

IMPACT OF CASH FLOWS MANAGEMENT INDICES ON FINANCIAL PERFORMANCE OF COMPANIES

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ABSTRACT

Cash flows have important impacts on maintaining the competitive position of companies, the development of their sales, and generally a prominent impact on the financial performance of companies. Therefore in this study, it's attempted to evaluate the impact of cash flows on the performance of the companies which are listed on Tehran Stock Exchange using the data between 2010-2013. In order to measure the cash flows, the three indices of accounts receivable turnover, inventory turnover, and cash conversion cycle were used, and using the Panel Data model, the impact of these indices on the financial performance of companies, measured by Tobin's Q ratio, was studied. Through the indices of cash flows, the results indicated that the accounts receivable turnover and cash conversion cycle indices have significant and negative impacts on the performance of the companies, and the inventory turnover indicator doesn't have a significant impact on it.

KEY WORDS: Management of Cash Flows, Tobin's Q, Accounts Receivable Turnover, Cash Conversion Cycle.

1-INTRODUCTION

In today's challenging economy with the increasing environmental pressures and limited external resources, current assets and liabilities or also the working capitals of the economic enterprises are very important, and the optimal management of the working capital of the enterprises can be considered as a competitive advantage for them (Elyasiani, 2015). The ability and accessibility of each profit unit to cash is the basis of decision- makings and judges about the unit. In other words, the information due to the inflow and outflow of cash in a profit unit is the basis of the decision- makings and judges of the users of the financial information (Elyasiani, 2015).

Liquidity management is an important criterion in determining the policies of the working capital and expresses the company's ability in making the required cash. The information due to the cash flows can assist the decision-makers with liquidity assessment and the ability of debts repayment of a commercial unit. This information can also be advantageous in evaluation of opportunities and risks of the commercial unit and the stewardship task of management (Arabmazar, 2007).

In cases that the commercial unit faces with the shortage of operating cash flow, managers would try to compensate or indicate the shortage positively through control of accruals, increase of credit purchases, or increase of depreciation, so they manage the company's liquidity. Among the first researchers on this topic, Alley's (1994) studies can be mentioned. He found out that small changes in cash flows are more important compared to the income of the users of financial statements. In other words, however a company's income is high; the fluctuations of its liquidity can disappoint the users of financial statements.

Management of cash flows is the conscious measures taken to manipulate the cash flows with the aim of indicating the cash flows desirable and removing the fluctuations of the cash flows, which is a means for managers to achieve the personal goals such as extra bonuses and benefits or maintaining and stabilizing their status in the company (Gilly, 2007).

Today, the cash flow management has turned into an important factor in many company's operational strategies (Fisher, 1998; Quinn, 2011). In fact, a company's policies about the cash flows, considered as the management of working capital, covers the capital management in the three forms of cash receivables from customers, inventories, and cash payments to suppliers of raw material, and it has a deep impact on the financial performance of companies (Richards & Laughlin, 1980; Stewart, 1995).

The conventional theory of working capital management implies that companies are to strengthen the liquidity, and hence, the stabilization of competitive status and increase of company's performance will be realized through making a change in cash flows (Brewer & Speh, 2000; Farris & Hutchison, 2002, 2003; Christopher & Ryals, 1999; Moss &
Volume-4 Special Issue- 1, 2015. ISSN: 2319-4731 (p); 2319-5037 (e) © 2015 DAMA International. All rights reserved. 14

Stine, 1993; Stewart, 1995). In addition, the ability of a company to turn the material into liquidity as a result of selling is considered as a reflection of the company's abilities in return of capital and efficient increase of performance (Gunasekaran et al., 2004).

In fact, there are three factors directly affecting on liquidity achievement of a company (Harford, 2014):

- A- The liquidity from accounts receivable, which isn't actually achievable for companies because they expect the customer's payment in return for the delivered goods.
- B- The liquidity invested in the goods that are produced and stored as inventory.
- C- The liquidity due to the company's failure to pay the suppliers of raw material or presenters of services (Richards & Laughlin, 1980; Elyasiani, 2015).

This analysis emphasizes on the producing companies which generally trade in Tehran Stock Exchange, because the position of producers at the middle of supply chain gives them the possibility for affecting on the suppliers and consumers and being affected by them (Swaminathan et al. 1998).

This interaction with the suppliers and consumers causes basic opportunities for flexibility of payment condition between the sides. In addition, producers have often flexibility of inventory compared to the downstream partners of the supply chain in terms of possibility to choose if they tend to keep the inventory as raw material or consider it as capital goods (Capkun et al. 2009). In other words, the companies at the middle of the supply chain have more options for buying the raw material in comparison to the companies providing the raw material in downstream, and they can buy their raw material from another seller in case of delay in payment of debts.

The change in working capital includes the sale of inventories, reduction of accounts receivable collection period, and delay in payment to suppliers. The decrease in working capital causes the increase in operating cash flows. On the other hand, when companies require cash earlier than the receivables collection date, they discount their accounts receivables. In a short while, the discount of accounts receivables faces the company with cash increase. This is a financing activity and it's not usually regarded as a deal and normal activity, but it may be reported in operating cash flow statement (Gilly, 2007). The management of cash flows due to buying and selling of securities is done through the following methods (Gilly, 2007):

The companies having additional cash invest through purchase of securities, and then in an optional timing, they sell their securities when the operating cash flows need increase. Although this event is recorded in operating cash flows reports, in fact the cash flows aren't resulted from the company's operations; or the companies buy the securities available for sale, which are recorded in operating cash flows reports, then they classify the trading securities again in order to sell them and increase the operating cash flows. The cash flows management has turned into an important factor in many companies' operating decision-makings and its being widely used (Fisher, 1998; Quinn, 2011).

As the efficient management of cash flows is widely considered as the motivation of performance improvement, this question arises to which cash flows management method increases the performance the most? And does the cash flows management have performance increase in Tehran Stock Exchange or not? Therefore, this research studies the relationship between cash flows management and financial performance of the companies listed on Tehran Stock Exchange.

There are only a few studies conducted on impact of cash flows management on financial characteristics of organizations including the study of Tehrani and Hesarzadeh (2009), using the data of the years 2000-2006 of the companies in Tehran Stock Exchange, which studied the relationship between free cash flow and over investment and also studied the relationship between financing limitation and low investment. They concluded that there is a statistically significant relationship between free cash flow and over investment.

In study of the relationship between cash flow management and debt costs, Hejazi et al. (2012) split the cash flow into the two components of managed and unmanaged. The research results indicated that there is a significant and negative relationship between unmanaged operating cash flow and debt costs, and there is also a significant and positive relationship between managed cash flow (uncommon) and debt costs.

Using integrative data, Yadifar and Ghanbari Moghadam (2013) studied the relationship between cash flow statement items and company value testing the data of 109 listed companies on Tehran Stock Exchange during 2006-2011. The results of the study indicated that there is a significant relationship between cash flows due to direct operating activities and reverse cash flows due to financing activities with Tobin's Q index, and there is no relationship between other items of cash flow statement including investment return and payment interest, income tax, and investing activities cash with Tobin's Q index.

Gill et al. (2010) chose a sample of 88 companies listed on New York Stock Exchange. Studying the working capital level on their profitability, they found out that there is a significant relationship between cash conversion cycle and the companies' profitability; they also found out that the companies' profitability increases by shortening the receivables collection period.

Enqvist, Graham, and Nikkinen (2011) studied the impact of management of working capital on companies' profitability in different business cycles. They used the two indices of return on asset and gross operating profit as the profitability indices and concluded that the impact of efficient working capital (cash conversion cycle) increases on operating profitability in an economic downturn situation. They also concluded that cash conversion cycle has a negative and significant impact on companies' profitability.

Al-Mualla (2012) studied the effects of working capital management policies on profitability and value of listed companies on Oman Stock Market during 2001 to 2006 and concluded that conservative investment strategy has a positive impact on profitability and value of companies, while aggressive financial policy has a negative impact on profitability and value of companies. He also found out that size, companies' growth, and gross domestic product have positive effects on profitability and value of companies.

Rehn (2012) studied the impacts of working capital management on profitability of Swedish companies. He used the cash conversion cycle and net trade cycle as the indicators of working capital and also the gross operating profit as the profitability indicator. His results indicated that companies can increase their profitability by reducing the cash conversion cycle and net trade cycle. This study also provided evidence indicating that companies can increase their net present value of cash flows and increase the value of their shareholders by efficient managing of each part of the working capital.

According to what is mentioned, in this study, we seek to study the impacts of liquidity management on companies' performance. The main hypothesis of the research according to the research topic is:

Cash flows have significant impact on companies' performance.

In order to study the factors affecting on companies' liquidity, the research sub-hypotheses are presented as follows:

Accounts receivable collection period has a significant impact on companies' performance.

Inventory turnover period has a significant impact on companies' performance.

Accounts receivable payment period has a significant impact on companies' performance.

2- MATERIALS AND METHODS

The study population of the research was the listed companies on Tehran Stock Exchange and the required research data was collected from financial statements of the companies in Tehran Stock Exchange. In this research, the systematic elimination was used to determine the sample size according to the following criteria:

1. The end of their fiscal year to be late march and it's not to change during the mentioned period.
2. The company must be listed on Tehran Stock Exchange from March, 2010 to February, 2013 without trading breaks over six months.
3. The companies that officially turn their financial statements in to Securities and Stock Exchange Organization at the end of every six months.
4. They must not be banks or financial institutions (investment companies, financial intermediaries, and holding and leasing companies).
5. The research time period is four years from March, 2010 to February, 2014 that is eight six-month periods.

The research data was collected in six-month period series from March, 2010 to February, 2014 for each company.

Considering the panel nature of the research data, the Panel data regression model was used to analyze the hypotheses.

3- CONCLUSIONS

To study the impact of cash flows on companies' performances, the following model was used:

$$TobinsQ_{it} = \beta_0 + \beta_1\Delta DSO_{it} + \beta_2DIO_{it} + \beta_3CCC_{it} + \beta_4Debt_{it} + \beta_5Sales_{it} + \varepsilon_{it}$$

Where,

The "it" index represents the values of each variable for the "i" company in the "t" year.

Companies' performance (Tobin's Q): (the market value of equity + book value of debts) / total assets

The financial performance of companies is measured by Tobin's Q. Tobin's Q is widely used as a financial performance indicator (Kroes et al. 2012).

Accounts receivable collection period (DSO): (accounts receivable / sales) × 180

This criterion represents the average time to collect sales profit.

Inventory cycle (DIO): (inventory / cost of goods sold) × 180

This criterion represents the average storage time of goods in warehouse before selling them.

Accounts payable payment period (DPO): (accounts payable / cost of goods sold + changes in inventory).

This criterion represents the average time that a company considers before paying its creditors.

Cash conversion cycle (CCC): DSO+DIO-DPO

Measuring cash conversion cycle (also called cash to cash cycle) is a combination of three cash flows measurements, and it's a way to achieve an overall indicator of a company's cash condition.

Debt ratio (DEBT): long-term debt / assets

This criterion represents a company's strength to pay debts or represents a company's credit in other words.

Sales ratio (Sales): sales / total assets

This criterion represents the amount of revenue of a company's assets.

ε_{it} : represents the disturbance sentence or the regression residual.

Considering the research data that is a combination of time series and cross sectional regression, the panel data method was used.

One of the most common tests is the static test, but considering the research data as ratio, difference, and percentage in this research, there is no need to the static test.¹

3-1- Chow test (F Limer)

In estimation of panel data model, we are dealing with two general cases. In the first case, the Y-intercept is the same for all the cross sections, in which we face with the "pool data" model. In the second case, the Y-intercept is different for all the cross sections, in which we face with the "panel data" model. To determine the use of combined data and detect the homogeneity or heterogeneity of it, the Chow test and F Limer statistic are used. The statistical hypotheses of this test are as follows:

$$H_0 = \text{Pooled Data}$$

$$H_1 = \text{Panel Data}$$

Therefore in case of rejection of the null hypothesis, the panel data technique must be used.

Using Eviews software, the Chow test was carried out that the results are presented in the following table:

Table 1- Chow test

Impact test	Statistics	Probability value
Cross-section F	4.125	0.00
Cross-section chi-square	18.104	0.04
Period F	5.992	0.00
Period chi-square	111.722	0.00
Cross-section/period F	4.844	0.00
Cross-section/period chi-square	121.415	0.00

¹ It's mentioned in the studies of Aghaie, Ahmadi, and Karimzadeh.

The probability value indicates the rejection of the null hypothesis and the use of the pool model. Therefore, the panel data model can be used.

3-2- Hausman test

Generally, there are two categories of panel estimating approaches in financial researches that are: fixed effects models and random effects models. The simplest type of fixed effects models express this concept that the Y-intercept of regression model is different periodically, not during the time, while all the slope estimates are fixed both periodically and during the time.

Random effects model is another alternative method for fixed effects model which is known as Error Components Model in many cases. Like fixed effects model, random effects approach provides different Y-intercept components for each input and the Y-intercepts are fixed during the time. It's also assumed that the relationship between the explanatory variables and the explained variables is temporarily identical. The difference is that, based on the random effects model, it's assumed that the Y-intercepts for each cross section unit is composed of a common Y-intercept or also α plus a random variable of ϵ that changes periodically, but its fixed during the time. The ϵ indicates the random deviation of each component of Y-intercepts from the total Y-intercept which is α .

In terms of fixed effects and random effects, the Hausma test is a practical test for diagnosis of the appropriate model, which is presented in the following table:

Table 2- Hausman test

Dependent variable	X ² Statistics	Probability value	Type of impact
TobinsQ	27.214	0.001	Constant Impact

The Hausman test results imply the rejection of the null hypothesis based on appropriateness of the random effects model; therefore, the fixed effects model must be used for the estimation.

3-3- Pesaran's test (cross sectional independence of residuals)

A standard assumption in panel data models is that the residual sentences are independent among the cross sections. Periodic dependence can lead to *TOURESH* in research results. To test whether the residuals among the cross sections are correlated or not, the Pesaran's cross sectional test is used.

The results of the Pesaran's test for review of the residuals correlation between the cross sections is presented as follows:

Table 3- Pesaran's test

Dependent variable	Boys' statistics	Probability value
TobinsQ	0.772	0.241

The null hypothesis of the Pesaran's test is not rejected; therefore, the residuals aren't correlated among the cross sections, and the cross sections aren't affiliated.

3-4- model estimation

According to the results of Chow and Hausman tests and using the Generalized Least Squares method, the model is estimated in the framework of weighted cross sectional regressions considering the fixed effects. Generally, the generalized least squares control the co-linearity between the residual sentences. The results of the model estimation using the fixed effects model are presented in the following table:

Table 4- the results of the model estimation

Variable	Coefficient	t-statistics	Probability value
DSO	-0.386	-3.049	0.019
DIO	0.241	1.274	0.257
CCC	-0.361	-6.082	0.000
Debt	-0.002	-2.229	0.026
Sales	0.471	2.047	0.054
F-Statistics= 102.507	Probability value of F-	R ² = 0.894	Durbin-Watson

Statistics=0.000

statistic=1.897

The results indicate that, at 95% level, the accounts receivable turnover has a negative and significant impact on financial performance of the companies listed on stock exchange. The inventory turnover period has a positive and significant impact on performance of the companies listed on Tehran Stock Exchange, but this impact isn't statistically significant at 95% level. The cash conversion cycle has also a negative and significant impact at 95% level on performance of the companies listed on Tehran Stock Exchange.

The first control variable or also the debt ratio has a negative and significant impact at 95% level on performance of the companies. The second control variable or also the sale has a positive and significant impact on performance of companies, but this impact isn't statistically significant at 95% level while it can be considered significant at 90 % level.

As it's shown in the bottom row of the table, the R^2 value is achieved 0.894; therefore, the proposed model has a high explanatory capability, and the F statistic of the null test of all the coefficients of the estimated model are significant at 95% level that confirms the authenticity of the fitted model. Increasing the accounts receivable turnover, the accounts receivable turnover period increases and the performance of companies decreases. Therefore, increase of collections and accounts receivable in amount and time decreases the performance of the companies listed on Tehran Stock Exchange.

The increase of goods inventory or the decrease of overall cost of the sold goods can increase the financial performance of the companies listed on Tehran Stock Exchange. The increase of goods inventory turnover period and collection period increases the performance of the companies listed on Tehran Stock Exchange, and the increase of accounts receivable payment period reduces the financial performance of the mentioned companies.

Finally, the following recommendations are made:

- To increase the financial performance, companies can reduce the long-term commitments.
- Increasing the production level and using the costs, in proportion to the descending order, can reduce the overall cost of goods and can increase the goods inventory turnover period and the performance of companies as a result.
- The shorter collections and commitments periods are, the faster the accounts receivable turn to cash, and the collections period or the accounts receivable turnover decreases and can increase the performance of companies.
The following suggestions are made for the future studies:
- Study of the liquidity management impact on the financial performance of companies separated by industry.
- Study of impact of other effective factors on performance of companies including financial leverages, receivable facilities, and interest management.
- Study of management liquidity long-term relationships on financial performance of companies.

REFERENCES

- Abrishami H., Mehr Ara M. and Tamadon Nezhad A. (2009).** Study of foreign commerce and economic growth in developing countries: Generalized Method of Moments (GMM). *J. Knowledge Development*. 16(26), pp. 44-62.
- Anvari Rostami A.A. and Sabour A.R. (2009).** Evaluation of efficiency of manufacturing units in Cement Industry: Data Envelopment Analysis (DEA) approach. M.A. Thesis in Energy Economics, Tarbiat Modarres-Tehran, Maham, Keivan, Commerce Publication Center.
- Arab Mazar A. and Ghanbari H. (1997).** Theoretical foundation of liquidity management in banks, Tehran: Speeches and articles of the eighth seminar on Islamic Banking.
- Ashrafzadeh S.H.R. Mehrgan N. (2008).** Panel data econometric. Tehran: Research and Cooperation Institute of University of Tehran.
- Bahrani M. and Kermani A. (2002).** Risk management in Islamic banking. Tehran: Iran Higher Institute of Banking.
- Bakhtiari H. (2006).** Effective methods of liquidity management in banks. *J. Auditor*, 12(34): 86-94.
- Baltagi B. C., Kao, (2000).** Non-stationary Panels, Cointegration in panels and Dynamic Panels:

- A Survey. Center for Policy Research Working Paper, 16, Maxwell School, Syracuse University.
- Banks E. (2005).** Liquidity risk managing asset and funding risk. London: Palgrave Macmillan.
- Crouhy M., D. Galai, & R. Mark, (2000),** A comparative analysis of current credit risk models, *J. Banking Finance*. 5(24): P 59-117.
- Dargerigourian S. (2004).** Design of a liquidity risk measurement model for the private banking system in Iran (case study: Saman Bank), M.A. Thesis in Financial Management, Tehran: Shahid Beheshti University.
- Elyasiani E. and Zhang L. (2015),** CEO entrenchment and corporate liquidity management, *J. Banking and Finance*. 15(66): 121-135.
- Falconer B. (2001),** Structural liquidity: The worry beneath the surface. *Balance Sheet*, 3(9), P 13-19.
- Hilton D. (2005).** Management accounting: Value creation in a dynamic business environment. London: Longman.
- Jahankhani A. and Parsaian A. (2005).** Financial management. Terhan: SAMT.
- Namazi, M. and Ramzani A.R. (2003).** Evaluation of balanced scorecard (BSC) in management accounting. *Journal of Social Sciences and Humanities*, University of Shiraz, 1(2):45-63.
- Pino R. (2006).** Financial management. New York: Routledge.
- Sabeti Kohnemoie, M. (2007).** Design and implementation of liquidity optimal model of banks. Tehran: Higher Institute of Banking.
- Sadeghi M. (2009).** Study of factors affecting improvement of liquidity management in Mellat Bank. Master's thesis in Accounting, Islamic Azad University.
- Wood worth G. Walter (1968),** Bank liquidity management: Theories and techniques. *Bankers Magazine*. 4: 66-78.