social responsibility is equal to 1.53, which indicates that most data are centered around this point. Dispersion parameters are criteria for determining the degree of dispersion from each other or their dispersion relative to the mean. Among the most important dispersion parameters is standard deviation. Among the variables, cash flow has the lowest level of dispersion and social responsibility has the highest dispersion.

Given that the data used in this research are of a combined type (year-company) and the combined data are in the form of panel and integrated data, F Limer test was employed to choose between panel and integrated data methods in model estimation. A summary of F Limer test results is presented in Table (3).

Table-3. F Limer Test Results

Model	F Limer test		
	Statistic value	Probability	Result
1	0/8930	0/7817	Integrated method
2	0/8886	0/7918	Integrated method

The probability of model statistics is less than 0.05. Thus, integrated data method is accepted.
The summary of the results of heterogeneity of variance and autocorrelation tests are displayed in Table (4).

Table-4. Results of Heterogeneity of Variance and Autocorrelation Tests

Model	Adjusted Wald test to Determine the Heterogeneity of Variance		Wooldridge Test to Determine Autocorrelation	
	Probability	Result	Probability	Result
1	0.000	Heterogeneity of variance	0.000	Lack of autocorrelation
2	0.000	Heterogeneity of variance	0.000	Lack of autocorrelation

According to Table (4), the probability of the obtained statistic for non-heterogeneity of variance test is equal to 0.000 for the research models, which is lower than the error level of 0.05. Therefore, the null hypothesis (homogeneity of variance) is rejected, which suggests the existence of heterogeneity of variance. In addition, given that the probability of the Wooldridge test statistic for the research model is less than 0.05, it was determined that the remainders of the regression model lack autocorrelation. To eliminate heterogeneity of variance, generalized least squares (GLS) method has been used.

In this study, to test the overall significance of the model, F statistic was applied and to test the significance of regression coefficients, t statistic was used. Considering the regression models related to the first and second hypotheses, if t statistic probability for the variable ($CSR_{it} * \left(\frac{CF_{it}}{K_{it-1}}\right)$, FCF_{it}) is less than the error level of 0.05, the first and second hypotheses are confirmed.

Table-5. Results of Data Analysis to Test the First Hypothesis

Variable	Coefficients	Standard Error	T Statistic	Significance
Y-intercept	0/002747	0/000753	3/647318	0/0003
Total sales	-0/003185	0/000768	-4/146258	0/000
Cash flow	-0/007871	0/006883	-1/143619	0/2532
Social responsibility	0/00015	0/000133	1/128333	0/2596
Moderating effect of social responsibility and cash flow	-0/008564	0/003037	-2/820199	0/0356
Investment to the previous year capital	0/785288	0/005952	131/9416	0/000
Investment to the second power	-0/240278	0/006498	-36/97903	0/0000
Debts to the second power	-0/0011	0/000745	-1/475967	0/1405
The coefficient of determination	0/8868	The adjusted coefficient of determination		0/8840
F statistic	353/6793	F statistic significance		0/0000

According to Table (5), the probability value obtained for F statistic is less than 0.05. Hence, this model is significant at a 95% confidence level. The coefficient of determination of the first research model is 0.8868, which shows that 88.68% of the changes in the dependent variable (investment to the current year capital) are explained by the independent and control variables. Furthermore, the variable coefficient of the moderating effect of social responsibility and cash flow is equal to -0.002369, which is negative and the probability of t statistic for the variable of the moderating effect of social responsibility and cash flow ($CSR_{it} * \left(\frac{CF_{it}}{K_{it-1}}\right)$) is equal to 0.0356. This probability is lower than the error level of 0.05. Thus, corporate social responsibility moderates investment-cash flow sensitivity. As a result, the first research hypothesis is not rejected at a 95% confidence level. It should be noted that among the control variables, investment to the previous year capital (I_{it}/K_{it-1}) and investment to the second power (I_{it}/K_{it-12}) have a significant impact on investment to the current year capital.

Table-6. Results of Data Analysis to Test the Second Hypothesis

Variable	Coefficients	Standard error	T statistic	Significance
Y-intercept	0/002747	0/000785	3/500814	0/0005
Total sales	-0/003186	0/000792	-4/023915	0/0001
Cash flow	-0/007859	0/006928	-1/134371	0/2571
Social responsibility	0/000153	0/000136	1/124481	0/2612
Moderating effect of social responsibility and cash flow	0/002394	0/003052	-0/784353	0/4331
Agency costs	0/0000245	0/000799	0/030621	0/9756
Investment to the previous year capital	0/785357	0/005972	131/5018	0/000
Investment to the second power	-0/240297	0/006505	-36/94242	0/000
Debts to the second power	-0/001109	0/000759	-1/460278	0/1447
The coefficient of determination	0/7868	The adjusted coefficient of determination		0/6940
F statistic	350/4252	F statistic significance		0/0000

Considering Table (6), the coefficient of determination of the second research model is 0.7868, which indicates that 78.68% of the changes in the dependent variable (investment to the current year capital) are explained by the independent and control variables. With respect to Table (6), the coefficient of agency costs is equal to 0.0000245, which is positive and the probability of t statistic for the variable of agency costs (FCF) is equal to 0.9756. This probability is higher than the error level of 0.05. Therefore, the null hypothesis is rejected and the agency cost is not effective in the relationship between social responsibility and investment-cash flow sensitivity. As a result, the second research hypothesis is rejected at a 95% confidence level. It should be noted that among the control variables, investment to the previous year capital (I_{it}/K_{it-1}) and investment to the second power (I_{it}/K_{it-12}) have a significant impact on investment to the current year capital.

4. Discussion

How the development of CSR strategies affects the corporate investment policy? This is the main question of this study. Adopting the Euler equation technique approach, we examine the moderating role of CSR in the relationship between investment spending and internally generated funds, as well as the mediating role of agency costs in the moderating effect of CSR.

The key premise of this paper is that CSR performance not only directly affects firms' investment policy but also affects firms' investment policy via its complementary effect on agency problems. High CSR firms reduce potential agency costs by pushing managers to adopt a long-term rather than a short-term orientation, which significantly reduces the investment-cash flow sensitivity. Our evidence lends support to the hypothesis that the sensitivity of investment to internal funds decreases with factors that reduce capital market imperfections.Some practical managerial implications can be derived from the results of this study.

The association between CSR, agency problems and investment-cash flow sensitivity suggests to organizations that improving CSR strategies is an efficient instrument to facilitate the access to external financing through mitigating agency conflicts between management and shareholders. So, firms are invited to engage more in CSR activities that reduce the likelihood of opportunistic behavior and align managers and shareholders interest.

5. Conclusion

The research findings on the first hypothesis show that corporate social responsibility moderates investment-cash flow sensitivity. In other words, corporate social responsibility has a significant negative relationship with investment-cash flow sensitivity. Additionally, the research findings on the second hypothesis suggest that the agency cost is not effective in the relationship between social responsibility and investment-cash flow sensitivity. The research results concerning the first hypothesis are consistent with the findings achieved by Samet and Jarboui (2017). They demonstrated that investment-cash flow sensitivity is lower in companies with high social responsibility. Moreover, the research findings regarding the second hypothesis are inconsistent with the results obtained by Samet and Jarboui (2017). Their research results revealed that free cash flow as an agency cost reduces the negative effect of social responsibility on investment-cash flow sensitivity. In other words, agency costs make a positive impact on the relationship between social responsibility and investment-cash flow sensitivity.

In this study, the following practical suggestions can be provided to guide the future studies of the researchers in the field of accounting:

1- Conducting a research similar to the above study at the level of banks, investment companies, insurance and leasing companies and comparing the results with the findings of the present research.
2- Conducting a study similar to the above research at the level of large industries in the stock exchange market and comparing the results with the findings of the present research.

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