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The Relationship between the Management of Cash Flow and Financial Performance of Companies Listed on Tehran Stock Exchange

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Abstract: The purpose of this study is to study the relationship between the management of cash flow and financial performance of companies listed on Tehran stock exchange. The population consists of all companies listed on Tehran stock exchange and the sample includes 75 companies by applying systematic elimination period is the years 2009 to 2014. Therefore, after compiling a review of literature and formulation of hypotheses, to collect and prepare the necessary information from conglomerates has been studied. Finally, the hypotheses using descriptive statistics and econometric models and using software Eviews are examined. The results showed that there was a significant and positive relationship between waiting periods for receipt of receivable outstanding sales and financial performance of companies. Also, there is a significant relationship between the period of storage inventory and cash conversion cycle and the financial performance of companies and finally there is a significant relationship between operating cash cycle and the financial performance of companies.

Keywords: Financial Performance, Cash Conversion Cycle, Inventory Maintenance Period.

Introduction

Cash flow management has become an important element for operational strategies of the companies (Fisher, 1998; Quinn, 2011). Three factors directly affect a company's access to cash; in fact, the cash flow of a company can be changed and controlled in three ways. First, changes in cash flows from the sale of the product until its receipt by the company are not in possession; second, by changing in existing level of the company which is the cash invested in products; and finally delays in payments to vendors (Richards & Laughlin, 1980; Kroes & Manikas, 2014). When assessing a company's cash flow or control positions, we can individually study each of criteria or combination of them. Policies of a company's cash flow, which capital in the flow is controlled and managed in the form of cash received from customers, resources and cash payments to the vendors, have wide relationships with the progress of their company's financial performance (Richards & Laughlin, 1980; Stewart, 1995). Working capital management is an important component of financial management because this is the most fundamental determinant of their life and directly affects liquidity, and ultimately the profitability of the companies (Boujmehrani, 2011). Cash flow information is useful also for the capital market because creditors use financial statements to anticipate the amount, timing and uncertainty of future cash flows (Hejazi et al., 2013). Although effective management of cash flows as a mechanism to improve performance in a wide level is accepted, academic researches study the relationship between cash flow and function of a static landscape and the scores. Therefore, although this static approach has provided

many insights on the value of effective cash flow management, economic relations are often dynamic (Nerlove, 2005). Finally, in this research, the relationship between changes in a company's cash flow situation and changes in the performance of a company based on a dynamic view are explored. Another point which here seems is an answer to this question that cash flow management strategies affect a company's financial performance or that cash flow situations are the result of a company (Deloof, 2003). In this study, the answer to this question has been examined by performing Granger causality test so that the relationship between cash flows and changes in financial performance management activities is clear.

Review of literature

Cash

Cash is cash and deposits with banks and financial institutions, both local and foreign (including short-term investment deposits without maturity) to deduct overdraft which is demanded without prior notice. Cash in Accounting Standard of No. 2 is referred only to holdings of cash and deposits with banks and financial institutions, both local and foreign (including short-term investment deposits without maturity). In cases where the overdraft is authorized in the current account (for example overdraft in bank accounts abroad by the entity), overdraft balances which without prior notice are claimed that there must be deducted from the amount. Visual characteristic of the items in the cash component means that this item must be claimed or demanded without prior notice. Long-term investment deposits may not be considered cash because the aim of maintaining them is to obtain the profit. In case they can be considered in calculating that the deadline shall not exceed one business day when the deadline is determined to bank overdraft settlement.

Generally, cash possesses institutions including cash to fund, cash funds and cash to the bank. Accounting operations for every section of cash will be discussed separately. Mainly, now operations of receive and payment are performed through the banking system (because the amount of trading was high and due to the avoidance of mistakes and deficit of fund) but in some cases, keeping the cash in the fund company is inevitable.

Theories of cash holdings

- Theory of information asymmetry
- Representation theory
- Balance theory

Research background

Namazi and Kermani (2008) concluded in a research to study the impact of ownership structure on performance that institutional ownership negatively affected on performance, company property positively and management property negatively and significantly. In the case of foreign ownership, the researchers found no information that indicated the ownership of foreign investors in the companies surveyed.

Mohammadi (2009) discussed on studying the impact of the management of working capital on profitability of companies listed in Tehran Stock Exchange. In this study, a sample consisted of 92 companies using correlation analysis and regression analysis was studied. The results showed that there was a significant and reverse relationship between company profitability and working capital management variables.

Foreign studies

During a research, Deloof (2003) studied the relationship between the variables management of cash flows and operational gross income of financial data of 1009 non-financial multiple corporations from regression and correlation techniques; he made clear from the findings of this study that days of sales outstanding, maintenance days of goods inventory and less outstanding days are related to operational gross income but cash conversion cycle are not related to operational gross income.

Studied the relationship between the management of cash flows and financial performance of manufacturing firms from long-term view. In this study, 1233 manufacturing companies that have generally participated in America Stock Exchange, generalized estimating equations were analyzed. The result showed that changes in the cash conversion cycle are not related to changes in the company's financial performance but changes in operating cash cycle are linked to changes in the company's financial performance.

Hypotheses

1. There is a significant relationship between waiting periods for receipt of receivable outstanding sales and financial performance of the companies.

2. There is a significant relationship between the period of storage inventory and the financial performance of the companies.

3. There is a significant relationship between cash conversion cycle and financial performance of the companies.

4. There is a significant relationship between operating cash cycle and the financial performance of the companies.

Materials and Methods

The research was descriptive - correlation. The population consists of all companies listed on Tehran stock exchange in 2009 to 2014. To determine the sample size in systematic removal method, 75 companies were selected.

Variables

Independent variables

The independent variables of this study are as follows:

Days of Sales Outstanding (DSO): This metric represents the average time that a sale will happen to the funds it is receiving. How to calculate the aforementioned criteria are as follows:

Days of period (Sales / Receivable Accounts)

Days of Goods Inventory Maintenance (DIO): This metric represents the average time that goods are kept in stock to be sold. How to calculate the aforementioned criteria are as follows:

Days of period (cost of goods sold / inventory)

Days of payment outstanding (DPO): The metric represents the average time it takes to settle the company's accounts payable. How to calculate the aforementioned criteria are as follows:

Days of period (buy / Payable Accounts)

Cash Conversion Cycle (CCC): This criterion combines three criteria of cash flow to provide a general indicator of a company's cash situation and represents the time required between payment to purchase goods and receive the proceeds from the sale. How to calculate the aforementioned criteria are as follows:

Days of debts outstanding - (days inventory + days sales outstanding maintenance)

Operating Cash Cycle (OCC): This metric represents the number of days that cash is held as inventory until they receive payment from the customer. As a result, the difference with CCC criteria is in that it only covers inventory and outstanding sales and ignores the payable accounts. How to calculate the aforementioned criteria are as follows:

Days of maintenance of inventory + days of sales outstanding

Dependent variable

It is a dependent variable of financial performance that:

Financial performance: In order to identify the financial performance, Tobin's q ratio is used. This ratio, which is presented by economist James Tobin, is one of the most reliable indicators of the performance of companies. The higher this ration is, this means more valuable company on the stock market (Linderberg and Rose, 1981). How to calculate Tobin's q is as follows:

(Replacement value or book value of assets) / (market value)

Control variables

Company size: the company can be obtained through the logarithm of total assets.

Financial leverage (LEV_{it}): this is obtained by dividing total debt by total assets at end of year. To test the hypotheses, a multivariate regression model was used as below:

$$Q_{tobin} = \beta_0 + \beta_1 DSO_{i,t} + \beta_2 DIO_{i,t} + \beta_3 DPO_{i,t} + \beta_4 CCC + \beta_5 OCC + \beta_6 SIZE_{i,t} + \beta_7 LEV_{i,t} + \varepsilon_{i,t}$$

Where:

Q_{tobin} = Financial performance

DSO: Days of sales outstanding

DIO: Days of inventory maintenance

DPO: Days of debt outstanding

CCC: Cash conversion cycle

OCC: Operating cash cycle

SIZE: Size of the company

LEV: Financial Leverage

The results of model estimate

The results for the Eviews program are given in the Table below.

Table 1. The results of model estimate.

Model of	$Q_{tobin} = \beta_0 + \beta_1 DSO_{i,t} + \beta_2 DIO_{i,t} + \beta_3 DPO_{i,t} + \beta_4 CCC + \beta_5 OCC + \beta_6 SIZE_{i,t} + \beta_7 LEV_{i,t} + \varepsilon_{i,t}$			
Variables	Coefficient	Standard error	T-statistic	Significance level
Constant coefficient	-2.215	0.985	-2.248	0.014
The waiting period for receipt of outstanding	-0.584	0.090	-3.469	0.000
Maintenance period of Inventory	-0.116	0.008	-3.510	0.000
Period of debt outstanding	-0.286	0.096	-3.893	0.000
Cash conversion cycle	-0.109	0.050	-2.721	0.009
Operating cash cycle	-0.254	0.010	-4.242	0.000
Size of the company	0.352	0.073	4.758	0.000
Financial leverage of the company	-0.206	0.367	-0.563	0.573
F statistic	5.616	Jarque- Bera statistics	5.264	
The probability of F statistic	00.0	Jarque- Bera statistics possibility	0.074	
Durbin-Watson statistic	1.940			
The coefficient of determination	0.616			
Adjusted coefficient of determination	0.605			

To evaluate the significance of the linear regression model, F-test was used. The null hypothesis of F test represents a significant linear model of regression model. According to the results of the Table, it can be seen that coefficient of determination is equal to 0.616; this means that independent variables explain 62 percent of changes in the dependent variable. High coefficient of determination represents the explanatory power of the model in explaining the dependent variable changes by the independent variable.

To check this case, the Durbin-Watson statistic is used and since this value is between 105 and 205, so it can be concluded that error components in the correlational model has not a significant relationship with each other and they have a dependent behavior. The value of the Durbin-Watson statistic is equal to 1.94 and this is in an acceptable level (between 105 and 205).

One of the key assumptions concerning the error components in the fitted model is that distribution is normal. In order to test the normality of the error, the test of Jarque- Bera is used. According to the results, Jarque- Bera statistics for fitted regression model is equals to 5.264 and due to the significant level of the test which is equal to 0.074 and is more than 0.05. Therefore, null hypothesis based on the normality of the error term is not rejected. Hence, assuming normality of error is confirmed.

Conclusion

First hypothesis

There is a significant relationship between waiting periods for receipt of receivable outstanding sales and financial performance of the companies.

According to the results, since the variable coefficient of waiting periods for receipt of receivable outstanding sales has been negative (-0.584) and due to the significance level of t test (0.0) is significant, so there is a significant and reverse relationship between waiting periods for receipt of receivable outstanding sales and financial performance of the companies. Therefore, the first hypothesis at the significance level of 95% is confirmed. This means that there is a significant relationship between waiting periods for receipt of receivable outstanding sales and financial performance of the companies. In this regard, there is not performed any research in abroad and inside this is consistent with the research.

Second hypothesis

There is a significant relationship between the period of storage inventory and the financial performance of the companies.

According to the results, since the variable coefficient of storage inventory has been negative (-0.116) and due to the significance level of t test (0.0) is significant, so there is a significant and reverse relationship between storage inventory and financial performance of the companies. Therefore, the second hypothesis at the significance level of 95% is confirmed. This means that there is a significant relationship between the period of storage inventory and financial performance of the companies.

Third hypothesis

There is a significant relationship between cash conversion cycle and financial performance of the companies.

According to the results, since the variable coefficient of cash conversion cycle has been negative (-0.109) and due to the significance level of t test (0.0) is significant, so there is a significant and reverse relationship between cash conversion cycle and financial performance of the companies. Therefore, the third hypothesis at the significance level of 95% is confirmed. This means that there is a significant relationship between cash conversion cycle and financial performance of the companies. The results of this research are not consistent with the results of Kroes and Manikas (2014).

Forth hypothesis

There is a significant relationship between operating cash cycle and the financial performance of the companies.

According to the results, since the variable coefficient of operating cash cycle has been negative (-0.254) and due to the significance level of t test (0.0) is significant, so there is a significant and reverse relationship between operating cash cycle and financial performance of the companies. Therefore, the forth hypothesis at the significance level of 95% is confirmed. This means that there is a significant relationship between operating cash cycle and financial performance of the companies. The results of this research are not consistent with the results of Kroes and Manikas (2014).

Recommendations

1. According to these interpretations, the maintenance of inventory is associated with financial performance and they found that practically the companies can increase the level of inventories without destroying services using methods including timed learning management plans, existing plans by the vendor management and programs of submitting inventory.
2. Improvement of cash flow management is associated with improvement of financial performance of companies and changes in cash conversion cycle are associated with financial performance.
3. This study is performed using other variables of financial performance.
4. Inventory maintenance periods (shorter and lower) are associated with financial performance and whatever the maintenance of inventory is shorter, financial performance is higher and vice versa.

Conflict of interest

The authors declare no conflict of interest

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