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Studying the effect of cash flows' management on firm performance in companies enlisted in Tehran Stock Exchange

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ABSTRACT

There is a common theory regarding cash flows management that deals with changing materials into cash resulted from goods and services sales. This is a reflection of firm's ability to produce and is one of the fundamental concepts within financial literature. Therefore, the present study has dealt with investigating about the effect of cash flows' management on firm performance in companies enlisted in Tehran Stock Exchange. In this project 138 firms enlisted in Tehran Stock Exchange were studied during the time period between 2008 and 2012. To test the hypotheses we have used a pooled multiple linear regression model. Research findings showed that on the whole cash flows' management affects performance assessment criteria such as return on equity, return on assets, and Q Tobin ratio positively and meaningfully.

Keyword:
cash flows' management, return on equity, return on assets, Q Tobin ratio

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Introduction

Cash is one of the important and critical resources in any economic unit. Making balance between existing cash and cash needs is one of the most important factors in economic health of any business unit and the permanence of its activity. Cash flows play the critical role in many financial decisions, bonds' valuation patterns, capital plan assessment methods,(Kashanipour, 2009). Cash flows is one of the most important indexes in assessing economic units that has a critical role in many financial decisions, bonds' valuation patterns, capital plan assessment methods, … . On the other hand, firm performance is a process through which any institution tries to work better than the others an override the rival institutions. Due to the shortage of financial, technical, and specialized resources firms are required to have a high level of performance to reach wealth and to help the shareholders to have welfare.

Theoretical foundation and research literature

Research shows that when managers try to manage cash flows with predetermined incentives, firm stock value is lost (Harford & et al, 2008). Researches within flows' management show that competition in product market enhances the strategic value of cash reservoirs and thus there would be less cash flows' management because it reduces the potential for managerial deviation and agency problems (Giroud& Mueller, 2010, 2011; Guadalupe & Perez-Gonzalez, 2010). Additionally, cash flow has changed into a critical element in many of operational strategies in firms (Fisher, 1998; Queen, 2011). Firm's cash flow policy managed in the form of cash claims from customers and cash payment to suppliers is vastly related with the improvement of firms' financial performance improvement (Richards &Clarens, 1980; Stewart, 1995). As Ibn & Johnson (2011), Farris & Hutchinson (2002), and Haus& Stein (1993) point out the industries consider cash flows and their management affecting firm performance and consider cash flows' management as a managerial perspective mechanism.

Studies show that cash flows' management improves firm liquidation and it leads to improve firm's financial performance. Also when performance desirability related to liquidation is increased, monetary and credit position is enhanced and bankruptcy risk is reduced (James & Andrew, 2014). The capability of a firm in receipt of customers' claims in return to services rendered or the goods sent can increase firm's liquidation. Customers tend to invest on activities based on more sales. Therefore, the more rapid payments would result in expecting such activities in firms. Regarding cash flows' management, there are 3 outlooks as follows: first, as Zumwalt&Wort (1985) found out when a firm accepts less income in business during reward payment plans to achieve a more rapid access to cash, the probability of payments increases and firm risk would be low (ibid.).

The second outlook shows that shorter goods holding periods on the whole causes the increase of financial liquidations and better financial performance in firms. Additionally, this shows that excessive commodities lead to a weaker financial performance. The third outlook claims that postpone of payments' cycle let a firm to hold its capital during a longer period and it leads to improve liquidation. Meanwhile, when a firm continues its payment cycles ignores the discounts belonging due to early payments and may disturb the relationships with suppliers (Queen, 2011). Deloof (2003) studied about the relationship between cash flows' management and firm performance. This happened when he proposed that changes in a firm's performance may stimulate changes in cash flows' positions in a firm. Specifically he believed that the reduction of usefulness may be the result of lower sales that may lead to develop inventory and a customer may spend longer times to recognize the quality of products purchased from the firm with less income. Due to the strategic value of cash resources that shows flexibility of management and also regarding firm performance as efficiency and effectiveness, the present study tries to investigate about the effect of cash flows' management on firms' performance in Tehran Stock Exchange.

Research literature

Gilly (2007)investigated about managed cash flows in different payment performance positions and identified that there were higher financial costs when a firm is unable to pay the debts and in such cases cash flows' management is seen more.Garay& Gonzalez (2008) studied about the relationship between firm's leadership system and firms' performance assessment criteria such as dividend percentage, P/B ratio (market to book value of stocks) and Q Tobin in Stock Exchange in Venezuela. Results of their research showed that the percentage of increase in firm's leadership index has led to 11.3 percent increase in dividends, 9.9 percent in P/B and 2.7 percent in Q Tobin. Dichu& et al (2012) studied about asymmetric cash flows sensitivity in firms with financial constraints and firms without financial constraints. They found out that firms with negative cash flows have different cash flows sensitivitythan those with positivecash flows. They also concluded that firms with financial constraints have had more asymmetric cash flows sensitivity than firms without financial constraints. Chang & et al (2012) investigated about the relationship between earning opaque, cash flows, and stock price reduction risk in a sample of 255 firms within the years between 2000 and 2010 and showed that earning opaque and operational cash flows sensitivity lead to avoiding the disclosure of bad news and it increases the risk of stock price fall.

Samuel Fasso (2013) studied about the relationship between capital structure, competition capability in product market, and their performance. Fasso used a new criterion to measure firm's competitive power. He used panel data to investigate about the performance of 257 firms in South Africa during the time period between 1998 and 2009. Results showed that leverage has had a positive and considerable effect on firm's performance. Also the effect of competition in product market on performance of firms that have had higher leverage has been greater.

Bharat & et al (2013) investigated about the relationship between corporate governance, competition in product market, and cash flows' management in IPO firms. Results of their research showed that firms with IPO apply cash flows' management and also competition in product market before IPO is more than after IPO. Finally there has been a positive relationship between corporate governance and competition in product market and it has had a negative

relationship with cash flows' management. James & Andrew (2004) investigated about the relationship between cash flows' management and the performance of manufacturing firms. They studied 6233 firms in 3 months and found out that cash flows' management affects Q Tobin ratio negatively and cash flows' management results in a reduction in firm's sales. Also if cash flows' management is carried out with a positive goal and is resulted from firm's performance, firm's financial performance will improve.

TalebBidokhti&Irani (2010) studied the relationship between cash flows' management and debt costs in firms enlisted in Tehran Stock Exchange. They investigated the issue during the time period between 1999 and 2007. The results showed that the variables of leverage, firm size, and unexpected cash flows have had a meaningful relationship with debt costs. Also the variables of sales growth and government's ownership percentage did not have any meaningful relationship with debt costs. In this research unexpected cash flows were considered as cash flows' management criterion and had a direct relationship with debt costs.

Honarbakhsh& et al (2012) investigated about the relative effect of business strategies on the relationship between leverage and firms' performance and concluded that in firms with leadership strategy costs and dividends have had a positive relationship with firm's performance. Also in firms with product differentiation strategy, the variable of firm size has had a positive relationship with performance but dividend has had a negative relationship with firm's performance.

Hypotheses development

Regarding what was pointed out above and research questions, the hypotheses can be proposed in the form of a major hypothesis and three minor hypotheses as follows:

1- Cash flows' management affects performance assessment criteria.

1-1- Cash flows' management affects return on equity.

1-2- Cash flows' management affects return on assets.

1-3- Cash flows' management affects Q Tobin ratio.

Methodology

The present research is correlation type and it is applied regarding the goal. Also since historical information will be used in testing the hypotheses, it can be categorized within quasi-experimental research group. Also it is experience based and it is inferential and the study is field-library study by using historical data in post incidental mode. Below the calculation type of each of the variables has been presented.

The independent variable in this research is cash flows' management and to calculate it we have used a model proposed by Amy &Geile (2007). To calculate cash flows' management, first we should adjust the following model for the years between 2004 and 2012. The regression model is as follows:

$$\left(\frac{OCFit}{Ait}\right)=\propto_1 \left(\frac{1}{Ait}\right)+\propto_2 \left(\frac{REV}{Ait}\right)+\propto_3 \left(\frac{(\Delta REVit)}{Ait}\right)+\varepsilon_{it}$$

Where,

OCF: total cash flows in year t in firm i

A: total assets in year t in firm i

REV: total revenue in year t in firm i

ΔREV: changes in revenue in year t in firm i

Є: error amount

Next, after calculating the coefficients we use the following model to calculate cash flows' management (abnormal cash flows).

$$\left(\frac{ABNOCFit}{Ait}\right)=\left(\frac{OCFit}{Ait}\right)-[\propto_1 \left(\frac{1}{Ait}\right)+\propto_2 \left(\frac{REV}{Ait}\right)+\propto_3 \left(\frac{(\Delta REVit)}{Ait}\right)]$$

In the model above by ABNOCF we mean cash flows' management index.

Dependent variables

Return on equity: this ratio is calculated by dividing net income into average equity (Babaei, 2010).

Return on assets: it is calculated by dividing annual income into total firm's assets (ibid.).

Q Tobin: this index can be considered as a representation of firm value for investors and responds the stockholders about to what extent management has been involved in increasing their wealth (Namazi&Zeraatgari, 2009). Accordingly, Q Tobin ratio can be calculated by using the following equation:

$$\frac{VOCSILOY + EMVOPSILOY + BVLTLILOY + BVCLILOY}{BVTAILOY}$$

Where,

VOCSILOY: value of common stocks at the end of the year

EMVOPSILOY: estimation of market value of outstanding stock at the end of the year

BVCLILOY: book value of current liabilities at the end of the year

BVTAILOY: book value of total assets at the end of the year

BVLTLILOY: book value of long-term liabilities at the end of the year

Since there are not outstanding stocks in Tehran Stock Exchange, the value of EMVOPSILO has been considered to be equal to zero.

Control variables: regarding the model posed by Rey Dick & Whited (2009) and Chang & et al (2012), the following 5 variables were considered as control variables. Institutional shareholder's ownership, board structure, firm size, leverage, returns on assets.

Data analysis

The following table shows the results of descriptive statistics of 690 year-firms of research variables:

Table (1): Results of descriptive statistics

Variable	Mean	median	Standard error	skewness	Pulling coefficient
Return on equity	0.284	0.290	0.317	-0.690	2.888
Return on assets	0.122	0.110	0.142	0.652	2.178
Q Tobin ratio	1.381	1.210	0.611	3.010	3.172
Cash flows' management	-0.016	0.130	0.552	4.586	-0.0001
Institutional shareholders' ownership	0.618	0.700	0.298	-0.539	1.978

Board structure	0.622	0.600	0.260	-0.895	3.484
Rate of assets' growth	0.149	0.118	0.230	2.113	15.037
Firm size	13.472	13.249	1.477	0.879	4.350
Leverage	0.630	0.629	0.253	2.974	25.643

Regarding the descriptive statistics we can divide the indexes above into central tendency, dispersion, and other indexes. Central tendency indexes are comprised of mean and median. Dispersion indexes are standard deviation indexes and other indexes are minimum, maximum, skewness, and pulling. Results of normality test are represented in the following table:

Table (2): Results of normality test

Variable	sign	statisticj	Asymp (sig)
Return on equity	ROE	1.162	0.158
Return on assets	ROA	1.150	0.198
Q Tobin ratio	QTobin	1.260	0.132

Results ofKolomogorov-Smirnov test show that the variables of return on equity, return on assets, and Q Tobin ratio (independent variables) follow a normal distribution. Therefore, regarding that the dependent variables follow a normal distribution we can use parametric statistics methods.

In this research we have used adjusted Dicki-Fuller test for consistency test. Results of this test are presented in table (3):

Table (3): Results of unitary root test- Dicki-Fuller test

Variable	**Amount of t statistic**	**Meaningfulness level**
Return on equity	-24.015	0.000
Return on assets	-15.770	0.000
Q Tobin ratio	-12.279	0.000
Cash flows' management	-25.001	0.000
Institutional shareholders' ownership	-25.352	0.000
Board size	-25.920	0.000
Assets' growth rate	-23.929	0.000
Firm size	-11.547	0.000
Leverage	-16.424	0.000

$ROE_{it} = \beta_0 + \beta_1 CFM_{i,t} + \beta_2 OSI_{i,t} + \beta_3 BF_{i,t} + \beta_4 grow_{i,t} + \beta_5 SIZE_{i,t} + \beta_6 EVR_{i,t} + \varepsilon_{it}$

$ROA_{it} = \beta_0 + \beta_1 CFM_{i,t} + \beta_2 OSI_{i,t} + \beta_3 BF_{i,t} + \beta_4 grow_{i,t} + \beta_5 SIZE_{i,t} + \beta_6 EVR_{i,t} + \varepsilon_{it}$

$QTobin_{it} = \beta_0 + \beta_1 CFM_{i,t} + \beta_2 OSI_{i,t} + \beta_3 BF_{i,t} + \beta_4 grow_{i,t} + \beta_5 SIZE_{i,t} + \beta_6 EVR_{i,t} + \varepsilon_{it}$

Regarding the results presented in the table variables have had consistency in an assurance level of %95. Below the results of testing hypotheses are shown.

Table (4): Results of testing hypotheses

variable	**Return on equity**		**Return on assets**		**Q Tobin ratio**	
	Meaningfulness level	**coefficients**	**Meaningfulness level**	**coefficients**	**Meaningfulness level**	**coefficients**
Cash flows management	0.644	0.000	0.378	0.000	0.000	1.506
Institutional shareholders' ownership	0.106	0.001	0.037	0.001	0.017	0.181
Board structure	0.014	0.754	0.013	0.377	0.001	0.287
Assets' growth rate	0.523	0.000	0.212	0.000	0.000	0.610
Firm size	0.010	0.119	0.005	0.018	0.001	-0.044
Leverage	-0.165	0.009	-0.261	0.000	0.229	0.212
Fixed amount	0.094	0.334	0.143	0.000	0.000	1.461
Identification coefficient	0.272		0.594		0.163	
Adjusted identification coefficient	0.266		0.590		0.156	
Durbin-Watson	1.883		1.837		1.778	
statisticF	Prob. 0.000	42.630	Prob. 0.000	166.641	Prob. 0.000	22.282
statisticGodfrey	Prob. 0.308	1.179	Prob. 0.113	2.181	Prob. 0.308	2.697
statisticF-white	Prob. 0.000	6.600	Prob. 0.000	4.221	Prob. 0.000	1.719
statisticF-limer	Prob. 0.400	1.012	Prob. 0.778	0.441	Prob. 0.400	1.230

Regarding theresults of testing research hypotheses presented in table (4), the meaningfulness level of F-limer statistic has been higher than the acceptable error level (%5), therefore pooled data is preferred to panel data

method. Then, the meaningfulness level of F-white statistic has been less than 0.05 and it shows that the regression has had variance incongruence. Thus, after removing standard error and variance incongruence, the regression was adjusted and finally the meaningfulness of Godfrey statistic was higher than 0.05. Therefore, the regression did not have serial self-correlation. Then, since F statistic has had a meaningfulness level of below %5, the regression has had identification power. Also due to the fact that cash flows' management variable has had a meaningfulness level of below %5 in all three hypotheses and its coefficient (β_1) has had positive sign, cash flows' management has had a positive and meaningful effect on variables of return on equity, return on assets, and Q Tobin ratio. Also regarding that Durbin-Watson statistic has been between 1.5 and 2.5, we can conclude that there has not been a self-correlation problem between variables. Additionally, the amount of identification coefficient shows that the changes in independent and control variables could determine %27.2, %59.4, %16.3 of changes in variables of return on equity, return on assets, and Q Tobin ratio, respectively.

Discussion and conclusion

Regarding cash flows' management, there is a common theory that deals with changing materials into money resulted from sales of goods and services and it is a reflection of the ability of a firm to produce. Accordingly, the goal of this research is to investigate about the effect of cash flows' management on firm's performance in Tehran Stock Exchange. On the whole, in addition to theoretical foundations mentioned the research findings showed that cash flows' management affects variables of return on equity, return on assets, and Q Tobin ratio positively and meaningfully. Regarding this it can be stated that since cash has been changed into a critical element in many operational strategies of firms the cash flow policy of the firm in the form of cash claims from customers and cash payment to suppliers are managed and this is vastly related to improvement of firms' financial performance. Industries considercash flows' management effective on firm's performance to a great extent and consider cash flows' management as a mechanism of managerial perspective. Regarding the results of the present study it can be suggested to investors to consider the effects of cash flows' management on firms' performance when they are making decisions for investment. Since the goal of managers is to supply the trust of owners in a firm, they should consider that increasing cash flows' management leads to increasing performance and this would be beneficial for an economic unit. It can be suggested to Stock Exchange Organization to devise rules and regulations for firms to choose a structure to exploit cash flows' management more due to the positive relationship between cash flows' management and firms' performances.

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